

TACTICS & STRATEGY

First edition

8 units

32 lessons

A video for every lesson

FIRST EDITION

COURSE GUIDE

Tactics & Strategy is a one-year elective for students in grades 4–7 about the most useful habit a player, a coach or a general can have: thinking ahead. A **strategy** is the big plan for winning; a **tactic** is the clever move that carries it out right now. The student learns both by playing. The year begins with games small enough to solve completely, tic-tac-toe, Nim and Connect Four, and moves on to checkers and chess, where the student learns to control the center, count before trading, spot forks and pins, and finish with a checkmate.

Then the course turns to real plans made by real people. From Scripture come Gideon’s 300 with their trumpets and torches, Joshua’s ambush at Ai, Jonathan’s climb at Michmash, and David waiting for “the sound of a going in the tops of the mulberry trees.” From history come Hannibal crossing the Alps, the surprise at Cannae, Washington crossing the Delaware, and Nelson breaking the line at Trafalgar. These lessons are about maps, timing, terrain, courage and trust in God, never about violence. Next the student carries the same ideas onto the field: spacing, triangles and the give-and-go in soccer and basketball; John Wooden’s Pyramid of Success; drawing up a football play; the bunt, the hit-and-run and the catcher’s signs in baseball.

Every lesson moves from **the story** to **the plan**, then to **the principle** underneath it, and finally to **the board and the field**, where the student tries it. The last unit puts the student in charge: he or she designs an original strategy game, tests it until it is fair, learns to win and lose with grace, and runs a family tournament. Scripture runs through the year lightly and plainly: “For by wise counsel thou shalt make thy war: and in multitude of counsellors there is safety” (Proverbs 24:6), and “he that ruleth his spirit [is better] than he that taketh a city” (Proverbs 16:32).

Videos were chosen lesson by lesson from chess and checkers teachers, the Numberphile mathematics channel, museums and battlefield-history groups, coaching channels, and a few careful Bible teachers. Every video was previewed frame by frame and its

description read. The history videos show maps, paintings and moving blocks, not wounds. Some channels end with an invitation to subscribe or a short message about their own website; you can stop the video when the teaching ends. A parent note flags anything to know in advance. Watch together when you can, and pause whenever the video asks a question so the student can answer it first.

Start with Lesson 1.1 →

WHO IT IS FOR

Written for students in grades 4–7 (about ages 9–13). A 9-year-old can follow every lesson with a parent reading along; a 12-year-old can read the lessons alone and run the projects independently. No chess or checkers experience is needed: the course teaches the rules from the beginning. Nothing needs to be bought beyond ordinary household items: paper, pencils, coins or dried beans, a checkerboard (or a printed one), a chess set if the family has one (or the free printable one described in Unit 3), and a soft ball for the field lessons.

HOW TO USE THIS COURSE

1. **The weekly rhythm.** The year has 32 lessons, one a week. Session 1 (about 45 minutes) is the warm-up, the video, the core ideas and the picture study. Session 2 (about 45 minutes) is the project and the scorebook. In the last week of each unit, add a third session for the unit review and the portfolio.
2. **Story, plan, principle, play.** The core ideas are written to be read aloud or read by the student. *The story* tells what happened, with real names, places and dates. *The plan* shows what the player, coach or commander decided and why. *The principle* names the idea underneath, the part that works in every game. *On the board and the field* shows how to use it yourself. After each paragraph, ask the student to tell it back in his or her own words.
3. **Picture study.** Each lesson has one public-domain painting, engraving, map or historic photograph. Look at it quietly for two minutes. Then put it away and have the student tell everything he or she remembers. Bring it back and work through the “look for” items and questions, which point to the plan, the choice or the teamwork in the picture.
4. **The scorebook.** Keep one notebook for the whole year: your scorebook. In it the student records games (who played, who moved first, who won), draws boards

and maps with arrows, writes down plans before a game and checks them afterward, and keeps tallies when testing a strategy many times. Date every page. Honest records matter more than wins.

5. **Testing a strategy.** Many projects ask the student to play the same game many times, once with a plan and once without, and count the results. One game proves little; ten games begin to show the truth. A plan that loses and is then improved has taught more than a lucky win.
6. **How we handle battles.** Units 4 and 5 teach battles from the Bible and from history the way a good coach teaches a game film: what the ground looked like, what each side planned, what surprised them, and what courage and wisdom looked like. They teach maneuver, terrain, timing and leadership, never violence for its own sake. Battles are drawn as maps with arrows and played out with coins or blocks on the kitchen table.
7. **Unit review and portfolio.** Each unit ends with a short review (50 points) and a portfolio project that pulls the unit together, such as a solved-game guide, an annotated checkers game, a map of a famous plan, or a playbook. Keep the portfolio pages in a folder for the year.
8. **Optional books and games.** Some units list free classic books (on Project Gutenberg), free chess sites and family games. They are extras. Every lesson can be completed without them.
9. **Safety on the field.** The soccer, basketball, football and baseball lessons use a soft ball, a clear space and a parent watching. Warm up first, wear proper shoes, and stop if anything hurts. Football plays are run as flag or touch plays only.
10. **The family tournament.** The year ends with a family game day in Lesson 8.4: a small tournament of the student's own game and the classics from the year, with a bracket, a scorebook for every player, and a handshake after every game.

SCOPE AND SEQUENCE

UNIT 1 • WEEKS 1–4

Thinking Ahead

What strategy and tactics are, learned from Benjamin Franklin’s chess games; tic-tac-toe and why perfect play always draws; Nim and the power of working backward; and Connect Four, threats and the double threat.

- 1.1 What Is a Strategy? Benjamin Franklin’s Chess
- 1.2 Tic-Tac-Toe: Why Perfect Play Draws
- 1.3 Nim: Working Backward from the End
- 1.4 Connect Four, Nine Men’s Morris and the Double Threat

UNIT 3 • WEEKS 9–12

Chess

How the chess pieces move and what they are worth; the opening principles in Paul Morphy’s Opera Game of 1858; forks and pins; and the basic checkmate patterns from Philidor to today.

- 3.1 The Pieces and What They Are Worth
- 3.2 Opening Principles: Paul Morphy’s Opera Game
- 3.3 Forks and Pins: José Raúl Capablanca
- 3.4 Checkmate Patterns: From Philidor to Today

UNIT 2 • WEEKS 5–8

Checkers

Checkers from its old roots to Arthur Samuel’s learning computer program of the 1950s; controlling the center; when to trade pieces and when not to; and the endgame, with kings, the corner and the opposition.

- 2.1 An Old Game and a Learning Machine
- 2.2 Control the Center
- 2.3 Trade When You Are Ahead
- 2.4 The Endgame: Kings, Corners and “the Move”

UNIT 4 • WEEKS 13–16

Battles in the Bible

Four plans from Scripture: Gideon’s 300 and the night of trumpets and torches; Joshua’s ambush at Ai; Jonathan and his armorbearer climbing the cliffs at Michmash; and David waiting for the sound in the mulberry trees.

- 4.1 Gideon’s 300: Trumpets, Pitchers and Torches
- 4.2 Joshua at Ai: The Ambush and the Feigned Retreat
- 4.3 Jonathan at Michmash: Using the Ground
- 4.4 David and the Sound in the Mulberry Trees

UNIT 5 • WEEKS 17–20

Famous Plans in History

Four famous plans in history: Hannibal crossing the Alps (218 BC); the surprise at Cannae (216 BC); Washington crossing the Delaware (1776); and Nelson breaking the line at Trafalgar (1805).

- 5.1 Hannibal Crosses the Alps
- 5.2 Cannae: The Surprise in the Center
- 5.3 Washington Crosses the Delaware
- 5.4 Nelson at Trafalgar: Breaking the Line

UNIT 7 • WEEKS 25–28

Plays and Plans: Football and Baseball

Plays and plans in football and baseball: drawing up a play, from Walter Camp to the forward pass of 1913; the bunt and the hit-and-run; signals, the catcher's signs and the huddle invented at Gallaudet; and scouting an opponent fairly.

- 7.1 Drawing Up a Play: From Walter Camp to the Forward Pass
- 7.2 The Bunt and the Hit-and-Run
- 7.3 Signals, Signs and the Huddle
- 7.4 Scouting an Opponent Fairly

UNIT 6 • WEEKS 21–24

Teamwork Tactics: Soccer and Basketball

Teamwork in soccer and basketball: spacing and passing triangles from the Scots' passing game of 1872; man-to-man and zone defense; the give-and-go; and John Wooden's Pyramid of Success.

- 6.1 Spacing and Passing Triangles
- 6.2 Defending: Man-to-Man and Zone
- 6.3 The Give-and-Go
- 6.4 John Wooden's Pyramid of Success

UNIT 8 • WEEKS 29–32

Be the Strategist

The student becomes the strategist: designing an original strategy game, testing it until it is fair, learning to be a good winner and a good loser, and running a family tournament.

- 8.1 Design Your Own Strategy Game
- 8.2 Test It and Make It Fair
- 8.3 A Good Winner and a Good Loser
- 8.4 The Family Tournament

WEEKLY PACING CALENDAR

WEEK	PLAN
1	- Session 1: Lesson 1.1 What Is a Strategy? Benjamin Franklin's Chess: warm-up, video, teaching and picture study - Session 2: Lesson 1.1 project and scorebook

WEEK	PLAN
	<i>Two sessions a week is the usual rhythm. Younger children can split a long session in two; older students can do both sessions in one sitting.</i>
2	• Session 1: Lesson 1.2 Tic-Tac-Toe: Why Perfect Play Draws: warm-up, video, teaching and picture study • Session 2: Lesson 1.2 project and scorebook
3	• Session 1: Lesson 1.3 Nim: Working Backward from the End: warm-up, video, teaching and picture study • Session 2: Lesson 1.3 project and scorebook
4	• Session 1: Lesson 1.4 Connect Four, Nine Men's Morris and the Double Threat: warm-up, video, teaching and picture study • Session 2: Lesson 1.4 project and scorebook • Session 3: Unit 1 review and portfolio project
5	• Session 1: Lesson 2.1 An Old Game and a Learning Machine: warm-up, video, teaching and picture study • Session 2: Lesson 2.1 project and scorebook
6	• Session 1: Lesson 2.2 Control the Center: warm-up, video, teaching and picture study • Session 2: Lesson 2.2 project and scorebook
7	• Session 1: Lesson 2.3 Trade When You Are Ahead: warm-up, video, teaching and picture study • Session 2: Lesson 2.3 project and scorebook
8	• Session 1: Lesson 2.4 The Endgame: Kings, Corners and "the Move": warm-up, video, teaching and picture study • Session 2: Lesson 2.4 project and scorebook • Session 3: Unit 2 review and portfolio project
9	• Session 1: Lesson 3.1 The Pieces and What They Are Worth: warm-up, video, teaching and picture study • Session 2: Lesson 3.1 project and scorebook

WEEK	PLAN
10	• Session 1: Lesson 3.2 Opening Principles: Paul Morphy's Opera Game: warm-up, video, teaching and picture study • Session 2: Lesson 3.2 project and scorebook
11	• Session 1: Lesson 3.3 Forks and Pins: José Raúl Capablanca: warm-up, video, teaching and picture study • Session 2: Lesson 3.3 project and scorebook
12	• Session 1: Lesson 3.4 Checkmate Patterns: From Philidor to Today: warm-up, video, teaching and picture study • Session 2: Lesson 3.4 project and scorebook • Session 3: Unit 3 review and portfolio project
13	• Session 1: Lesson 4.1 Gideon's 300: Trumpets, Pitchers and Torches: warm-up, video, teaching and picture study • Session 2: Lesson 4.1 project and scorebook
14	• Session 1: Lesson 4.2 Joshua at Ai: The Ambush and the Feigned Retreat: warm-up, video, teaching and picture study • Session 2: Lesson 4.2 project and scorebook
15	• Session 1: Lesson 4.3 Jonathan at Michmash: Using the Ground: warm-up, video, teaching and picture study • Session 2: Lesson 4.3 project and scorebook
16	• Session 1: Lesson 4.4 David and the Sound in the Mulberry Trees: warm-up, video, teaching and picture study • Session 2: Lesson 4.4 project and scorebook • Session 3: Unit 4 review and portfolio project
17	• Session 1: Lesson 5.1 Hannibal Crosses the Alps: warm-up, video, teaching and picture study • Session 2: Lesson 5.1 project and scorebook
18	• Session 1: Lesson 5.2 Cannae: The Surprise in the Center: warm-up, video, teaching and picture study • Session 2: Lesson 5.2 project and scorebook

WEEK	PLAN
19	• Session 1: Lesson 5.3 Washington Crosses the Delaware: warm-up, video, teaching and picture study • Session 2: Lesson 5.3 project and scorebook
20	• Session 1: Lesson 5.4 Nelson at Trafalgar: Breaking the Line: warm-up, video, teaching and picture study • Session 2: Lesson 5.4 project and scorebook • Session 3: Unit 5 review and portfolio project
21	• Session 1: Lesson 6.1 Spacing and Passing Triangles: warm-up, video, teaching and picture study • Session 2: Lesson 6.1 project and scorebook
22	• Session 1: Lesson 6.2 Defending: Man-to-Man and Zone: warm-up, video, teaching and picture study • Session 2: Lesson 6.2 project and scorebook
23	• Session 1: Lesson 6.3 The Give-and-Go: warm-up, video, teaching and picture study • Session 2: Lesson 6.3 project and scorebook
24	• Session 1: Lesson 6.4 John Wooden's Pyramid of Success: warm-up, video, teaching and picture study • Session 2: Lesson 6.4 project and scorebook • Session 3: Unit 6 review and portfolio project
25	• Session 1: Lesson 7.1 Drawing Up a Play: From Walter Camp to the Forward Pass: warm-up, video, teaching and picture study • Session 2: Lesson 7.1 project and scorebook
26	• Session 1: Lesson 7.2 The Bunt and the Hit-and-Run: warm-up, video, teaching and picture study • Session 2: Lesson 7.2 project and scorebook
27	• Session 1: Lesson 7.3 Signals, Signs and the Huddle: warm-up, video, teaching and picture study • Session 2: Lesson 7.3 project and scorebook

WEEK	PLAN
28	• Session 1: Lesson 7.4 Scouting an Opponent Fairly: warm-up, video, teaching and picture study • Session 2: Lesson 7.4 project and scorebook • Session 3: Unit 7 review and portfolio project
29	• Session 1: Lesson 8.1 Design Your Own Strategy Game: warm-up, video, teaching and picture study • Session 2: Lesson 8.1 project and scorebook
30	• Session 1: Lesson 8.2 Test It and Make It Fair: warm-up, video, teaching and picture study • Session 2: Lesson 8.2 project and scorebook
31	• Session 1: Lesson 8.3 A Good Winner and a Good Loser: warm-up, video, teaching and picture study • Session 2: Lesson 8.3 project and scorebook
32	• Session 1: Lesson 8.4 The Family Tournament: warm-up, video, teaching and picture study • Session 2: Lesson 8.4 project and scorebook • Session 3: Unit 8 review and portfolio project <i>Last week. Hold a family game day: the student runs the culminating event from Unit 8 and shows guests the scorebook and the best project from each unit.</i>

MATERIALS

A scorebook (a composition book, lined or graph paper)

One for the whole year: game records, drawn boards and maps, plans written before a game, and tallies.

Pencils, colored pencils, a ruler and plain paper

For drawing boards, maps with arrows, and plays.

About 40 small counters

Coins, buttons, dried beans or toothpicks for Nim, Connect Four on paper, and battle maps.

A checkerboard with 24 checkers

Any inexpensive set, or a printed board with two colors of coins or bottle caps.

A chess set

Any set. Families without one can print a board and paper pieces, or use the free site lichess.org with a parent.

Building blocks, dominoes or cut-paper rectangles

For laying out battle formations on the table in Units 4 and 5.

A soft ball (foam or playground ball), a few cones or plastic cups, and a basket or bucket

For the soccer, basketball, football and baseball lessons in Units 6 and 7. A foam bat or a rolled-up newspaper works for the bunting lesson.

A Bible (King James Version is quoted in the lessons)

For Unit 4 and the Scripture notes throughout the year.

Index cards, scissors, tape and markers

For making game pieces, rule cards and the tournament bracket in Unit 8.

GRADING

Grades come from the projects, the scorebook, the eight unit reviews and the eight portfolio projects. The emphasis is on careful thinking and honest records: a plan written before the game, the game itself, and what the student learned afterward.

PART	%
Projects (played, recorded and explained)	40
Scorebook (organization, honesty, completeness)	20
Unit reviews	15
Portfolio projects	25

Scale: A 90–100, B 80–89, C 70–79, D 60–69, F below 60.

- A project earns full credit when the student wrote a plan or prediction first, played or tested it the required number of times, recorded the results honestly, and wrote one or two sentences about what he or she learned. Winning is not required.

- Unit reviews are worth 50 points each. They may be done orally with younger students, with the parent writing the answers.
- Portfolio projects are graded with the rubric in each unit. Keep them in a folder for the year.
- For a transcript, this course is a one-year elective in logic and games (strategy, chess and history).

A NOTE TO PARENTS

You do not need to be a chess player to teach this course well. The lessons teach the rules from the beginning, and the best thing you can do is play: be the opponent, the referee and the audience. Ask, before each game, “What is your plan?” and after it, “Did your plan work? What would you change?” A child who can answer those two questions is learning strategy.

Units 4 and 5 teach battles from the Bible and from history. They are written for 9- to 12-year-olds and keep to plans, maps, courage and leadership. There is no bloodshed described in the lessons, and the videos were checked frame by frame for it. The Bible battles are taught as true history from Scripture, with attention to how God’s people sought Him, obeyed and trusted Him. If your child is sensitive, read the core ideas aloud yourself and preview the video first.

The course is also a course in character. Strategy games reward patience, self-control and honesty, and they give children many small chances to practice winning without boasting and losing without sulking. Proverbs 16:32 runs under the whole year: “He that is slow to anger is better than the mighty; and he that ruleth his spirit than he that taketh a city.” Praise good thinking and good sportsmanship more than wins.

UNIT 1

THINKING AHEAD

Every good player, coach and general has one habit in common: before moving, they look ahead. In this unit you will learn the difference between a **strategy** (your big plan) and a **tactic** (the clever move that carries out the plan right now). You will meet Benjamin Franklin, who loved chess and wrote that it teaches foresight, and Charles Babbage, who dreamed of a machine that could play tic-tac-toe.

Then you will study three small games so carefully that you will know them completely. You will learn why tic-tac-toe always ends in a draw when both players play perfectly, how to win at Nim every time by working backward from the end, and how Connect Four is won with threats, especially the double threat that cannot be stopped. These little games teach the big ideas you will use all year.

PREREQUISITES

- Can read a short paragraph and tell it back
- Knows how to play tic-tac-toe
- Can count by fours and add and subtract numbers up to 30

MASTERY CHECKLIST

- ☐ I can explain the difference between a strategy and a tactic, with an example from a game.
- ☐ I can play tic-tac-toe without ever losing, and explain why perfect play ends in a draw.
- ☐ I can win the 21-counter game of Nim by working backward and leaving a multiple of 4.
- ☐ I can make a threat and a double threat in Connect Four or nine men's morris.
- ☐ I can record a game in my scorebook and say what I would do differently next time.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **Benjamin Franklin: A Book of His Writings (Project Gutenberg)**: Free. A collection of Franklin’s writings that includes “The Morals of Chess” (written in 1779). A parent can read the essay aloud in about ten minutes for Lesson 1.1; the language is old-fashioned, so read a paragraph and talk about it. The rest of the book is for adults. Ages 10+ with a parent.

Not required. Every project in this unit works without them. School Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

1.1 What Is a Strategy? Benjamin Franklin’s Chess	2 sessions of 45 minutes
1.2 Tic-Tac-Toe: Why Perfect Play Draws	2 sessions of 45 minutes
1.3 Nim: Working Backward from the End	2 sessions of 45 minutes
1.4 Connect Four, Nine Men’s Morris and the Double Threat	2 sessions of 45 minutes

UNIT 1 REVIEW

Answer each question in complete sentences unless it asks for a number or a drawing. The review is worth 50 points. Younger students may answer aloud while a parent writes.

1. **5 pts**
What is the difference between a strategy and a tactic? Give one example of each from a game.
2. **5 pts**
Name Benjamin Franklin’s three habits that he said chess teaches, and explain one of them.
3. **5 pts**
In tic-tac-toe, what is a fork, and why does it usually win?

4. (4 pts)

What happens in tic-tac-toe when both players play perfectly?

5. (5 pts)

In 21-counter Nim (take 1, 2 or 3; whoever takes the last counter wins), there are 14 counters left and it is your turn. How many do you take, and why?

6. (5 pts)

Explain “working backward” using Nim.

7. (4 pts)

Who gave Nim its name and published the winning secret, and in what year?

8. (5 pts)

Why is the middle column the strongest place to start in Connect Four?

9. (6 pts)

What would happen if... your opponent in Connect Four makes a double threat?
What should you have done earlier?

10. (6 pts)

Read Luke 14:31. What does the wise king do before going to war, and how can a game player do the same?

ANSWER KEY

1. A strategy is the big plan for the whole game; a tactic is a short, clever move that wins something now and helps the plan. Example: strategy, “control the middle of the board”; tactic, “a double jump in checkers.” Other sensible examples accepted.
2. Foresight (looking ahead), circumspection (looking all around the board), and caution (not moving in a hurry). Any one explained correctly.
3. A fork is a move that makes two threats at once. The opponent can block only one, so the other wins.
4. The game is always a draw.
5. Take 2, leaving 12, which is a multiple of 4. Then whatever the opponent takes, you take enough to make 4 together.
6. Start from the end: with 1–3 counters you win by taking them all, so 4 is a losing number to face. Therefore leave your opponent 4, and by the same reasoning 8, 12, 16 and 20.
7. Charles Bouton of Harvard University, in 1901.
8. It is part of more possible lines of four than any other column, so it gives the most chances to make threats. With perfect play, the first player wins by starting there.
9. You can block only one of the two threats, so the opponent will win with the other. Earlier, you should have looked ahead and blocked the square that would have let them create two threats at once.
10. He sits down first and considers whether he is able to win with the soldiers he has. A player can do the same by thinking about the position and writing a plan before the game and before each important move.

PORTFOLIO PIECE: MY BOOK OF SOLVED GAMES

Make a small illustrated booklet (four to six pages, folded paper is fine) that teaches a younger child how to play tic-tac-toe, Nim and Connect Four well. Give each game one page with the rules, a drawing of the board, and the winning strategy in your own words: the five tic-tac-toe rules, the multiples-of-4 secret for Nim, and the double threat for Connect Four. Add a page of your best game records from this unit and a cover with a title and your name. Then teach one game from your booklet to a younger child or a grandparent, and write one sentence about how it went.

LOOK FOR	WHAT IT MEANS
Rules	Each game's rules are complete and clear enough for someone to play from the booklet alone.
Strategy	Each page explains the winning idea correctly: the fork, working backward to multiples of 4, and the double threat.
Drawings	Boards and examples are neat and labeled, with at least one fork or double threat shown.
Records	Includes real game records from the unit's projects, honestly reported.
Teaching	The student taught one game to someone else and wrote a sentence about it.

1.1 WHAT IS A STRATEGY? BENJAMIN FRANKLIN'S CHESS

OBJECTIVES

- Explain the difference between a strategy and a tactic.
- Tell the story of Benjamin Franklin's love of chess and the three lessons he said it teaches.
- Write a plan before a game and check it afterward.

Warm-up. Think of a game you know well: tag, hide-and-seek, checkers or a card game. Write one sentence that begins “My big plan is...” and one that begins “One clever trick I use is...”. Read both aloud. You have just written a strategy and a tactic.

WATCH

Board Games 101: Tactics vs. Strategy

Nights Around a Table • 6:08

<https://www.youtube.com/watch?v=ptKj473sGxk>

WHEN TO WATCH

After the story, before the plan. Listen for one example of a strategy and one of a tactic.

BACKUP VIDEO

Chess Strategy | Chess Terms | ChessKid

ChessKid • 1:23

<https://www.youtube.com/watch?v=i4XCfTbfjVE>

A one-minute definition of strategy from the chess teachers at ChessKid.

KEY TERMS

strategy

The big plan for winning: what you are trying to do over the whole game.

tactic

A short, clever move or series of moves that wins something right now and helps carry out the plan.

foresight

Looking ahead to see what may happen next. Franklin named it the first lesson of chess.

opponent

The player or team you are playing against.

CORE IDEAS

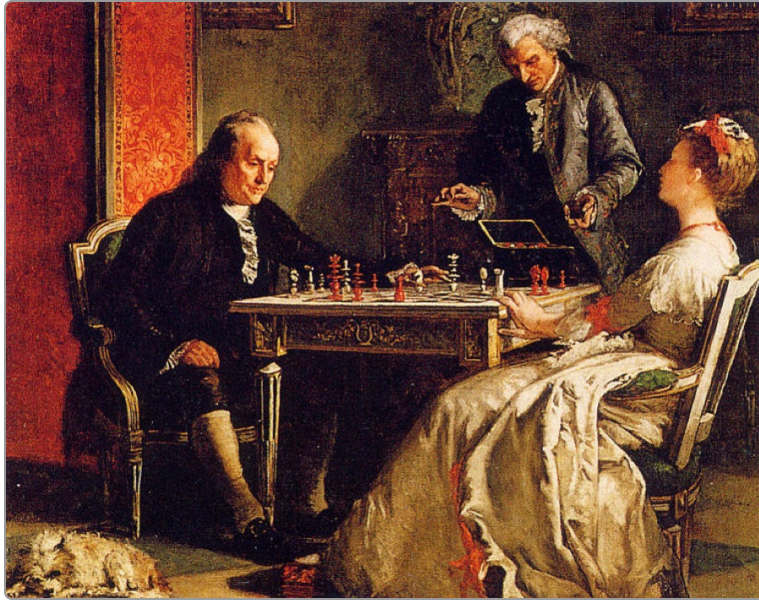
The story. Benjamin Franklin, the printer, inventor and statesman of Philadelphia, loved chess all his life. In London in the winter of 1774, when trouble was growing between Britain and the American colonies, Franklin was invited to play chess with Caroline Howe, the sister of a British admiral. The friendly games led to quiet talks about how war might be avoided. Years later, in 1786, Franklin's short essay *The Morals of Chess* was printed in Philadelphia. In it he said that chess teaches three habits that are useful all through life.

The plan. Franklin's three habits are a plan for thinking. The first is **foresight**: before you move, look ahead and ask, "If I do this, what will my opponent do next?" The second is **circumspection**, a long word for looking all around: check the whole board, not just the corner where you are busy. The third is **caution**: do not move in a hurry. Franklin also noticed that a player who seems to be losing can often turn the game around by patience and care, so we should not give up when things look bad.

The principle. Every game has two kinds of thinking. A **strategy** is your big plan: "I will control the middle of the board," or "Our team will pass the ball to the open player." A **tactic** is a short, sharp move that wins something right now: a double jump in checkers, a trick play in football. Strategy without tactics is a plan that never gets carried out. Tactics without strategy are clever moves that lead nowhere. Good players use both.

On the board and the field. Jesus once asked, "What king, going to make war against another king, sitteth not down first, and consulteth whether he be able?" (Luke 14:31). Wise kings, coaches and players sit down and plan before they act. This whole year you will practice that habit: write your plan before a game, play, and then look back to see whether the plan worked.

PICTURE STUDY



Franklin Playing Chess with Lady Howe, Edward Harrison May, 1867 · Oil on canvas · Painted in Paris by an English-born American artist

Image: [Wikimedia Commons](#), public domain

This painting imagines one of Franklin's chess games with Caroline Howe in London in 1774. It was painted almost a hundred years later, so the artist had to picture the scene. Notice how he shows thinking: no one is in a hurry.

Look closely

- Find Franklin. Where are his eyes looking? What do you think he is doing?
- Look at the lady's hand. Is she moving quickly or carefully?
- Find the man standing behind the table. What is he watching?
- Find the sleeping dog. How does it make the room feel?

Talk about it

1. Which of Franklin's three habits, foresight, circumspection or caution, can you see in this picture?
2. Why might a friendly game of chess help two people talk about hard things?
3. What would Franklin be asking himself before his next move?

PROJECT

Plan, Play, Look Back

You will play five games of a simple game you already know, such as checkers, tic-tac-toe, dots and boxes or a card game, against a family member. Before each game you will write a plan. After each game you will write whether the plan worked. This is the scorebook habit you will use all year.

You will need

- A simple two-player game you know
- A family member to play against
- Your scorebook and a pencil

Steps

1. Draw a table in your scorebook with five rows and four columns: Game, My plan, What happened, Next time.
2. Before game 1, write your plan in one sentence. For example: “I will try to take the middle square first.”
3. Play the game. Try hard to follow your plan.
4. Right after the game, write what happened. Did you follow your plan? Who won?
5. In the last column, write one thing you would change next time.
6. Repeat for games 2 to 5. You may keep the same plan or improve it.
7. At the bottom of the page, circle the game where your plan worked best, and write one sentence about why.
8. Ask your opponent: “What was your plan?” Write down the answer. Did you guess it during the game?

Tips

- A plan does not have to be fancy. “Block every row my opponent starts” is a fine plan.
- Losing a game is not a failure if you learn something from it and write it down.

- Take turns going first, so the games are fair.

Check your work

- ☐ I wrote a plan before every game.
- ☐ I wrote what happened and one change after every game.
- ☐ I can tell which of my moves were part of my strategy and which were tactics.

SCOREBOOK

1. Start your scorebook. On the first page write your name, the date, and Franklin's three habits: foresight, circumspection, caution. Draw a small picture for each one.
2. Make a two-column list titled "Strategy" and "Tactic." Write three examples of each from games or sports you know.
3. Copy your project table neatly and add a sentence at the bottom: "The most important thing I learned is..."

From history. Franklin spent many years in Paris representing the new United States, and he played chess there too, often late into the night. A famous chess-playing machine of the time, the Mechanical Turk, played against visitors across Europe; it turned out to hide a human player inside.

COMMON MISTAKES

- Thinking strategy and tactics are the same thing. A strategy is the big plan; a tactic is a short move that helps carry it out.
- Writing the plan after the game. The plan must come first, or you cannot check it.
- Changing the plan in the middle of every game without a reason. Change it when you learn something, not when you get impatient.

Make it a game · Strategy or Tactic?. Your parent calls out plans from everyday life, such as get a good seat for the movie or move the knight to fork two pieces. You shout strategy or tactic and say why in one sentence. Then tell Benjamin Franklin's three chess lessons from memory. Miss one, and your parent gets the point. Play to ten.

Scripture. “Or what king, going to make war against another king, sitteth not down first, and consulteth whether he be able with ten thousand to meet him that cometh against him with twenty thousand?” (Luke 14:31, KJV)

Our Lord’s question about the wise king is a lesson in strategy: sit down first, count what you have, and plan before you act.

1.2 TIC-TAC-TOE: WHY PERFECT PLAY DRAWS

OBJECTIVES

- Play tic-tac-toe without ever losing, as X or as O.
- Explain what a threat, a block and a fork are.
- Explain why two perfect players always draw.

Warm-up. Play three quick games of tic-tac-toe with a family member. Before each game, predict: will X win, will O win, or will it be a draw? Tally the results. Did anyone win? If so, what mistake did the loser make?

WATCH

How to win tic-tac-toe

Science Mom • 6:45

<https://www.youtube.com/watch?v=38clnzM--uw>

WHEN TO WATCH

After the plan paragraph. Pause at each question on the screen and answer it before she does.

BACKUP VIDEO

There are Exactly 14 Different Games of Tic-Tac-Toe

Marc Evanstein / music.py • 7:20

<https://www.youtube.com/watch?v=QNFQvX-MQgl>

For older students: how a programmer counted every game of tic-tac-toe and found that only a few are truly different.

KEY TERMS

threat

Two of your marks in a row with the third square empty, so you will win next turn unless your opponent blocks.

block

Placing your mark to stop your opponent's threat.

fork

A move that makes two threats at once.
The opponent can block only one, so
the fork wins.

draw

A game that ends with no winner.

solved game

A game whose result with perfect play
is known for certain.

CORE IDEAS

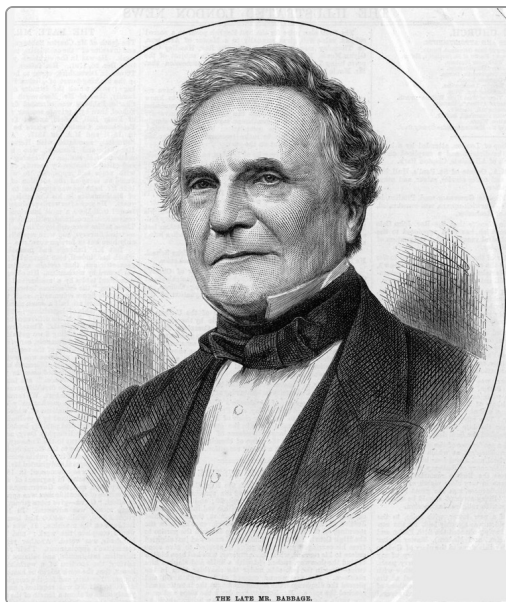
The story. Tic-tac-toe is one of the oldest and simplest strategy games, and it has a surprising place in the history of computers. Charles Babbage, the English mathematician who designed the first plans for a programmable computer, wrote in 1864 that he had once worked out how a machine could play tic-tac-toe perfectly, and he even thought of showing it to raise money for his great calculating engine. Almost a century later, in 1952, a student at Cambridge University named A. S. Douglas wrote one of the first computer games ever made: a tic-tac-toe program called OXO, which played perfectly on a room-sized computer.

The plan. Why could a machine play tic-tac-toe perfectly so long ago? Because the game is small. There are only nine squares, and every game ends in nine moves or fewer. A careful player can follow a short list of rules, in this order: (1) If you can win this turn, win. (2) If your opponent can win next turn, block. (3) If you can make a fork, two threats at once, make it. (4) If your opponent could make a fork next turn, stop it. (5) Otherwise take the center, then a corner, then an edge.

The principle. When both players follow those rules, every game ends in a draw. Mathematicians say tic-tac-toe is a **solved game**: we know the result of perfect play for certain. The real battle is about the **fork**. A single threat can always be blocked, but two threats at once cannot. That is why a good player is not only thinking, “Can I make a threat?” but also, “Can my opponent make two?”

On the board and the field. The fork is one of the most important ideas in all of strategy. You will meet it again in Connect Four, in checkers (the double jump), in chess (the knight fork), and on the field, where a player who threatens to pass or to shoot makes the defender guess. Learn to see forks in tic-tac-toe and you are learning to see them everywhere.

PICTURE STUDY



The Late Mr. Babbage, *The Illustrated London News* (wood engraving from a photograph), 1871 · Wood engraving · Published in London in *The Illustrated London News*, 4 November 1871

Image: [Wikimedia Commons](#), public domain

Charles Babbage (1791–1871) designed machines to calculate tables of numbers without mistakes, and he drew plans for an “Analytical Engine” that worked much like a modern computer. This portrait was printed in a London newspaper the week after he died.

Look closely

- Look at Babbage’s eyes and mouth. Does he look like a patient thinker or a quick talker?
- Notice the fine lines the engraver cut to make light and shadow. How is the face made to look rounded?
- Find the high collar and neck-cloth. They tell you when he lived.

Talk about it

1. Babbage worked out rules a machine could follow to play tic-tac-toe perfectly. Why is a small game easier to “solve” than a big one?
2. If a game always ends in a draw with perfect play, why do people still enjoy playing it?
3. What rules would you give a machine to play your favorite game?

PROJECT

The Unbeatable Tic-Tac-Toe Rule Card

You will write the five tic-tac-toe rules on a card, test them in ten games, and prove to yourself that a player who follows them never loses.

You will need

- An index card
- Paper and pencil for games (or a whiteboard)
- A family member to play against
- Your scorebook

Steps

1. Copy the five rules from the plan paragraph onto an index card. Number them.
2. Play ten games against a family member. Take turns: five games as X (first) and five as O (second).
3. On every move, read your card from the top and do the first rule that fits.
4. Your opponent may play any way they like. Ask them to try hard to beat you.
5. Record every game in your scorebook: who went first, and whether it was a win, loss or draw.
6. If you ever lose, replay the game slowly. Which rule did you skip?
7. Count your results. How many wins, draws and losses did you have as X? As O?
8. Now hand your card to your opponent and play five more games. What happens when both players follow the card?

Tips

- Rule 4 (stop the opponent's fork) is the hardest. When you are O and X takes a corner, take the center.
- Most wins against beginners come from forks. Watch for them.
- Draw small boards in your scorebook to record each game: write the move number in each square.

Check your work

- ☐ I did not lose a game while following my rule card.
- ☐ I can point to a fork in one of my games.
- ☐ I can explain why two players with the card always draw.

SCOREBOOK

1. Draw three small tic-tac-toe boards. On the first show a threat, on the second a block, and on the third a fork. Label each one.
2. Make a tally table of your ten games: Wins, Draws, Losses, as X and as O.
3. Write two sentences: “Tic-tac-toe is a solved game because...” and “The most dangerous move in tic-tac-toe is...”

WORKED EXAMPLES

Example 1. X has taken the top-left corner and O has taken an edge square (top-middle). X now takes the center. What must O do, and why does X still win?

Show solution

1. X now threatens to complete the diagonal from top-left to bottom-right, so O must block in the bottom-right corner.
2. X then takes the bottom-left corner. Now X has two threats: the left column (top-left, middle-left, bottom-left) and the diagonal from bottom-left to top-right through the center.
3. O can block only one of them.

Answer: O is forced to block in the bottom-right corner, and then X’s move to the bottom-left corner makes a fork with two threats, so X wins. O’s first mistake was answering a corner with an edge instead of the center.

COMMON MISTAKES

- Making your own threat when the opponent already has one. Always block first unless you can win this turn.
- As O, answering a corner with an edge. Answer a corner with the center.
- Forgetting that a fork is two threats at once, not just a strong move.

Make it a game • Never Lose Tic-Tac-Toe. Play five quick games of tic-tac-toe where your parent goes first and tries to beat you. Before each of your moves, say aloud whether it is a threat, a block or a fork. Count the games you do not lose. Then write your own rule card for X and O from memory in one minute.

1.3 NIM: WORKING BACKWARD FROM THE END

OBJECTIVES

- Play the 21-counter game of Nim and win by leaving a multiple of 4.
- Explain the strategy of working backward from the end of a game.
- Tell the story of Charles Bouton and the Nimatron.

Warm-up. Put 10 coins on the table. Players take turns removing 1 or 2 coins.

Whoever takes the last coin wins. Play three times. Before the third game, think: if there are 3 coins left and it is your turn, are you happy or worried?

WATCH

The Game of Nim - a math game of strategy using matchsticks!

[tecmath](#) · 9:27

<https://www.youtube.com/watch?v=SUh8C387BVU>

WHEN TO WATCH

After the plan paragraph. Try to beat the game shown before the teacher reveals the secret.

Note: Skip from about 0:55 to 2:35, a sponsor segment for an online class website. The video shows the game with matchsticks; use coins, beans or toothpicks instead.

BACKUP VIDEO

The secret of playing NIM

[CuriosityShow](#) · 1:59

<https://www.youtube.com/watch?v=4N4zxpFAZ5U>

A short clip from the classic Australian children's science program, showing a quick way to win.

KEY TERMS

Nim

A game in which players take turns removing counters from a pile or piles; the rules decide whether taking the last counter wins or loses.

working backward

Solving a problem by starting at the end and asking what must happen just before it.

safe position

A position you want to leave for your opponent, because whatever they do, you can win.

multiple of 4

A number you reach by counting by fours: 4, 8, 12, 16, 20.

CORE IDEAS

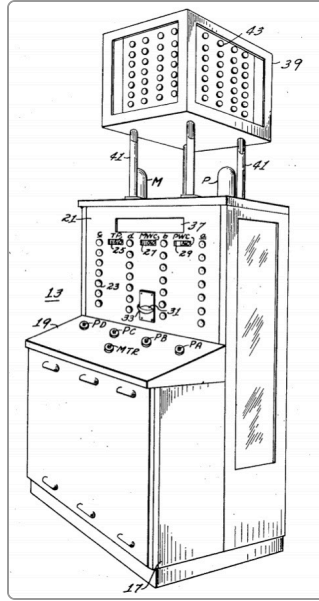
The story. Games of taking away counters are very old, but in 1901 a mathematics professor at Harvard University named Charles Bouton gave the game the name Nim and published the complete secret of how to win it. In 1940, at the New York World's Fair, visitors lined up to play Nim against a huge electric machine with rows of glowing lights called the Nimatron. It was designed by the physicist Edward Condon and built by the Westinghouse company, and it won the great majority of the thousands of games played against it. People were amazed that a machine could “think,” but it was really following Bouton's rule.

The plan. Here is our version. Start with 21 counters. Players take turns removing 1, 2 or 3. Whoever takes the last counter wins. The secret is to **work backward**. If it is your turn and there are 1, 2 or 3 counters left, you take them all and win. So 4 counters is a terrible position to face: whatever you take, your opponent takes the rest. That means you want to *leave* your opponent 4. In the same way you want to leave them 8, then 12, 16 and 20.

The principle. The **safe positions** are the multiples of 4. Whenever your opponent takes some counters, you take enough to make the two of you add up to 4 (they take 1, you take 3; they take 2, you take 2; they take 3, you take 1). Then the pile always lands on a multiple of 4 after your turn. With 21 counters, the first player takes 1 to leave 20 and wins every time with perfect play. Working backward turns a guessing game into a sure thing.

On the board and the field. Working backward is how good planners think. A chess player asks, “What checkmate am I aiming for?” and then works out the moves to reach it. A coach with two minutes left asks, “How many times must we score, and how much time does each drive need?” Scripture praises this kind of foresight: “A prudent man foreseeth the evil, and hideth himself: but the simple pass on, and are punished” (Proverbs 22:3). See the end first, then plan the steps that lead there.

PICTURE STUDY



The Nimatron: Drawing from the Patent, Edward U. Condon and colleagues, 1940 · Patent drawing (pen and ink) · United States patent for a “Machine to Play Game of Nim”

Image: [Wikimedia Commons](#), public domain

Inventors must send careful drawings to the patent office to explain their machines. This drawing shows the Nimatron, the Nim-playing machine shown at the 1940 New York World’s Fair. The rows of lamps stood for piles of counters; players pushed buttons to “take away” lights.

Look closely

- Find the rows of small circles on the front panel. These were the lamps that stood for counters.
- Find the box of lights raised on posts above the cabinet. Why would a fair machine need a big display up high?
- Notice the small numbers with lines pointing to parts. What are they for?

Talk about it

1. The Nimatron never got tired and never made a mistake. Why could it play so well?
2. Could a person who knows the multiples-of-4 secret beat the machine? When?
3. What other game could someone build a machine to play perfectly?

PROJECT

Beat the Family at Nim

You will test the multiples-of-4 strategy by playing 20 games of Nim, ten before you use the secret and ten after, and count how much it helps.

You will need

- 21 small counters (coins, dried beans, buttons or toothpicks)
- A family member to play against
- Your scorebook

Steps

1. Explain the rules to your opponent: 21 counters, take 1, 2 or 3 on your turn, and whoever takes the last counter wins. Do not tell the secret.
2. Play ten games without using the secret. Just play however you like. Take turns going first.
3. Record each game: who went first and who won.
4. Now play ten more games using the secret. When you go first, take 1. After that, always make your turn and your opponent's turn add up to 4.
5. When your opponent goes first, watch for any move that does not leave a multiple of 4. Jump on it.
6. Record these ten games too.
7. Compare: how many games did you win before the secret, and how many after?
8. Finally, teach your opponent the secret and play three more games. What happens now?

Tips

- Say the safe numbers out loud as you play: "20, 16, 12, 8, 4."
- When you go second against someone who knows the secret, you will lose. That is not bad luck; it is mathematics.
- Try a new version: 25 counters, take 1 to 4. What are the safe positions now? (Hint: count by fives.)

Check your work

- ☐ I won more games after using the secret than before.
- ☐ I can explain why 4 is a losing number to face.
- ☐ I can find the safe positions for a new version of Nim.

SCOREBOOK

1. Draw a number line from 0 to 21. Circle the safe positions: 4, 8, 12, 16, 20. Write “Leave these for your opponent.”
2. Make a results table: Games 1–10 (no secret) and Games 11–20 (with the secret), with wins and losses for each.
3. Write a short paragraph explaining “working backward” to a younger child, using Nim as the example.

WORKED EXAMPLES

Example 1. There are 15 counters left and it is your turn. You may take 1, 2 or 3. How many should you take?

Show solution

1. The safe positions are multiples of 4: 4, 8, 12, 16, 20.
2. The largest multiple of 4 that is less than 15 is 12.
3. $15 - 12 = 3$.

Answer: Take 3, leaving 12. From now on, whatever your opponent takes, take enough to make 4 together.

Example 2. Your opponent leaves you 16 counters. What happens?

Show solution

1. 16 is a multiple of 4, so it is a safe position for your opponent, not for you.
2. If you take 1, 2 or 3, your opponent can take 3, 2 or 1 and leave 12.

Answer: If your opponent knows the secret, you will lose. Take 1 and hope they make a mistake.

COMMON MISTAKES

- Trying to leave a multiple of 4 for yourself instead of for your opponent.

- Taking 3 every turn because it is the most. In Nim the right number matters, not the biggest number.
- Giving up when you go second. Keep watching; one mistake by your opponent lets you take over the safe numbers.

Make it a game • Nim Backward Chant. Play 21-counter Nim with beans, first mixing up who goes first. Before each move, call out the safe number you want to leave, such as 20, 16, 12, 8 or 4. Your parent plays badly on purpose once to test whether you notice. Win three games in a row, then explain working backward.

Scripture. “A prudent man foreseeth the evil, and hideth himself: but the simple pass on, and are punished.” (Proverbs 22:3, KJV)

The prudent person looks ahead to what is coming and acts before it arrives. That is exactly what working backward in Nim trains you to do.

1.4 CONNECT FOUR, NINE MEN'S MORRIS AND THE DOUBLE THREAT

OBJECTIVES

- Make threats and double threats in Connect Four and nine men's morris.
- Explain why the first player can always win Connect Four with perfect play.
- Read a medieval picture of a strategy game and connect it to games we play today.

Warm-up. Draw a grid 7 squares wide and 6 squares tall. With a family member, take turns “dropping” an X or an O into a column: your mark goes in the lowest empty square of that column. First to get four in a row (across, up and down, or slanting) wins. Play one game. Where did most of the action happen: the edges or the middle?

WATCH

Connect Four - Numberphile

Numberphile · 5:02

<https://www.youtube.com/watch?v=yDWPi1pZ0Po>

WHEN TO WATCH

After the story. Listen for who solved the game and what the first player must do to win.

Note: Near the start the video shows a close-up of two painted hands from a famous ceiling painting, with a Connect Four grid added between them; nothing else from the painting is shown.

BACKUP VIDEO

How to win at Connect 4 almost every time!

Keith Galli · 6:09

<https://www.youtube.com/watch?v=3R1Cx6uGjMw>

For practice: a player shows how he sets up threats on a computer version of the game.

KEY TERMS

double threat

Two threats made at the same time.
The opponent can block only one, so the other wins.

mill

In nine men's morris, three of your pieces in a line. Making a mill lets you remove one of your opponent's pieces.

center column

The middle column of a Connect Four grid, which belongs to more possible fours than any other.

first-player advantage

The extra chance of winning that comes from moving first.

CORE IDEAS

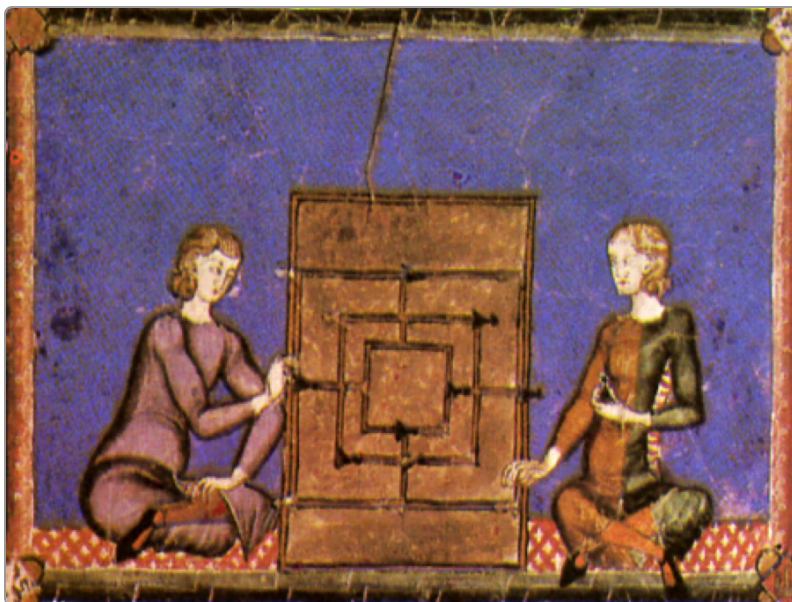
The story. Games of getting three or four in a row are very old. In 1283, King Alfonso X of Castile, in Spain, had a beautiful book of games made, the *Libro de los juegos*, with painted pictures of people playing chess, dice and board games. One of those games is nine men's morris, in which players try to line up three pieces, called a mill. Seven hundred years later, in 1974, the Milton Bradley company sold a new game of four-in-a-row with a plastic frame and dropping checkers: Connect Four. In October 1988, two computer scientists working separately, James Allen in America and Victor Allis in the Netherlands, both proved the same thing: with perfect play, the first player can always win Connect Four by starting in the middle column.

The plan. Connect Four has 7 columns and 6 rows. The middle column is part of more possible lines of four than any other column, so playing there gives you the most chances. Good players build **threats**: three in a row with an empty space that would make four. But one threat is usually blocked. The real goal is the **double threat**: two places where you could finish four, so that your opponent can stop only one. Nine men's morris has the same idea. A clever player arranges pieces so that one move can open a mill in two directions.

The principle. Here is the big idea from this whole unit: *make two threats at once*. In tic-tac-toe it was called a fork. In Connect Four and nine men's morris it is the double threat. You will see it again in checkers as the double jump, and in chess as the fork. A good defender, on the other hand, looks ahead to stop the double threat *before* it is made, by blocking the square that would create it.

On the board and the field. The double threat works in sport too. In basketball, a player who can either shoot or pass makes the defender choose, and whichever the defender guards, the other is open. In soccer, two attackers running at one defender make a "two against one." Whenever you play, ask: "Can I make my opponent face two problems at once?" and "Is my opponent about to do that to me?"

PICTURE STUDY



Nine Men's Morris, from the *Book of Games*, Workshop of King Alfonso X of Castile, 1283 · Painted illustration (tempera and gold on parchment) · *Libro de los juegos*, Royal Library of the Monastery of El Escorial, Spain

Image: [Wikimedia Commons](#), public domain

King Alfonso X, called “the Wise,” wanted the rules of games written down and illustrated. His *Libro de los juegos* (Book of Games) has about 150 pictures. This one shows two players at nine men’s morris, a game played on three squares, one inside another, joined by lines.

Look closely

- Count the squares on the board. How are they joined together?
- Find the places where lines cross or meet. Pieces are placed on those points.
- Look at each player’s hands. Who is moving, and who is explaining?
- Notice the patterned carpet and the colored border. How did the painter make this game look important?

Talk about it

1. A mill is three pieces in a line. Can you find a point on the board that belongs to two different lines? Why would that point be valuable for a double threat?
2. Why do you think a king wanted the rules of games written down?
3. How is nine men’s morris like Connect Four, and how is it different?

PROJECT

Hunting the Double Threat

You will play ten games of Connect Four on paper (or with a real set), keeping track of who moved first, who won, and whether the winner used a double threat. Then you will test whether starting in the middle column really helps.

You will need

- Graph paper, or a drawn 7-by-6 grid (make several copies), and two colors of pencil; or a Connect Four set
- A family member to play against
- Your scorebook

Steps

1. Draw or copy at least ten 7-by-6 grids. Number the columns 1 to 7 across the bottom.
2. Game 1–5: the first player must start in an edge column (1 or 7). Game 6–10: the first player must start in the middle column (4). Take turns being first.
3. Play each game. Remember: a mark always goes in the lowest empty square of its column.
4. After each game, record: who went first, the first column played, who won, and how many moves the game took.
5. If the game was won, circle the winning four. Was it set up with a double threat? Mark the double threat with a star.
6. Compare the two groups of games. Did the first player win more often when starting in the middle?
7. Write a rule of thumb for Connect Four in one sentence, based on your games.
8. Optional: draw a nine men's morris board, play three games with nine coins each, and record any double mills.

Tips

- Before every move, check two things: can I win right now, and can my opponent win next turn?

- Watch the square directly above a threat. If you play under your opponent's threat square, you may let them win.
- Ten games is a small test. If the results are close, play ten more.

Check your work

- ☐ I recorded ten games with who went first, the first column and the winner.
- ☐ I found and starred at least one double threat.
- ☐ I can explain why the middle column is strong.

SCOREBOOK

1. Draw a Connect Four grid showing a double threat: two empty squares where the same player could finish four. Label them "Threat 1" and "Threat 2."
2. Make a table comparing your middle-start games and edge-start games: games, first-player wins, second-player wins, draws.
3. Draw the nine men's morris board from the picture study and mark with a star every point that belongs to two lines.

From history. Victor Allis wrote up his Connect Four discovery in 1988 as a student, using a computer program that searched many positions and some clever rules about which squares each player could claim. Today, computers can show the perfect move in any Connect Four position.

COMMON MISTAKES

- Looking only at your own threats and missing your opponent's.
- Thinking a single threat wins. It almost never does; a careful opponent blocks it.
- Forgetting that pieces drop to the bottom. A square in the air can only be reached after the squares under it are filled.

Make it a game • Double Threat Hunt. Draw a Connect Four grid on paper and place a few markers in a position with a possible double threat. Race to find the move that makes two threats at once, within thirty seconds. Then draw a nine men's morris board and set up a double mill. Take turns setting traps for each other. Name the center column advantage.

UNIT 1

THINKING AHEAD

Every good player, coach and general has one habit in common: before moving, they look ahead. In this unit you will learn the difference between a **strategy** (your big plan) and a **tactic** (the clever move that carries out the plan right now). You will meet Benjamin Franklin, who loved chess and wrote that it teaches foresight, and Charles Babbage, who dreamed of a machine that could play tic-tac-toe.

Then you will study three small games so carefully that you will know them completely. You will learn why tic-tac-toe always ends in a draw when both players play perfectly, how to win at Nim every time by working backward from the end, and how Connect Four is won with threats, especially the double threat that cannot be stopped. These little games teach the big ideas you will use all year.

PREREQUISITES

- Can read a short paragraph and tell it back
- Knows how to play tic-tac-toe
- Can count by fours and add and subtract numbers up to 30

MASTERY CHECKLIST

- ☐ I can explain the difference between a strategy and a tactic, with an example from a game.
- ☐ I can play tic-tac-toe without ever losing, and explain why perfect play ends in a draw.
- ☐ I can win the 21-counter game of Nim by working backward and leaving a multiple of 4.
- ☐ I can make a threat and a double threat in Connect Four or nine men's morris.
- ☐ I can record a game in my scorebook and say what I would do differently next time.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **Benjamin Franklin: A Book of His Writings (Project Gutenberg)**: Free. A collection of Franklin’s writings that includes “The Morals of Chess” (written in 1779). A parent can read the essay aloud in about ten minutes for Lesson 1.1; the language is old-fashioned, so read a paragraph and talk about it. The rest of the book is for adults. Ages 10+ with a parent.

Not required. Every project in this unit works without them. School Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

1.1 What Is a Strategy? Benjamin Franklin’s Chess	2 sessions of 45 minutes
1.2 Tic-Tac-Toe: Why Perfect Play Draws	2 sessions of 45 minutes
1.3 Nim: Working Backward from the End	2 sessions of 45 minutes
1.4 Connect Four, Nine Men’s Morris and the Double Threat	2 sessions of 45 minutes

UNIT 1 REVIEW

Answer each question in complete sentences unless it asks for a number or a drawing. The review is worth 50 points. Younger students may answer aloud while a parent writes.

1. **5 pts**
What is the difference between a strategy and a tactic? Give one example of each from a game.
2. **5 pts**
Name Benjamin Franklin’s three habits that he said chess teaches, and explain one of them.
3. **5 pts**
In tic-tac-toe, what is a fork, and why does it usually win?

4. (4 pts)

What happens in tic-tac-toe when both players play perfectly?

5. (5 pts)

In 21-counter Nim (take 1, 2 or 3; whoever takes the last counter wins), there are 14 counters left and it is your turn. How many do you take, and why?

6. (5 pts)

Explain “working backward” using Nim.

7. (4 pts)

Who gave Nim its name and published the winning secret, and in what year?

8. (5 pts)

Why is the middle column the strongest place to start in Connect Four?

9. (6 pts)

What would happen if... your opponent in Connect Four makes a double threat?
What should you have done earlier?

10. (6 pts)

Read Luke 14:31. What does the wise king do before going to war, and how can a game player do the same?

ANSWER KEY

1. A strategy is the big plan for the whole game; a tactic is a short, clever move that wins something now and helps the plan. Example: strategy, “control the middle of the board”; tactic, “a double jump in checkers.” Other sensible examples accepted.
2. Foresight (looking ahead), circumspection (looking all around the board), and caution (not moving in a hurry). Any one explained correctly.
3. A fork is a move that makes two threats at once. The opponent can block only one, so the other wins.
4. The game is always a draw.
5. Take 2, leaving 12, which is a multiple of 4. Then whatever the opponent takes, you take enough to make 4 together.
6. Start from the end: with 1–3 counters you win by taking them all, so 4 is a losing number to face. Therefore leave your opponent 4, and by the same reasoning 8, 12, 16 and 20.
7. Charles Bouton of Harvard University, in 1901.
8. It is part of more possible lines of four than any other column, so it gives the most chances to make threats. With perfect play, the first player wins by starting there.
9. You can block only one of the two threats, so the opponent will win with the other. Earlier, you should have looked ahead and blocked the square that would have let them create two threats at once.
10. He sits down first and considers whether he is able to win with the soldiers he has. A player can do the same by thinking about the position and writing a plan before the game and before each important move.

PORTFOLIO PIECE: MY BOOK OF SOLVED GAMES

Make a small illustrated booklet (four to six pages, folded paper is fine) that teaches a younger child how to play tic-tac-toe, Nim and Connect Four well. Give each game one page with the rules, a drawing of the board, and the winning strategy in your own words: the five tic-tac-toe rules, the multiples-of-4 secret for Nim, and the double threat for Connect Four. Add a page of your best game records from this unit and a cover with a title and your name. Then teach one game from your booklet to a younger child or a grandparent, and write one sentence about how it went.

LOOK FOR	WHAT IT MEANS
Rules	Each game's rules are complete and clear enough for someone to play from the booklet alone.
Strategy	Each page explains the winning idea correctly: the fork, working backward to multiples of 4, and the double threat.
Drawings	Boards and examples are neat and labeled, with at least one fork or double threat shown.
Records	Includes real game records from the unit's projects, honestly reported.
Teaching	The student taught one game to someone else and wrote a sentence about it.

UNIT 2

CHECKERS

Checkers looks simple: twelve round pieces each, moving forward on the dark squares. But it is a real strategy game, deep enough that the world's best computer scientists worked on it for fifty years. In this unit you will learn where checkers came from, from an old Spanish and Arab game called alquerque to the first checkers books, and how an engineer named Arthur Samuel taught a computer to get better at checkers by playing against itself in the 1950s.

Then you will learn three big ideas that strong checkers players use. Control the center, because pieces in the middle have more choices. Trade pieces when you are ahead, because a small lead grows larger as the board empties. And play the endgame patiently, using your kings, the corners and the timing that checkers players call “the move.” Every lesson ends with real games recorded in your scorebook.

PREREQUISITES

- Knows the idea of strategy and tactics (Unit 1)
- Can record games in a scorebook
- Can count and compare small numbers

MASTERY CHECKLIST

- ☐ I can set up a checkers board correctly and play by the standard rules, including forced jumps and crowning kings.
- ☐ I can tell the story of checkers from alquerque to Arthur Samuel's learning program and the proof that perfect checkers is a draw.
- ☐ I can explain why the center squares are strong and why I should keep some back-row checkers home.
- ☐ I can decide when to trade pieces and explain why trading helps the side that is ahead.
- ☐ I can win with two kings against one king by driving the lone king out of the double corner.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **The American Checker Federation**: Free. The national checkers organization’s website, with the official rules, a history of the game and news of tournaments. A parent should browse it with the student. Fits Lessons 2.1 and 2.4. Ages 10+.

Not required. Every project in this unit works without them. School

Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

2.1	An Old Game and a Learning Machine	2 sessions of 45 minutes
2.2	Control the Center	2 sessions of 45 minutes
2.3	Trade When You Are Ahead	2 sessions of 45 minutes
2.4	The Endgame: Kings, Corners and “the Move”	2 sessions of 45 minutes

UNIT 2 REVIEW

Answer each question in complete sentences unless it asks for a number or a drawing. The review is worth 50 points.

1. **4 pts**
How many dark playing squares are on a checkerboard, and how many checkers does each player start with?
2. **5 pts**
What is the forced-jump rule, and what happens if after one jump another jump is possible?
3. **5 pts**
Who was Arthur Samuel, and what was special about his checkers program?
4. **4 pts**
What did Jonathan Schaeffer’s team prove in 2007?

5. **5 pts**

Why is a checker in the center usually stronger than a checker on the edge?

6. **4 pts**

Why should you keep some checkers on your back row?

7. **6 pts**

You have 7 checkers and your opponent has 5. If you make four one-for-one trades, how many does each side have? Is your lead bigger or smaller compared with what is left?

8. **5 pts**

What would happen if... a player who is behind keeps making even trades?

9. **6 pts**

In the ending of two kings against one, where does the lone king hide, and how does the stronger side win?

10. **6 pts**

Read Ecclesiastes 7:8. How does it apply to the endgame in checkers?

ANSWER KEY

1. 32 dark squares; 12 checkers each.
2. If you can jump, you must. If the same piece can jump again after landing, it must keep jumping.
3. An engineer at IBM who, beginning in 1952, wrote a checkers program that learned from experience, improving by playing many games, including against itself. His 1959 paper helped make the phrase “machine learning” famous.
4. That checkers is a draw if both players play perfectly.
5. A center checker has two forward squares and friends on both sides to protect it; an edge checker has only one forward square and can be trapped easily.
6. They guard the king row, so your opponent cannot easily crown kings.
7. 3 against 1. The lead is still two pieces, but compared with what is left it is much bigger: three times as many instead of 1.4 times as many.
8. The opponent’s lead becomes larger compared with what is left, and the player who is behind will usually lose. A player behind should avoid trades and look for tricks.
9. In a double corner. The stronger side brings both kings close, guards the escape squares with one king and uses the other to force the lone king out, then traps or jumps it.
10. The patient in spirit is better than the proud. In the endgame a patient player who checks every move finishes the win; a proud, hasty player may let the opponent escape.

PORTFOLIO PIECE: MY BEST CHECKERS GAME, EXPLAINED

Play a game of checkers against a family member while a helper writes down every move (or take a photograph of the board every few moves). Choose your best game from the unit. Then make a two-page report: draw three important positions from the game, the opening, a moment in the middle when someone gained an advantage, and the ending, and write a few sentences under each explaining what happened. Use this unit's ideas by name: center, back row, trade, shot, king, double corner, the move. End with one sentence about what you did well and one about what you would do differently.

LOOK FOR	WHAT IT MEANS
Record	The game is recorded honestly, with at least three clear diagrams of real positions.
Explanation	Each diagram has a clear explanation of what happened and why.
Strategy words	Uses at least four of the unit's ideas correctly (center, back row, trade, shot, king, double corner, the move).
Reflection	Ends with an honest sentence about what went well and one about what to change.

2.1 AN OLD GAME AND A LEARNING MACHINE

OBJECTIVES

- Set up a checkers board and play by the standard rules.
- Tell how checkers grew from alquerque and how Arthur Samuel's program learned to play.
- Explain what it means that checkers has been “solved” as a draw.

Warm-up. Set up a checkerboard. Check two things before you place a single piece: each player should have a dark square in the corner on the left and a light square on the right, and all play happens on the dark squares. Count the dark squares. How many are there? How many pieces does each player have? How many dark squares are left empty at the start?

WATCH

A brief history of checkers and checkers tournaments

[azcheckers](#) · 8:03

<https://www.youtube.com/watch?v=iFhsoicLH3o>

WHEN TO WATCH

After the story paragraph. Listen for the name of the oldest checkers book in English that he shows on the screen.

BACKUP VIDEO

Checkers - (1956) - First artificial intelligence game!

[Video Game History Project](#) · 3:02

https://www.youtube.com/watch?v=T_IsYnRGNls

Old film and photographs of Arthur Samuel and his IBM computer playing checkers.

KEY TERMS

alquerque

An old capturing game played on a board of lines, pictured in King Alfonso's Book of Games (1283); an ancestor of checkers.

forced jump

The checkers rule that if you can jump an opponent's piece, you must.

king

A checker that has reached the far row and been crowned with a second checker; it may move backward as well as forward.

machine learning

A way of programming a computer so that it improves from experience. Arthur Samuel made the phrase famous with his checkers program.

CORE IDEAS

The story. More than 700 years ago, players in Spain and the lands around the Mediterranean played a capturing game called **alquerque**, in which pieces jump over each other on a board of crossing lines. King Alfonso X of Castile had it painted in his *Book of Games* in 1283. Sometime in the Middle Ages, people began playing a jumping game like it on the squares of a chessboard. By the 1500s, players in France and Spain had a game very much like our checkers, and books about it soon followed. In England the game is called *draughts*; in 1756 a teacher of mathematics named William Payne published one of the first English books about it.

The plan. In 1952, an engineer at IBM named Arthur Samuel wrote a checkers program for one of the company's first large computers. He did not just give it rules; he gave it a way to *learn*. The program looked a few moves ahead, scored each position by counting things like pieces, kings and control of the center, and remembered which kinds of positions led to wins. By playing thousands of games, including games against itself, it slowly got better. It was shown on national television in 1956, and in 1959 Samuel wrote a famous paper that helped give the name “machine learning” to this kind of computer science.

The principle. Samuel's program teaches a lesson for people too: a good player *evaluates* a position by asking the same questions every time. How many pieces do I have compared with my opponent? Do I have any kings? Who controls the center? Are my back-row checkers still guarding home? Years later, in 2007, a team led by Jonathan Schaeffer at the University of Alberta in Canada finished a project that took almost twenty years: they proved that if both players make no mistakes, checkers always ends in a draw, just like tic-tac-toe, only far bigger.

On the board and the field. Learn the rules exactly, because many families play “house rules.” Black (or red) moves first. Pieces move one square diagonally forward onto an empty dark square. If you can jump, you must, and if after one jump you can jump again with the same piece, you must keep going. A checker that reaches the far

row is crowned a king and may move backward. Playing by the real rules is part of playing fairly.

PICTURE STUDY



Alquerque, from the *Book of Games*, Workshop of King Alfonso X of Castile, 1283 · Painted illustration (tempera and gold on parchment) · *Libro de los juegos*, Royal Library of the Monastery of El Escorial, Spain

Image: [Wikimedia Commons](#), public domain

This is the same book of games you saw in Lesson 1.4. Here the painter shows alquerque, a game in which pieces jump and capture each other, much like checkers. Look at how the board is drawn: not squares but lines that cross.

Look closely

- Find the board. How is it different from a checkerboard?
- Find the player reaching toward the board. Is he moving a piece or pointing?
- Look at the men standing behind the players. What might they be doing?
- Look at the colors of the robes. How does the painter tell the two sides apart?

Talk about it

1. In alquerque, as in checkers, pieces capture by jumping. Why might a game with jumping need a rule that forces you to jump?
2. Arthur Samuel's program scored positions by counting pieces and kings. What would you count to decide who is winning at alquerque or checkers?
3. Why do you think people kept playing this kind of game for more than 700 years?

PROJECT

Score the Position Like Samuel's Machine

You will play five games of checkers by the official rules. Every ten moves, you will stop and “score” the position the way Arthur Samuel's program did, and see whether the score predicted the winner.

You will need

- A checkerboard and 24 checkers (or a printed board and two colors of coins)
- A family member to play against
- Your scorebook and a pencil

Steps

1. Read the rules in the last core-ideas paragraph aloud with your opponent and agree to play by them exactly.
2. Make a scoring rule: 1 point for each checker, 2 points for each king, and 1 bonus point for each of your pieces in the four center squares of the board.
3. Draw a table in your scorebook: Game, After 10 moves, After 20 moves, After 30 moves, Winner.
4. Play game 1. After every ten moves (five by each player), stop and count each player's score. Write both scores in the table.
5. Finish the game and write the winner.
6. Play four more games, taking turns moving first.
7. Look at your table. In how many games was the player ahead at move 20 the one who won?
8. Write one sentence: “Samuel's score was a good (or poor) predictor because...”

Tips

- The four center squares are the ones in the middle two rows and middle columns that pieces can stand on (dark squares only).
- If a game ends before move 30, leave the later boxes empty.

- Remember the forced-jump rule. If your opponent forgets, point it out kindly.

Check your work

- ☐ I played five games by the official rules.
- ☐ I recorded scores at least twice in each game.
- ☐ I can explain whether counting pieces and kings predicted the winner.

SCOREBOOK

1. Draw a checkerboard and shade the 32 playing squares. Mark where each player's 12 checkers start.
2. Make a timeline with four points: 1283 (alquerque in Alfonso's book), 1756 (William Payne's book), 1952–1959 (Arthur Samuel's program), 2007 (checkers proved a draw).
3. Copy your scoring table and circle the game where the score changed the most.

From history. Marion Tinsley, an American mathematics professor and a devout Christian, was the world's greatest checkers player for decades. In 1992 he defeated the computer program Chinook, built by Jonathan Schaeffer's team, in a long match. He lost only a handful of serious games in his entire career.

COMMON MISTAKES

- Setting the board up with a light square in the bottom-left corner. The dark square goes on each player's left.
- Ignoring the forced-jump rule. In standard checkers you must jump when you can.
- Thinking a king can jump any distance like a queen in chess. In standard (American) checkers a king moves one square at a time, forward or backward.

Make it a game • Checkers Setup Dash. Race to set up a checkerboard from memory, timed by your parent. Then your parent calls out a rule: forced jump, king or move direction. You explain it and show it with two pieces. Finish by telling in three sentences how checkers grew from alquerque and how Arthur Samuel's program learned.

2.2 CONTROL THE CENTER

OBJECTIVES

- Explain why pieces in the center of the board are stronger than pieces on the edge.
- Keep back-row checkers home to stop the opponent from crowning kings.
- Test the “center first” strategy in real games.

Warm-up. Put one checker on an edge square of an empty board and count how many squares it could move to. Now put it on a center square and count again. Do the same for a king. Write the numbers. Which squares give a piece the most choices?

WATCH

UNDERSTANDING THE CENTER..CHECKERS AND DRAUGHTS

[checkercycle](#) • 6:22

<https://www.youtube.com/watch?v=Hr3aW4ObTvg>

WHEN TO WATCH

After the plan paragraph. Watch which side gets pushed to the edges.

BACKUP VIDEO

How To Win At CHECKERS / My Top 5 STRATEGY TIPS

[Legendary Tactics](#) • 6:48

<https://www.youtube.com/watch?v=b7NthnTjDEY>

Five strategy tips with clear diagrams, including keeping the back row and controlling the center.

KEY TERMS

center

The middle squares of the board, where pieces have the most choices and can support each other.

edge piece

A checker on the side of the board, which has only one forward square and can be trapped easily.

back row

Your own first row, also called the king row. Checkers kept there stop your opponent from crowning.

tempo

A move's worth of time. Gaining tempo means making useful moves while your opponent wastes them.

CORE IDEAS

The story. Strong checkers players have taught the same lesson for more than two hundred years: fight for the middle. Early English writers such as William Payne in 1756 showed games in which the side that built a strong group of pieces in the center slowly squeezed the other side against the edges. Arthur Samuel's learning program, two hundred years later, discovered the same thing for itself: when it counted points for center control, it won more often.

The plan. A checker in the center can move to two squares and can be supported by friends on both sides. A checker on the edge has only one forward square, and the edge itself gives it no help. So the plan is: (1) in the opening, move pieces toward the center, not toward the sides; (2) keep your pieces close together so they protect each other from jumps; (3) leave two or three checkers on your back row for as long as you can, so your opponent cannot easily crown kings.

The principle. This idea is called **control of the center**, and it is one of the biggest ideas in all strategy games. In chess you will learn to control the four middle squares. In soccer and basketball, teams try to control the middle of the field or court. The center is the place from which you can go anywhere, so whoever holds it has the most choices and the opponent has the fewest.

On the board and the field. Watch for two common mistakes in your own games. The first is rushing one checker far ahead by itself, where it will be trapped or jumped. The second is emptying your back row too early, which lets your opponent's checkers slip through and become kings. Play patiently: build a strong group in the middle, keep your home guarded, and let your opponent run out of good moves.

PICTURE STUDY



Two Boys in Sailor Suits, Playing Checkers, F. Holland Day, 1911 · Cyanotype (blue photographic print) · Library of Congress, Prints and Photographs Division
Image: [Wikimedia Commons](#), public domain

A cyanotype is an old kind of photograph printed with chemicals that turn blue in sunlight. The Boston photographer F. Holland Day made this one in 1911. Two young men in sailor suits sit close over a checkerboard, completely focused on the game.

Look closely

- Find the checkerboard. Can you tell how many pieces are left?
- Look at both players' heads and eyes. Where are they looking?
- Find each player's hands. Is anyone about to move?
- Notice the blue color. How is this photograph different from a modern one?

Talk about it

1. Which player do you think has the center of the board? How could you tell if you could see more closely?
2. Why do strong players lean in and study the board before moving?
3. If you could give one of these players advice about the center, what would you say?

PROJECT

Center or Edge? A Ten-Game Test

You will test the center strategy. In five games you will try to move your checkers toward the center and keep your back row; in five games you will play however you like. Then you will compare your results.

You will need

- A checkerboard and checkers
- A family member to play against (the same person for all ten games is best)
- Your scorebook and a pencil

Steps

1. Make a table: Game, Strategy (Center or Free), Moved first?, Pieces left at the end (mine/theirs), Winner.
2. Games 1–5: play “Free.” Make whatever moves seem good to you.
3. Games 6–10: play “Center.” Move toward the middle, keep your pieces together, and keep at least two back-row checkers home until move 20.
4. Take turns moving first so the test is fair.
5. After each game, record the result and how many pieces each side had left.
6. Add up: how many games did you win with each strategy? How many pieces did you have left on average?
7. Ask your opponent: “Did my play feel different in the last five games?” Write down the answer.
8. Write a conclusion: did controlling the center help you? Ten games is a small test, so say how sure you are.

Tips

- Count your moves so you know when you reach move 20.
- If your opponent rushes a checker forward alone, look for a way to trap it against the edge.
- Play the same opponent so that the only big change is your strategy.

Check your work

- ☐ I played and recorded ten games, five with each strategy.
- ☐ I compared wins and pieces left for both strategies.
- ☐ I can explain why a center checker has more choices than an edge checker.

SCOREBOOK

1. Draw a board and color the center squares in one color and the edge squares in another. Write how many moves a checker has from each.
2. Copy your ten-game table and draw a simple bar graph: wins with the Free strategy and wins with the Center strategy.
3. Draw one position from your games where a piece was trapped on the edge. Add an arrow showing how it got trapped.

COMMON MISTAKES

- Moving every checker toward the side because the sides feel safe. Edge pieces are safe from one side only and are easy to trap.
- Moving all the back-row checkers out early, which opens a road for your opponent's kings.
- Pushing one checker far ahead alone. Move pieces in groups that protect each other.

Make it a game • Center or Edge Showdown. Set up a half-played checkers position with beans. You and your parent each have sixty seconds to improve it, then explain what you moved and why center beats edge. Judge for each other's explanation. Score a bean for naming back-row guards and tempo. Play two rounds and swap sides.

2.3 TRADE WHEN YOU ARE AHEAD

OBJECTIVES

- Explain why trading pieces helps the side that is ahead.
- Decide when to trade and when to avoid trading.
- Use simple fractions or ratios to compare positions.

Warm-up. Imagine two teams: one has 12 players and the other has 11. Is that a big lead? Now imagine one has 2 players and the other has 1. Which lead is bigger? Both leads are “one more,” but they feel very different. Write down why.

WATCH

How To WIN At Checkers [10 Tips and Tricks] Draughts

Puzzling Games · 6:14

https://www.youtube.com/watch?v=JVDy_WStUNE

WHEN TO WATCH

After the plan paragraph. Listen for tip 4, about trading when you are ahead.

BACKUP VIDEO

Checkers tips: breaking down common mistakes

azcheckers · 6:08

<https://www.youtube.com/watch?v=OQrCqUYAqJI>

A strong player shows common mistakes on a real board, including careless trades.

KEY TERMS

trade (exchange)

A series of moves in which each player loses the same number of pieces, such as one for one.

material

The pieces each player has on the board.

simplify

To make trades so there are fewer pieces and the position is easier to understand and win.

shot

In checkers, a tactic in which a player gives up one piece to win two or more, often with a double jump.

CORE IDEAS

The story. Checkers coaches have a saying older than anyone can remember: “When you are ahead, trade.” William Payne’s book of 1756 and the many checkers books after it are full of games in which a player wins one extra piece in the middle of the game and then calmly trades the rest of the pieces away, one for one, until the lead is overwhelming. Arthur Samuel’s program learned the same rule; when it was ahead, its scoring made it prefer even trades.

The plan. Suppose you have 9 checkers and your opponent has 8. You are ahead by one, but the game is still close: 8 checkers can do a lot. Now trade one for one, five times. You will have 4 and your opponent 3. Trade twice more and it is 2 against 1, which is a sure win if you know how (Lesson 2.4). The lead stayed “one piece” the whole time, but it grew from a small edge into a winning edge. The opposite is also true: when you are *behind*, avoid trades and keep the board crowded, because crowded positions give more chances for tricks.

The principle. What matters is not only how many more pieces you have but how big your lead is *compared with* what is left. With 9 against 8, you have 9 for every 8, only a little more. With 2 against 1, you have twice as many. Thinking in comparisons, or ratios, is a powerful habit in every game. It also explains the checkers **shot**: giving up one piece to jump two changes the count from even to ahead, and then you trade.

On the board and the field. The same idea works on the field. A team leading late in a game often plays safe and lets the clock run, because every minute that passes is like a trade that makes the lead harder to overcome. A team that is behind takes more chances. Before you trade, always ask two questions: “Am I ahead or behind?” and “After this trade, will my opponent have a jump I did not see?”

PICTURE STUDY



The Draughts Players, Joseph Clark, 19th century · Oil on canvas · Newport Museum and Art Gallery, Wales

Image: [Wikimedia Commons](#), public domain

Joseph Clark, an English painter, often painted family life in plain cottages. In this picture the whole family gathers around a game of draughts, the British name for checkers. It may be the oldest player against the youngest.

Look closely

- Find the two players. Who is older and who is younger?
- Look at the grandfather's hand on his chin. What is he doing?
- Find the small child at the grandfather's knee. What is he learning just by watching?
- Find the mother and baby, the basket and the sleeping dog. What kind of evening is this?

Talk about it

1. If the grandfather is ahead by one piece, what should he do according to this lesson? What should the boy do?
2. How do you think the grandfather learned to play? How will the little child learn?
3. Why are games like checkers good for families?

PROJECT

The Trading Experiment

You will set up the same position several times, once trading and once refusing to trade, and see which way wins more often. Then you will use the trading rule in real games.

You will need

- A checkerboard and checkers
- A family member to play against
- Your scorebook

Steps

1. Set up a practice position: give yourself 6 checkers and your opponent 5, spread across both halves of the board, with no jumps available. Draw this position in your scorebook so you can set it up again.
2. Game A: play from this position trying to trade one for one whenever you safely can. Record who wins and how many moves it takes.
3. Game B: set up the same position. This time avoid trades and play for tricks. Record the result.
4. Repeat Games A and B two more times each (six games in all).
5. Compare: which way did the player who was ahead win more often, and more quickly?
6. Now switch sides: you take the 5 checkers. Try to avoid trades. Did it help you hold on longer?
7. Finally, play two full games from the beginning. Each time you get ahead, say “Trade!” out loud and look for safe even trades.
8. Write your conclusion in two sentences.

Tips

- A safe trade is one where your opponent cannot jump twice in reply. Check before you offer it.
- Count pieces after every capture so you always know who is ahead.

- If the results are mixed, think about why. Did someone make a mistake?

Check your work

- ☐ I played the same position with and without trades and recorded the results.
- ☐ I can explain why trading helps the side that is ahead.
- ☐ I said “Trade!” and made safe trades in a real game.

SCOREBOOK

1. Draw the practice position from your project, with a key showing which color is yours.
2. Make a table of your six experiment games: Game, Trading or Not, Winner, Number of moves.
3. Write the rule in large letters: “Ahead? Trade. Behind? Keep pieces and look for a shot.” Draw a small example of each.

WORKED EXAMPLES

Example 1. You have 8 checkers and your opponent has 6. You make three even trades. How many does each side have now, and how did your lead change?

Show solution

1. Each trade removes one checker from each side.
2. After three trades: $8 - 3 = 5$ for you and $6 - 3 = 3$ for your opponent.
3. Before, you had 8 for every 6, or about $1\frac{1}{3}$ times as many. Now you have 5 for every 3, or about $1\frac{2}{3}$ times as many.

Answer: You have 5 and your opponent has 3. Your lead is still two pieces, but compared with what is left it is much bigger.

Example 2. You are behind, 5 checkers to 7. Your opponent offers a one-for-one trade. Should you take it?

Show solution

1. After the trade it would be 4 to 6.
2. Compare: 5 to 7 means your opponent has 1.4 times as many; 4 to 6 means 1.5 times as many.
3. The trade makes your opponent's lead stronger.

Answer: Avoid it if you can. When you are behind, keep pieces on the board and look for a shot.

COMMON MISTAKES

- Trading when you are behind. That makes your opponent's lead bigger.
- Offering a trade that lets your opponent make a double jump. Look two moves ahead.
- Forgetting to count. Many players do not notice they are ahead until it is too late to use it.

Make it a game • Trade Talk Trials. Set up four small positions on a checkerboard where one side is ahead. For each, decide in ten seconds whether to trade or avoid trading, and explain with the word simplify. Your parent holds the answer card prepared in advance. Score a point for each right decision and each reason. Create one position of your own for your parent.

2.4 THE ENDGAME: KINGS, CORNERS AND “THE MOVE”

OBJECTIVES

- Win with two kings against one king by forcing the lone king out of the double corner.
- Explain what “the move” (the opposition) means in simple endgames.
- Show patience in a winning position.

Warm-up. Put a single king on an empty board and count how many squares it could move to from a corner, from an edge and from the center. Then find the two “double corners” on the board: the corners where two dark squares sit side by side. Put a king there. Why might a king that is being chased like this corner?

WATCH

All about kings: endgame mastery in checkers

[azcheckers](#) · 16:15

<https://www.youtube.com/watch?v=zNCS0vnTyVg>

WHEN TO WATCH

Watch the first half after the plan paragraph and the rest during session 2 while you set up the same positions on your own board.

BACKUP VIDEO

How to win in checkers (2 kings vs 1 king demonstration)

[azcheckers](#) · 1:12

<https://www.youtube.com/watch?v=hu5Cf8BmrqU>

A one-minute demonstration of winning with two kings against one. Watch it twice and copy it on your board.

KEY TERMS

endgame

The last part of a game, when only a few pieces are left.

double corner

A corner of the board where two dark playing squares sit side by side. A lone king hides there because it can shuttle back and forth.

single corner

A corner with only one dark square, where a king can be trapped more easily.

the move (opposition)

In simple endings, the advantage of making your opponent be the one who must move into a bad square.

CORE IDEAS

The story. Checkers champions have always been famous for their endgames. Marion Tinsley, the American mathematics professor who was the world's best player for about forty years, was famous for seeing winning endgames many moves before they happened. Endgames are where patience wins. When only a few pieces are left, one careless move can turn a win into a draw, and one patient move can turn a draw into a win.

The plan. The most important ending to learn is **two kings against one king**. The lone king runs to a **double corner**, where it can step back and forth between two squares and seems impossible to catch. The winning side brings both kings close, uses one king to guard the escape squares, and uses the other to force the lone king to step out. Then the trapped king is either jumped or squeezed into a corner where it has no moves. It takes practice, but it is always a win if you are careful.

The principle. In endings with very few pieces, checkers players talk about having “**the move**.” Sometimes two pieces face each other and whoever has to move must give way. If it is your opponent's turn in that position, you “have the move,” and you will win. Chess players call the same idea the *opposition*. It teaches something surprising: sometimes the best thing is to make your opponent move. Timing can matter more than strength.

On the board and the field. Scripture says, “Better is the end of a thing than the beginning thereof: and the patient in spirit is better than the proud in spirit” (Ecclesiastes 7:8). A proud player who is ahead gets careless, rushes, and lets the opponent escape with a draw. A patient player finishes the job. In sport, a team that is winning late still plays every play carefully. Finish well.

PICTURE STUDY



Checker Players of Cape Cod, Postcard after a painting by Wendell M. Rogers, About 1945 · Color postcard (printed) · Published by C. A. Lake, Chatham, Massachusetts; printed by Tichnor Brothers, Boston

Image: [Wikimedia Commons](#), public domain

For a hundred years and more, the American country store had a checkerboard on a barrel near the stove, where neighbors played long games on winter evenings. This postcard from Cape Cod in Massachusetts shows three old friends at such a game, with a short verse about “checker champs.”

Look closely

- Find the two players. Where are their hands? Who seems to be about to move?
- Look at the faces. Does anyone look hurried?
- Find the man standing behind. What would a watcher see that the players might miss?
- Read the little poem. What season is it, and why are the friends indoors?

Talk about it

1. These players look patient. How does patience help in the endgame?
2. Imagine one player has two kings and the other has one. What would the player with one king try to do?
3. Why do you think games like checkers were so popular in country stores?

PROJECT

Endgame Drills and a Final Match

You will practice the two-kings-against-one ending until you can win it every time, record how many moves it takes, and then play a short match to use your new skill.

You will need

- A checkerboard, two kings of one color and one king of the other (stack two checkers to make each king)
- A family member to play the lone king
- Your scorebook and a stopwatch or clock (optional)

Steps

1. Put the lone king in a double corner. Put your two kings anywhere in the middle of the board.
2. Your partner moves the lone king and tries to survive. You try to trap or jump it.
3. Count the number of moves you need to win. Record it. If you cannot win in 30 of your moves, call it a draw and record that.
4. Watch the backup video again if you get stuck, and copy the method.
5. Repeat the drill five times. Try to win faster each time.
6. Switch roles: you play the lone king. What is the best defense? How long can you last?
7. Play three full games of checkers. Whenever you reach an ending with kings, slow down and use the drill.
8. Write a short “Endgame Guide” of three or four steps that you would give a beginner.

Tips

- Bring both kings close before trying to force anything. One king alone cannot win.
- Guard the escape square first, then push.

- If you are the lone king, never leave the double corner unless you must.

Check your work

- ☐ I won the two-kings-against-one drill at least three times.
- ☐ My number of moves went down with practice.
- ☐ I can explain why the double corner is the lone king's best hiding place.

SCOREBOOK

1. Draw the board and mark the two double corners and the two single corners. Label each.
2. Make a chart of your five drills: Drill, Moves to win (or Draw). Draw a line graph if you can.
3. Write your three- or four-step Endgame Guide neatly and decorate it.

COMMON MISTAKES

- Chasing the lone king with one king while the other king sits far away. Use both.
- Rushing and letting the lone king slip out of the trap. Check every escape square before you move.
- Giving up and agreeing to a draw in a won position. Two kings against one is always a win with good play.

Make it a game • Corner Escape Drill. Place two kings against one on the checkerboard. Race against the clock to trap the lone king out of the double corner, saying the move or the opposition at each step. Your parent plays the lone king. Win in under ten moves. Then swap sides and try to escape for as long as you can.

Scripture. “Better is the end of a thing than the beginning thereof: and the patient in spirit is better than the proud in spirit.” (Ecclesiastes 7:8, KJV)

Endgames reward patience. The proud player rushes and lets the win slip; the patient one finishes well.

UNIT 2

CHECKERS

Checkers looks simple: twelve round pieces each, moving forward on the dark squares. But it is a real strategy game, deep enough that the world's best computer scientists worked on it for fifty years. In this unit you will learn where checkers came from, from an old Spanish and Arab game called alquerque to the first checkers books, and how an engineer named Arthur Samuel taught a computer to get better at checkers by playing against itself in the 1950s.

Then you will learn three big ideas that strong checkers players use. Control the center, because pieces in the middle have more choices. Trade pieces when you are ahead, because a small lead grows larger as the board empties. And play the endgame patiently, using your kings, the corners and the timing that checkers players call “the move.” Every lesson ends with real games recorded in your scorebook.

PREREQUISITES

- Knows the idea of strategy and tactics (Unit 1)
- Can record games in a scorebook
- Can count and compare small numbers

MASTERY CHECKLIST

- ☐ I can set up a checkers board correctly and play by the standard rules, including forced jumps and crowning kings.
- ☐ I can tell the story of checkers from alquerque to Arthur Samuel's learning program and the proof that perfect checkers is a draw.
- ☐ I can explain why the center squares are strong and why I should keep some back-row checkers home.
- ☐ I can decide when to trade pieces and explain why trading helps the side that is ahead.
- ☐ I can win with two kings against one king by driving the lone king out of the double corner.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **The American Checker Federation**: Free. The national checkers organization's website, with the official rules, a history of the game and news of tournaments. A parent should browse it with the student. Fits Lessons 2.1 and 2.4. Ages 10+.

Not required. Every project in this unit works without them. School

Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

2.1	An Old Game and a Learning Machine	2 sessions of 45 minutes
2.2	Control the Center	2 sessions of 45 minutes
2.3	Trade When You Are Ahead	2 sessions of 45 minutes
2.4	The Endgame: Kings, Corners and “the Move”	2 sessions of 45 minutes

UNIT 2 REVIEW

Answer each question in complete sentences unless it asks for a number or a drawing. The review is worth 50 points.

1. **4 pts**
How many dark playing squares are on a checkerboard, and how many checkers does each player start with?
2. **5 pts**
What is the forced-jump rule, and what happens if after one jump another jump is possible?
3. **5 pts**
Who was Arthur Samuel, and what was special about his checkers program?
4. **4 pts**
What did Jonathan Schaeffer's team prove in 2007?

5. **5 pts**

Why is a checker in the center usually stronger than a checker on the edge?

6. **4 pts**

Why should you keep some checkers on your back row?

7. **6 pts**

You have 7 checkers and your opponent has 5. If you make four one-for-one trades, how many does each side have? Is your lead bigger or smaller compared with what is left?

8. **5 pts**

What would happen if... a player who is behind keeps making even trades?

9. **6 pts**

In the ending of two kings against one, where does the lone king hide, and how does the stronger side win?

10. **6 pts**

Read Ecclesiastes 7:8. How does it apply to the endgame in checkers?

ANSWER KEY

1. 32 dark squares; 12 checkers each.
2. If you can jump, you must. If the same piece can jump again after landing, it must keep jumping.
3. An engineer at IBM who, beginning in 1952, wrote a checkers program that learned from experience, improving by playing many games, including against itself. His 1959 paper helped make the phrase “machine learning” famous.
4. That checkers is a draw if both players play perfectly.
5. A center checker has two forward squares and friends on both sides to protect it; an edge checker has only one forward square and can be trapped easily.
6. They guard the king row, so your opponent cannot easily crown kings.
7. 3 against 1. The lead is still two pieces, but compared with what is left it is much bigger: three times as many instead of 1.4 times as many.
8. The opponent’s lead becomes larger compared with what is left, and the player who is behind will usually lose. A player behind should avoid trades and look for tricks.
9. In a double corner. The stronger side brings both kings close, guards the escape squares with one king and uses the other to force the lone king out, then traps or jumps it.
10. The patient in spirit is better than the proud. In the endgame a patient player who checks every move finishes the win; a proud, hasty player may let the opponent escape.

PORTFOLIO PIECE: MY BEST CHECKERS GAME, EXPLAINED

Play a game of checkers against a family member while a helper writes down every move (or take a photograph of the board every few moves). Choose your best game from the unit. Then make a two-page report: draw three important positions from the game, the opening, a moment in the middle when someone gained an advantage, and the ending, and write a few sentences under each explaining what happened. Use this unit's ideas by name: center, back row, trade, shot, king, double corner, the move. End with one sentence about what you did well and one about what you would do differently.

LOOK FOR	WHAT IT MEANS
Record	The game is recorded honestly, with at least three clear diagrams of real positions.
Explanation	Each diagram has a clear explanation of what happened and why.
Strategy words	Uses at least four of the unit's ideas correctly (center, back row, trade, shot, king, double corner, the move).
Reflection	Ends with an honest sentence about what went well and one about what to change.

UNIT 3

CHESS

Chess is the most famous strategy game in the world. It began in India about 1,400 years ago, traveled through Persia and the Arab world to Spain, and became the game we know when the queen gained her great power around the year 1475. In this unit you will learn how every piece moves and what each is worth, so that you can count before you trade, just as you learned in checkers.

Then you will learn the three opening principles, center, development and king safety, from the most famous short game ever played, Paul Morphy's Opera Game of 1858. You will learn the two tactics that win the most games for beginners, the fork and the pin, from the story of José Raúl Capablanca, who learned chess at four years old. And you will finish with the basic checkmate patterns, from the back-rank checkmate to the clever pattern named after the French master Philidor.

PREREQUISITES

- Knows how to make threats and double threats (Unit 1)
- Understands center control and trading when ahead (Unit 2)
- Can add small numbers quickly

MASTERY CHECKLIST

- ☐ I can set up a chessboard and move every piece correctly, including castling and pawn promotion.
- ☐ I know the point values of the pieces (pawn 1, knight 3, bishop 3, rook 5, queen 9) and can count material before a trade.
- ☐ I can follow the opening principles: control the center, develop knights and bishops, castle early, and do not move the queen out too soon.
- ☐ I can find forks and pins in my own games and in puzzles.
- ☐ I can deliver a back-rank checkmate and a checkmate with a king and a queen against a lone king.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **Chess Fundamentals, by José Raúl Capablanca (Project Gutenberg):** Free. The world champion's own book for learners (1921), with simple endings and middlegame ideas. Best for strong readers of 11 and up, or read with a parent. Fits Lessons 3.3 and 3.4.
- **ChessKid:** Free basic accounts. The children's site of Chess.com, made for young players, with lessons, puzzles and safe play against other children. A parent sets up and supervises the account. Fits all of Unit 3. Ages 6+.
- **Lichess:** Free, with no advertising. Puzzles, lessons and a board for practicing against the computer at easy levels. Turn on Kid Mode in the settings, which turns off chat. Fits all of Unit 3. Ages 10+ with a parent.

Not required. Every project in this unit works without them. School Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

3.1 The Pieces and What They Are Worth	2 sessions of 45 minutes
3.2 Opening Principles: Paul Morphy's Opera Game	2 sessions of 45 minutes
3.3 Forks and Pins: José Raúl Capablanca	2 sessions of 45 minutes
3.4 Checkmate Patterns: From Philidor to Today	2 sessions of 45 minutes

UNIT 3 REVIEW

Answer each question in complete sentences unless it asks for a number or a drawing. You may use a chessboard. The review is worth 50 points.

1. **4 pts**
Give the point value of each piece: pawn, knight, bishop, rook, queen. Why does the king have no point value?
2. **5 pts**
You capture a bishop with your rook, and your opponent captures your rook. Did you gain or lose material, and how much?

3. **4 pts**

Where did chess begin, and what change around 1475 made it the game we play today?

4. **6 pts**

Name the three opening principles and give one reason for each.

5. **5 pts**

Why did Paul Morphy win the Opera Game so quickly?

6. **5 pts**

What is the difference between a fork and a pin?

7. **4 pts**

Why is the knight such a good forking piece?

8. **5 pts**

What is a back-rank checkmate, and how can you prevent it?

9. **6 pts**

What would happen if... you have a king and queen against a lone king, and you take away every square the lone king could move to, but it is not in check?

10. **6 pts**

Tell one story from this unit (Capablanca as a child, Morphy at the opera, or Philidor) and the lesson it teaches about strategy.

ANSWER KEY

1. Pawn 1, knight 3, bishop 3, rook 5, queen 9. The king can never be traded; losing it means losing the game.
2. You gained a bishop (3) and lost a rook (5), so you lost 2 points.
3. In India, as chaturanga. Around 1475 in Spain the queen gained the power to move any distance in any direction.
4. Control the center (pieces there have the most choices); develop knights and bishops quickly (so the whole army is ready); castle early (to keep the king safe). Similar reasons accepted.
5. He developed his pieces quickly and kept his king safe, while his opponents moved the queen out early, moved pieces twice and left their king in the middle. By move 10 nearly his whole army was working.
6. A fork is one piece attacking two or more pieces at once. A pin is an attack on a piece that cannot move without exposing a more valuable piece (or the king) behind it.
7. It jumps in an L shape over other pieces and attacks squares that the pieces it attacks usually cannot attack back.
8. A checkmate by a rook or queen on the king's first row when the king is trapped behind its own pawns. Prevent it by moving one pawn forward to give the king luft (an escape square), or by guarding the back row.
9. It would be stalemate, and the game would be a draw, even though you were far ahead. You must leave the king a square until you can give checkmate.
10. For example: Capablanca at four noticed his father's illegal knight move and then beat him; he became world champion by seeing patterns clearly. Lesson: learn the rules exactly and practice patterns until you see them at a glance. Other accurate stories and lessons accepted.

PORTFOLIO PIECE: MY CHESS PATTERN BOOK

Make a small book (at least six pages) that could teach a beginner chess. Include: a page showing how each piece moves with its point value; a page of the opening principles with the board after move 10 of the Opera Game; two pages of tactics, at least two forks and two pins, drawn on small boards with the answer underneath; and two pages of checkmate patterns (the ladder, king and queen, the back-rank checkmate and Philidor's Legacy). Add one page called "From My Own Games" with a real fork, pin or checkmate you made this unit. Then use the book to teach one lesson to a younger child or a grandparent.

LOOK FOR	WHAT IT MEANS
Accuracy	Every diagram shows a legal, correct position; moves and point values are right.
Completeness	Includes pieces, opening principles, at least four tactics and four checkmate patterns.
Own games	Includes at least one real example from the student's own games.
Clarity	Neat, labeled diagrams and short explanations a beginner could follow.
Teaching	The student used the book to teach someone and wrote a sentence about it.

3.1 THE PIECES AND WHAT THEY ARE WORTH

OBJECTIVES

- Set up a chessboard and move every piece correctly.
- Know the point value of each piece and count material.
- Tell how chess traveled from India to Europe and how the queen became powerful.

Warm-up. Set up a chessboard. Check: a light square in each player's right-hand corner ("light on right"), and the queen on her own color (white queen on a light square, black queen on a dark square). Name each piece as you place it. Which piece do you think is the strongest? Which is the most important? Are they the same piece?

WATCH

How to Play Chess: Chess Rules for Beginners | ChessKid

ChessKid · 19:19

<https://www.youtube.com/watch?v=YdnlntAQH8>

WHEN TO WATCH

In session 1, after the story paragraph. Pause after each piece and move it on your own board.

BACKUP VIDEO

Chess Piece Values - How much is each chess piece worth?

Chess Vibes · 2:24

<https://www.youtube.com/watch?v=86ls6YemsyA>

A short explanation of the point values, for the principle paragraph.

KEY TERMS

material

The pieces a player has, counted by their point values.

point values

A simple way to compare pieces: pawn 1, knight 3, bishop 3, rook 5, queen 9. The king cannot be traded, so it has no number.

check and checkmate

Check is an attack on the king.

Checkmate is a check that cannot be escaped, and it ends the game.

castling

A special move of the king and a rook together that tucks the king safely into the corner.

promotion

When a pawn reaches the far row it becomes a queen, rook, bishop or knight, usually a queen.

CORE IDEAS

The story. Chess was born in India about 1,400 years ago as a game called *chaturanga*, with pieces that stood for the parts of an army: foot soldiers, horses, chariots and elephants. It traveled to Persia, where it was called *shatranj*, and the Arabs carried it across North Africa into Spain. In those old games the piece beside the king was a weak counselor who could move only one square on a slant. Then, around the year 1475, players in Spain began to let that piece move as far as it liked in any direction. The counselor became the **queen**, the game became much faster, and a Spanish book of 1497 by Luis Ramírez de Lucena already describes this new, quicker chess.

The plan. Before you can make plans, you must know what your pieces can do. The rook moves in straight lines. The bishop moves on slants and stays on one color. The queen moves like a rook and a bishop together. The knight jumps in an L shape and is the only piece that can leap over others. The king moves one square any way. Pawns move straight ahead one square (two on their first move) but capture one square on a slant. White always moves first.

The principle. Players use **point values** to decide whether a trade is good: pawn 1, knight 3, bishop 3, rook 5, queen 9. If you give a knight (3) to win a rook (5), you gain 2 points. If you give a rook (5) for a bishop (3), you lose 2. Just as in checkers, when you are ahead in material you should usually trade, and when you are behind you should avoid trades. The king has no number, because losing him loses the game.

On the board and the field. Point values are a guide, not a law. A knight in the center may be worth more than a rook stuck in the corner, and any piece is worth giving up for a checkmate. But beginners who count before every capture lose far fewer

pieces. Make it a habit: before you take, ask “What is it worth?”; before you move, ask “Can anything of mine be taken for free?”

PICTURE STUDY



The Chess Players, Thomas Eakins, 1876 · Oil on wood · The Metropolitan Museum of Art, New York

Image: [Wikimedia Commons](#), public domain

Thomas Eakins of Philadelphia painted this small, careful picture of his father, Benjamin Eakins, a writing master, watching two of his friends play chess. Eakins was very exact: he even drew the board and the room in perspective before he painted, so that every square on the table is correct.

Look closely

- Find the three men. Two are playing and one is watching. Which one is the artist's father, standing between the players?
- Look at the board. Can you tell how many pieces are left? Is it early or late in the game?
- Look at the hands and faces of the two players. Who looks more worried?
- Find the cat and the clock. What do they add to the feeling of a long, quiet game?

Talk about it

1. If you could see the pieces, how would you decide who is ahead in material?
2. Why might a watcher see things that the players miss?
3. Eakins measured and drew his room carefully before painting. How is that like counting material before a trade?

PROJECT

The Point-Value Challenge

You will learn the moves by playing three “mini-games” that use only a few pieces, and then play a full game in which you count material after every capture.

You will need

- A chess set (or a printed board with paper pieces)
- A family member to play against
- Your scorebook

Steps

1. Mini-game 1, “Pawn Wars”: each side has only its eight pawns. The first to get a pawn to the far row wins. Play three times.
2. Mini-game 2, “Knight Journey”: put one knight on a corner square. Count how many moves it takes to reach the opposite corner. Try to beat your record.
3. Mini-game 3, “Rook and Pawns”: each side has a rook and four pawns. Capture everything or promote a pawn to win. Play twice.
4. Now set up a full game. Draw a two-column table in your scorebook: White’s material and Black’s material, starting at 39 each ($8 + 6 + 6 + 10 + 9$).
5. Play a full game. Every time a piece is captured, stop and subtract its value from that side’s total.
6. At the end, look at your table. Did the player who was ahead in material at the halfway point win?
7. Write down one capture in your game that was a good trade and one that was a bad trade, with the points.

Tips

- In Pawn Wars, a pawn that is blocked cannot move forward, but it can capture on a slant.
- The knight changes color every time it moves. Use that to plan its route.

- Say the values aloud during the game: “Your bishop for my knight: three for three, even trade.”

Check your work

- ☐ I can move every piece correctly, including how pawns capture.
- ☐ I kept a material count during a full game.
- ☐ I can name a good trade and a bad trade from my game, with points.

SCOREBOOK

1. Make a “piece card” page: draw each piece, show how it moves with arrows on a small grid, and write its point value.
2. Copy your material table from the full game.
3. Make a timeline: chaturanga in India (about 600), shatranj in Persia, chess in Spain, the new queen (about 1475), Lucena’s book (1497).

WORKED EXAMPLES

Example 1. You capture your opponent’s rook with your knight, and then your opponent captures your knight with a pawn. Who gained material, and how much?

Show solution

1. You won a rook: +5.
2. You lost a knight: −3.
3. $5 - 3 = 2$.

Answer: You gained 2 points. Trading a knight for a rook is called “winning the exchange.”

Example 2. White has a queen, two rooks, a bishop and five pawns. Black has two rooks, two knights, a bishop and six pawns. Who is ahead in material?

Show solution

1. White: $9 + 5 + 5 + 3 + 5 = 27$.
2. Black: $5 + 5 + 3 + 3 + 3 + 6 = 25$.

Answer: White is ahead by 2 points.

COMMON MISTAKES

- Setting up the board with a dark square in the right-hand corner, or the king and queen swapped. Remember “light on right” and “queen on her color.”
- Moving pawns diagonally without capturing, or capturing straight ahead. Pawns move straight but capture on a slant.
- Trading a rook for a knight because “a piece is a piece.” Count the points.

Make it a game • Piece Value Auction. Line up cards for pawn, knight, bishop, rook and queen, face down. Your parent draws one and you give its point value and how it moves. Then count material for a made-up position of paper pieces, and say who is ahead. Score a bean for each right answer. Win by getting ten beans first.

3.2 OPENING PRINCIPLES: PAUL MORPHY'S OPERA GAME

OBJECTIVES

- State and use the three opening principles: center, development and king safety.
- Tell the story of Paul Morphy and the Opera Game of 1858.
- Play the first ten moves of a game with a plan.

Warm-up. Set up the board. You get to make four moves in a row while your opponent does nothing. Which four moves would make your army the strongest? Write them down, then compare with a family member's four moves. Did either of you move a piece twice?

WATCH

The Most Famous Chess Game - Opera Game Analysis | Paul Morphy | Kids Academy

Kids Academy • 11:01

<https://www.youtube.com/watch?v=7hp7IDLDCXM>

WHEN TO WATCH

In session 1 after the plan paragraph, and again in session 2: set up your own board and play through Morphy's Opera Game move by move with the teacher.

BACKUP VIDEO

3 Basic Opening Strategy Principles | Chess

Howcast • 3:01

<https://www.youtube.com/watch?v=UoFqV1lxA7Q>

A three-minute summary of the opening principles by a New York chess teacher.

KEY TERMS

opening

The first part of the game, usually the first ten to fifteen moves, when both sides bring out their pieces.

development

Moving knights and bishops off the back row to useful squares where they can join the game.

king safety

Keeping the king protected, usually by castling early behind a wall of pawns.

tempo

A move's worth of time. Moving the same piece twice in the opening often wastes a tempo.

CORE IDEAS

The story. Paul Morphy was born in New Orleans in 1837 and learned chess as a boy by watching his family play. In 1857 he won the first American Chess Congress, and in 1858 he sailed to Europe and beat the best players there. One evening in Paris that year he was invited to a box at the opera by a duke and a count, who wanted to play him together while the opera went on below. Morphy brought every piece into the game quickly, while his opponents wasted time, and he finished with a beautiful checkmate in just 17 moves. It is still called the **Opera Game**, and chess teachers all over the world use it to show how an opening should be played.

The plan. Morphy followed three simple principles. (1) **Control the center:** put a pawn or two on the middle squares and aim your pieces there, just as in checkers. (2) **Develop** your knights and bishops quickly, bringing a new piece into the game with almost every move instead of moving the same piece again and again. (3) **Keep your king safe** by castling early. His opponents broke these rules: they moved their queen out early, moved pieces twice and left their king in the middle. By move 10 Morphy had almost his whole army working and they did not.

The principle. In the opening, time is like money. Each move is a **tempo**, and every tempo spent bringing a new piece out is an investment. A player who develops faster can attack before the opponent is ready. That is why beginners are taught not to bring the queen out early: she can be chased by smaller pieces, and each time she runs away, the opponent develops another piece for free.

On the board and the field. Scripture says, "The thoughts of the diligent tend only to plenteousness; but of every one that is hasty only to want" (Proverbs 21:5). Morphy was quick, but he was not hasty: every move had a purpose. Teams do the same thing at the start of a game, setting up their formation before trying anything fancy. Get organized first, then attack.

PICTURE STUDY



Paul Morphy, Unknown photographer, 1859 · Photograph · Reproduced in the John G. White Chess Collection, Cleveland Public Library

Image: [Wikimedia Commons](#), public domain

This photograph was taken in 1859, the year after the Opera Game, when Morphy came home to America as the most famous chess player in the world. He was only about 22 years old. Notice the chessboard beside him: the photographer wanted everyone to know who he was.

Look closely

- Find the chessboard. Where is it, and how is Morphy's arm placed?
- Look at his face. Does he look proud, calm or nervous?
- Notice his clothes. How do they tell you when he lived?

Talk about it

1. Morphy beat older, famous players. What do you think was his secret: memory, speed, or good principles?
2. Why do you think a photographer would pose a chess champion beside a chessboard?
3. If you could ask Morphy one question about the opening, what would it be?

PROJECT

The Opening Checklist

You will play through the Opera Game on your own board, then play five games of your own in which you check every opening move against the three principles.

You will need

- A chess set
- A family member to play against
- Your scorebook
- The lesson video, or a printed copy of the Opera Game moves from a library book or chess site (with a parent)

Steps

1. With the lesson video, play through the Opera Game move by move on your own board. Pause after move 10 and count: how many pieces has Morphy developed? How many have his opponents developed?
2. Write the three principles on an index card: Center, Develop, Castle. Add a fourth: “Don’t bring the queen out early.”
3. Make a table in your scorebook for five games with these columns: Pieces developed by move 10 (me), Castled by move 10? (yes/no), Moved a piece twice? (how many times), Result.
4. Play five games. During the first ten moves, read your card before every move.
5. After move 10 in each game, stop and fill in the table, then finish the game.
6. Look for a pattern: in the games where you developed more pieces and castled, did you do better?
7. Write two sentences about which principle was hardest to follow, and why.

Tips

- A good first move is a center pawn: the king’s pawn or the queen’s pawn two squares forward.
- Knights usually come out before bishops, toward the center.

- If you are tempted to attack early with one piece, ask: “Is the rest of my army ready?”

Check your work

- ☐ I played through the Opera Game and counted developed pieces at move 10.
- ☐ I recorded my development and castling in five games.
- ☐ I can name the three opening principles and why each matters.

SCOREBOOK

1. Draw the board after move 10 of the Opera Game (use the lesson video), and circle Morphy’s developed pieces.
2. Copy your five-game table and add a sentence about the pattern you found.
3. Make a poster titled “Opening Rules” with the three principles and a small drawing for each.

From history. Morphy’s opponents in the Opera Game were Karl, Duke of Brunswick, and Count Isouard. After his triumphant year in Europe, Morphy returned to New Orleans in 1859 and soon gave up serious chess and tried to build a career as a lawyer, but he is still remembered as one of the greatest natural players who ever lived.

COMMON MISTAKES

- Moving the queen out on move two or three. She gets chased and you lose time.
- Moving only pawns in the opening. Pawns open the way, but pieces must come out.
- Forgetting to castle until it is too late and the king is attacked in the middle.

Make it a game • Opening Referee. Replay Paul Morphy’s Opera Game story, naming one move at a time on paper or a chessboard. At each step, your parent asks, which opening principle is this: center, development or king safety? You answer from memory. If you slip, the parent claims the point. Then state the three principles in sixty seconds.

Scripture. “The thoughts of the diligent tend only to plenteousness; but of every one that is hasty only to want.” (Proverbs 21:5, KJV)

In the opening, diligent players develop with purpose; hasty players rush one piece forward and fall behind.

3.3 FORKS AND PINS: JOSÉ RAÚL CAPABLANCA

OBJECTIVES

- Find and make forks, especially knight forks.
- Find and use pins, and escape from them.
- Tell the story of José Raúl Capablanca.

Warm-up. Put a white knight in the center of an empty board. Now place black pieces on as many squares as you can that the knight attacks. How many squares does a knight attack from the center? From a corner? Now put the black king and black queen on two of those squares. What has the knight done?

WATCH

The Fork | Chess Tactics | ChessKid

ChessKid · 7:06

<https://www.youtube.com/watch?v=mgAbXPBeVEI>

WHEN TO WATCH

After the plan paragraph. Pause before each answer and find the fork yourself.

BACKUP VIDEO

The Pin | Chess Tactics | ChessKid

ChessKid · 6:54

<https://www.youtube.com/watch?v=sjpKC9SMvKs>

In session 2, before the pin part of the project.

KEY TERMS

fork

One piece attacking two or more enemy pieces at the same time. The opponent can usually save only one.

absolute pin

A pin in which the piece behind is the king, so the pinned piece is not allowed to move at all.

pin

An attack on a piece that cannot move without exposing a more valuable piece behind it.

tactic

A short, forcing series of moves that wins material or gives checkmate (from Lesson 1.1).

CORE IDEAS

The story. José Raúl Capablanca was born in Havana, Cuba, in 1888. When he was four years old, he watched his father play chess with a friend. In his own book he later told how he noticed his father move a knight in a way knights cannot move. When he pointed it out, his father did not believe him, so the little boy sat down and beat his father in a game. Capablanca grew up to become world chess champion in 1921. He was famous for playing simply and clearly, and for spotting tactics that other players missed.

The plan. The two most common tactics in chess are the **fork** and the **pin**. A fork is the double threat you learned in Unit 1: one piece attacks two things at once. The knight is the best forking piece because it jumps in an L and attacks pieces that cannot attack it back. A knight that checks the king and attacks the queen at the same time wins the queen. A pin is different: a bishop, rook or queen attacks a piece that cannot move because a more valuable piece stands behind it on the same line. A pinned piece is stuck, and you can attack it again with a pawn.

The principle. Both tactics work because the opponent has **two problems and only one move**. In a fork the problem is two pieces under attack. In a pin the problem is a piece that cannot leave its post. Forks and pins are the reason point values matter: a fork that wins a rook (5) for a knight (3), or a pin that wins a bishop for a pawn, decides most beginners' games.

On the board and the field. Look for tactics with three questions every move: (1) "Are any of my pieces attacked or undefended?" (2) "Can any of my pieces attack two things at once?" (3) "Are any of my opponent's pieces lined up with their king or queen behind them?" In sport, a defender caught between two attackers is "forked," and a defender who cannot leave his player is "pinned." Learning to see these patterns makes you quicker in every game.

PICTURE STUDY



Capablanca Playing Many Games at Once, Underwood and Underwood (news photograph), 1919 ·
Photograph · London

Image: [Wikimedia Commons](#), public domain

In a “simultaneous exhibition,” a master walks from board to board playing many opponents at once. This photograph shows Capablanca in London in 1919, reportedly playing about forty games at the same time. He would glance at each board for a few seconds, make a move and walk on.

Look closely

- Find Capablanca. How is he standing differently from everyone else?
- Count the boards you can see. How many opponents is he playing?
- Look at the faces of the seated players. Are they relaxed or concentrating?
- Find the notice on the wall in the back. What might it say?

Talk about it

1. How could Capablanca play so many games at once with only a few seconds for each move? (Think about patterns like forks and pins.)
2. If you were one of the seated players, what would you look for when he came to your board?
3. How does practicing tactic puzzles help a player see patterns quickly?

PROJECT

Forty Tactics Hunt

Capablanca saw patterns at a glance because he had seen them thousands of times. You will build your own pattern library by solving and making forks and pins, then using them in real games.

You will need

- A chess set
- Your scorebook
- Index cards
- Optional: the free puzzles at ChessKid or Lichess with a parent

Steps

1. Set up five fork positions of your own on the board: a knight fork of king and queen, a knight fork of two rooks, a pawn fork of two pieces, a queen fork, and a bishop fork. Draw each on an index card with the answer on the back.
2. Set up three pin positions: a bishop pinning a knight to the king, a rook pinning a piece to the queen, and a pin you can attack with a pawn. Draw each on a card.
3. Swap cards with a family member and solve each other's positions. Time how long each takes.
4. Optional: solve ten puzzles marked "fork" or "pin" on a children's chess site with a parent, and record how many you got right on the first try.
5. Play three full games. After each game, look back: was there a fork or pin for either player? Write it down, even if nobody saw it during the game.
6. Count your results: how many tactics did you find during the games, and how many did you find only afterward?
7. Write one sentence about how you will look for tactics in your next game.

Tips

- Knight forks often happen on the square two steps and one step away from the enemy king and queen.
- Pinned pieces are great targets. Attack them with something cheaper.

- Before every move, ask the three questions from the last core-ideas paragraph.

Check your work

- ☐ I made at least eight tactic cards and solved my partner's cards.
- ☐ I found at least one fork or pin in my own games.
- ☐ I can explain the difference between a fork and a pin.

SCOREBOOK

1. Draw a knight in the center of a small board and mark all eight squares it attacks.
2. Draw one fork and one pin from your own games, with arrows.
3. Make a tally chart: tactics found during games versus tactics found afterward.

From history. Capablanca won the world championship from Emanuel Lasker in a match in Havana in 1921 without losing a single game. He later wrote *Chess Fundamentals* (1921) for learners, which is still in print and is free online.

COMMON MISTAKES

- Thinking a fork wins when the opponent can capture the forking piece. Check that it is safe.
- Moving a piece that is pinned to the king. That move is illegal.
- Looking only at your own attacks. Every move, check whether your opponent can fork or pin you.

Make it a game • Fork Finder Flash. Set up a chessboard with a knight and two valuable pieces placed safely apart. You have thirty seconds to find the knight fork and say which pieces are attacked. Then show a pin and name the absolute pin. Swap roles. Score a point for each tactic found. The loser makes the next puzzle.

3.4 CHECKMATE PATTERNS: FROM PHILIDOR TO TODAY

OBJECTIVES

- Deliver a back-rank checkmate and a checkmate with king and queen against a lone king.
- Recognize the smothered checkmate known as Philidor's Legacy.
- Tell the story of François-André Danican Philidor.

Warm-up. Put a black king alone in the corner, and a white king and white rook somewhere else. Can you find a way to checkmate the black king? Try for five minutes. Then try with the black king in the middle of the board. Which is easier, and why?

WATCH

Back Rank Checkmate | ChessKid

[ChessKid](#) · 6:34

<https://www.youtube.com/watch?v=uBXBE0F78xw>

WHEN TO WATCH

After the plan paragraph. Set up each example on your own board.

BACKUP VIDEO

Every Chess Checkmate From Beginner to Grandmaster Explained

[Chess Explained](#) · 6:00

<https://www.youtube.com/watch?v=iEuLPFJZ1rY>

For older students: a quick tour of many checkmate patterns, from easy to hard. Watch the first half; the later patterns are advanced.

KEY TERMS

checkmate pattern

A common arrangement of pieces that gives checkmate, which strong players recognize at a glance.

back-rank checkmate

A checkmate by a rook or queen on the king's first row, when the king is trapped behind its own pawns.

luft

A German word meaning “air”: a small escape square made for the king by moving one pawn in front of it.

smothered checkmate

A checkmate by a knight against a king that is surrounded by its own pieces and cannot move.

CORE IDEAS

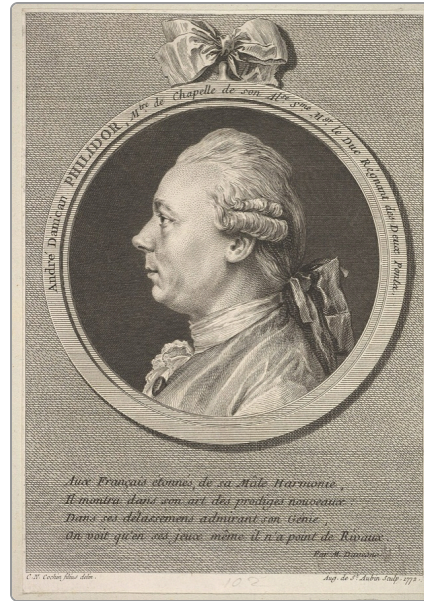
The story. François-André Danican Philidor was born in France in 1726 into a family of musicians. He became a famous composer of operas, but he was even more famous as the best chess player of his time. In 1749 he published a book, *Analysis of the Game of Chess*, which taught that “pawns are the soul of chess,” and he amazed audiences in London by playing several games at once without looking at the boards. A beautiful knight checkmate, in which the king is smothered by its own pieces, has long been called **Philidor’s Legacy** in his honor.

The plan. Checkmate usually happens when three things come together: the enemy king has no safe squares, your attacking piece cannot be captured, and the check cannot be blocked. The most common pattern for beginners is the **back-rank checkmate**. A king that has castled behind three pawns is safe from the front, but if a rook or queen reaches its first row, the king has nowhere to go. The cure is simple: once the danger appears, move one of those pawns up a square to give the king **luft**, an escape hatch.

The principle. Patterns save thinking. A strong player does not calculate every checkmate from scratch; he recognizes it, the way you recognize a word without sounding out each letter. That is why it pays to learn a handful of patterns well: the back-rank checkmate, the king and queen against a lone king, the two-rook “ladder,” and the smothered checkmate. When the pieces fall into one of these shapes, you will see the end of the game coming.

On the board and the field. Remember the lesson of working backward from Nim: picture the checkmate first, then find the moves that lead there. And remember the lesson of checkers endgames: when you are winning, slow down. Many games that should be won end in stalemate, a draw in which the losing king has no legal move but is not in check. Always leave the lone king one square to move to until you are ready to checkmate.

PICTURE STUDY



Portrait of André Danican Philidor, Augustin de Saint-Aubin, after Charles-Nicolas Cochin, 1772 ·

Engraving · The Metropolitan Museum of Art, New York

Image: [Wikimedia Commons](#), public domain

This engraving was made in Paris in 1772, when Philidor was famous both as a composer and as a chess master. The French verses under the portrait praise him for his music and for his skill at chess, which, they say, has no rival.

Look closely

- Look at Philidor's face in profile. What kind of person does he seem to be?
- Find the ribbon at the top and the oval frame. How do they make the portrait look important?
- Find the lines of French writing at the bottom. Why would an artist add a poem?

Talk about it

1. Philidor was a composer and a chess master. How might music and chess both use patterns?
2. He said “pawns are the soul of chess.” What do you think he meant?
3. Why do you think a checkmate pattern was named after him?

PROJECT

The Checkmate Gym

You will practice four checkmate patterns until you can do each one without help, timing yourself and keeping a record, and then use them in real games.

You will need

- A chess set
- A family member to play the defending side
- A stopwatch or clock (optional)
- Your scorebook

Steps

1. Drill 1, the ladder: White king and two rooks against a lone black king in the middle. Push the king to the edge with the rooks taking turns. Record the number of moves.
2. Drill 2, king and queen: White king and queen against a lone black king. Use the queen to shrink the king's box, then bring your own king up to help. Watch out for stalemate! Record the number of moves.
3. Drill 3, back rank: set up a castled black king behind three pawns with nothing on its first row, and a white rook that can reach that row. Find the checkmate. Then set it up again and find the defense (luft).
4. Drill 4, Philidor's Legacy: with a parent or the backup video, set up the smothered checkmate with a queen and knight and play it through.
5. Repeat drills 1 and 2 three times each. Try to use fewer moves each time.
6. Play three full games. Before each game, say: "I will look for a back-rank checkmate, and I will give my own king luft."
7. Record every checkmate that happened in your games and which pattern it was.

Tips

- In the queen drill, keep the queen a knight's move away from the king to shrink its box safely.

- Stalemate happens when the lone king has no legal moves and is not in check. Always count its squares.
- Say “check” quietly when you give check; it helps both players notice.

Check your work

- ☐ I can win with king and two rooks and with king and queen against a lone king without help.
- ☐ I can show a back-rank checkmate and how to prevent it.
- ☐ I recorded my move counts and they improved with practice.

SCOREBOOK

1. Draw the four patterns from the drills on four small boards, each with a title.
2. Make a chart of your drill times or move counts.
3. Draw one stalemate position as a warning, labeled “Do not do this!”

COMMON MISTAKES

- Giving stalemate to the lone king when you have a huge advantage. Always leave the king a square until the final move.
- Moving your queen next to the enemy king where it can be captured. Make sure she is protected.
- Forgetting your own back rank while attacking. Give your king luft before it is too late.

Make it a game • Mate Pattern Drill. Use a chessboard to set up a back-rank mate on a lone king. Race a timer to deliver checkmate and say its name aloud. Then try king and queen against a lone king. Finally, show or draw Philidor's Legacy with a smothered mate. Beat your own time on the back-rank pattern.

UNIT 3

CHESS

Chess is the most famous strategy game in the world. It began in India about 1,400 years ago, traveled through Persia and the Arab world to Spain, and became the game we know when the queen gained her great power around the year 1475. In this unit you will learn how every piece moves and what each is worth, so that you can count before you trade, just as you learned in checkers.

Then you will learn the three opening principles, center, development and king safety, from the most famous short game ever played, Paul Morphy's Opera Game of 1858. You will learn the two tactics that win the most games for beginners, the fork and the pin, from the story of José Raúl Capablanca, who learned chess at four years old. And you will finish with the basic checkmate patterns, from the back-rank checkmate to the clever pattern named after the French master Philidor.

PREREQUISITES

- Knows how to make threats and double threats (Unit 1)
- Understands center control and trading when ahead (Unit 2)
- Can add small numbers quickly

MASTERY CHECKLIST

- ☐ I can set up a chessboard and move every piece correctly, including castling and pawn promotion.
- ☐ I know the point values of the pieces (pawn 1, knight 3, bishop 3, rook 5, queen 9) and can count material before a trade.
- ☐ I can follow the opening principles: control the center, develop knights and bishops, castle early, and do not move the queen out too soon.
- ☐ I can find forks and pins in my own games and in puzzles.
- ☐ I can deliver a back-rank checkmate and a checkmate with a king and a queen against a lone king.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **Chess Fundamentals, by José Raúl Capablanca (Project Gutenberg):** Free. The world champion's own book for learners (1921), with simple endings and middlegame ideas. Best for strong readers of 11 and up, or read with a parent. Fits Lessons 3.3 and 3.4.
- **ChessKid:** Free basic accounts. The children's site of Chess.com, made for young players, with lessons, puzzles and safe play against other children. A parent sets up and supervises the account. Fits all of Unit 3. Ages 6+.
- **Lichess:** Free, with no advertising. Puzzles, lessons and a board for practicing against the computer at easy levels. Turn on Kid Mode in the settings, which turns off chat. Fits all of Unit 3. Ages 10+ with a parent.

Not required. Every project in this unit works without them. School Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

3.1 The Pieces and What They Are Worth	2 sessions of 45 minutes
3.2 Opening Principles: Paul Morphy's Opera Game	2 sessions of 45 minutes
3.3 Forks and Pins: José Raúl Capablanca	2 sessions of 45 minutes
3.4 Checkmate Patterns: From Philidor to Today	2 sessions of 45 minutes

UNIT 3 REVIEW

Answer each question in complete sentences unless it asks for a number or a drawing. You may use a chessboard. The review is worth 50 points.

1. **4 pts**
Give the point value of each piece: pawn, knight, bishop, rook, queen. Why does the king have no point value?
2. **5 pts**
You capture a bishop with your rook, and your opponent captures your rook. Did you gain or lose material, and how much?

3. **4 pts**

Where did chess begin, and what change around 1475 made it the game we play today?

4. **6 pts**

Name the three opening principles and give one reason for each.

5. **5 pts**

Why did Paul Morphy win the Opera Game so quickly?

6. **5 pts**

What is the difference between a fork and a pin?

7. **4 pts**

Why is the knight such a good forking piece?

8. **5 pts**

What is a back-rank checkmate, and how can you prevent it?

9. **6 pts**

What would happen if... you have a king and queen against a lone king, and you take away every square the lone king could move to, but it is not in check?

10. **6 pts**

Tell one story from this unit (Capablanca as a child, Morphy at the opera, or Philidor) and the lesson it teaches about strategy.

ANSWER KEY

1. Pawn 1, knight 3, bishop 3, rook 5, queen 9. The king can never be traded; losing it means losing the game.
2. You gained a bishop (3) and lost a rook (5), so you lost 2 points.
3. In India, as chaturanga. Around 1475 in Spain the queen gained the power to move any distance in any direction.
4. Control the center (pieces there have the most choices); develop knights and bishops quickly (so the whole army is ready); castle early (to keep the king safe). Similar reasons accepted.
5. He developed his pieces quickly and kept his king safe, while his opponents moved the queen out early, moved pieces twice and left their king in the middle. By move 10 nearly his whole army was working.
6. A fork is one piece attacking two or more pieces at once. A pin is an attack on a piece that cannot move without exposing a more valuable piece (or the king) behind it.
7. It jumps in an L shape over other pieces and attacks squares that the pieces it attacks usually cannot attack back.
8. A checkmate by a rook or queen on the king's first row when the king is trapped behind its own pawns. Prevent it by moving one pawn forward to give the king luft (an escape square), or by guarding the back row.
9. It would be stalemate, and the game would be a draw, even though you were far ahead. You must leave the king a square until you can give checkmate.
10. For example: Capablanca at four noticed his father's illegal knight move and then beat him; he became world champion by seeing patterns clearly. Lesson: learn the rules exactly and practice patterns until you see them at a glance. Other accurate stories and lessons accepted.

PORTFOLIO PIECE: MY CHESS PATTERN BOOK

Make a small book (at least six pages) that could teach a beginner chess. Include: a page showing how each piece moves with its point value; a page of the opening principles with the board after move 10 of the Opera Game; two pages of tactics, at least two forks and two pins, drawn on small boards with the answer underneath; and two pages of checkmate patterns (the ladder, king and queen, the back-rank checkmate and Philidor's Legacy). Add one page called "From My Own Games" with a real fork, pin or checkmate you made this unit. Then use the book to teach one lesson to a younger child or a grandparent.

LOOK FOR	WHAT IT MEANS
Accuracy	Every diagram shows a legal, correct position; moves and point values are right.
Completeness	Includes pieces, opening principles, at least four tactics and four checkmate patterns.
Own games	Includes at least one real example from the student's own games.
Clarity	Neat, labeled diagrams and short explanations a beginner could follow.
Teaching	The student used the book to teach someone and wrote a sentence about it.

UNIT 4

BATTLES IN THE BIBLE

The Bible tells the true stories of God's people, and some of those stories are about battles. In this unit you will study four of them the way a coach studies a game: the ground, the plan, the timing and the courage. You will see Gideon's 300 surround a huge camp at night with trumpets, pitchers and torches; Joshua set an ambush at Ai after first learning a hard lesson; Jonathan and his armorbearer climb a cliff that everyone thought could not be climbed; and David wait for a sound in the tops of the trees before he moved.

Each story teaches a principle of strategy that you will meet again in history and in sport: surprise, the ambush and the feigned retreat, using the ground, and the flank attack with perfect timing. But each story also teaches something more important. In every one of these plans, God's people first sought the Lord and obeyed Him, and the victory was His. As Proverbs 21:31 says, "The horse is prepared against the day of battle: but safety is of the LORD."

PREREQUISITES

- Knows what a strategy and a tactic are (Unit 1)
- Can find a book, chapter and verse in the Bible
- Can draw a simple map with a key

MASTERY CHECKLIST

- ☐ I can retell each of the four battles from Scripture accurately, with the chapter where it is found.
- ☐ I can name the strategic idea in each: surprise and deception (Gideon), the ambush and feigned retreat (Ai), using the ground (Michmash), and the flank attack with timing (the mulberry trees).
- ☐ I can draw a map of each plan with arrows and a key.
- ☐ I can explain how each story shows God's people seeking Him and obeying Him.
- ☐ I can connect each idea to a game or sport.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **Bible Atlas: A Manual of Biblical Geography and History, by Jesse Lyman Hurlbut (Project Gutenberg):** Free. A classic Sunday-school atlas first published in 1884, with maps and short chapters on the land of Israel, including the conquest under Joshua and the wars of Saul and David. Fits all four lessons. Read with a parent; the maps are the best part. Ages 10+.

Not required. Every project in this unit works without them. School Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

4.1	Gideon's 300: Trumpets, Pitchers and Torches	2 sessions of 45 minutes
4.2	Joshua at Ai: The Ambush and the Feigned Retreat	2 sessions of 45 minutes
4.3	Jonathan at Michmash: Using the Ground	2 sessions of 45 minutes
4.4	David and the Sound in the Mulberry Trees	2 sessions of 45 minutes

UNIT 4 REVIEW

Answer each question in complete sentences. You may use your Bible to look up the chapters. The review is worth 50 points.

1. **5 pts**
How did God make Gideon's army smaller, and why? (Judges 7)
2. **5 pts**
Name three things that made Gideon's night attack work.
3. **5 pts**
Why did Israel lose the first battle at Ai, and what did Joshua do?
4. **5 pts**
Explain the ambush and feigned retreat at Ai.

5. **5 pts**

How did Jonathan use the ground at Michmash?

6. **4 pts**

What did Jonathan say about God in 1 Samuel 14:6?

7. **5 pts**

What is a flank attack, and how did David use one?

8. **5 pts**

What would have happened if... David had simply repeated his first plan in the second battle?

9. **5 pts**

Choose one of the four battles and connect its strategic idea to a game or sport.

10. **6 pts**

What did God's people do first in all four of these stories, and why does it matter?

ANSWER KEY

1. First everyone who was afraid went home (22,000 left), then God tested the 10,000 at the water and kept only the 300 who lapped from their hands. He did it so Israel could not boast that their own strength had saved them (Judges 7:2).
2. Any three: surprise at night and at the change of the watch; three companies all around the camp; the sound of 300 trumpets and the sudden lights made it seem like a huge army; Gideon scouted first; God gave the victory.
3. Because Achan had disobeyed God and secretly taken forbidden treasure. Joshua sought the LORD humbly, the sin was found and dealt with, and God gave him a plan.
4. A hidden force waited west of the city. The main army came from the north, pretended to be beaten and ran away. The men of Ai chased them and left their city empty. At Joshua's signal the hidden force took the city, and the men of Ai were caught between the two parts of Israel's army.
5. He and his armorbearer climbed the steep side of the gorge, which no one guarded because it seemed impossible to climb, and surprised the garrison at the top.
6. "There is no restraint to the LORD to save by many or by few."
7. Going around to attack an enemy from the side or rear, where it is weakest. God told David to circle behind the Philistines and come at them near the mulberry trees.
8. He would have disobeyed God's new instruction and attacked from the front against an enemy that may have learned from the first battle. The lesson is to seek the Lord and think again instead of trusting an old success.
9. Example: the feigned retreat at Ai is like offering a piece in checkers to lure an opponent into a double jump, or a fake handoff in football. Other sensible connections accepted.
10. They sought the LORD and obeyed Him: Gideon followed God's commands, Joshua sought God after the defeat, Jonathan trusted God and asked for a sign, David enquired of the LORD twice. It matters because victory belongs to the Lord (Proverbs 21:31), and wise plans begin with seeking Him.

PORTFOLIO PIECE: AN ATLAS OF FOUR BIBLE BATTLES

Make a small atlas with one page for each of the four battles in this unit. Each page needs: a title and the Bible reference; a clear map from above with arrows, a key and the same colors for the same sides throughout; three or four sentences retelling the plan; the strategic idea in one phrase (surprise and deception, the ambush and feigned retreat, using the ground, the flank attack and timing); and one sentence about what God's people did first. Add a cover and a final page comparing the four plans in a chart. Present your atlas to your family, telling one of the stories from your map.

LOOK FOR	WHAT IT MEANS
Faithful to Scripture	Each retelling matches the Bible accurately, with correct references.
Maps	Each map is clear and neat, with arrows, a key and consistent colors.
Strategy	The strategic idea of each battle is named and explained correctly.
Seeking God	Each page notes how God's people sought and obeyed the Lord.
Presentation	The student retold one battle aloud from the map.

4.1 GIDEON'S 300: TRUMPETS, PITCHERS AND TORCHES

OBJECTIVES

- Retell the story of Gideon and the 300 from Judges 6–7.
- Explain how surprise, timing and the look of a large force made the plan work.
- Explain why God made Gideon's army smaller.

Warm-up. Turn off the lights in a room at night. Have three family members stand in three corners of the room. At a signal, each one switches on a flashlight and calls out at the same moment. Talk about it: if you were in the middle of the room, how many people would you think were there? Why?

WATCH

Gideon and the 300 | Animated Bible Stories | My First Bible | 43

My First Bible · 11:13

<https://www.youtube.com/watch?v=54Bq50BqAVs>

WHEN TO WATCH

After reading Judges 7 together. Watch for the three steps that made the army smaller.

BACKUP VIDEO

Gideon's 300 Men

Saddleback Kids · 3:05

<https://www.youtube.com/watch?v=c3CDZjpkDKU>

A short, cheerful puppet-style retelling for younger students.

KEY TERMS

surprise

Striking at a time or place, or in a way, that the opponent does not expect.

reconnaissance

Scouting: going to look at the enemy before acting, as Gideon did when he crept down to the camp at night.

watch

A period of the night when guards are on duty. Gideon struck at the beginning of the middle watch, just after the guards had changed.

deception

Making the opponent believe something that is not true, such as that a small force is a huge one.

CORE IDEAS

The story. For seven years the Midianites swept into Israel at harvest time and took everything, so that the Israelites hid in caves and dens. God called Gideon, a young man threshing wheat in secret, to save His people (Judges 6). Gideon gathered 32,000 men. But the LORD said the army was too many, “lest Israel vaunt themselves against me, saying, Mine own hand hath saved me” (Judges 7:2). Everyone who was afraid went home, and 22,000 left. Then God tested the 10,000 who remained at the water, and only the 300 who lapped water from their hands were kept.

The plan. That night God sent Gideon to scout the enemy camp, and he overheard a Midianite telling a dream that meant Gideon would win (Judges 7:9–15). Gideon divided his 300 into three companies of 100. Each man carried a trumpet and an empty clay pitcher with a lamp hidden inside. They spread out around the edge of the huge camp in the dark. At the beginning of the middle watch, just after the new guards had come on duty, Gideon gave the signal. All 300 blew their trumpets, broke their pitchers so the lights blazed out, and shouted, “The sword of the LORD, and of Gideon” (Judges 7:20). In the confusion the Midianites turned on one another and fled.

The principle. Gideon’s plan used **surprise** (night, and a moment when the new guards were not yet settled), **position** (three groups all around the camp, so the noise came from every side), and **deception** (to men waking in the dark, 300 trumpets and 300 sudden lights all around the camp sounded and looked like a vast army). A small force that acts all at once, from an unexpected direction, can throw a large one into confusion. Notice too that Gideon scouted first. Good plans begin with good information.

On the board and the field. The deepest lesson is God’s. He made the army smaller on purpose, so that no one could boast that their own strength had won. In games, a smaller or weaker side can still win with a clever plan, good timing and courage; think of a quick counterattack in soccer or a surprise play in football. But we play

and work remembering that our strength and skill are gifts, and that we must not boast in them.

PICTURE STUDY



Gideon's Fountain (the Spring of Harod), American Colony Photo Department, Jerusalem (Matson Photograph Collection), Between 1898 and 1914 · Glass negative (photograph) · Library of Congress, Prints and Photographs Division, G. Eric and Edith Matson Collection

Image: [Wikimedia Commons](#), public domain

This spring at the foot of Mount Gilboa, called 'Ain Jalud in Arabic, has long been thought to be the “well of Harod” where Gideon camped (Judges 7:1). The Midianite camp lay in the valley to the north. Photographers from the American Colony in Jerusalem took this picture more than a hundred years ago.

Look closely

- Find the pool and the hillside behind it. Where would Gideon's men have camped?
- Find the two riders and their horses drinking. How is this like the test at the water in Judges 7?
- Look at the slope of the land. Where would the valley and the enemy camp be?
- Notice how open the water is. Who could watch from the hill?

Talk about it

1. Why would an army camp near a spring?
2. Why did God use drinking at the water to choose the 300?
3. How does seeing the real place help you picture the story?

Safety first. For the optional flashlight game, play only in an open yard you know well, away from streets and water, at dusk with a parent present. Walk, do not run, in the dark.

PROJECT

Map and Model of the Night Attack

You will draw a map of Gideon's plan, set it up on the table with counters, and then test the idea of surprise in a simple game of hide-and-seek or flashlight tag.

You will need

- A Bible (Judges 6–7)
- Paper, colored pencils and a ruler
- About 50 small counters or dried beans for the Midianite camp and 3 coins or buttons for Gideon's companies
- Flashlights for the optional outdoor game, with a parent

Steps

1. Read Judges 7:1–22 aloud with a parent.
2. Draw a map: the spring of Harod where Gideon camped on the hill, the valley below, and the large Midianite camp. Add a key.
3. Mark the three companies of 100 around the camp with three colors and draw arrows showing how they spread out.
4. On the table, pile the 50 counters in the middle as the camp. Place three coins around it as the three companies. Act out the plan step by step as you retell it.
5. In your scorebook, write a “plan card” for Gideon with four lines: Goal, Information (what the scouting showed), Timing, Signal.
6. Optional: play flashlight tag outdoors at dusk with a parent watching. One team tries to “surround” the other quietly and switch on all their lights at once on a signal. Afterward talk about how surprise felt from both sides.
7. Write three sentences: what made the plan work, what Gideon did first, and why the victory belonged to the LORD.

Tips

- Use different colors for Israel and for Midian, and keep the same colors on all your maps this unit.
- Write the verse reference beside each part of the map.

- Keep the flashlight game safe: an open yard, no running near streets, and a parent present.

Check your work

- ☐ My map shows the camp, the three companies and arrows, with a key.
- ☐ I can retell the story in the right order.
- ☐ I can name the three strategic ideas: surprise, position and deception.

SCOREBOOK

1. Draw your map of Gideon's plan with arrows and a key.
2. Make a number line showing the army shrink: 32,000, then 10,000, then 300.
3. Copy Judges 7:2 and write one sentence about what it means for you.

COMMON MISTAKES

- Thinking Gideon won because he was strong. The story shows that God made the army small so the victory would be His.
- Forgetting the scouting trip. Gideon gathered information before acting.
- Mixing up the order: first the army was reduced, then Gideon scouted the camp, then the attack came.

Make it a game • Gideon's Night Raid. Act out Gideon's night attack with a parent. You are Gideon: whisper the plan, hand out pretend pitchers and torches, then shout at the right moment. Your parent plays the camp and guesses what surprise, timing and the look of a large force did. Then retell Judges 6-7 in order in under two minutes.

Scripture. “And the LORD said unto Gideon, The people that are with thee are too many for me to give the Midianites into their hands, lest Israel vaunt themselves against me, saying, Mine own hand hath saved me.” (Judges 7:2, KJV)

God made Gideon's army smaller so that no one could boast. Strategy is good, but the victory belongs to the LORD.

4.2 JOSHUA AT AI: THE AMBUSH AND THE FEIGNED RETREAT

OBJECTIVES

- Retell the two battles at Ai from Joshua 7–8.
- Explain how an ambush and a feigned retreat work.
- Explain why Israel lost the first time and what changed.

Warm-up. Play a quick game of tag in the yard or a hallway. This time, one player on the “chasing” team hides behind a corner while the others pretend to run away. When the tagger chases them past the corner, the hidden player jumps out. Talk about it: why did the trick work?

WATCH

Two Battles with Ai Bible Animation (Joshua 7-8)

CartoonWorks · 5:08

<https://www.youtube.com/watch?v=uVQusPryR6Y>

WHEN TO WATCH

After reading Joshua 8:1–22 together.

Note: The video includes the story of Achan’s sin from Joshua 7, told simply with line drawings.

BACKUP VIDEO

Why Did Joshua Attack the City of Ai (Khirbet el-Maqatir)?

Associates for Biblical Research · 1:48

<https://www.youtube.com/watch?v=IXO2Q75ZvqQ>

A short talk by Dr. Bryant Wood, an archaeologist who excavated at a site many believe was Ai, about why the city mattered.

KEY TERMS

ambush

A force hidden in a place where the opponent will pass, ready to attack by surprise.

feigned retreat

Pretending to run away in order to draw the opponent out of a strong position.

decoy

Someone or something used to draw the opponent's attention away from the real danger.

signal

An agreed sign that tells everyone when to act, like Joshua stretching out his spear.

CORE IDEAS

The story. After the walls of Jericho fell, Joshua sent a small force against the little city of Ai, sure that it would be easy. But Israel was beaten and ran back (Joshua 7:2–5). Joshua fell on his face before the LORD, and God showed him the cause: a man named Achan had disobeyed God's command and secretly taken treasure from Jericho. When the sin was found and dealt with, the LORD said to Joshua, "Fear not, neither be thou dismayed... arise, go up to Ai: see, I have given into thy hand the king of Ai" (Joshua 8:1).

The plan. This time God gave Joshua a plan. At night Joshua sent a large group of men to hide on the west side of the city, between Ai and Bethel, where no one could see them. In the morning Joshua led the main army up to the north side of Ai, in plain view. When the king of Ai came out to fight, Joshua's army pretended to be beaten again and ran toward the wilderness. Every fighting man of Ai, and of Bethel too, rushed out to chase them, leaving the city open. Then, at the LORD's word, Joshua stretched out his spear toward Ai (Joshua 8:18). The hidden men rose up, entered the empty city and set it on fire. When the men of Ai looked back and saw the smoke, they were caught between two parts of Israel's army.

The principle. This is the **ambush** combined with the **feigned retreat**. The plan worked because Joshua used what the enemy already believed: they had won last time, so they expected to win again. Overconfidence made them careless, and they left their city empty. Every part of the plan depended on a clear **signal** and on each group doing its job at the right moment.

On the board and the field. The first lesson of Ai is about obedience: Israel lost when there was sin in the camp and won when it was dealt with. The second is about humility after a loss: Joshua did not make excuses but sought the LORD. And the third is strategic: the same trick still works in games. In checkers and chess, players offer a piece to lure an opponent into a trap. In football, a fake handoff draws the defense one way while the ball goes the other. Beware of being so proud of your last win that you chase without thinking.

PICTURE STUDY



Site of Ai: "Et Tell, the Heap", Engraving in Picturesque Palestine, Sinai and Egypt, 1881 · Wood engraving on a book page · Edited by Colonel Charles Wilson; scan from the New York Public Library
Image: [Wikimedia Commons](#), public domain

In the 1800s, travelers and surveyors explored the Holy Land and published books with engravings of the places named in the Bible. This page shows a hill called Et Tell, which means "the heap," long thought to be the site of Ai. Some archaeologists today think Ai was at a nearby site called Khirbet el-Maqatir. Either way, the picture shows the kind of hilly, rocky ground where Joshua's plan took place.

Look closely

- Look at the shape of the hill in the oval. Where could an army hide nearby?
- Find the trees and rocks. How would they help an ambush stay hidden?
- Look at the wildflowers drawn around the picture. Why might the artist add them?
- Notice the printed words on the page. This is a book of places in the Bible.

Talk about it

1. Joshua's hidden force waited on the west side of the city. Why was it important that the men of Ai could not see them?
2. How did the ground help Joshua's plan?

3. What lesson did Joshua learn from losing the first battle?

PROJECT

The Ambush Game

You will map Joshua's plan, act it out with counters, and then test the feigned retreat in a game of your own on the table or in the yard.

You will need

- A Bible (Joshua 7–8)
- Paper and colored pencils
- Counters in two colors (coins, buttons or beans), a small box for the city
- Optional: a soft ball and a yard for the outdoor version

Steps

1. Read Joshua 8:1–22 aloud with a parent.
2. Draw a map: the city of Ai, Bethel to the west, the hidden force between them, Joshua's main army on the north, and the road toward the wilderness. Use arrows for the retreat and for the ambush.
3. On the table, set the box as Ai with ten counters inside. Put Joshua's counters in two groups: a hidden group behind a book on the west, and a main group to the north.
4. Act it out: the main group "runs" away; the defenders leave the city to chase; on your signal, the hidden group moves into the empty city.
5. Now invent a simple table game called "Ambush." Each player has 6 counters and a home square. A player who leaves home empty can have it captured by a hidden counter. Write three rules and play three games.
6. Record each game: did anyone fall for a feigned retreat? Who won?
7. Write two sentences about how overconfidence made the men of Ai careless, and one about how you can avoid the same mistake in games.

Tips

- Use the same colors as in Lesson 4.1: one for Israel, one for the opponent.
- Keep your "Ambush" game simple: a small board, a few counters, and a rule about home squares.
- When you invent rules, test them and change one rule at a time.

Check your work

- ☐ My map shows both parts of Joshua's army, the retreat and the ambush, with arrows and a key.
- ☐ I can explain an ambush and a feigned retreat.
- ☐ I played and recorded three games of my own Ambush game.

SCOREBOOK

1. Draw your map of the battle of Ai with arrows and a key.
2. Write the rules of your Ambush game and a table of your three games.
3. Draw two boxes: "Why Israel lost the first time" and "Why Israel won the second time." Fill each with a sentence.

COMMON MISTAKES

- Telling only the second battle. The loss and Joshua's repentance are part of the lesson.
- Thinking the retreat was real. It was a planned trick to empty the city.
- Forgetting the signal. The plan worked because every group moved at the right moment.

Make it a game • Ambush at Ai. Use beans on a table to set up the two battles of Ai. Place the main force, the hidden ambush and the decoy. Your parent plays the king of Ai and must decide whether to chase. Act out the feigned retreat and signal. Retell why the first battle failed and the second succeeded, with Joshua 7-8.

Scripture. "And the LORD said unto Joshua, Fear not, neither be thou dismayed: take all the people of war with thee, and arise, go up to Ai: see, I have given into thy hand the king of Ai, and his people, and his city, and his land:" (Joshua 8:1, KJV)

After the defeat and the sin were dealt with, God encouraged Joshua and gave him the plan. A loss is not the end when we turn back to the Lord.

4.3 JONATHAN AT MICHMASH: USING THE GROUND

OBJECTIVES

- Retell the story of Jonathan and his armorbearer from 1 Samuel 14.
- Explain how the shape of the ground can help a small force.
- Explain the difference between courage and foolishness.

Warm-up. Look out a window or walk around your yard or a park with a parent. Find three places where someone could move without being seen from the house: behind a hedge, along a fence, down a slope. Draw a quick sketch of one of them. Why would hidden routes matter in a game of hide-and-seek?

WATCH

Jonathan and His Armor Bearer | Bible Story | LifeKids

LifeKids • 2:52

<https://www.youtube.com/watch?v=HBJOGAd1wE>

WHEN TO WATCH

After reading 1 Samuel 14:1–15. It is a playful retelling with actors; compare it with the Bible and notice what it leaves out.

BACKUP VIDEO

How Bible Battleplans Secured a World War I Victory! | InGrace

InGrace Israel with Jim Scudder • 23:00

<https://www.youtube.com/watch?v=pEOAPQPzpeU>

For older students: a visit to the real gorge at Michmash with an archaeologist, and the story in the history note of how a British officer used 1 Samuel 14 in 1918.

KEY TERMS

terrain

The shape of the land: hills, cliffs, valleys, rivers and woods.

garrison

A group of soldiers stationed to guard a place.

pass

A narrow way through hills or mountains.

armorbearer

A young man who carried a warrior's shield and armor and fought beside him.

CORE IDEAS

The story. In the days of King Saul, the Philistines had a strong army and a **garrison** at the pass of Michmash. Many Israelites were so afraid that they hid in caves and thickets, and Saul waited with about 600 men under a pomegranate tree (1 Samuel 13–14). Saul's son Jonathan did something different. Without telling anyone, he and the young man who carried his armor went toward the Philistine garrison. Jonathan said, "It may be that the LORD will work for us: for there is no restraint to the LORD to save by many or by few" (1 Samuel 14:6).

The plan. Between the two armies was a deep gorge with steep rocky sides. The Bible names two sharp crags, Bozez and Seneh (1 Samuel 14:4). Jonathan asked God for a sign: if the Philistines said, "Come up to us," they would go (14:9–10). The Philistines saw them and mocked, "Come up to us." So Jonathan climbed up the cliff on his hands and feet, with his armorbearer behind him (14:13). No one guarded that steep side, because no one thought it could be climbed. The two men surprised the garrison at the top, and then the ground itself shook. The whole Philistine army trembled and began to flee, and Saul's army joined in the chase.

The principle. Jonathan used the **terrain**. Defenders guard the easy paths and leave the "impossible" ones open. A small force that can move where no one expects it, using cover and steep ground, can surprise a stronger enemy at its weak point. But notice what came first: Jonathan trusted God and asked for His guidance. His courage was not foolish showing off. It was faith that acted.

On the board and the field. Good players look at the whole "ground" of the game. In soccer, an attacker runs into the empty space the defense forgot. In chess, a knight leaps over the pawns into a square the opponent thought was safe. In hide-and-seek, the best route is the one the seeker is not watching. Learn to ask: "Where is no one looking?" And learn the difference between courage and recklessness: courage counts the cost and trusts God; recklessness does not think at all.

PICTURE STUDY



Michmash Gorge (1 Samuel 14:4–5), American Colony Photo Department, Jerusalem (Matson Photograph Collection), 20th century · Color lantern slide (photograph) · Library of Congress, Prints and Photographs Division, G. Eric and Edith Matson Collection

Image: [Wikimedia Commons](#), public domain

The photographers of the American Colony in Jerusalem made thousands of pictures of the Holy Land, and they labeled this one with the very verses of our lesson. It shows the steep gorge near the village of Mukhmas, which keeps the old name Michmash. Imagine climbing these rocks with your hands and feet.

Look closely

- Find the two steep sides of the gorge. Which one looks harder to climb?
- Look at the layers of rock. Where could a climber find a handhold?
- Find the bottom of the gorge. How far down is it?
- Look for any easy path. Would a guard watch this side?

Talk about it

1. Why would the Philistines not expect anyone to come up this way?
2. What did Jonathan do before he climbed? Why does that matter?
3. Where in a game you play is there a “cliff” that no one guards?

Safety first. Do not climb real cliffs, walls or trees for this lesson. The outdoor game uses flat, safe ground, with a parent watching, away from streets.

PROJECT

A Terrain Map and the Hidden-Route Game

You will build a small model of the gorge at Michmash, trace Jonathan's route, and then play a game that rewards finding the route no one is watching.

You will need

- A Bible (1 Samuel 13:23–14:23)
- Two shoeboxes or stacks of books, a towel or blanket, and small toys or counters
- Paper and colored pencils
- Optional: a yard or park and a parent for the outdoor game

Steps

1. Read 1 Samuel 14:1–23 aloud with a parent.
2. Build the gorge: place two stacks of books a short distance apart and drape a towel over them so it dips into a valley in the middle. Put the Philistine garrison counters on top of one side and Saul's 600 on the other.
3. Use two counters for Jonathan and his armorbearer. Show their route down into the gorge and up the steep side.
4. Draw a terrain map from above with a key: cliffs, the gorge, the garrison, Saul's camp, and Jonathan's route as a dotted line.
5. Play the Hidden-Route Game indoors or out with a parent: one player guards a "flag" and watches two easy paths; the other tries to reach the flag by a third, harder path without being seen. Switch roles. Play four rounds.
6. Record the rounds: which route worked, and why?
7. Write two sentences comparing courage and recklessness, using Jonathan as your example.

Tips

- Make the steep side of your model really steep, so you can see why no one guarded it.
- In the outdoor game, the harder path must still be safe: no real climbing, no streets, a parent watching.

- Write the verse numbers on your map where each part happened.

Check your work

- ☐ My model and map show the gorge, both camps and Jonathan's route.
- ☐ I can explain how the ground helped a small force.
- ☐ I can tell the difference between courage and recklessness.

SCOREBOOK

1. Draw your terrain map from above, with a key and Jonathan's dotted route.
2. Make a table of your four Hidden-Route rounds.
3. Copy 1 Samuel 14:6 and underline the words "by many or by few."

From history. In February 1918, during the First World War, a British officer named Vivian Gilbert later wrote that his brigade major read 1 Samuel 14 by candlelight before an attack near the same village of Mukhmas. Following the Bible's description of the two crags, a small party found the path Jonathan had used and surprised the defenders at dawn. The story appears in Gilbert's book *The Romance of the Last Crusade* (1923).

COMMON MISTAKES

- Thinking Jonathan was showing off. He trusted the Lord and asked for a sign before acting.
- Forgetting the ground. The steep side was the key to the surprise.
- Copying Jonathan by doing something dangerous. The lesson is faith and wise courage, not climbing real cliffs.

Make it a game • Hidden Route Hide-and-Seek. Build a pass from books and pillows. Your parent defends from the high ground while you find a hidden route to approach unseen, as Jonathan and his armorbearer did. Time your climb. Then explain how terrain helps a small force, and retell 1 Samuel 14 in your own words.

Scripture. "And Jonathan said to the young man that bare his armour, Come, and let us go over unto the garrison of these uncircumcised: it may be that the LORD will work for us: for there is no restraint to the LORD to save by many or by few." (1 Samuel 14:6, KJV)

Jonathan's courage rested on faith: God can save by many or by few.

4.4 DAVID AND THE SOUND IN THE MULBERRY TREES

OBJECTIVES

- Retell David's two battles in the valley of Rephaim from 2 Samuel 5:17–25.
- Explain the flank attack and why timing matters.
- Explain why David asked the LORD again instead of repeating his first plan.

Warm-up. Play “Red Light, Green Light” with a family member, but with a twist: instead of the caller saying “green light,” the runners may move only when they hear a soft sound, like a spoon tapped on a cup. Talk about it: what was it like to wait and listen for the signal?

WATCH

The Sound In The Mulberry Trees — 2 Samuel 5:23-25

David Guzik · 3:53

<https://www.youtube.com/watch?v=lqZbDKuFzVY>

WHEN TO WATCH

After reading 2 Samuel 5:17–25 together. Listen for why David did not simply repeat his first plan.

BACKUP VIDEO

Opposition to the King | 2 Samuel 5:17-25

The Word at Work · 9:34

<https://www.youtube.com/watch?v=rhrsVpQV-YU>

For older students: a pastor explains the whole passage, both battles.

KEY TERMS

flank

The side of an army or team, usually the weakest part, because it faces forward, not sideways.

flank attack

Going around the enemy to attack from the side or rear instead of from the front.

“fetch a compass”

An old English phrase from the King James Bible meaning “go around in a circle.”

timing

Choosing the exact right moment to act.

CORE IDEAS

The story. When David became king over all Israel, the Philistines came up to fight him and spread out in the valley of Rephaim, near Jerusalem. David did not rush out. He “enquired of the LORD,” and God told him to go up. David won, and he named the place Baal-perazim, saying that the LORD had broken through his enemies “as the breach of waters” (2 Samuel 5:17–20). But the Philistines came back and spread out in the same valley again.

The plan. This time it would have been easy to say, “Same enemy, same place, same plan.” But David asked the LORD again, and the answer was different: “Thou shalt not go up; but fetch a compass behind them, and come upon them over against the mulberry trees” (5:23). David was to circle around the Philistines and wait behind them, near a grove of trees. Then God gave the signal: “When thou hearest the sound of a going in the tops of the mulberry trees, that then thou shalt bestir thyself: for then shall the LORD go out before thee” (5:24). David obeyed, waited for the sound, attacked from behind, and drove the Philistines back from Geba all the way to Gazer.

The principle. David’s second battle shows two great ideas of strategy. The first is the **flank attack**: an army is strongest at the front and weakest at the sides and back, so going around is often better than charging straight in. The second is **timing**: David did not move until the signal came. A good plan at the wrong moment can fail; the right moment can make a plan unstoppable. And beneath both is the greatest lesson: David did not trust his old success. He asked the LORD each time, and he waited for Him.

On the board and the field. Opponents learn. A trick that worked once may not work twice. Good players and coaches keep asking, “What is different this time?” In soccer, attackers go around the side of a defense. In basketball, a player waits for the screen before cutting. In chess, you wait for the right moment to attack. And in life, Christians learn to pray before deciding, not only after.

PICTURE STUDY



Plain of Rephaim from the Jaffa Gate, American Colony Photo Department, Jerusalem (Matson Photograph Collection), Between 1898 and 1914 · Glass negative (photograph) · Library of Congress, Prints and Photographs Division, G. Eric and Edith Matson Collection

Image: [Wikimedia Commons](#), public domain

This photograph was taken more than a hundred years ago from the walls of Jerusalem, looking toward the plain of Rephaim, the same broad valley where the Philistines spread out against David. The road in the picture leads toward Bethlehem, David’s hometown.

Look closely

- Find the tall tower and the old city wall on the left.
- Follow the road down into the open valley. Why would an army spread out there?
- Look for places where an army could circle around without being seen.
- Find the carriages and people. How does that help you guess the size of the valley?

Talk about it

1. Why would a wide, open valley be a good place for a large army to camp, but also a dangerous one?
2. Where would David’s men have waited “over against the mulberry trees”?

3. Why did David ask the LORD a second time instead of repeating his first plan?

PROJECT

Front or Flank? A Table-Top Test

You will draw David's two battles, then test the flank attack in a simple game with counters, and practice waiting for a signal.

You will need

- A Bible (2 Samuel 5:17–25)
- Paper and colored pencils
- Building blocks or dominoes for two small “armies” (about 10 each)
- A spoon and a cup for the signal

Steps

1. Read 2 Samuel 5:17–25 aloud with a parent.
2. Draw two small maps side by side: Battle 1 (David attacks straight up the valley) and Battle 2 (David circles behind the Philistines and waits by the trees). Use arrows and a key.
3. Make a table-top game: line up 10 blocks for each army facing each other. A block can “push” over an enemy block only if it touches it from the side or back, not from the front.
4. Play three rounds where both sides attack only from the front. Then play three rounds where one side may send three blocks around the side. Record what happens.
5. Add the signal: the flank group may not move until the other player taps the cup with the spoon at a secret moment. Play two more rounds.
6. Count your results. Did the flank attack win more often? Did waiting for the signal help or hurt?
7. Write two sentences about David asking the LORD again, and one about how you can “ask again” instead of repeating an old plan in a game.

Tips

- Keep your rules simple and write them down before you play.
- The defending player may turn some blocks sideways if they see the flank group coming. Does that help?

- Use the same colors for Israel and the Philistines on all your Unit 4 maps.

Check your work

- ☐ My two maps show the difference between the first and second battles.
- ☐ I played and recorded at least six rounds of Front or Flank.
- ☐ I can explain the flank attack and why timing matters.

SCOREBOOK

1. Draw your two battle maps side by side with arrows and a key.
2. Make a results table for Front or Flank: rounds, who won, which method.
3. Make a summary chart of all four Bible battles: Name, Chapter, Strategic idea, What God's people did first.

COMMON MISTAKES

- Thinking David used the same plan twice. The second battle was different because David asked the LORD again.
- Mixing up “fetch a compass” with a modern compass for finding north. It means to go around.
- Forgetting the signal. David waited for the sound before he moved.

Make it a game • Front or Flank Duel. Use buttons to set up David's valley. Place your parent's army facing your main group of buttons. Then, at the sound in the trees, slide a second group around the side. Count the beats of timing. Retell 2 Samuel 5 and explain what a flank attack does.

Scripture. “And let it be, when thou hearest the sound of a going in the tops of the mulberry trees, that then thou shalt bestir thyself: for then shall the LORD go out before thee, to smite the host of the Philistines.” (2 Samuel 5:24, KJV)

David waited for God's signal before he moved. Timing in obedience is part of faithful strategy.

UNIT 4

BATTLES IN THE BIBLE

The Bible tells the true stories of God's people, and some of those stories are about battles. In this unit you will study four of them the way a coach studies a game: the ground, the plan, the timing and the courage. You will see Gideon's 300 surround a huge camp at night with trumpets, pitchers and torches; Joshua set an ambush at Ai after first learning a hard lesson; Jonathan and his armorbearer climb a cliff that everyone thought could not be climbed; and David wait for a sound in the tops of the trees before he moved.

Each story teaches a principle of strategy that you will meet again in history and in sport: surprise, the ambush and the feigned retreat, using the ground, and the flank attack with perfect timing. But each story also teaches something more important. In every one of these plans, God's people first sought the Lord and obeyed Him, and the victory was His. As Proverbs 21:31 says, "The horse is prepared against the day of battle: but safety is of the LORD."

PREREQUISITES

- Knows what a strategy and a tactic are (Unit 1)
- Can find a book, chapter and verse in the Bible
- Can draw a simple map with a key

MASTERY CHECKLIST

- ☐ I can retell each of the four battles from Scripture accurately, with the chapter where it is found.
- ☐ I can name the strategic idea in each: surprise and deception (Gideon), the ambush and feigned retreat (Ai), using the ground (Michmash), and the flank attack with timing (the mulberry trees).
- ☐ I can draw a map of each plan with arrows and a key.
- ☐ I can explain how each story shows God's people seeking Him and obeying Him.
- ☐ I can connect each idea to a game or sport.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **Bible Atlas: A Manual of Biblical Geography and History, by Jesse Lyman Hurlbut (Project Gutenberg)**: Free. A classic Sunday-school atlas first published in 1884, with maps and short chapters on the land of Israel, including the conquest under Joshua and the wars of Saul and David. Fits all four lessons. Read with a parent; the maps are the best part. Ages 10+.

Not required. Every project in this unit works without them. School Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

4.1	Gideon's 300: Trumpets, Pitchers and Torches	2 sessions of 45 minutes
4.2	Joshua at Ai: The Ambush and the Feigned Retreat	2 sessions of 45 minutes
4.3	Jonathan at Michmash: Using the Ground	2 sessions of 45 minutes
4.4	David and the Sound in the Mulberry Trees	2 sessions of 45 minutes

UNIT 4 REVIEW

Answer each question in complete sentences. You may use your Bible to look up the chapters. The review is worth 50 points.

1. **5 pts**
How did God make Gideon's army smaller, and why? (Judges 7)
2. **5 pts**
Name three things that made Gideon's night attack work.
3. **5 pts**
Why did Israel lose the first battle at Ai, and what did Joshua do?
4. **5 pts**
Explain the ambush and feigned retreat at Ai.

5. (5 pts)

How did Jonathan use the ground at Michmash?

6. (4 pts)

What did Jonathan say about God in 1 Samuel 14:6?

7. (5 pts)

What is a flank attack, and how did David use one?

8. (5 pts)

What would have happened if... David had simply repeated his first plan in the second battle?

9. (5 pts)

Choose one of the four battles and connect its strategic idea to a game or sport.

10. (6 pts)

What did God's people do first in all four of these stories, and why does it matter?

ANSWER KEY

1. First everyone who was afraid went home (22,000 left), then God tested the 10,000 at the water and kept only the 300 who lapped from their hands. He did it so Israel could not boast that their own strength had saved them (Judges 7:2).
2. Any three: surprise at night and at the change of the watch; three companies all around the camp; the sound of 300 trumpets and the sudden lights made it seem like a huge army; Gideon scouted first; God gave the victory.
3. Because Achan had disobeyed God and secretly taken forbidden treasure. Joshua sought the LORD humbly, the sin was found and dealt with, and God gave him a plan.
4. A hidden force waited west of the city. The main army came from the north, pretended to be beaten and ran away. The men of Ai chased them and left their city empty. At Joshua's signal the hidden force took the city, and the men of Ai were caught between the two parts of Israel's army.
5. He and his armorbearer climbed the steep side of the gorge, which no one guarded because it seemed impossible to climb, and surprised the garrison at the top.
6. "There is no restraint to the LORD to save by many or by few."
7. Going around to attack an enemy from the side or rear, where it is weakest. God told David to circle behind the Philistines and come at them near the mulberry trees.
8. He would have disobeyed God's new instruction and attacked from the front against an enemy that may have learned from the first battle. The lesson is to seek the Lord and think again instead of trusting an old success.
9. Example: the feigned retreat at Ai is like offering a piece in checkers to lure an opponent into a double jump, or a fake handoff in football. Other sensible connections accepted.
10. They sought the LORD and obeyed Him: Gideon followed God's commands, Joshua sought God after the defeat, Jonathan trusted God and asked for a sign, David enquired of the LORD twice. It matters because victory belongs to the Lord (Proverbs 21:31), and wise plans begin with seeking Him.

PORTFOLIO PIECE: AN ATLAS OF FOUR BIBLE BATTLES

Make a small atlas with one page for each of the four battles in this unit. Each page needs: a title and the Bible reference; a clear map from above with arrows, a key and the same colors for the same sides throughout; three or four sentences retelling the plan; the strategic idea in one phrase (surprise and deception, the ambush and feigned retreat, using the ground, the flank attack and timing); and one sentence about what God's people did first. Add a cover and a final page comparing the four plans in a chart. Present your atlas to your family, telling one of the stories from your map.

LOOK FOR	WHAT IT MEANS
Faithful to Scripture	Each retelling matches the Bible accurately, with correct references.
Maps	Each map is clear and neat, with arrows, a key and consistent colors.
Strategy	The strategic idea of each battle is named and explained correctly.
Seeking God	Each page notes how God's people sought and obeyed the Lord.
Presentation	The student retold one battle aloud from the map.

UNIT 5

FAMOUS PLANS IN HISTORY

Some plans are so clever, so daring or so well timed that people still study them hundreds or even thousands of years later. In this unit you will study four of them the way a coach studies a famous game: with maps, arrows and blocks on the kitchen table. You will follow Hannibal of Carthage and his elephants over the snowy Alps in 218 BC, and see how he trapped a much larger Roman army at Cannae two years later. Then you will cross the icy Delaware River with George Washington on Christmas night, 1776, and sail with Admiral Nelson at Trafalgar in 1805, where he broke the enemy's line in two.

Each plan teaches one big idea: strategic surprise, the double envelopment, surprise and morale, and shared intent, where every captain knows the plan so well that he can act without new orders. These lessons are about maps, timing, courage and leadership, not about fighting itself. You will also see the cost of war honestly but briefly, and remember that the best strategy of all is the one that brings peace.

PREREQUISITES

- Can draw a map with arrows and a key (Unit 4)
- Knows the ideas of surprise, ambush and the flank attack (Unit 4)
- Can read a timeline with BC and AD dates

MASTERY CHECKLIST

- ☐ I can tell where and when each of the four plans happened and place them on a timeline.
- ☐ I can explain Hannibal's strategic surprise and its cost.
- ☐ I can draw the double envelopment at Cannae with blocks or arrows.
- ☐ I can explain why Washington's crossing raised the morale of his army and his country.
- ☐ I can explain how Nelson's captains knew what to do without new signals.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **Hannibal, by Jacob Abbott (Project Gutenberg):** Free. A biography for young readers first published in 1849 in Abbott’s “Makers of History” series, with long chapters on the crossing of the Alps and Cannae. Old-fashioned but clear. Fits Lessons 5.1 and 5.2. A parent may wish to preview the battle chapters. Ages 11+.

Not required. Every project in this unit works without them. School Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

5.1	Hannibal Crosses the Alps	2 sessions of 45 minutes
5.2	Cannae: The Surprise in the Center	2 sessions of 45 minutes
5.3	Washington Crosses the Delaware	2 sessions of 45 minutes
5.4	Nelson at Trafalgar: Breaking the Line	2 sessions of 45 minutes

UNIT 5 REVIEW

Answer each question in complete sentences unless it asks for a date or a drawing.
The review is worth 50 points.

1. **4 pts**
Put these in order on a timeline: Trafalgar, Cannae, Washington crosses the Delaware, Hannibal crosses the Alps. Give the year of each.
2. **5 pts**
Why did Hannibal choose to cross the Alps instead of sailing to Italy?
3. **5 pts**
Name two costs of Hannibal’s march over the Alps.
4. **6 pts**
Explain the double envelopment at Cannae in three or four sentences, or draw it with arrows.

5. (4 pts)

How did Rome learn from Cannae?

6. (5 pts)

Why was the victory at Trenton so important even though it was a small battle?

7. (5 pts)

What went wrong on the night of the Delaware crossing, and what did Washington do?

8. (5 pts)

Describe Nelson's plan at Trafalgar.

9. (5 pts)

What would happen if... Nelson had never explained his plan to his captains before the battle?

10. (6 pts)

Choose one of the four plans and explain how its idea could be used in a game or sport you know.

ANSWER KEY

1. Hannibal crosses the Alps (218 BC), Cannae (216 BC), Washington crosses the Delaware (1776), Trafalgar (1805).
2. The Romans controlled the sea and expected him to fight in Spain or Africa. Crossing the Alps carried the war into Italy by a route the Romans thought impossible: strategic surprise.
3. He lost many men and animals to cold, cliffs and attacks; his army was far from home and hard to supply or reinforce. Other accurate costs accepted.
4. Hannibal's curved center bent back as the deep Roman block pushed forward. His best infantry on both sides turned inward, and his cavalry came around behind. The Romans were surrounded and too crowded to turn and fight.
5. It avoided big battles with Hannibal for a time (the Fabian strategy), and Scipio studied Hannibal's methods and defeated him at Zama in 202 BC.
6. It raised the morale of the army and the country when the cause seemed lost; soldiers agreed to stay, and people believed independence was possible.
7. A storm of snow and sleet and the ice slowed the crossing so the march started hours late, and two other groups could not cross. Washington kept going with his part of the plan and still surprised Trenton.
8. Instead of fighting in a long line side by side, his fleet sailed in two columns straight at the enemy line and cut through it in two places, so part of the enemy fleet was overwhelmed before the rest could help.
9. Once the smoke hid the signals, the captains would not have known what to do and would have had to wait for orders that could not reach them. The attack would likely have been confused and much weaker.
10. Example: commander's intent in soccer. If every player understands the team's plan, they can make good decisions without the coach shouting each move. Other sensible connections accepted.

PORTFOLIO PIECE: A MUSEUM OF FAMOUS PLANS

Turn a table, a wall or a large poster into a small museum of the four plans in this unit. For each plan, make one “exhibit”: a neat map or table model with arrows, a label card with the name, place, date and commanders, a three-sentence explanation of the plan, and one sentence naming its big idea (strategic surprise, double envelopment, surprise and morale, commander’s intent). Add your Unit 5 timeline across the top. Then give a family member a guided tour, explaining each exhibit in your own words.

LOOK FOR	WHAT IT MEANS
Accuracy	Names, dates and places are correct, and each plan is described truthfully.
Maps and models	Each exhibit has a clear map or model with arrows and a key.
Big ideas	Each plan’s strategic idea is named and explained correctly.
Timeline	The timeline shows all four events in order with dates.
Tour	The student explained each exhibit aloud clearly to a family member.

5.1 HANNIBAL CROSSES THE ALPS

OBJECTIVES

- Trace Hannibal's route from Spain to Italy on a map.
- Explain strategic surprise: going where the opponent thinks no one can go.
- Weigh the gains and the costs of a bold plan.

Warm-up. Look at a map of Europe in an atlas or online with a parent. Find Spain, Italy and the Alps between France and Italy. Suppose an army in Spain wants to reach Rome. Draw two possible routes: one by sea and one over land. Which would the Romans expect? Which would be harder?

WATCH

How Hannibal Crossed the Alps // Hannibal's Journey Through the Alps

Our Ancient World · 12:10

<https://www.youtube.com/watch?v=eJmJmp-S99c>

WHEN TO WATCH

After the plan paragraph. Follow the route on your own map as you watch.

Note: Uses old paintings and engravings of the march, including a few crowded scenes of soldiers and elephants struggling on the mountain paths; nothing graphic.

BACKUP VIDEO

The Secret to Controlling Hannibal's War Elephants

Secrets of the Dead PBS · 2:58

<https://www.youtube.com/watch?v=jX8KlQsvbVQ>

A short clip from a PBS program in which an elephant keeper shows how a herd follows its leader, which helps explain how Hannibal moved elephants at all.

KEY TERMS

strategic surprise

Doing something on a large scale that the opponent does not expect, such as attacking from an unexpected direction.

Carthage

A great trading city in North Africa, in what is now Tunisia, and Rome's rival in the Punic Wars.

supply

The food, clothing and equipment an army needs, and the way it is brought to them.

route

The path taken from one place to another.

CORE IDEAS

The story. More than two hundred years before Christ, two great powers struggled for control of the western Mediterranean: Rome in Italy and Carthage in North Africa. In 218 BC a young Carthaginian general named Hannibal was in Spain with a large army, including war elephants. The Romans had the stronger navy, so they expected to fight Hannibal in Spain or in Africa. Instead, Hannibal marched his army more than a thousand miles over land: across the Pyrenees mountains, across the wide Rhône River in France (floating his elephants over on rafts covered with earth), and then, as winter was beginning, over the high, snowy Alps into Italy.

The plan. The Greek historian Polybius, who later walked part of the route himself, wrote that the crossing of the Alps took about fifteen days. The army climbed narrow paths beside cliffs, was attacked by mountain tribes, and struggled through early snow. Near the top, a landslide blocked the way and the soldiers had to cut a new path out of the rock. When Hannibal came down into the plains of northern Italy, he had lost a great many men and animals, but he had done what no one thought possible: he had carried the war into Italy itself.

The principle. This is **strategic surprise**: choosing a route or a time the opponent believes is impossible, so that they are not ready. It is the same idea as Jonathan's climb at Michmash, but on a giant scale. Strategic surprise has a price. Hannibal's route was so hard that it cost him much of his army, and his soldiers were far from home with no easy way to get **supplies** or new men. A wise strategist always asks two questions: "What will this gain?" and "What will it cost?"

On the board and the field. Scripture reminds us that “The horse is prepared against the day of battle: but safety is of the LORD” (Proverbs 21:31). Hannibal prepared brilliantly and won great victories, yet Carthage still lost the war in the end. In games, a surprising plan can win, but only if you can afford what it costs. A risky attack in chess that gives up pieces must lead somewhere, or you will simply be behind. Be bold, but count the cost first (Luke 14:28–31).

PICTURE STUDY



Hannibal's Crossing of the Alps, Heinrich Leutemann, 19th century · Color print (illustration) · German illustration of the kind printed in history books for young readers

Image: [Wikimedia Commons](#), public domain

Heinrich Leutemann was a German artist famous for drawing animals, and he made many pictures for children's history books. Here he imagined the hardest part of Hannibal's march: getting elephants, horses and thousands of men along narrow mountain paths.

Look closely

- Find the elephants. How many can you count? How are they being guided?
- Find the commander in the red cloak. Where is he pointing?
- Look at the rocks and the path. Which parts look most dangerous?
- Look at the faces and bodies of the soldiers. Are they tired, afraid or determined?

Talk about it

1. Why would the Romans not expect an army with elephants to come this way?
2. What do you think was the hardest part of the march: the cold, the cliffs or the lack of food? Why?
3. Was Hannibal's plan worth its cost? Give a reason.

Safety first. Keep the indoor obstacle course low to the ground: crawl and step, do not jump or climb on furniture. Clear away anything breakable.

PROJECT

Map the March and Count the Cost

You will draw Hannibal's route on a map, measure it, and make a simple "cost and gain" chart. Then you will build a "mountain pass" on the floor and test how long it takes to move a group along a hard route compared with an easy one.

You will need

- An atlas or a printed outline map of Spain, France and Italy
- Colored pencils, a ruler and a piece of string
- Pillows, chairs or books to build an obstacle course; a few stuffed animals or toys as "elephants"
- A stopwatch or phone timer

Steps

1. On the map, mark New Carthage (Cartagena) in Spain, the Pyrenees, the Rhône River, the Alps, and Rome.
2. Draw Hannibal's route in red. Lay the string along it, then measure the string against the map's scale to estimate the distance in miles or kilometers.
3. Draw the sea route the Romans expected in blue. Which is shorter? Which was a surprise?
4. Make a two-column chart in your scorebook: "What Hannibal gained" and "What it cost." Write at least three things in each column.
5. Build two indoor routes: an easy route across open floor and a hard "Alps" route over pillows, under chairs and around books. Keep it low and safe.
6. Time yourself carrying three stuffed "elephants" along each route, one at a time. Record the times.
7. Compare: how much longer did the hard route take? What does that tell you about Hannibal's choice?
8. Write a short paragraph answering: "Would I have chosen Hannibal's route? Why or why not?"

Tips

- Use the map's scale bar carefully: line up the string, then hold it against the bar.
- Hannibal started in spring and reached the Alps in autumn. Mark the seasons along your route.
- There is no single right answer to the last question. Give reasons.

Check your work

- ☐ My map shows both routes with a key and an estimated distance.
- ☐ My chart lists at least three gains and three costs.
- ☐ I timed both indoor routes and explained what the times show.

SCOREBOOK

1. Paste or draw your route map with a key and the distance.
2. Copy your cost-and-gain chart.
3. Start a Unit 5 timeline: 218 BC Hannibal crosses the Alps. Leave room for 216 BC, 1776 and 1805.

From history. Historians still argue about exactly which Alpine pass Hannibal used. Polybius and the Roman historian Livy both describe the march, and Livy tells a famous story that the soldiers cracked a blocking rock by heating it with fire and pouring vinegar on it. No one knows for certain whether that detail is true.

COMMON MISTAKES

- Thinking Hannibal went over the Alps because it was easy. It was the hardest route, chosen because it was unexpected.
- Forgetting the cost. Hannibal lost many men and animals on the march.
- Mixing up BC dates. 218 BC is two years before 216 BC, because BC years count down toward the birth of Christ.

Make it a game • Alps March Map. Draw Hannibal's route from Spain to Italy on paper from memory in two minutes, marking the Alps, Carthage and Rome. Your parent asks how supply mattered. Then count the cost: start with twenty beans and give up some for each hard stretch of the march. Explain strategic surprise as going where no one expects.

Scripture. “The horse is prepared against the day of battle: but safety is of the LORD.” (Proverbs 21:31, KJV)

Hannibal prepared brilliantly and still lost the war. Preparation is our duty; the outcome belongs to God.

5.2 CANNAE: THE SURPRISE IN THE CENTER

OBJECTIVES

- Explain the double envelopment at Cannae with blocks or a drawing.
- Explain why a deep, crowded formation became a weakness.
- Tell how Rome later learned from its defeat.

Warm-up. Line up about 20 dominoes or blocks in a thick rectangle. Line up 12 more in a thin, curved line in front of them, bowed out toward the rectangle like a smile turned upside down. Push the big rectangle forward slowly into the curve and let the curve bend back. What happens to the ends of the curve as the middle gives way?

WATCH

Battle of Cannae - The genius of Hannibal Barca

The History Shack • 3:42

<https://www.youtube.com/watch?v=nBjdvbucMsl>

WHEN TO WATCH

After the plan paragraph. Watch how the two armies are drawn as simple shapes and how they move.

KEY TERMS

formation

The arrangement of soldiers or players on the field.

envelopment

Wrapping around the enemy's side. A double envelopment wraps around both sides at once.

reserve

Troops kept back from the first fighting, ready to be used at the key moment.

Fabian strategy

Avoiding a big battle and wearing the enemy down slowly, named after the Roman leader Fabius.

CORE IDEAS

The story. After Hannibal came down from the Alps, he defeated Roman armies in northern Italy. In the summer of 216 BC the Romans gathered the largest army they had ever sent into one battle, about twice the size of Hannibal's, and marched to meet him near a small town called Cannae, beside the Aufidus River in southern

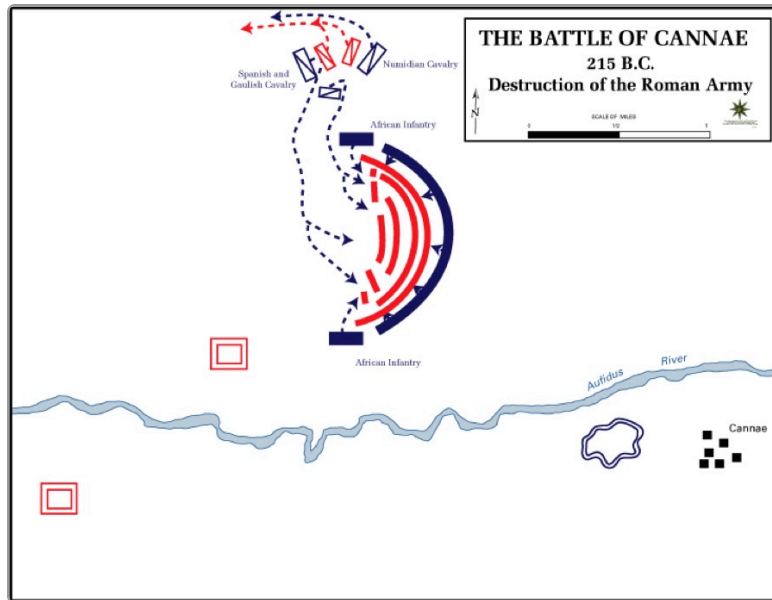
Italy. The Roman commanders planned to win by sheer weight: they packed their foot soldiers into an extra-deep block, many ranks deep, meaning to smash straight through Hannibal's center.

The plan. Hannibal guessed what they would do. He placed his weakest foot soldiers in the center in a curved line that bulged out toward the Romans. On each side of the curve, held back, he put his best, most experienced infantry. On the far wings he placed his cavalry. When the battle began, his horsemen drove the Roman cavalry off the field. Then the great Roman block pushed into the curved center, and Hannibal's center slowly gave way, step by step, bending backward as it was meant to. The Romans, sure they were winning, crowded deeper and deeper into the bend. At that moment Hannibal's veteran troops on both sides turned inward, and his cavalry came back around behind the Romans. The huge army was surrounded on every side.

The principle. This is the **double envelopment**: drawing an opponent into the center and then closing on both sides at once. It worked because Hannibal used the Romans' own plan against them. Their deep block could push forward, but packed so tightly, most of the soldiers could not turn to face the sides or the back. Cannae was one of Rome's worst defeats. Yet Rome did not give up. It learned to avoid big battles with Hannibal, a patient plan called the **Fabian strategy**, and years later a Roman general named Scipio, who had been at Cannae as a young officer, studied Hannibal's methods and defeated him at Zama in Africa in 202 BC.

On the board and the field. In sport, the same idea appears when a defense lets an attacker dribble into the middle and then closes from both sides, or when a basketball team traps a ball-handler in the corner. In checkers and chess, players "invite" the opponent into a square that looks inviting and then surround it. The lesson for every player: when something seems too easy, ask why. And the lesson of Rome is just as important: a bad defeat is a chance to learn.

PICTURE STUDY



The Battle of Cannae, 216 BC: Map, Department of History, United States Military Academy, West Point, 20th century · Map (drawing) · From the West Point atlas of ancient warfare; public domain as a work of the U.S. government

Image: [Wikimedia Commons](#), public domain

Officers in training at the U.S. Military Academy at West Point study Cannae, and the academy's history department drew this map. Red is the Roman army and blue is Hannibal's. Look closely at the title: it says 215 B.C., but most historians date the battle to August of 216 BC. Even good maps can contain mistakes, so always check.

Look closely

- Find the large red block. How many sides is it attacked from?
- Follow the dotted blue arrows. Who circled around behind the Romans?
- Find the curved blue line in front of the red block. How has it changed shape from the start of the battle?
- Find the river and the town of Cannae. Why might the river matter?

Talk about it

1. Why could most of the Roman soldiers not turn to fight the troops on their sides and back?
2. What did Hannibal know about the Roman plan before the battle?
3. How did Rome learn from this defeat?

PROJECT

Cannae on the Kitchen Table

You will rebuild the battle with blocks, dominoes or paper rectangles, play it out three ways, and record what happens each time.

You will need

- About 40 blocks, dominoes or paper rectangles in two colors (or mark them with tape)
- A large table or floor space
- Paper and colored pencils
- Your scorebook

Steps

1. Set up the Roman army: 24 pieces in a deep block, 4 wide and 6 deep, with 2 cavalry pieces on each side.
2. Set up Hannibal's army: 6 pieces in a curved center bulging forward, 3 pieces held back on each side of the curve, and 2 cavalry on each wing.
3. Version 1 (history): move step by step. Hannibal's cavalry pushes away the Roman cavalry, the Roman block pushes forward, the curve bends back, the side groups turn in, the cavalry closes behind. Draw the final position.
4. Version 2: try it again, but this time the Romans spread out in a wide, thin line instead of a deep block. Can Hannibal still surround them? Draw what happens.
5. Version 3: you command the Romans. Using the same pieces, plan a way to avoid the trap. Explain your plan in your scorebook.
6. Write a sentence for each version describing what happened.
7. Explain the double envelopment to a family member using your table model.

Tips

- Move slowly and narrate each step aloud; this is a model of a plan, not a game of knocking things over.
- Use arrows on your drawings to show movement.

- Remember that real battles are confusing. Models help us see the plan, but they are simpler than the real thing.

Check your work

- ☐ I set up and moved both armies in the order of the real battle.
- ☐ I tried at least two other versions and recorded what happened.
- ☐ I can explain the double envelopment with my model.

SCOREBOOK

1. Draw three small maps of Cannae: the start, the middle (center bending back) and the end (surrounded).
2. Add 216 BC Cannae and 202 BC Zama to your Unit 5 timeline.
3. Write a sentence about something you learned from a game you lost, the way Rome learned from Cannae.

From history. For more than two thousand years, generals and military schools have studied Cannae. In the early 1900s a German general, Alfred von Schlieffen, wrote a famous study of it. Yet Hannibal, who won the most perfect battle of his age, still lost the war, because winning battles is not the same as winning a war.

COMMON MISTAKES

- Thinking Hannibal won because he had more soldiers. The Romans had about twice as many.
- Thinking Hannibal's center ran away. It bent back on purpose, slowly and in order.
- Forgetting the end of the story: Rome learned, and Hannibal was finally defeated at Zama.

Make it a game • Cannae Squeeze. Line up ten blocks or buttons in a thick center for the Romans, and let your parent surround them with a curved line for the Carthaginians. Act out the double envelopment, closing from both sides. Say why a deep, crowded formation became a weakness. Then swap armies and try to avoid being squeezed.

5.3 WASHINGTON CROSSES THE DELAWARE

OBJECTIVES

- Retell the story of Washington's crossing and the victory at Trenton, December 25–26, 1776.
- Explain how surprise and timing made the plan work.
- Explain morale and why this small victory mattered so much.

Warm-up. Think of a time your team, your family or a group you were in felt discouraged, maybe after losing several games in a row. What helped you feel hopeful again? Write two sentences. Today's lesson is about an army that was ready to give up, and the night that changed its mind.

WATCH

George Washington Crosses the Delaware | American Revolution Made Easy | Battle of Trenton

Bedtime History · 4:32

<https://www.youtube.com/watch?v=ioBjYhmANaU>

WHEN TO WATCH

After the story paragraph. Listen for the weather and the time of night.

Note: Narrated over famous paintings of the Revolution, including some battle paintings with smoke and soldiers; nothing graphic.

BACKUP VIDEO

Why No One Died in the Delaware River Crossing

Smithsonian Channel · 2:39

<https://www.youtube.com/watch?v=WT3kEF4apr0>

Aerial views of the real river crossing place today, with a short explanation of how the boats were handled.

KEY TERMS

morale

The confidence and spirit of a team or army; whether people believe they can succeed.

Durham boat

A long, flat-bottomed river boat built to carry iron ore and grain, used to carry Washington's soldiers across the Delaware.

garrison

Soldiers stationed in a town to hold it (from Lesson 4.3).

contingency

Something that might go wrong, which a good plan prepares for.

CORE IDEAS

The story. In December 1776, the American cause looked nearly lost. Washington's Continental Army had been pushed out of New York and across New Jersey into Pennsylvania. Many soldiers had no shoes, and many enlistments would end on December 31, when the men could go home. Across the Delaware River, in the town of Trenton, New Jersey, a garrison of Hessian soldiers (German troops hired by Britain) was spending the winter. Just before Christmas, Washington had Thomas Paine's new essay read to his troops: "These are the times that try men's souls." Then he made a bold plan.

The plan. On Christmas night, about 2,400 soldiers gathered at McConkey's Ferry. Fishermen and sailors from Marblehead, Massachusetts, led by Colonel John Glover, rowed and poled them across the ice-choked river in Durham boats, with horses and cannon on ferries. A storm of snow and sleet blew all night, and the crossing took hours longer than planned. The password was "Victory or Death." The army then marched about nine miles in the storm and struck Trenton at about eight in the morning on December 26. The surprised garrison surrendered after a short fight, and nearly 900 Hessians were taken prisoner, while very few Americans were hurt. Two other groups that were supposed to cross elsewhere could not get through the ice, but Washington's part of the plan went forward anyway.

The principle. Washington used **surprise** and **timing**: no one expected an attack on the night after Christmas, in a storm, by an army that seemed beaten. But the greatest result was not the town or the prisoners. It was **morale**. News of Trenton, and of a second victory at Princeton a week later, spread through the colonies.

Soldiers agreed to stay on, and people began to believe that independence was possible. A small victory at the right moment can change how a whole team feels.

On the board and the field. Coaches know that morale matters. A team that wins one hard game often plays better for weeks. Notice also that Washington's plan had problems: the storm, the delays, the groups that could not cross. A good leader expects **contingencies** and keeps going when parts of a plan fail. Washington, who often attended worship and spoke of Providence, did not give up when things looked darkest.

PICTURE STUDY



The Passage of the Delaware, Thomas Sully, 1819 · Oil on canvas · Museum of Fine Arts, Boston

Image: [Wikimedia Commons](#), public domain

Many people know Emanuel Leutze's painting of Washington standing in a boat. Thirty years earlier, Thomas Sully painted a different moment: Washington on the New Jersey shore, on horseback, watching his army come across. Sully painted it for the state of North Carolina, but it was too large for the place it was meant to hang, and it now hangs in Boston.

Look closely

- Find Washington on the white horse. How does he look: worried, calm or excited?
- Find the officer pointing. Where might he be pointing?
- Find the soldiers pushing the cannon up the bank. What makes their work hard?
- Look at the sky and the light. What time of day and what weather does the painter show?

Talk about it

1. Why might Sully have painted Washington so calm when the night was so difficult?
2. How would a leader's calm face affect his tired soldiers' morale?

3. What would you have felt if you were one of the soldiers crossing that night?

PROJECT

Plan, Problems and Morale

You will make a map and timeline of the crossing and march, list what went wrong and how Washington kept going, and then run a small “morale experiment” in your own family games.

You will need

- Paper, colored pencils and a ruler
- A printed outline map of the Delaware River near Trenton, or your own drawing
- Your scorebook
- A simple family game you can play several times (any game from this course)

Steps

1. Draw a map showing the Delaware River, McConkey’s Ferry on the Pennsylvania side, the road to Trenton, and the town. Mark the 9-mile march with arrows.
2. Make a timeline for the night: evening (army gathers), crossing through the night, about 4 a.m. (march begins, later than planned), about 8 a.m. (attack on Trenton).
3. Make a list called “What went wrong” (storm, ice, delays, two groups could not cross) and a list called “How they kept going.”
4. Morale experiment: play the same game five times with a family member. Before games 3, 4 and 5, give each other a short word of encouragement and remind each other of a good move from earlier games.
5. After each game, each player rates how they felt from 1 (discouraged) to 5 (confident). Record the ratings.
6. Compare the ratings before and after the encouragement. Did morale change? Did play change?
7. Write three sentences about how Washington’s victory changed the morale of his army.

Tips

- Keep the morale experiment honest. Record how you really felt.
- Encouragement should be true: name a real good move, not just “You’re great.”
- Add 1776 Trenton to your Unit 5 timeline.

Check your work

- ☐ My map and timeline show the crossing, the march and the attack.
- ☐ I listed at least three problems and how the army kept going.
- ☐ I recorded morale ratings and wrote what I noticed.

SCOREBOOK

1. Draw your map of the crossing and march with a key.
2. Copy your morale ratings in a small table.
3. Write the password “Victory or Death” and a sentence about what it tells you about the soldiers’ determination.

From history. Emanuel Leutze’s famous painting *Washington Crossing the Delaware* (1851) shows Washington standing in a small boat. Historians point out that the real crossing was at night, in larger Durham boats, and that standing up would have been unwise in an icy river. Paintings tell stories; maps and records tell facts. Both are worth studying.

COMMON MISTAKES

- Thinking the crossing went exactly as planned. It was late, stormy and only part of the army got across.
- Thinking Trenton was a huge battle. It was small; its importance was in morale.
- Forgetting who rowed the boats: Glover’s Marblehead mariners.

Make it a game • Crossing Plan Pitch. Be George Washington planning the crossing of December 1776. Pitch the plan in three sentences to your parent, who plays an officer worried about ice, boats and timing. Answer each worry using morale, Durham boats and contingency. Score a bean for every worry you answer well. Then retell the victory at Trenton.

5.4 NELSON AT TRAFALGAR: BREAKING THE LINE

OBJECTIVES

- Explain Nelson’s plan to break the enemy line at Trafalgar on 21 October 1805.
- Explain shared intent: why a plan everyone understands works better than one that needs constant orders.
- Use flag signals to send a message.

Warm-up. Play a quick game: one person is the “admiral” and the rest are “captains” in different rooms. The admiral may not speak, only hold up a colored card or a simple hand signal. Try to get the captains to do three things (sit down, stand up, wave). How hard is it? Now try again after the admiral explains the plan beforehand. What changed?

WATCH

Battle of Trafalgar (1805) Animation

Corvus · 4:06

<https://www.youtube.com/watch?v=YeyTC9vTtLc>

WHEN TO WATCH

After the plan paragraph. It shows the ships as small colored shapes on a map. Pause and point to the two British columns.

Note: There is no narration, only short captions and music; read the captions aloud with younger students.

KEY TERMS

line of battle

The old way of fighting at sea: two fleets sailing side by side in long lines, firing at each other.

breaking the line

Sailing straight through the enemy’s line to cut it into pieces.

commander’s intent

The goal of a plan, explained so clearly that each leader knows what to do even when orders cannot reach him.

signal flags

Colored flags hoisted on a ship’s mast to send messages to other ships.

CORE IDEAS

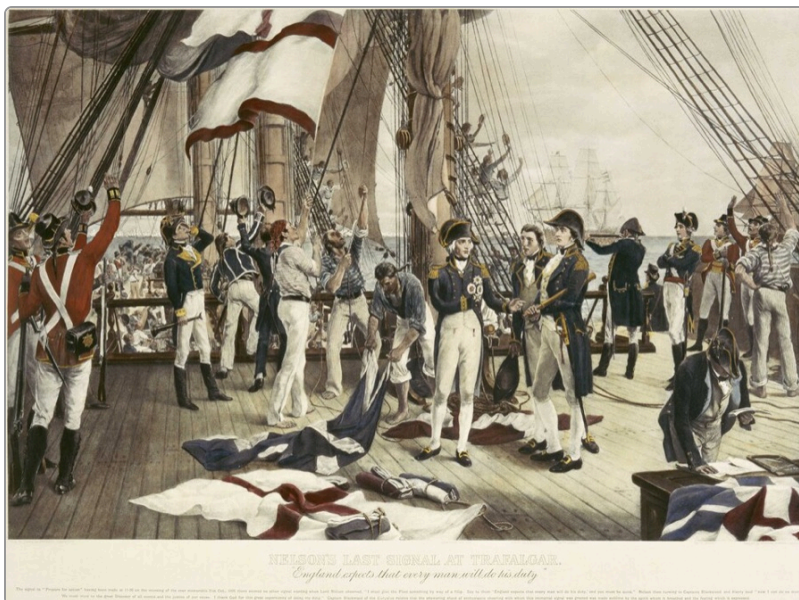
The story. In 1805 the French emperor Napoleon hoped to invade Britain, and for that he needed to control the sea. A combined fleet of French and Spanish warships under Admiral Villeneuve sailed out of the Spanish port of Cádiz. Off Cape Trafalgar, on 21 October 1805, it met a British fleet of 27 great warships under Vice-Admiral Horatio Nelson. Nelson had fewer ships than his enemy, but he had something more important: a plan that every one of his captains understood.

The plan. For a hundred years, sea battles had usually been fought by two long lines of ships sailing side by side, and they often ended without a clear result. Nelson planned something different. His fleet would sail toward the enemy in two columns, one led by Nelson in HMS *Victory* and one by Admiral Collingwood in HMS *Royal Sovereign*, and cut straight through the enemy line in two places. The rear part of the enemy fleet would be overwhelmed before the front part could turn around to help. Weeks before the battle, Nelson explained the plan to his captains over dinner, and he wrote it down. He told them that if signals could not be seen in the smoke, “no Captain can do very wrong if he places his Ship alongside that of an Enemy.”

The principle. This is **commander’s intent**, sometimes called “the Nelson touch.” Because every captain knew the goal, no one had to wait for new orders once the fighting began. Each could act wisely on his own. Just before the battle, Nelson hoisted his most famous signal: “England expects that every man will do his duty.” The plan worked: the combined fleet was broken without the loss of a single British ship, and Britain’s command of the sea was secure for the rest of the wars with Napoleon. Nelson himself was struck by a marksman’s shot during the battle and died that afternoon, aware that the battle had been won.

On the board and the field. Scripture says, “Every purpose is established by counsel: and with good advice make war” (Proverbs 20:18). Nelson took counsel with his captains, and the plan became theirs too. Good teams work the same way. A quarterback cannot stop the play to give new orders after the ball is snapped, so everyone must know the plan. A soccer coach cannot shout every move, so players learn the team’s ideas well enough to decide for themselves. Explain the “why,” not just the “what.”

PICTURE STUDY



Nelson's Last Signal at Trafalgar, Photogravure by Landecker and Brown, after a painting by Thomas Davidson, Published 1912 · Photogravure (printed reproduction of a painting) · National Maritime Museum, Greenwich, London

Image: [Wikimedia Commons](#), public domain

Thomas Davidson painted the moment just before the battle when Nelson's famous signal was hoisted on HMS *Victory*. Each flag stood for a number, and each number for a word in a code book. This print of the painting was published in 1912, more than a hundred years after the battle.

Look closely

- Find Admiral Nelson. How is he different from the men around him?
- Find the string of flags going up the mast. How many can you count?
- Find the flags lying on the deck. Why would a ship need so many?
- Look at the faces of the officers and sailors. Are they calm or excited?

Talk about it

1. Why would a fleet need flag signals in 1805?
2. If the smoke of battle hid the flags, how did Nelson's captains know what to do?
3. What would your team's "signal" be before a big game?

PROJECT

Break the Line and Send the Signal

You will model Trafalgar with paper ships, test what happens when a line is broken, and then make your own set of signal flags and send messages across the yard.

You will need

- About 40 small paper rectangles or blocks in two colors for ships
- Paper, crayons or markers, string, and tape for signal flags
- A table or floor space, and a yard or hallway for signaling
- Your scorebook

Steps

1. Set up the combined fleet: 33 ships in one long line across the table (or a scaled-down version: 11 ships).
2. Set up the British fleet: 27 ships in two columns (or a scaled-down 9 ships: 5 and 4) pointing at the enemy line from the side.
3. Move the two columns forward so they cut through the line in two places. Mark which group of enemy ships is now cut off from the rest.
4. Count: in the cut-off part, how many British ships are there compared with enemy ships? Write it down. Why does that matter?
5. Make a signal code: draw six flags in different colors and patterns, and give each a meaning (Stop, Go, Turn left, Turn right, Come here, Well done).
6. With a family member at the other end of the yard or hallway, send five messages using only the flags. Record how many were understood correctly.
7. Now explain your “plan” first (for example: “When I raise the red flag, run to the tree, touch it and come back”), then send signals again. Did knowing the plan help?
8. Write two sentences about commander’s intent.

Tips

- Keep the ship model simple: what matters is where the line is cut.

- Make flags big and bright so they can be seen at a distance.
- Add 1805 Trafalgar to your Unit 5 timeline and finish it with a title.

Check your work

- ☐ I modeled the two British columns breaking the line and counted ships in the cut-off part.
- ☐ I made a set of signal flags and sent messages with them.
- ☐ I can explain commander's intent and the Nelson touch.

SCOREBOOK

1. Draw two diagrams: the old line of battle, and Nelson's two columns breaking the line.
2. Draw your six signal flags with their meanings.
3. Finish your Unit 5 timeline: 218 BC, 216 BC, 1776, 1805, with one sentence for each.

COMMON MISTAKES

- Thinking Nelson won because he had more ships. He had fewer; his plan made them stronger where it mattered.
- Thinking the famous signal was the plan. The plan had been explained weeks before; the signal was encouragement.
- Forgetting the importance of counsel: Nelson shared his plan with his captains.

Make it a game • Break the Line. Line up pillows or buttons as the enemy's line of battle and use two strings as your fleet. Show how Nelson's plan broke the line at Trafalgar. Then play signal flags: give a secret instruction in three words and let your parent carry it out with no further orders. Explain commander's intent.

Scripture. "Every purpose is established by counsel: and with good advice make war." (Proverbs 20:18, KJV)

Nelson took counsel with his captains and shared his purpose with them, so that each could act wisely when the moment came.

UNIT 5

FAMOUS PLANS IN HISTORY

Some plans are so clever, so daring or so well timed that people still study them hundreds or even thousands of years later. In this unit you will study four of them the way a coach studies a famous game: with maps, arrows and blocks on the kitchen table. You will follow Hannibal of Carthage and his elephants over the snowy Alps in 218 BC, and see how he trapped a much larger Roman army at Cannae two years later. Then you will cross the icy Delaware River with George Washington on Christmas night, 1776, and sail with Admiral Nelson at Trafalgar in 1805, where he broke the enemy's line in two.

Each plan teaches one big idea: strategic surprise, the double envelopment, surprise and morale, and shared intent, where every captain knows the plan so well that he can act without new orders. These lessons are about maps, timing, courage and leadership, not about fighting itself. You will also see the cost of war honestly but briefly, and remember that the best strategy of all is the one that brings peace.

PREREQUISITES

- Can draw a map with arrows and a key (Unit 4)
- Knows the ideas of surprise, ambush and the flank attack (Unit 4)
- Can read a timeline with BC and AD dates

MASTERY CHECKLIST

- ☐ I can tell where and when each of the four plans happened and place them on a timeline.
- ☐ I can explain Hannibal's strategic surprise and its cost.
- ☐ I can draw the double envelopment at Cannae with blocks or arrows.
- ☐ I can explain why Washington's crossing raised the morale of his army and his country.
- ☐ I can explain how Nelson's captains knew what to do without new signals.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **Hannibal, by Jacob Abbott (Project Gutenberg):** Free. A biography for young readers first published in 1849 in Abbott’s “Makers of History” series, with long chapters on the crossing of the Alps and Cannae. Old-fashioned but clear. Fits Lessons 5.1 and 5.2. A parent may wish to preview the battle chapters. Ages 11+.

Not required. Every project in this unit works without them. School Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

5.1 Hannibal Crosses the Alps	2 sessions of 45 minutes
5.2 Cannae: The Surprise in the Center	2 sessions of 45 minutes
5.3 Washington Crosses the Delaware	2 sessions of 45 minutes
5.4 Nelson at Trafalgar: Breaking the Line	2 sessions of 45 minutes

UNIT 5 REVIEW

Answer each question in complete sentences unless it asks for a date or a drawing.
The review is worth 50 points.

- 4 pts**
Put these in order on a timeline: Trafalgar, Cannae, Washington crosses the Delaware, Hannibal crosses the Alps. Give the year of each.
- 5 pts**
Why did Hannibal choose to cross the Alps instead of sailing to Italy?
- 5 pts**
Name two costs of Hannibal’s march over the Alps.
- 6 pts**
Explain the double envelopment at Cannae in three or four sentences, or draw it with arrows.

5. (4 pts)

How did Rome learn from Cannae?

6. (5 pts)

Why was the victory at Trenton so important even though it was a small battle?

7. (5 pts)

What went wrong on the night of the Delaware crossing, and what did Washington do?

8. (5 pts)

Describe Nelson's plan at Trafalgar.

9. (5 pts)

What would happen if... Nelson had never explained his plan to his captains before the battle?

10. (6 pts)

Choose one of the four plans and explain how its idea could be used in a game or sport you know.

ANSWER KEY

1. Hannibal crosses the Alps (218 BC), Cannae (216 BC), Washington crosses the Delaware (1776), Trafalgar (1805).
2. The Romans controlled the sea and expected him to fight in Spain or Africa. Crossing the Alps carried the war into Italy by a route the Romans thought impossible: strategic surprise.
3. He lost many men and animals to cold, cliffs and attacks; his army was far from home and hard to supply or reinforce. Other accurate costs accepted.
4. Hannibal's curved center bent back as the deep Roman block pushed forward. His best infantry on both sides turned inward, and his cavalry came around behind. The Romans were surrounded and too crowded to turn and fight.
5. It avoided big battles with Hannibal for a time (the Fabian strategy), and Scipio studied Hannibal's methods and defeated him at Zama in 202 BC.
6. It raised the morale of the army and the country when the cause seemed lost; soldiers agreed to stay, and people believed independence was possible.
7. A storm of snow and sleet and the ice slowed the crossing so the march started hours late, and two other groups could not cross. Washington kept going with his part of the plan and still surprised Trenton.
8. Instead of fighting in a long line side by side, his fleet sailed in two columns straight at the enemy line and cut through it in two places, so part of the enemy fleet was overwhelmed before the rest could help.
9. Once the smoke hid the signals, the captains would not have known what to do and would have had to wait for orders that could not reach them. The attack would likely have been confused and much weaker.
10. Example: commander's intent in soccer. If every player understands the team's plan, they can make good decisions without the coach shouting each move. Other sensible connections accepted.

PORTFOLIO PIECE: A MUSEUM OF FAMOUS PLANS

Turn a table, a wall or a large poster into a small museum of the four plans in this unit. For each plan, make one “exhibit”: a neat map or table model with arrows, a label card with the name, place, date and commanders, a three-sentence explanation of the plan, and one sentence naming its big idea (strategic surprise, double envelopment, surprise and morale, commander’s intent). Add your Unit 5 timeline across the top. Then give a family member a guided tour, explaining each exhibit in your own words.

LOOK FOR	WHAT IT MEANS
Accuracy	Names, dates and places are correct, and each plan is described truthfully.
Maps and models	Each exhibit has a clear map or model with arrows and a key.
Big ideas	Each plan’s strategic idea is named and explained correctly.
Timeline	The timeline shows all four events in order with dates.
Tour	The student explained each exhibit aloud clearly to a family member.

TEAMWORK TACTICS: SOCCER AND BASKETBALL

In a board game you move every piece yourself. In a team sport, every “piece” is a person who thinks and moves on his own, so the plan only works if everyone understands it. In this unit you will learn four big ideas of team play in soccer and basketball. You will learn why good teams spread out and pass in triangles, from the Scots who amazed England with their passing game in the very first international soccer match in 1872. You will learn the two great ways to defend: guarding a player (man-to-man) and guarding an area (zone).

Then you will learn the oldest teamwork play of all, the give-and-go, which works in basketball and soccer alike, and you will meet John Wooden, the Christian coach who won ten national championships at UCLA and taught that success is giving your very best. Every lesson has a short practice you can do in the yard or a gym with a soft ball and a family member or friends.

PREREQUISITES

- Knows the double threat and the flank attack (Units 1 and 4)
- Understands commander’s intent (Lesson 5.4)
- Can pass and catch a soft ball and kick a ball gently

MASTERY CHECKLIST

- ☐ I can explain why spacing and passing triangles give the player with the ball more choices.
- ☐ I can explain the difference between man-to-man and zone defense and when each is useful.
- ☐ I can run a give-and-go with a partner in basketball or soccer.
- ☐ I can name the cornerstones and the top of John Wooden’s Pyramid of Success and explain his definition of success.
- ☐ I can draw a simple play diagram with circles, X’s and arrows.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **Pyramid of Success (Official Site of Coach Wooden)**: Free. The official page on John Wooden's Pyramid of Success, with each block and its meaning in his own words. Fits Lesson 6.4. Ages 9+ with a parent.
- **Jr. NBA**: Free. The NBA's youth program site, with short skill and drill videos for young players and coaches, including the give-and-go. Fits Lessons 6.2 and 6.3. A parent should browse it with the student. Ages 8+.

Not required. Every project in this unit works without them. School Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

6.1	Spacing and Passing Triangles	2 sessions of 45 minutes
6.2	Defending: Man-to-Man and Zone	2 sessions of 45 minutes
6.3	The Give-and-Go	2 sessions of 45 minutes
6.4	John Wooden's Pyramid of Success	2 sessions of 45 minutes

UNIT 6 REVIEW

Answer each question in complete sentences unless it asks for a drawing. The review is worth 50 points.

1. **5 pts**
Why is spacing important in soccer and basketball?
2. **5 pts**
Draw a passing triangle with a defender and show why the player with the ball has two choices.
3. **4 pts**
What was different about the Scottish team's play in the first international match in 1872?

4. (5 pts)

What is the difference between man-to-man and zone defense?

5. (5 pts)

Give one strength and one weakness of a zone defense.

6. (5 pts)

Describe a give-and-go step by step.

7. (5 pts)

What would happen if... a player passed and then stood still instead of cutting?

8. (4 pts)

What are the two cornerstones and the top block of the Pyramid of Success?

9. (6 pts)

How did John Wooden define success, and how is it different from winning?

10. (6 pts)

Read Colossians 3:23. How does it connect to teamwork and to Coach Wooden's pyramid?

ANSWER KEY

1. When players spread out, one defender cannot guard two of them, there are open passing lanes, and the defense must cover more ground.
2. Drawing shows three teammates in a triangle, a defender near the ball, and two arrows for passes to the two other teammates; the defender can block only one lane.
3. The Scots spread out and passed the ball to each other, while the English mostly dribbled with teammates backing up.
4. In man-to-man each defender guards one opponent wherever he goes; in a zone each defender guards an area and whoever comes into it.
5. Strength: it protects the space near the goal and can stop a strong inside player. Weakness: it can leave gaps between areas and open shots far from the goal. Other accurate answers accepted.
6. A passes to B; the defender watches the ball; A cuts hard past the defender toward the goal; B passes the ball right back to A for an open shot.
7. The defender would stay with him easily and he would not get open. The give-and-go works only if he moves at once, while the defender is watching the ball.
8. Cornerstones: industriousness and enthusiasm. Top: competitive greatness.
9. As peace of mind from knowing you made the effort to do the best you are capable of. A team can succeed by giving its best and still lose, or win without succeeding if it did not give its best.
10. It tells us to do everything heartily, as to the Lord. A good teammate works hard, passes unselfishly and gives his best whether or not he scores, which is what the pyramid teaches.

PORTFOLIO PIECE: MY TEAM PLAYBOOK

Make a small playbook (at least five pages) for a soccer or basketball team of young players. Include: a page on spacing with a field or court diagram; a page showing passing triangles; a page explaining man-to-man and zone defense with a diagram of each and when you would use them; a page with the give-and-go or one-two drawn as a play; and a final page called “Our Team Values” using at least four blocks from the Pyramid of Success. Use circles for your players, X’s for defenders, solid arrows for passes and dotted arrows for runs. Then teach one play from your book to family members or friends and run it together.

LOOK FOR	WHAT IT MEANS
Diagrams	Plays and formations are drawn clearly with a key (circles, X’s, solid and dotted arrows).
Understanding	Explanations of spacing, triangles, defenses and the give-and-go are correct.
Values	The team values page uses at least four Pyramid blocks in the student’s own words.
Teaching	The student taught and ran one play with others.

6.1 SPACING AND PASSING TRIANGLES

OBJECTIVES

- Explain why spreading out (spacing) helps a team keep the ball.
- Form passing triangles and explain why a triangle gives two passing choices.
- Tell the story of the first international soccer match, Scotland against England in 1872.

Warm-up. Watch a group of young children play soccer at a park or in a video with a parent, or remember your own early games. Where is almost every player? (Usually all chasing the ball in one bunch!) Draw a quick picture of the “bunch.” What happens to the empty parts of the field?

WATCH

Why do we make triangles in soccer?

Soccer Coach Academy • 4:27

<https://www.youtube.com/watch?v=oVDhdnGA2qY>

WHEN TO WATCH

After the plan paragraph. Watch the red and blue dots on the field and count the triangles.

BACKUP VIDEO

Soccer Basics - Positioning and Movement

Howard Chang • 7:49

https://www.youtube.com/watch?v=_dYy4QGxnns

For older students: a coach pauses real game film to show how players find open space.

KEY TERMS

spacing

Spreading out across the field or court so teammates have room and the defense must cover more ground.

passing triangle

Three teammates placed in a triangle, so the player with the ball always has two passing choices.

passing lane

An open path between two teammates that a pass can travel along without being stopped.

support

Moving to a place where a teammate with the ball can pass to you.

CORE IDEAS

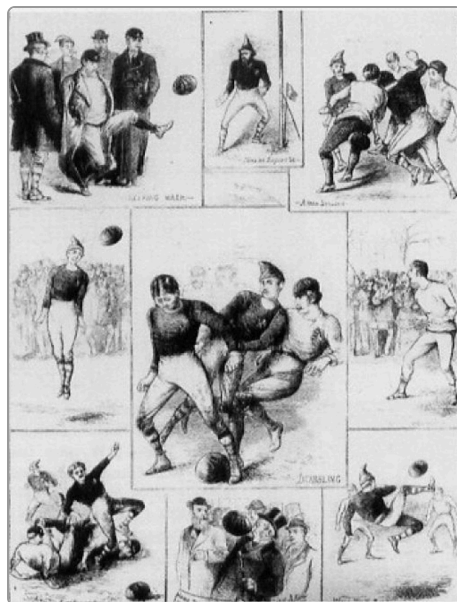
The story. On 30 November 1872, the first international soccer match was played at Hamilton Crescent, a cricket ground in Glasgow, between Scotland and England. About 4,000 people came to watch. In those days English teams mostly played a dribbling game: one player ran with the ball as far as he could while teammates followed behind to “back up.” The Scottish team, whose players all came from the Queen’s Park club, did something different. They spread out and passed the ball to each other. The game ended 0–0, but people noticed the Scots’ passing game, and over the next years it spread until it became the way soccer is played everywhere.

The plan. Passing only works if teammates are spread out. If everyone crowds around the ball, one defender can guard several players at once, and there are no open lanes. So good teams use **spacing**: each player stays far enough from teammates that a defender cannot cover two of them. Then they form **triangles**. When three teammates stand in a triangle, the player with the ball has two passing choices, one to each side, and the defender can only block one.

The principle. Does that sound familiar? A triangle is the double threat from Unit 1 and the fork from chess. A defender who must guard two passing lanes at once is in the same trouble as a king and queen forked by a knight. Spacing also uses the whole field, the way a chess player uses the whole board instead of crowding pieces in one corner. Notice too that the passing game needed every player to understand the same plan: commander’s intent, from Lesson 5.4.

On the board and the field. When you play, keep asking: “Where is the open space?” and “Can my teammate with the ball see me?” If not, move to make a triangle. Scripture says, “Two are better than one; because they have a good reward for their labour” (Ecclesiastes 4:9). Team sports show it plainly: three players who work together beat three who each try to do everything alone.

PICTURE STUDY



The Football Match between England and Scotland, 1872, William Ralston, 1872 · Wood engraving (newspaper illustration) · Published in *The Graphic*, London, December 1872

Image: [Wikimedia Commons](#), public domain

Newspapers in 1872 could not print photographs, so artists drew the action. William Ralston, a Scottish illustrator, made these sketches of the first international soccer match for the London weekly *The Graphic*. Look at the clothes, the caps and the crowd: soccer looked very different then.

Look closely

- Find the large center picture. How many players are near the ball? Are they spread out or bunched together?
- Find a small picture of a player heading the ball.
- Find the spectators. What are they wearing?
- Look at the players' clothing. How is it different from a soccer uniform today?

Talk about it

1. In the 1870s, English players liked to dribble and Scottish players liked to pass. Which style do the pictures seem to show more?
2. Why would passing beat dribbling once players learned to spread out?
3. What would a passing triangle look like in one of these pictures?

Safety first. Warm up with a few minutes of jogging and stretching. Use a soft ball, wear proper shoes, and play in a clear, open space away from windows, streets and people walking by. Stop if anything hurts, and tell a parent. Do not head the ball.

PROJECT

Bunch Ball or Triangles? A Passing Test

You will test whether spreading out in triangles really helps by counting passes in two kinds of keep-away games.

You will need

- A soft soccer ball or playground ball
- Four cones, shoes or plastic cups to mark a square about 10 big steps on each side
- At least three players and one defender (family members or friends); a parent to watch
- Your scorebook and a pencil

Steps

1. Warm up and mark out the square with the cones.
2. Round 1, “Bunch”: three passers must stay within two steps of each other. The defender tries to touch the ball. Count how many passes in a row the passers make before the defender touches it. Play three times.
3. Round 2, “Triangles”: the three passers spread out to form a triangle and keep moving to stay in a triangle. Count passes in a row again. Play three times.
4. Record all six counts in a table: Round, Try, Passes in a row.
5. Find the average for each round (add the three tries and divide by 3).
6. Switch so everyone gets a turn as defender. Ask the defender: “Which round was harder to defend? Why?”
7. Draw a diagram of a good triangle from your game, with the defender, and arrows for the two passing choices.
8. Write two sentences about what you learned.

Tips

- Pass along the ground with the inside of your foot; it is more accurate.
- After you pass, move to a new spot so the triangle stays a triangle.

- If you have only two players and a defender, a wall can be your third player.

Check your work

- ☐ I recorded passes in a row for both rounds and found the averages.
- ☐ I can draw a passing triangle and show the two passing lanes.
- ☐ I can explain why spacing makes defending harder.

SCOREBOOK

1. Draw a field from above with your three passers as circles and the defender as an X. Draw the triangle and two arrows for passing lanes.
2. Copy your table and draw a bar graph comparing the average passes in Bunch and Triangles.
3. Write the connection: “A passing triangle is like a double threat because...”

COMMON MISTAKES

- Running to the ball when a teammate has it. Move to open space instead.
- Standing in a straight line with two teammates. A defender can block a line; a triangle gives two lanes.
- Passing and then standing still. Move after every pass to keep the shape.

Make it a game • Triangle Pass Count. Pass a ball around three people or three chairs. Count how many passes in a row before a defender, played by your parent, steals it. Try in a bunch, then spread out in a triangle. Compare counts. Explain what spacing and a passing lane mean. Beat your own record of passes.

Scripture. “Two are better than one; because they have a good reward for their labour.” (Ecclesiastes 4:9, KJV)

Teamwork multiplies what each player can do alone. The passing game is a picture of this truth.

6.2 DEFENDING: MAN-TO-MAN AND ZONE

OBJECTIVES

- Explain the difference between man-to-man and zone defense.
- Name a strength and a weakness of each.
- Choose a defense to fit an opponent.

Warm-up. Put three toys in a room. Ask two family members to “guard” them in two different ways: first, each guard follows one person who is trying to grab a toy; second, each guard stays in one half of the room. Which way stopped more toys from being taken? Which way was more tiring?

WATCH

Zone Defense vs Man To Man Defences In Basketball

Basketball Coach Allen • 9:15

<https://www.youtube.com/watch?v=BTe0gMa-SDA>

WHEN TO WATCH

After the plan paragraph. Watch where the defenders (the red dots) go when the ball moves, and pause to predict where they will slide next.

KEY TERMS

man-to-man defense

Each defender guards one opponent wherever that opponent goes.

zone defense

Each defender guards an area of the court or field, and whoever comes into it.

switch

In man-to-man, two defenders trading the players they guard when the players cross.

help defense

A defender leaving his own player for a moment to stop an opponent who has gotten free.

CORE IDEAS

The story. When James Naismith, a Presbyterian minister and teacher at the YMCA training school in Springfield, Massachusetts, invented basketball in December 1891, players simply chased the ball. Very soon coaches began to think about how to

defend. Most teams guarded player against player. In the early 1900s some coaches began to try guarding *areas* instead; one college coach of that time, Cam Henderson, is often credited with making the “zone” defense popular. Ever since, coaches have argued about which way is better, and the answer is: it depends on the opponent.

The plan. In **man-to-man**, each defender is given one opponent to guard everywhere. It is simple to understand and makes every player responsible, but if one opponent is much quicker than his defender, he can get free, and someone must leave his own player to help. In a **zone**, each defender guards an area, such as two defenders near the top and three near the basket (a “2-3 zone”). A zone protects the space near the goal and helps when the other team has one great player who likes to drive in close, but it can leave open spots between areas and far from the goal.

The principle. Defense is about **covering the most dangerous space and the most dangerous players with the people you have**. Man-to-man puts the focus on players; zone puts it on space. A wise coach studies the opponent first (you will learn about scouting in Lesson 7.4) and chooses. Against a team of great long shooters, a zone may leave them open. Against a team with one strong player near the basket, a zone may stop him. Remember the lessons of Units 2 and 3: control the center, and do not leave your back row empty.

On the board and the field. Soccer teams make the same choice: some defenders mark a player, and others guard a zone in front of the goal. In chess, a pawn wall guards a zone, while a piece that follows an enemy piece is “marking” it. Whatever defense your team uses, the most important things are effort, talking to each other (“I’ve got number 5!”), and helping a teammate who is beaten.

PICTURE STUDY



Carnegie Playground, Fifth Avenue, New York City, Bain News Service, 1911 · Glass negative (photograph) · Library of Congress, Prints and Photographs Division, Bain Collection

Image: [Wikimedia Commons](#), public domain

Twenty years after Naismith invented basketball, the game was already being played on city playgrounds. This news photograph shows boys on a playground on Fifth Avenue in New York in August 1911. Look carefully at where all the players are.

Look closely

- Find the ball. How many boys are reaching for it?
- Look for any boy standing in open space away from the crowd. Is there one?
- Find the hoop and backboard. How are they different from today's?
- Find the man in the white shirt. What might he be doing?

Talk about it

1. If you were coaching these boys, what would you teach them first about spacing?
2. In this crowd, would man-to-man or zone defense be easier to play? Why?
3. How has basketball changed since 1911, and what has stayed the same?

Safety first. Warm up first. Use a soft ball indoors or a regular ball outdoors on a safe, clear court or driveway, with proper shoes and a parent watching. No pushing, holding or reaching in to grab; defend with your feet. Stop if anything hurts, and tell a parent.

PROJECT

Which Defense Works Better? A Driveway Test

You will play short rounds of a simple shooting game against two kinds of defense and count how many baskets are scored. If you have no hoop, use a bucket or laundry basket as the goal.

You will need

- A basketball hoop, or a bucket or laundry basket as a goal
- A soft ball or basketball
- At least four people (two attackers and two defenders) or more; a parent to watch
- Chalk or cones to mark two zones, and your scorebook

Steps

1. Mark the playing area into two zones with chalk or cones: one close to the goal and one farther out.
2. Round 1, man-to-man: each defender follows one attacker. The attackers have one minute to try to score as many times as they can (a parent keeps time). Count baskets.
3. Round 2, zone: one defender stays in the near zone and one in the far zone; each guards whoever comes in. One minute again. Count baskets.
4. Play each kind of defense three times, switching who attacks and who defends.
5. Record every round: Defense, Baskets scored, Where most shots came from (near or far).
6. Compare: which defense let in fewer baskets? Where did the attackers shoot from against each one?
7. Write a scouting-style sentence: "Against attackers who shoot well from far away, I would use... because..."

Tips

- Defenders: stay between your player (or your zone) and the goal.

- Attackers: against a zone, look for the gaps between areas; against man-to-man, try to move quickly to get free.
- Keep score honestly, and play gently. This is a test, not a rough game.

Check your work

- ☐ I played and recorded at least three rounds of each defense.
- ☐ I can name a strength and a weakness of man-to-man and of zone.
- ☐ I wrote a sentence choosing a defense for a kind of opponent.

SCOREBOOK

1. Draw two half-courts. On the first, show man-to-man with lines joining each defender (X) to an attacker (O). On the second, shade the zones each defender guards.
2. Copy your results table and circle the defense that worked better for your family.
3. Make a two-column list: “Man-to-man: strengths and weaknesses” and “Zone: strengths and weaknesses.”

COMMON MISTAKES

- Thinking one defense is always best. The best defense depends on the opponent.
- In man-to-man, watching only the ball and losing your player.
- In a zone, standing still. Zone defenders still move as the ball moves.

Make it a game • Defense Switch Game. Take turns being the attacker and defender with a soft ball in a hallway. Play one round in man-to-man style and one in zone style, with chairs as defenders. Call out the style before each. Name one strength and one weakness of each defense. Tally which defense stopped more shots out of ten.

6.3 THE GIVE-AND-GO

OBJECTIVES

- Run a give-and-go in basketball and a one-two (wall pass) in soccer.
- Explain why moving right after you pass beats a defender.
- Tell how early teams like the Original Celtics made passing and cutting famous.

Warm-up. Stand facing a family member a few steps apart. Pass a soft ball to them, then quickly take three steps to one side, and catch it when they pass it back. Do it five times. Now try it with someone guarding you. Does the quick move after the pass help you get free?

WATCH

Give & Go Drill

Jr. NBA Jr. WNBA • 1:54

<https://www.youtube.com/watch?v=WH79CAnB9Vw>

WHEN TO WATCH

After the plan paragraph. Watch the young players: pass, cut, catch, shoot.

BACKUP VIDEO

The Give-and-Go | Basketball

SIKANA English • 1:38

<https://www.youtube.com/watch?v=LOL5ZNuP7vk>

A short demonstration with a defender, with arrows showing the cut.

KEY TERMS

give-and-go

A play in which a player passes to a teammate, cuts past the defender, and gets the ball right back.

cut

A quick, sharp run toward the goal or into open space.

one-two (wall pass)

The soccer give-and-go: pass to a teammate, run past the defender, and receive the return pass, as if bouncing the ball off a wall.

pivot

In basketball, a player near the basket who receives passes and hands or passes the ball to teammates cutting past him.

CORE IDEAS

The story. In the 1920s the most famous basketball team in America was a traveling professional team from New York called the Original Celtics. They played well over a hundred games a year in small gyms and dance halls all over the country. They were famous not for one great scorer but for teamwork: quick passes, players cutting toward the basket the moment after they passed, and big men near the basket who handed the ball off to cutters running by. In February 1925 the team was even photographed at the White House. Coaches who watched them copied their passing game for years afterward.

The plan. The **give-and-go** is the simplest teamwork play. Player A has the ball, guarded by a defender. A passes to teammate B. The defender relaxes for a moment, watching the ball. Right then, A **cuts** hard past the defender toward the basket. B passes the ball straight back, and A is open for an easy shot. In soccer it is called the **one-two** or wall pass: pass to a teammate, sprint past the defender, and receive the return pass behind him, as if the teammate were a wall the ball bounced off.

The principle. The give-and-go works because of **timing** and **attention**. Defenders naturally turn their heads to follow the ball. A player who passes and then stands still is easy to guard; a player who passes and then moves at once is gone before the defender looks back. It is David's lesson from the mulberry trees (Lesson 4.4): move at exactly the right moment. And it needs a teammate who trusts you and gives the ball back.

On the board and the field. A good team player is just as happy to pass as to score. The give-and-go only works if B gives the ball back unselfishly, and if A works hard to cut even when he might not get the ball. Practice it until it becomes a habit: *pass and move, pass and move*.

PICTURE STUDY



The Original Celtics at the White House, National Photo Company, 16 February 1925 · Glass negative (photograph) · Library of Congress, Prints and Photographs Division, National Photo Company Collection

Image: [Wikimedia Commons](#), public domain

The Original Celtics were so famous in the 1920s that they visited the White House. This news photograph shows them in their winter coats, not their uniforms, on 16 February 1925. The caption called them “World Champions Basket Ball.”

Look closely

- Count the players. How many are standing and how many are crouching?
- Look at their coats and hats. What season is it?
- Look at their faces. Do they look like a team that is proud, relaxed or serious?
- Find the building behind them.

Talk about it

1. This team was famous for passing and cutting, not for one star. Why might that make a team hard to beat?
2. Why do you think a team that played more than a hundred games a year would be so good at working together?
3. What does it take to be a good teammate in a give-and-go?

Safety first. Warm up first, use a soft ball, and play in a clear space with proper shoes and a parent watching. Cut around defenders, never into them. Stop if anything hurts, and tell a parent.

PROJECT

Pass and Stand, or Pass and Go?

You will compare two ways of attacking a defender: passing and standing still, or passing and cutting (the give-and-go). Then you will try the soccer one-two.

You will need

- A soft basketball or playground ball, and a hoop, bucket or basket as a goal
- A soccer ball and two cones for a small goal
- Three people: two attackers and one defender; a parent to watch
- Your scorebook

Steps

1. Basketball, Round 1, “Pass and Stand”: Attacker A starts guarded by the defender. A passes to B and waits. B must pass back to A within three seconds. Count how many times out of ten A catches the ball and gets a clear shot.
2. Round 2, “Pass and Go”: same start, but A passes and cuts hard toward the goal. B passes back to A on the cut. Count clear shots out of ten.
3. Switch roles so everyone defends once. Record all results.
4. Soccer one-two: set up two cones as a goal. Attacker A dribbles toward a defender, passes to B at the side, sprints past the defender, and receives the return pass. Try ten times and count how many end with a shot at the goal.
5. Make a table of your three tests: Test, Successes out of 10.
6. Write two sentences about which way worked better and why.

Tips

- The cut should be sudden: take one step away, then burst toward the goal.
- Passers: lead your teammate by passing to where he is going, not where he is.
- Defenders: try hard, but no grabbing or pushing.

Check your work

- ☐ I compared Pass and Stand with Pass and Go and recorded both.
- ☐ I tried the soccer one-two at least ten times.
- ☐ I can explain why moving right after a pass beats a defender.

SCOREBOOK

1. Draw a give-and-go play diagram: two O's, one X, an arrow for the pass, a dotted arrow for the cut, and an arrow for the return pass.
2. Draw the soccer one-two in the same way.
3. Copy your results table and circle the best result.

From history. James Naismith wrote basketball's first thirteen rules in December 1891 for a class of young men at the YMCA training school in Springfield, Massachusetts. One rule said a player could not run with the ball. That meant the ball had to be passed, and passing has been the heart of basketball ever since.

COMMON MISTAKES

- Passing and then admiring the pass. Move right away.
- Cutting slowly. A slow cut lets the defender recover.
- Keeping the ball instead of giving it back. The give-and-go needs an unselfish teammate.

Make it a game • Pass and Go Reflex. Practice a give-and-go with a parent: pass, cut hard, take the return. Then do it again, passing and standing still. Time how fast you can reach the target spot each way. Name the pivot and the cut. Explain to your parent why moving right after the pass beats a defender, and do the soccer wall pass.

6.4 JOHN WOODEN'S PYRAMID OF SUCCESS

OBJECTIVES

- Tell the story of John Wooden, his faith, and his teams at UCLA.
- Name the cornerstones and the top of the Pyramid of Success and explain several blocks.
- Explain Wooden's definition of success and apply it to your own work.

Warm-up. Write your own definition of success in one sentence. Then ask a parent to write theirs. Compare them. Is success the same as winning? Keep your sentence; you will look at it again at the end of the lesson.

WATCH

True success - John Wooden

TED-Ed • 17:39

https://www.youtube.com/watch?v=3s_hlvhwmvg

WHEN TO WATCH

In session 1, after the story paragraph. Coach Wooden speaks for himself; listen for his definition of success and the advice his father gave him.

BACKUP VIDEO

John Wooden discusses his "Pyramid of Success"

CoachTube • 3:09

<https://www.youtube.com/watch?v=SUTnppPjxjg>

A short interview in which Coach Wooden explains how he built the pyramid.

KEY TERMS

Pyramid of Success

John Wooden's diagram of fifteen qualities, built like a pyramid, that lead to success.

cornerstone

One of the first stones laid at the corner of a building, on which everything else rests. Wooden's cornerstones are industriousness and enthusiasm.

industriousness

Hard, careful, steady work.

competitive greatness

Wooden's top block: being at your best when your best is needed, and enjoying a hard challenge.

CORE IDEAS

The story. John Wooden grew up on a farm in Indiana and became an All-American basketball player at Purdue University in the early 1930s. When he finished grade school, his father gave him a simple creed of seven points, beginning “Be true to yourself.” Wooden became an English teacher and coach. Unhappy with the way people measured success only by winning, he began in the 1930s to draw a pyramid of the qualities he believed led to true success, and he worked on it for years. From 1948 to 1975 he coached at UCLA, where his teams won ten national championships in twelve seasons, including seven in a row, and once won 88 games in a row. He was a devout Christian who often said that basketball mattered far less than faith in Christ.

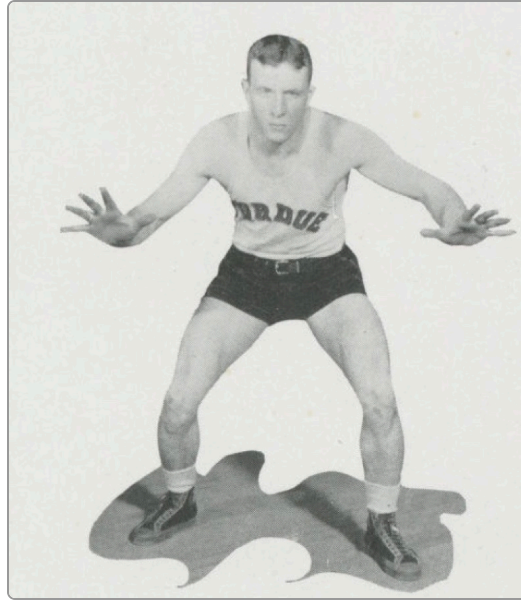
The plan. The Pyramid of Success has fifteen blocks. The two **cornerstones** are **industriousness** (hard work) and **enthusiasm** (enjoying what you do). Between them are friendship, loyalty and cooperation. The next rows include self-control, alertness, initiative and intentness; then condition, skill and team spirit; then poise and confidence. At the top is **competitive greatness**: being at your best when your best is needed. Wooden held the blocks together with “mortar” such as patience, honesty and faith.

The principle. Wooden defined success not as winning but, in his own words, as peace of mind that comes from knowing you made the effort to do the best you are capable of. A team that plays its very best and loses has succeeded; a team that wins while playing carelessly has not. He taught his players to focus on what they could control: their effort, their preparation and their attitude. He started every season by teaching players how to put on their socks and lace their shoes properly, to prevent blisters. Great plans rest on small things done well.

On the board and the field. The Apostle Paul wrote, “And whatsoever ye do, do it heartily, as to the Lord, and not unto men” (Colossians 3:23). Wooden's pyramid is a picture of that verse. Whether you are playing checkers, practicing passes or doing

math, the question is not only “Did I win?” but “Did I give my best, honestly and with a good attitude?” That is a goal every player can reach, every day.

PICTURE STUDY



John Wooden at Purdue, Purdue University (yearbook photograph), About 1931–1932 · Photograph · Purdue University, West Lafayette, Indiana

Image: [Wikimedia Commons](#), public domain

Before he was a famous coach, John Wooden was a famous player. This photograph from his Purdue days shows him crouched in a defensive stance, ready to move in any direction. He was known for his speed and his fearless dives for loose balls.

Look closely

- Look at how low Wooden is crouched. Why would a defender crouch?
- Look at his arms and hands. What are they ready to do?
- Look at his eyes. Where is he looking?
- Notice his shoes and uniform. How are they different from today's?

Talk about it

1. Which blocks of the Pyramid of Success can you see in this picture? (Think about condition, alertness and intentness.)
2. Why might a great player make a great teacher of the game?
3. Wooden later taught players to lace their shoes carefully. Why do small things matter?

Safety first. For the practice in the project, warm up first, use a soft ball in a clear space, and wear proper shoes. Stop if anything hurts, and tell a parent.

PROJECT

Build Your Own Pyramid and a Week of Effort

You will build a model of the Pyramid of Success, choose three blocks to work on, and keep a one-week “effort log” for a skill or a game you are practicing.

You will need

- Fifteen index cards or small boxes, and tape
- Markers or colored pencils
- A skill to practice for a week (passing, shooting, chess puzzles or any game from this course)
- Your scorebook

Steps

1. Write the fifteen blocks on fifteen cards (use the official Pyramid of Success page or the lesson for the names). On the back of each card, write what it means in your own words.
2. Build the pyramid on a wall or the floor: five cards on the bottom row with industriousness and enthusiasm at the corners, then four, three, two, and competitive greatness at the top.
3. Choose three blocks you most want to grow in. Circle them.
4. Choose one skill to practice for 10–15 minutes a day for a week.
5. Each day, record in your scorebook: what you practiced, for how long, and a 1–5 rating of your effort (not your result).
6. At the end of the week, test your skill and compare with day 1. Did steady effort help?
7. Read your definition of success from the warm-up. Write a new one that includes what you learned from Coach Wooden.

Tips

- Rate your effort honestly. A 5 means you truly gave your best for the whole time.
- Small, daily practice usually beats one long practice.
- Put your pyramid where you will see it every day.

Check your work

- ☐ I built the pyramid with all fifteen blocks in the right rows.
- ☐ I kept an effort log for at least five days.
- ☐ I can explain Wooden's definition of success and how it differs from winning.

SCOREBOOK

1. Draw the Pyramid of Success with all fifteen blocks.
2. Copy your effort log as a small table.
3. Write your old and new definitions of success side by side.

COMMON MISTAKES

- Thinking success means winning. Wooden defined it as giving your best effort.
- Skipping the cornerstones. Without hard work and enthusiasm, the higher blocks have nothing to stand on.
- Rating results instead of effort in the log.

Make it a game • Pyramid Builder. Build a pyramid out of ten paper blocks. Write one trait of Wooden's Pyramid of Success on each block, from memory, with cornerstones at the bottom and competitive greatness near the top. Time yourself. Your parent points to any block and asks you to explain it. Tell one fact about Wooden's faith and UCLA.

Scripture. "And whatsoever ye do, do it heartily, as to the Lord, and not unto men;" (Colossians 3:23, KJV)

Coach Wooden's idea of success is a picture of this verse: give your whole heart to the work, whatever the scoreboard says.

TEAMWORK TACTICS: SOCCER AND BASKETBALL

In a board game you move every piece yourself. In a team sport, every “piece” is a person who thinks and moves on his own, so the plan only works if everyone understands it. In this unit you will learn four big ideas of team play in soccer and basketball. You will learn why good teams spread out and pass in triangles, from the Scots who amazed England with their passing game in the very first international soccer match in 1872. You will learn the two great ways to defend: guarding a player (man-to-man) and guarding an area (zone).

Then you will learn the oldest teamwork play of all, the give-and-go, which works in basketball and soccer alike, and you will meet John Wooden, the Christian coach who won ten national championships at UCLA and taught that success is giving your very best. Every lesson has a short practice you can do in the yard or a gym with a soft ball and a family member or friends.

PREREQUISITES

- Knows the double threat and the flank attack (Units 1 and 4)
- Understands commander’s intent (Lesson 5.4)
- Can pass and catch a soft ball and kick a ball gently

MASTERY CHECKLIST

- ☐ I can explain why spacing and passing triangles give the player with the ball more choices.
- ☐ I can explain the difference between man-to-man and zone defense and when each is useful.
- ☐ I can run a give-and-go with a partner in basketball or soccer.
- ☐ I can name the cornerstones and the top of John Wooden’s Pyramid of Success and explain his definition of success.
- ☐ I can draw a simple play diagram with circles, X’s and arrows.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **Pyramid of Success (Official Site of Coach Wooden):** Free. The official page on John Wooden's Pyramid of Success, with each block and its meaning in his own words. Fits Lesson 6.4. Ages 9+ with a parent.
- **Jr. NBA:** Free. The NBA's youth program site, with short skill and drill videos for young players and coaches, including the give-and-go. Fits Lessons 6.2 and 6.3. A parent should browse it with the student. Ages 8+.

Not required. Every project in this unit works without them. School Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

6.1	Spacing and Passing Triangles	2 sessions of 45 minutes
6.2	Defending: Man-to-Man and Zone	2 sessions of 45 minutes
6.3	The Give-and-Go	2 sessions of 45 minutes
6.4	John Wooden's Pyramid of Success	2 sessions of 45 minutes

UNIT 6 REVIEW

Answer each question in complete sentences unless it asks for a drawing. The review is worth 50 points.

1. **5 pts**
Why is spacing important in soccer and basketball?
2. **5 pts**
Draw a passing triangle with a defender and show why the player with the ball has two choices.
3. **4 pts**
What was different about the Scottish team's play in the first international match in 1872?

4. (5 pts)

What is the difference between man-to-man and zone defense?

5. (5 pts)

Give one strength and one weakness of a zone defense.

6. (5 pts)

Describe a give-and-go step by step.

7. (5 pts)

What would happen if... a player passed and then stood still instead of cutting?

8. (4 pts)

What are the two cornerstones and the top block of the Pyramid of Success?

9. (6 pts)

How did John Wooden define success, and how is it different from winning?

10. (6 pts)

Read Colossians 3:23. How does it connect to teamwork and to Coach Wooden's pyramid?

ANSWER KEY

1. When players spread out, one defender cannot guard two of them, there are open passing lanes, and the defense must cover more ground.
2. Drawing shows three teammates in a triangle, a defender near the ball, and two arrows for passes to the two other teammates; the defender can block only one lane.
3. The Scots spread out and passed the ball to each other, while the English mostly dribbled with teammates backing up.
4. In man-to-man each defender guards one opponent wherever he goes; in a zone each defender guards an area and whoever comes into it.
5. Strength: it protects the space near the goal and can stop a strong inside player. Weakness: it can leave gaps between areas and open shots far from the goal. Other accurate answers accepted.
6. A passes to B; the defender watches the ball; A cuts hard past the defender toward the goal; B passes the ball right back to A for an open shot.
7. The defender would stay with him easily and he would not get open. The give-and-go works only if he moves at once, while the defender is watching the ball.
8. Cornerstones: industriousness and enthusiasm. Top: competitive greatness.
9. As peace of mind from knowing you made the effort to do the best you are capable of. A team can succeed by giving its best and still lose, or win without succeeding if it did not give its best.
10. It tells us to do everything heartily, as to the Lord. A good teammate works hard, passes unselfishly and gives his best whether or not he scores, which is what the pyramid teaches.

PORTFOLIO PIECE: MY TEAM PLAYBOOK

Make a small playbook (at least five pages) for a soccer or basketball team of young players. Include: a page on spacing with a field or court diagram; a page showing passing triangles; a page explaining man-to-man and zone defense with a diagram of each and when you would use them; a page with the give-and-go or one-two drawn as a play; and a final page called “Our Team Values” using at least four blocks from the Pyramid of Success. Use circles for your players, X’s for defenders, solid arrows for passes and dotted arrows for runs. Then teach one play from your book to family members or friends and run it together.

LOOK FOR	WHAT IT MEANS
Diagrams	Plays and formations are drawn clearly with a key (circles, X’s, solid and dotted arrows).
Understanding	Explanations of spacing, triangles, defenses and the give-and-go are correct.
Values	The team values page uses at least four Pyramid blocks in the student’s own words.
Teaching	The student taught and ran one play with others.

PLAYS AND PLANS: FOOTBALL AND BASEBALL

Football and baseball are the two most “planned” American sports. Every football play is designed ahead of time, drawn on paper, and carried out by eleven players who each know their part. Every pitch in baseball is chosen by the pitcher and catcher with secret signs, and managers plan bunts and the hit-and-run to move runners around the bases. In this unit you will learn to read and draw a football play, from Walter Camp’s line of scrimmage to the famous forward passes of Notre Dame in 1913.

You will learn baseball’s small-ball tactics, the bunt and the hit-and-run, from the 1890s Baltimore Orioles and Willie Keeler, who said to “hit ’em where they ain’t.” You will learn how teams send signals, from the catcher’s fingers to the football huddle, which students at Gallaudet, a college for the deaf, made famous. And you will learn how to scout an opponent fairly, from the great Christian pitcher Christy Mathewson, and why stealing signs with hidden tricks is cheating.

PREREQUISITES

- Can draw a play diagram with circles, X’s and arrows (Unit 6)
- Knows the ideas of surprise, timing and commander’s intent (Units 4 and 5)
- Can throw and catch a soft ball

MASTERY CHECKLIST

- ☐ I can read and draw a football play with a line of scrimmage, formations and routes.
- ☐ I can explain the sacrifice bunt and the hit-and-run, and when a manager would use each.
- ☐ I can explain why teams use signals and the huddle, and make my own set of signs.
- ☐ I can make an honest scouting report of an opponent and explain the difference between fair scouting and cheating.
- ☐ I can tell the stories of Walter Camp, Dorais and Rockne, Willie Keeler, Paul Hubbard and Christy Mathewson.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **Pitching in a Pinch, by Christy Mathewson (Project Gutenberg):** Free. The great pitcher's own 1912 book about the thinking side of baseball: studying batters, signals and the strategy of each pitch. Fits Lessons 7.2–7.4. Read a chapter aloud with a parent. Ages 11+.
- **American Football, by Walter Camp (Project Gutenberg):** Free. Walter Camp's own guide to the game from 1891, with diagrams of early plays and formations. Interesting to compare with today's game in Lesson 7.1. Ages 11+ with a parent.

Not required. Every project in this unit works without them. School

Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

7.1 Drawing Up a Play: From Walter Camp to the Forward Pass

2 sessions of 45 minutes

7.2 The Bunt and the Hit-and-Run

2 sessions of 45 minutes

7.3 Signals, Signs and the Huddle

2 sessions of 45 minutes

7.4 Scouting an Opponent Fairly

2 sessions of 45 minutes

UNIT 7 REVIEW

Answer each question in complete sentences unless it asks for a drawing. The review is worth 50 points.

1. **5 pts**

What two rules did Walter Camp bring to football in 1880 and 1882, and why did they make football a game of plans?

2. **5 pts**

Draw a simple pass play with a line of scrimmage, a quarterback, two receivers with routes, and a defender. Include a key.

3. **4 pts**

Why did Notre Dame's passing surprise Army in 1913?

4. **5 pts**

Explain the sacrifice bunt. What does the team give up, and what does it gain?

5. **5 pts**

What would happen if... the batter misses the ball during a hit-and-run?

6. **4 pts**

What did Willie Keeler mean by “hit ’em where they ain’t”?

7. **5 pts**

Why are Gallaudet’s players credited with making the huddle famous?

8. **5 pts**

What is an indicator in a set of baseball signs, and why is it used?

9. **6 pts**

What is the difference between fair scouting and cheating? Use the 1900 buzzer story.

10. **6 pts**

Read 2 Timothy 2:5. How does it apply to tactics in sport?

ANSWER KEY

1. The line of scrimmage (1880) and downs (1882). Because one team had the ball and started each play from a set place, with a set number of plays to gain distance, teams could stop and choose a planned play before each snap.
2. Drawing shows a line, O's for offense, an X for the defender, solid arrows for routes, a dotted arrow for the pass, and a key.
3. Most teams ran the ball into the line and seldom passed; Dorais and Rockne had practiced passing all summer and threw to open spaces Army did not expect.
4. The batter taps the ball softly and is usually thrown out at first; the team gives up an out to move a runner to the next base.
5. The runner, who started running with the pitch, may be thrown out trying to steal the next base.
6. Place the ball where the fielders are not standing, in the open spaces.
7. They called plays in sign language, and when they played other deaf schools the opponents could read their signs, so in 1894 quarterback Paul Hubbard gathered the team in a circle to hide their hands.
8. A special sign meaning the next sign is the real one. It hides the true signal among many fake ones so opponents cannot easily decode it.
9. Fair scouting uses what anyone can see, such as watching games and remembering habits, as Mathewson did. Cheating breaks the rules, like the 1900 Philadelphia team hiding a man with binoculars and a buried electric buzzer to steal and send the catcher's signs.
10. An athlete is not crowned unless he competes lawfully. Plans, signals and scouting are good, but only within the rules; a win by cheating is not a true win.

PORTFOLIO PIECE: COACH'S GAME PLAN

Prepare a complete game plan for a small flag-football or backyard-baseball game against family or friends, as a coach would. Include: a scouting page on the other team (from watching them or from earlier games); three football plays or three baseball situations (when to bunt, when to hit-and-run, when to swing away) drawn and explained; a page of your team's secret signs with an indicator; and a one-paragraph "team talk" about playing hard, playing fair and being good sports. Then play the game, follow your plan, and write half a page afterward about what worked and what you would change.

LOOK FOR	WHAT IT MEANS
Scouting	The scouting page is fair, specific and respectful, with tendencies, strengths, weaknesses and a plan.
Plays and situations	Three plays or situations are drawn clearly and explained correctly.
Signals	The sign system is clear, practiced and includes an indicator.
Sportsmanship	The team talk stresses fair play, and the game was played by the rules.
Reflection	An honest half page on what worked and what to change.

7.1 DRAWING UP A PLAY: FROM WALTER CAMP TO THE FORWARD PASS

OBJECTIVES

- Read and draw a football play with a line of scrimmage, a formation and routes.
- Tell the story of Walter Camp and of Notre Dame's forward passes against Army in 1913.
- Design a simple play and run it as a flag or touch play.

Warm-up. Draw a rectangle for a field and a line across the middle. Put five O's on one side and five X's on the other. Now draw arrows to show where each O should run so that one of them gets open to catch a pass. Explain your drawing to a family member without using any words other than "this player goes here." Did they understand?

WATCH

How to Draw Plays | Football 101

Chalk Talk Football • 7:12

<https://www.youtube.com/watch?v=caij2lvaxl>

WHEN TO WATCH

After the plan paragraph. Copy one of the plays he draws onto paper.

BACKUP VIDEO

Legend or Myth? Knute Rockne Invented The Forward Pass

Notre Dame Fighting Irish • 6:12

https://www.youtube.com/watch?v=fqJ_Nj98BYA

After the story paragraph: Notre Dame's own short film about Dorais, Rockne and the summer they practiced passing on a beach.

KEY TERMS

line of scrimmage

The imaginary line across the field where the ball sits at the start of each play; neither team may cross it before the snap.

down

One play. A team gets a set number of downs to move the ball ten yards.

formation

How the players line up before the play.

route

The path a receiver runs to get open for a pass.

forward pass

Throwing the ball forward to a teammate, legal in American football since 1906.

CORE IDEAS

The story. American football grew out of rugby. In 1880 Walter Camp, a Yale student and later coach, persuaded the rule-makers to create the **line of scrimmage**: instead of a scramble for the ball, one team would have the ball and start each play from a set place. In 1882 he added the rule of **downs**, so a team had to gain a certain distance in a few plays or give up the ball. Those two rules turned football into a game of plans, because now a team could stop, think and choose a play before every snap. In 1906 the forward pass became legal, but for years few teams used it much. Then, on 1 November 1913, a little-known team from Notre Dame traveled to West Point to play powerful Army. Quarterback Gus Dorais threw again and again to end Knute Rockne and others, and Notre Dame won 35 to 13. The newspapers were amazed.

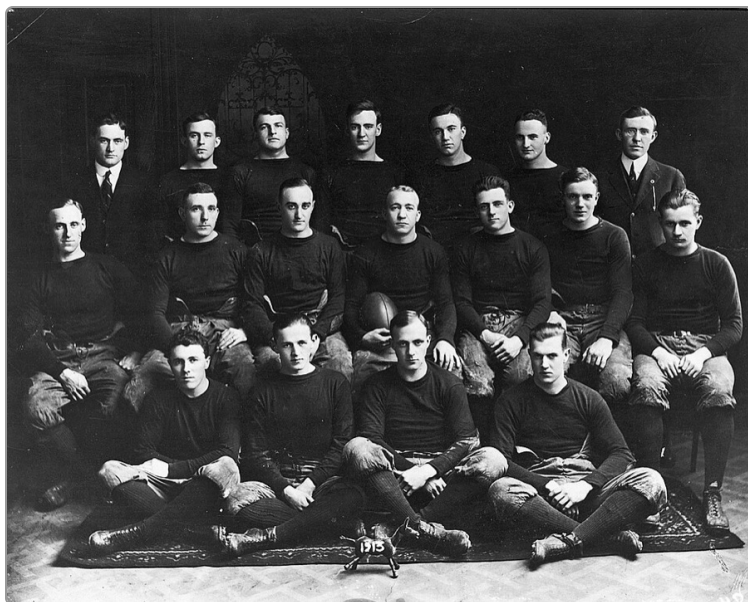
The plan. Dorais and Rockne had spent the summer before working at a resort on Lake Erie, and on their days off they practiced passing on the beach for hours, with Rockne learning to catch the ball on the run with his hands instead of against his chest. Their plan against Army was simple: Army expected Notre Dame to run into the line like everyone else, so Notre Dame would pass where the defenders were not. Every play was planned: who would line up where, who would block, and the **route** each receiver would run.

The principle. A **play diagram** is a plan everyone can read. O's are the offense, X's are the defense, a straight line marks the line of scrimmage, solid arrows show where players run, and a dotted or dashed arrow shows the pass. Good plays use ideas you already know: spacing (receivers spread out), the double threat (two receivers in different places so one is open), and surprise (passing when the defense

expects a run). And because everyone has the diagram in his head, the team has shared intent, like Nelson's captains.

On the board and the field. When you design a play, ask: "What will the defense expect?" "Where will the open space be?" and "What is each player's job?" A play where only one person has a job is not a team play. A good play gives everyone something important to do, even the players who never touch the ball.

PICTURE STUDY



The Notre Dame Football Team, 1913, Unknown photographer, 1913 · Photograph · University of Notre Dame, Indiana

Image: [Wikimedia Commons](#), public domain

This is the 1913 Notre Dame team, the one that surprised Army with the forward pass. Gus Dorais, the quarterback, and Knute Rockne, the end who caught his passes and later became Notre Dame's famous coach, are among the players. Their coach, Jesse Harper, stands in the back row.

Look closely

- Count the players. How does a 1913 team compare in size with a modern team?
- Look at the uniforms. What padding can you see? What is missing compared with today?
- Find the football. Is it shaped like a modern football?
- Find the toy mule in the front. Why might a team that played Army bring a mule?

Talk about it

1. How do you think these players felt traveling to play the much more famous Army team?
2. Why would practicing all summer on a beach make Dorais and Rockne better passers?

3. If you were Army's coach the next year, what would you change after this game?

Safety first. Run plays only as flag or touch football: no tackling and no blocking by pushing. Warm up, use a soft ball, play on grass or an open yard away from streets with proper shoes, and have a parent watching. Stop if anything hurts, and tell a parent.

PROJECT

My First Playbook Page

You will draw three football plays, then run them in the yard as flag or touch football and record which ones work.

You will need

- Paper, a ruler and colored pencils
- A soft football (or any soft ball), and cones or shoes to mark the field
- At least three people (a quarterback, a receiver, a defender); more is better; a parent to watch
- Your scorebook

Steps

1. Draw a field with a line of scrimmage. Draw your offense as O's and the defense as X's.
2. Design Play 1, "Straight Go": one receiver runs straight down the field.
3. Design Play 2, "Out": the receiver runs five steps forward, then cuts sharply to the sideline.
4. Design Play 3, "Double Threat": two receivers run different routes (one short, one long). The quarterback throws to whichever is open.
5. In the yard, run each play five times against one defender. Count how many passes are caught.
6. Record results in a table: Play, Attempts, Catches.
7. Talk with the players: which play worked best and why? What did the defender do?
8. Improve your weakest play by changing one thing, then test it five more times.

Tips

- Quarterbacks: throw to where the receiver is going, not where he is.
- Receivers: run your route sharply and look back for the ball.
- Keep it fun and safe: two-hand touch instead of tackling.

Check your work

- ☐ I drew three plays with a key.
- ☐ I ran each play at least five times and recorded the results.
- ☐ I improved one play and tested the change.

SCOREBOOK

1. Draw your three plays neatly with a key: O, X, line of scrimmage, solid arrow (run), dotted arrow (pass).
2. Copy your results table and circle the best play.
3. Make a mini timeline: 1880 line of scrimmage, 1882 downs, 1906 forward pass legal, 1913 Notre Dame against Army.

COMMON MISTAKES

- Drawing plays where only the receiver has a job. Give every player a role.
- Forgetting the line of scrimmage, so no one knows where the play starts.
- Thinking Notre Dame invented the forward pass. It was legal from 1906; Notre Dame showed how powerful it could be.

Make it a game • Playbook Page Relay. Draw a football play on paper with a line of scrimmage, a formation and two routes, then hand it to your parent to act out with books as players. Your parent reads the play back to you. Then tell the story of Walter Camp and Notre Dame's forward passes against Army in 1913. Draw a new play.

7.2 THE BUNT AND THE HIT-AND-RUN

OBJECTIVES

- Explain the sacrifice bunt and the hit-and-run and the risk of each.
- Tell the story of the 1890s Baltimore Orioles and Willie Keeler.
- Practice bunting safely with a foam bat and soft ball.

Warm-up. Draw a baseball diamond with home plate, first base, second base and third base. Put a runner on first base. Write two ways the batter could help the runner get to second base without hitting a home run. Keep your list; you will check it at the end of the lesson.

WATCH

DIAMOND DEMO Hit and Run

MLB Network · 2:12

<https://www.youtube.com/watch?v=uGTFSq7A5UA>

WHEN TO WATCH

After the plan paragraph. Watch where the runner goes when the pitch is thrown and where the batter tries to hit.

BACKUP VIDEO

Mastering The Bunt With Juan Pierre

MLB Network · 3:25

<https://www.youtube.com/watch?v=iZ68D5EGucw>

Before session 2: a former major-league player shows how to hold the bat and bunt, on an indoor studio field.

KEY TERMS

bunt

Holding the bat out and letting the ball hit it softly so it rolls a short way.

sacrifice

A bunt in which the batter expects to be put out but moves a teammate to the next base.

hit-and-run

A play in which the runner starts running as the pitch is thrown and the batter must swing and try to hit the ball on the ground.

small ball

A style of play that scores runs with bunts, steals and the hit-and-run instead of long hits.

CORE IDEAS

The story. In the 1890s the Baltimore Orioles, managed by Ned Hanlon, became famous for a thinking kind of baseball. Instead of waiting for big hits, they bunted, ran the bases daringly and practiced the hit-and-run until it was perfect. Their right fielder, a small man named Willie Keeler, was a master at placing the ball. Asked his secret, he answered that he tried to “hit ’em where they ain’t,” meaning where the fielders were not. Keeler collected more than 200 hits a season eight years in a row, and he was later elected to the Baseball Hall of Fame.

The plan. In the **sacrifice bunt**, the batter squares around and taps the ball softly onto the infield. The fielders will probably throw him out at first base, but the runner moves from first to second, where a single can bring him home. In the **hit-and-run**, the runner on first starts running as the pitcher throws. A fielder must hurry to cover second base, which leaves a gap in the infield. The batter swings and tries to hit a ground ball through that gap. If it works, the runner may reach third.

The principle. Both plays trade something for something. The bunt trades an out for a base: a **sacrifice**, like giving up a checker to set up a double jump. The hit-and-run trades safety for speed: if the batter misses the ball, the runner may be thrown out, and if the ball is hit in the air and caught, the runner may be doubled off first base. A good manager weighs the gain and the risk, just as you did with Hannibal’s march. Late in a close game, one run may be worth a sacrifice. Early in a game, it may not.

On the board and the field. Notice how the hit-and-run uses ideas from earlier units: the runner’s move *creates* the open space, like a decoy, and the batter *uses* it, like a give-and-go. And notice the word “sacrifice”: a player gives up his own chance at a hit to help the team. That is the spirit of every good team.

PICTURE STUDY



Willie Keeler Bunting, International News Photos, About 1903 · Photograph · News photograph from Keeler's years with New York

Image: [Wikimedia Commons](#), public domain

Willie Keeler stood only about five feet four inches tall and used one of the shortest, lightest bats in baseball. This photograph, taken when he played for New York, catches him in the middle of a bunt, with the catcher ready to spring forward.

Look closely

- Find Keeler's hands. Where are they on the bat? Is he swinging or holding the bat out?
- Find the ball. How close is it to the bat?
- Look at the catcher. What will he do if the ball rolls in front of the plate?
- Look at Keeler's feet. Is he ready to run?

Talk about it

1. Why would a small, quick player like Keeler be a good bunter?
2. What does "hit 'em where they ain't" mean, and how is it like finding open space in soccer?
3. When would a manager ask his best hitter to bunt? When would he not?

Safety first. Use a foam or plastic bat and a soft foam ball or rolled-up socks, never a hard ball, for bunting practice. The pitcher tosses gently underhand from a safe distance. Keep everyone else well behind and away from the batter. Play outdoors or in a large clear room with a parent watching. Stop if anything hurts, and tell a parent.

PROJECT

The Bunting Lab

You will practice bunting with a foam bat and soft ball, aim your bunts at targets, and keep score. Then you will act out the hit-and-run on a small diamond.

You will need

- A foam or plastic bat (or a rolled-up newspaper taped firmly), and a soft foam ball or rolled-up socks
- Four pieces of paper or cones for bases, and two hoops, towels or chalk circles as targets
- A family member to pitch underhand; a parent to watch
- Your scorebook

Steps

1. Set up a small diamond with bases about 10 steps apart. Put one target circle near the first-base line and one near the third-base line, a few steps in front of home.
2. Practice the bunting grip: slide your top hand up the bat, hold it level in front of you, and let the ball hit the bat. Do not swing.
3. Bunt 10 pitches toward the first-base target and 10 toward the third-base target. Count how many land in each circle.
4. Record your results. Which side was easier?
5. Act out the hit-and-run: a runner on first starts running when the pitcher releases the ball; a fielder runs to cover second; the batter tries to tap the ball on the ground where that fielder used to be. Try it five times.
6. Record what happened each time: did the batter hit it on the ground? Did the runner reach second or third?
7. Check your warm-up list. Did you think of the bunt or the hit-and-run? Write one more sentence about when you would use each.

Tips

- Watch the ball all the way onto the bat.

- “Catch” the ball with the bat: soft hands make soft bunts.
- In the hit-and-run, the batter must swing to protect the runner, even at a bad pitch.

Check your work

- ☐ I bunted at least 20 pitches and recorded how many hit the targets.
- ☐ I acted out the hit-and-run at least five times and recorded the results.
- ☐ I can explain the gain and the risk of each play.

SCOREBOOK

1. Draw a diamond showing a sacrifice bunt: the ball’s path, the throw to first, and the runner going to second.
2. Draw a diamond showing the hit-and-run: the runner going, the fielder covering second, and the ball going through the gap.
3. Copy your bunting results as a table and a bar graph.

COMMON MISTAKES

- Swinging at a bunt. A bunt is a soft tap.
- Thinking the sacrifice is a failure because the batter is out. It succeeds if the runner moves up.
- Forgetting the risk of the hit-and-run: a missed pitch or a line drive caught in the air can cost an out.

Make it a game • Bunt or Swing?. Set up game situations on slips: runner on first, one out, close score. Draw a slip and decide in ten seconds whether to bunt, hit-and-run or swing away, with a reason and the risk. Your parent scores your answer. Then tell a fact about the Baltimore Orioles and Willie Keeler.

7.3 SIGNALS, SIGNS AND THE HUDDLE

OBJECTIVES

- Explain why teams use signals and keep them secret.
- Tell how students at Gallaudet are credited with making the football huddle famous, and how baseball catchers give signs.
- Design a set of signs and test them.

Warm-up. Make up three silent hand signs with a family member, for example, touching your ear means “clap,” touching your nose means “stand up,” touching your elbow means “sit down.” Add a fourth sign that means “ignore the next sign.” Give a series of signs and see whether your partner follows them correctly.

WATCH

Did a Deaf Person Really Invent the Football Huddle?

Today I Found Out • 6:39

<https://www.youtube.com/watch?v=JktAUOi0Vh8>

WHEN TO WATCH

After the story paragraph. Listen for the reason the Gallaudet players needed a huddle, and for the other teams that also claimed to invent it.

BACKUP VIDEO

How Gallaudet University created the football huddle | NBC4 Washington

NBC4 Washington • 2:03

<https://www.youtube.com/watch?v=HxVBcNTJmhg>

A short news story filmed at Gallaudet University today, where players and coaches explain the huddle in sign language.

KEY TERMS

signal

An agreed sign or message that tells teammates what to do (from Lesson 4.2).

huddle

A tight circle of players behind the line where the next play is called so opponents cannot see or hear.

signs

In baseball, the secret finger and hand signals from the catcher to the pitcher, or from a coach to a batter or runner.

indicator

A special sign that means “the next sign is the real one,” used to hide signals from opponents.

CORE IDEAS

The story. Gallaudet, in Washington, D.C., is a university for deaf students. In the 1890s its football team called plays in sign language at the line of scrimmage. That worked well against hearing teams, but when Gallaudet played other schools for the deaf, the opponents could read their signs. In 1894, the story goes, quarterback Paul Hubbard gathered his players into a tight circle before each play so no one could see their hands. The **huddle** spread to other teams and became a part of football. Historians note that a few other teams also used huddles around that time, but Gallaudet is the school most often credited.

The plan. Baseball teams send signals all game long. The catcher crouches and shows fingers between his knees, out of the opposing team’s view: one finger for one kind of pitch, two for another. A coach near third base touches his cap, his arm or his belt to tell a batter to bunt or a runner to steal. To hide the real message, many teams use an **indicator**: only the sign that comes right after a certain touch counts. One of the first deaf major-league players, the outfielder William “Dummy” Hoy, played from 1888 to 1902; some people say umpires began using hand signals for outs and safe calls because of him, though historians are not sure.

The principle. Signals let a team share a plan in the middle of a game. They need three things: they must be **clear** to teammates, **hidden** from opponents, and **practiced** until they are automatic. That is why the huddle was a good idea: it kept the message among teammates. It is Nelson’s signal flags and Joshua’s spear again, but with a defense that is trying hard to read them.

On the board and the field. Notice that the Gallaudet players turned a difficulty into a new idea that helped everyone. Their signing was not a weakness; it led to one of football’s lasting habits. Good teams listen to every member and look for wisdom in unexpected places.

PICTURE STUDY



Dummy Hoy, Goodwin and Company (studio portrait), 1888 · Photograph · Studio portrait from Hoy's first season in the major leagues

Image: [Wikimedia Commons](#), public domain

William Hoy lost his hearing as a small child after an illness. He became a fast, clever outfielder and played fourteen seasons in the major leagues, a remarkable career for any player. This studio portrait was made in 1888, his first season. He lived to be 99.

Look closely

- Look at Hoy's uniform. How is it different from a modern baseball uniform?
- Find the bat. Is it longer or shorter than you expected?
- Look at his face and posture. What kind of person does he seem to be?
- Look at the painted backdrop. Why might a photographer use one?

Talk about it

1. How might a deaf outfielder and his teammates communicate on the field?
2. Why would hand signals help umpires, players and fans who cannot hear well?
3. What did Hoy and the Gallaudet players teach the sports world about turning a difficulty into a strength?

Safety first. If you run plays outdoors, use flag or touch rules, warm up, wear proper shoes, and have a parent watching.

PROJECT

Crack the Code: A Signals Game

You will design a set of team signs with an indicator, test whether an “opponent” can crack them, and then run a few plays using a huddle.

You will need

- At least three people: a coach, a player and an opponent who tries to decode the signs
- Paper and pencil for each person
- A soft ball and a yard (optional, for the huddle plays)
- Your scorebook

Steps

1. Design four signs for actions such as Run, Stop, Jump and Spin (for example: touch cap, touch ear, touch elbow, touch knee).
2. Choose an indicator sign (for example, touching your nose). Only the sign right after the indicator is the real one.
3. Round 1, no indicator: the coach gives a single sign, the player does the action, and the opponent writes down what they think each sign means. Do ten signs.
4. Round 2, with indicator: the coach gives a string of four or five touches, with the indicator hidden in it. Do ten more.
5. Count: how many signs did the player get right in each round? How many did the opponent decode in each round?
6. Optional: run three flag or touch plays in the yard, calling each in a huddle. Then call three plays out loud at the line, where the defense can hear. Did the huddle help?
7. Write two sentences about what makes a good signal system.

Tips

- Keep the signs smooth and quick so the indicator does not stand out.
- Practice before testing: a signal system only works when teammates know it by heart.

- Opponents: watch for patterns. What does the coach always do before the real sign?

Check your work

- ☐ I designed four signs and an indicator.
- ☐ I compared rounds with and without the indicator and recorded the results.
- ☐ I can explain why the huddle was invented and why signs are kept secret.

SCOREBOOK

1. Draw your four signs and the indicator as simple stick figures with labels.
2. Copy your results table: Round, Player correct, Opponent decoded.
3. Write a short paragraph telling the Gallaudet huddle story in your own words.

From history. Gallaudet University was founded in 1864, and its charter was signed by President Abraham Lincoln. The Gallaudet football team still plays today, and the huddle is still a point of honor there.

COMMON MISTAKES

- Making signs so complicated that teammates cannot follow them.
- Always giving the real sign in the same place in the string, so opponents can find it.
- Telling the Dummy Hoy umpire story as certain fact. Historians are not sure, so say “some people say.”

Make it a game • Secret Sign Game. Invent five secret hand signals together for pass, run, bunt, steal and hold. Memorize them for sixty seconds, then play a signal-and-guess game across the room. Your parent tries to crack the code by watching. Tell the story of the huddle at Gallaudet and why catchers give signs. Change one signal.

7.4 SCOUTING AN OPPONENT FAIRLY

OBJECTIVES

- Make an honest scouting report of an opponent from watching and recording.
- Explain the difference between fair scouting and cheating.
- Tell the story of Christy Mathewson and his book *Pitching in a Pinch*.

Warm-up. Play three quick games of rock, paper, scissors with a family member, and write down what they choose each time. Then play ten more. Before each throw, look at your notes and guess what they will choose. Did watching help? Was it fair to watch and remember?

WATCH

HOW TO CREATE IN-DEPTH ADVANCED SCOUTING REPORTS

Simple Sabermetrics • 8:05

https://www.youtube.com/watch?v=8g_MSymGopc

WHEN TO WATCH

After the plan paragraph. Notice what the coach writes down about hitters and pitchers.

Note: Written for coaches of older teams; younger students can watch the first half, which shows the checklist.

KEY TERMS

scouting

Watching and studying an opponent to learn their habits, strengths and weaknesses.

tendency

Something a player or team does often, such as always passing to the right.

scouting report

A written summary of what a team learned about an opponent and how it plans to play them.

sportsmanship

Playing fairly and honorably, respecting the rules, opponents and officials.

CORE IDEAS

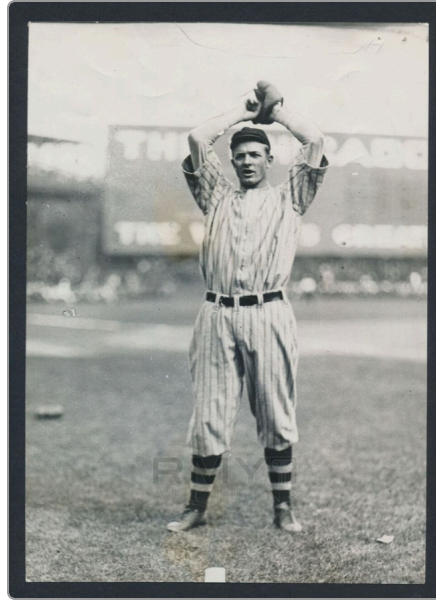
The story. Christy Mathewson was one of the greatest pitchers in baseball history, winning 373 games for the New York Giants between 1900 and 1916. He was a college man, a gentleman and a Christian who, because of a promise to his mother, did not play baseball on Sundays. In 1912 he wrote a book called *Pitching in a Pinch*, in which he explained that he studied every batter: what pitches each one liked, which ones he could not hit, and how he behaved in a tight spot. He kept those notes in his memory and used them inning after inning. That is **scouting**, done honestly, with your own eyes and mind.

The plan. A **scouting report** answers a few questions about an opponent. What do they do most often? (Their **tendencies**.) What are they best at? What gives them trouble? And then: how will we play them? A basketball scout might write, “Their best player always dribbles to his right; make him go left.” A chess player might notice, “My brother always brings his queen out early; I will develop quickly and chase her.”

The principle. Scouting is fair when you learn from what anyone could see: watching games, studying records, remembering what happened. It becomes **cheating** when you break the rules to get information. In 1900 the Philadelphia baseball team was caught hiding a man with binoculars beyond the outfield, who sent the catcher’s stolen signs to his coach by an electric buzzer buried under the third-base coaching box. An opposing player found the wires and dug the box up. Today the rules forbid using hidden cameras or electronic devices to steal signs. The apostle Paul wrote that an athlete “is not crowned, except he strive lawfully” (2 Timothy 2:5).

On the board and the field. Scouting also teaches humility: when you study an opponent carefully, you learn to respect their strengths. And it teaches you to scout yourself. What are *your* tendencies? A wise player asks, “If my opponent wrote a scouting report on me, what would it say?” and then works to fix his own weaknesses.

PICTURE STUDY



Christy Mathewson, Chicago Tribune (news photograph), 1912 · Photograph · Published by the *Chicago Tribune*

Image: [Wikimedia Commons](#), public domain

This photograph shows Christy Mathewson in 1912, the year his book *Pitching in a Pinch* was published. His hands are raised over his head at the start of his windup. Batters said he seemed to know exactly what they were thinking.

Look closely

- Find the ball in Mathewson's hands. What part of his windup is this?
- Look at his face. Is he calm or tense?
- Find the scoreboard behind him. What would a pitcher want to know about the game?
- Look at his uniform. How is it different from a modern one?

Talk about it

1. What would Mathewson want to know about each batter before he pitched?
2. How is remembering a batter's habits different from stealing signs with a hidden helper?
3. Why do you think Mathewson was admired for his character as well as his pitching?

PROJECT

My Honest Scouting Report

You will scout a family member at a game from this course (checkers, chess, Connect Four or Nim), write a scouting report, and then use it in a match to see whether it helps.

You will need

- A game from this course and a family member to scout
- Your scorebook and a pencil
- A copy of the scouting report form below, drawn in your scorebook

Steps

1. Draw a scouting form with four headings: Tendencies (what they do often), Strengths, Weaknesses, Our plan.
2. Watch your opponent play two or three games against someone else, or look back at your scorebook records of games against them. Write what you notice. Only use what you can fairly see.
3. Fill in the form. For example: “Always moves pieces on the left side first,” “Strong at the endgame,” “Forgets to guard the back row.”
4. Write your plan in two or three sentences based on the report.
5. Play a five-game match against that opponent, using your plan.
6. Record the results and whether each part of your plan worked.
7. Now ask your opponent to write a scouting report on you. Read it. What will you work on?
8. Write two sentences on the difference between fair scouting and cheating, using the 1900 buzzer story.

Tips

- Look for patterns that happen at least two or three times, not just once.
- Be respectful in your report. It is about the game, not the person.
- A scouting report is a guess. If the opponent changes, change your plan.

Check your work

- ☐ I wrote a complete scouting report with tendencies, strengths, weaknesses and a plan.
- ☐ I played a five-game match using my plan and recorded the results.
- ☐ I can explain the difference between fair scouting and cheating.

SCOREBOOK

1. Copy your scouting report neatly.
2. Copy the report your opponent wrote on you and circle one weakness to work on.
3. Write 2 Timothy 2:5 and one sentence about what it means to “strive lawfully.”

From history. Christy Mathewson served in the U.S. Army in France in 1918. During a training exercise he was exposed to poison gas, and his health never recovered; he died in 1925 at the age of 45. In 1936 he was one of the first five players elected to the Baseball Hall of Fame.

COMMON MISTAKES

- Thinking that any way of getting information is fine. Breaking the rules to learn an opponent’s signals is cheating.
- Writing a report from one game only. Look for real patterns.
- Forgetting to scout yourself.

Make it a game • Fair Scout Report. Watch a short family game or a sibling's activity for three minutes and record what the opponent tends to do on paper. Present your honest scouting report in under a minute. Your parent asks whether any of it was cheating. Sort five scouting ideas into fair or not fair. Explain tendency and sportsmanship.

Scripture. “And if a man also strive for masteries, yet is he not crowned, except he strive lawfully.” (2 Timothy 2:5, KJV)

A victory won by cheating is no true victory. Scout, plan and compete, but always by the rules.

PLAYS AND PLANS: FOOTBALL AND BASEBALL

Football and baseball are the two most “planned” American sports. Every football play is designed ahead of time, drawn on paper, and carried out by eleven players who each know their part. Every pitch in baseball is chosen by the pitcher and catcher with secret signs, and managers plan bunts and the hit-and-run to move runners around the bases. In this unit you will learn to read and draw a football play, from Walter Camp’s line of scrimmage to the famous forward passes of Notre Dame in 1913.

You will learn baseball’s small-ball tactics, the bunt and the hit-and-run, from the 1890s Baltimore Orioles and Willie Keeler, who said to “hit ’em where they ain’t.” You will learn how teams send signals, from the catcher’s fingers to the football huddle, which students at Gallaudet, a college for the deaf, made famous. And you will learn how to scout an opponent fairly, from the great Christian pitcher Christy Mathewson, and why stealing signs with hidden tricks is cheating.

PREREQUISITES

- Can draw a play diagram with circles, X’s and arrows (Unit 6)
- Knows the ideas of surprise, timing and commander’s intent (Units 4 and 5)
- Can throw and catch a soft ball

MASTERY CHECKLIST

- ☐ I can read and draw a football play with a line of scrimmage, formations and routes.
- ☐ I can explain the sacrifice bunt and the hit-and-run, and when a manager would use each.
- ☐ I can explain why teams use signals and the huddle, and make my own set of signs.
- ☐ I can make an honest scouting report of an opponent and explain the difference between fair scouting and cheating.
- ☐ I can tell the stories of Walter Camp, Dorais and Rockne, Willie Keeler, Paul Hubbard and Christy Mathewson.

OPTIONAL BOOKS AND GAMES FOR THIS UNIT

- **Pitching in a Pinch, by Christy Mathewson (Project Gutenberg):** Free. The great pitcher's own 1912 book about the thinking side of baseball: studying batters, signals and the strategy of each pitch. Fits Lessons 7.2–7.4. Read a chapter aloud with a parent. Ages 11+.
- **American Football, by Walter Camp (Project Gutenberg):** Free. Walter Camp's own guide to the game from 1891, with diagrams of early plays and formations. Interesting to compare with today's game in Lesson 7.1. Ages 11+ with a parent.

Not required. Every project in this unit works without them. School

Launch has no ties to these authors, publishers or companies.

LESSONS IN THIS UNIT

7.1 Drawing Up a Play: From Walter Camp to the Forward Pass

2 sessions of 45 minutes

7.2 The Bunt and the Hit-and-Run

2 sessions of 45 minutes

7.3 Signals, Signs and the Huddle

2 sessions of 45 minutes

7.4 Scouting an Opponent Fairly

2 sessions of 45 minutes

UNIT 7 REVIEW

Answer each question in complete sentences unless it asks for a drawing. The review is worth 50 points.

1. **5 pts**

What two rules did Walter Camp bring to football in 1880 and 1882, and why did they make football a game of plans?

2. **5 pts**

Draw a simple pass play with a line of scrimmage, a quarterback, two receivers with routes, and a defender. Include a key.

3. **4 pts**

Why did Notre Dame's passing surprise Army in 1913?

4. **5 pts**

Explain the sacrifice bunt. What does the team give up, and what does it gain?

5. **5 pts**

What would happen if... the batter misses the ball during a hit-and-run?

6. **4 pts**

What did Willie Keeler mean by “hit ’em where they ain’t”?

7. **5 pts**

Why are Gallaudet’s players credited with making the huddle famous?

8. **5 pts**

What is an indicator in a set of baseball signs, and why is it used?

9. **6 pts**

What is the difference between fair scouting and cheating? Use the 1900 buzzer story.

10. **6 pts**

Read 2 Timothy 2:5. How does it apply to tactics in sport?

ANSWER KEY

1. The line of scrimmage (1880) and downs (1882). Because one team had the ball and started each play from a set place, with a set number of plays to gain distance, teams could stop and choose a planned play before each snap.
2. Drawing shows a line, O's for offense, an X for the defender, solid arrows for routes, a dotted arrow for the pass, and a key.
3. Most teams ran the ball into the line and seldom passed; Dorais and Rockne had practiced passing all summer and threw to open spaces Army did not expect.
4. The batter taps the ball softly and is usually thrown out at first; the team gives up an out to move a runner to the next base.
5. The runner, who started running with the pitch, may be thrown out trying to steal the next base.
6. Place the ball where the fielders are not standing, in the open spaces.
7. They called plays in sign language, and when they played other deaf schools the opponents could read their signs, so in 1894 quarterback Paul Hubbard gathered the team in a circle to hide their hands.
8. A special sign meaning the next sign is the real one. It hides the true signal among many fake ones so opponents cannot easily decode it.
9. Fair scouting uses what anyone can see, such as watching games and remembering habits, as Mathewson did. Cheating breaks the rules, like the 1900 Philadelphia team hiding a man with binoculars and a buried electric buzzer to steal and send the catcher's signs.
10. An athlete is not crowned unless he competes lawfully. Plans, signals and scouting are good, but only within the rules; a win by cheating is not a true win.

PORTFOLIO PIECE: COACH'S GAME PLAN

Prepare a complete game plan for a small flag-football or backyard-baseball game against family or friends, as a coach would. Include: a scouting page on the other team (from watching them or from earlier games); three football plays or three baseball situations (when to bunt, when to hit-and-run, when to swing away) drawn and explained; a page of your team's secret signs with an indicator; and a one-paragraph "team talk" about playing hard, playing fair and being good sports. Then play the game, follow your plan, and write half a page afterward about what worked and what you would change.

LOOK FOR	WHAT IT MEANS
Scouting	The scouting page is fair, specific and respectful, with tendencies, strengths, weaknesses and a plan.
Plays and situations	Three plays or situations are drawn clearly and explained correctly.
Signals	The sign system is clear, practiced and includes an indicator.
Sportsmanship	The team talk stresses fair play, and the game was played by the rules.
Reflection	An honest half page on what worked and what to change.

UNIT 8

BE THE STRATEGIST

All year you have studied other people's strategies: Franklin's foresight, Morphy's development, Gideon's night attack, Nelson's shared plan and Wooden's pyramid. Now it is your turn. In this last unit you will design your own strategy game, from the board and pieces to the rules for winning, the way King Alfonso's book of games recorded new chess variants more than 700 years ago.

Then you will test your game again and again until it is fair, so that both players have a real chance and the better plan wins. You will learn how to win without boasting and lose without sulking, from the golfer Bobby Jones, who called a penalty on himself that no one else had seen. And you will finish the year by running a family tournament: a game day with a bracket, a scorebook for every player, your own game alongside the classics from the year, and a handshake after every game.

PREREQUISITES

- Has played and recorded many games this year (Units 1–3)
- Knows the ideas of strategy, tactics, double threats and fair play
- Can make a table and count results

MASTERY CHECKLIST

- ☐ I can design an original strategy game with a board, pieces, a goal and clear rules.
- ☐ I can playtest my game, record results, and change one rule at a time to make it fair.
- ☐ I can explain first-move advantage and one way games balance it.
- ☐ I can win and lose graciously, and explain Proverbs 16:32.
- ☐ I can organize and run a round-robin tournament with a schedule and a results table.

LESSONS IN THIS UNIT

8.1 Design Your Own Strategy Game

2 sessions of 45 minutes

8.2 Test It and Make It Fair

2 sessions of 45 minutes

8.3 A Good Winner and a Good Loser

2 sessions of 45 minutes

UNIT 8 REVIEW

Answer each question in complete sentences unless it asks for a number. The review is worth 50 points.

1. (5 pts)

Name the five parts every strategy game needs.

2. (4 pts)

What makes a game a game of strategy rather than luck?

3. (5 pts)

What is first-move advantage? Name one game where it matters.

4. (5 pts)

Name two ways to balance a first-move advantage.

5. (5 pts)

Why should you change only one rule at a time when playtesting?

6. (5 pts)

What did Bobby Jones do in the 1925 U.S. Open, and why does it matter?

7. (5 pts)

Write Proverbs 16:32 and explain it in your own words.

8. (5 pts)

How many games are in a round robin with 4 players? With 6 players? Show how you know.

9. (5 pts)

What would happen if... a tournament had no tiebreak rule and two players finished with the same points?

10. **6 pts**

Name one strategy idea you learned this year that you used in your own game or in the tournament, and explain how.

ANSWER KEY

1. A board, pieces, a goal (victory condition), rules for moving, and rules for ending the game (including ties).
2. Players have real choices and information, and good decisions usually beat bad ones; the result is not decided mostly by dice or chance.
3. The extra chance of winning that comes from moving first. Examples: Connect Four (the first player can always win), chess (White wins somewhat more often), Go.
4. Any two: give the second player extra points or pieces (like komi in Go); the pie rule (the second player chooses sides after the first move); play two games and switch who goes first.
5. So you know which change caused the difference in the results, like a fair test in science.
6. He called a one-stroke penalty on himself when his ball moved slightly, though no one else saw it, and then lost in a playoff. It shows integrity: keeping the rules even when no one would know.
7. "He that is slow to anger is better than the mighty; and he that ruleth his spirit than he that taketh a city." Controlling your own temper and boasting is greater than winning a battle or a game.
8. 4 players: 6 games ($3 + 2 + 1$). 6 players: 15 games ($5 + 4 + 3 + 2 + 1$).
9. No one would know who placed first, which could lead to arguments. A tiebreak decided in advance keeps the tournament fair and clear.
10. Example: the double threat. In my game a piece can attack two squares at once, so players try to make two threats. Other accurate, specific answers accepted.

PORTFOLIO PIECE: MY GAME, PUBLISHED

Make a finished “published” edition of the strategy game you designed. Include: a neat, durable board; a full set of pieces; a rule booklet with a cover, the setup, the rules for moving and winning, and a diagram of an example turn; a page called “How I Tested It” with your playtest table and the rule changes you made; and a page called “Strategy Tips” with two or three pieces of advice for new players, using ideas from this year. Present your game at the family game day, teach it, and play at least one game with someone new.

LOOK FOR	WHAT IT MEANS
Complete game	Board, pieces and rule booklet are complete and neat enough for someone else to play.
Clear rules	A new player can learn the game from the booklet, with a diagram of an example turn.
Testing	The playtest record shows at least ten games and at least one rule changed one at a time.
Strategy	The game rewards good decisions, and the tips page uses ideas from the year correctly.
Presentation	The game was taught and played at the family game day with good sportsmanship.

8.1 DESIGN YOUR OWN STRATEGY GAME

OBJECTIVES

- Name the parts every strategy game needs: a board, pieces, a goal, rules for moving and rules for winning.
- Design and build a first version of an original strategy game.
- Explain what makes a game a game of strategy rather than luck.

Warm-up. Take a checkerboard and checkers. Change just one rule of checkers, for example “checkers may move sideways” or “the goal is to lose all your pieces first.” Play one game with the new rule. How did one change make the game different? Was it more fun or less?

WATCH

10 Steps to ACTUALLY Design a Board Game

Dave Jeltema · 9:52

https://www.youtube.com/watch?v=ZUuudT9Vn_w

WHEN TO WATCH

In session 1, after the plan paragraph. Write down the steps he names, then choose the ones that fit a simple family game.

Note: Made for grown-up hobby designers; the steps are simple, but parents can help younger students pick out the main ideas.

KEY TERMS

game designer

A person who invents a game and writes its rules.

mechanic

One of the basic actions of a game, such as moving, jumping, capturing, placing or blocking.

victory condition

The rule that says how a player wins.

prototype

A first, rough version of a game, made quickly from paper and household things for testing.

CORE IDEAS

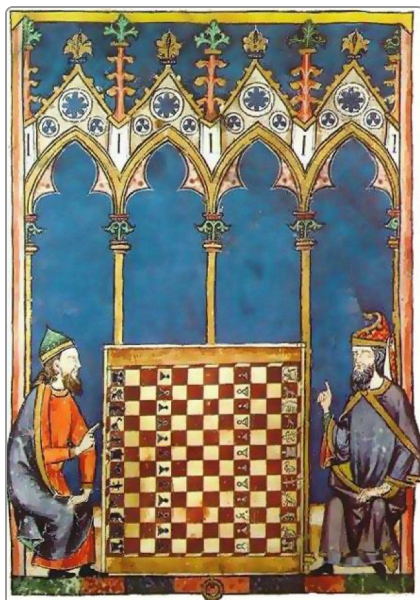
The story. People have been inventing new strategy games for thousands of years. In 1283, King Alfonso X of Castile's *Book of Games* recorded not only ordinary chess but several new versions, including *Grande Acedrex* ("Great Chess"), played on a board of 12 by 12 squares with new pieces such as the giraffe, the unicorn and the crocodile, each with its own way of moving. Six hundred years later, in about 1884, a Boston surgeon named George Howard Monks invented a jumping game called Halma, played on a board of 256 squares. A few years later, in 1892, a German company made a star-shaped version for more players, and in America it became known as Chinese checkers, though it never came from China.

The plan. Every strategy game needs five parts. (1) A **board**: squares, points, lines or spaces. (2) **Pieces**: what each player controls. (3) A **goal or victory condition**: capture the king, reach the far side, make a line of four, control the most spaces. (4) **Rules for moving**: how each piece moves and what it may do. (5) **Rules for ending**: when the game is over and what happens in a tie. Start with a small, simple **prototype** made from paper, coins and beans. You can always add more later.

The principle. A game is a game of **strategy** when good decisions usually beat bad ones. That means players need real choices, information about what is happening, and a way to plan ahead. Games of pure luck, like a contest decided only by dice, give no reward for thinking. Many good games mix a little luck with a lot of choice, but for this unit, design a game in which the better plan almost always wins. Look back at the ideas you learned this year, such as double threats, center control, trades, ambushes and flanks, and build a game in which they matter.

On the board and the field. God made people in His image, and part of that image is that we love to make things, including games, stories and music. Designing a game is a small way of being a maker. Remember the site motto, *Fabricando fit faber*: "by making, one becomes a maker." Your first version will not be perfect. That is fine. Every great game was tested and changed many times.

PICTURE STUDY



Grande Acedrex, from the *Book of Games*, Workshop of King Alfonso X of Castile, 1283 · Painted illustration (tempera and gold on parchment) · *Libro de los juegos*, Royal Library of the Monastery of El Escorial, Spain

Image: [Wikimedia Commons](#), public domain

This picture from King Alfonso's book shows *Grande Acedrex*, "Great Chess," a game played on a board of 144 squares with twenty-four pieces on each side, including some that do not exist in ordinary chess. Someone designed it, tested it and wrote down its rules, just as you will do with your game.

Look closely

- Look at the board. Can you count how many squares are along one side?
- Look at the pieces lined up on the near and far rows. How many can you count?
- Look at the two players. Which one seems to be explaining something?
- Look at the arches and the blue background. How did the painter make this game look important?

Talk about it

1. What would change about chess if the board were 12 by 12 instead of 8 by 8?
2. If you could add one new piece to chess, what would it be, and how would it move?
3. Why do you think a king wanted new games recorded in a book?

PROJECT

Build Your Prototype

You will design and build the first version of your own two-player strategy game, write its rules, and play it once.

You will need

- Cardboard or heavy paper for a board, a ruler and markers
- Pieces: coins, buttons, beans, bottle caps or small blocks in two colors
- Index cards for the rules
- Your scorebook

Steps

1. Brainstorm in your scorebook: list three ideas for a goal (for example: reach the other side, surround a piece, make a line, capture a leader). Choose one.
2. Choose a board: a small grid (5 by 5 or 6 by 6 is a good start), a set of points joined by lines, or a shape you invent. Draw it on cardboard.
3. Decide on the pieces: how many each player gets and whether any piece is special.
4. Write the rules on index cards: setup, who moves first, how pieces move, how pieces are captured or blocked (if at all), how a player wins, and what happens if no one can win.
5. Give your game a name and draw a simple box cover or title card.
6. Play one complete game against a family member, reading the rules aloud as you go.
7. Right after the game, write down every question that came up, every rule that was unclear and anything that felt unfair or boring.
8. Choose one thing to fix first. Write the change on a new card. (You will test it in Lesson 8.2.)

Tips

- Smaller is better for a first version. You can make the board bigger later.

- Use ideas from the year: a double threat, a king that must be protected, a jump like checkers, a line like Connect Four.
- If a rule is hard to explain in one sentence, it may be too complicated.

Check your work

- ☐ My game has a board, pieces, a goal, movement rules and an ending rule, all written down.
- ☐ I played one full game and recorded the problems.
- ☐ I chose one rule to fix first.

SCOREBOOK

1. Draw your board design and label the starting positions.
2. Copy your rules neatly, numbered.
3. List the problems from the first game and circle the one you will fix first.

COMMON MISTAKES

- Making the game too big or too complicated at first.
- Forgetting a rule for ties or for when no one can move.
- Designing a game where luck decides almost everything. For this unit, choices should matter most.

Make it a game · Game Part Checklist. Race a timer to name from memory the five parts every strategy game needs: board, pieces, goal, moving rules and winning rules. Then write one new game's parts on paper using only household items, with a victory condition. Your parent plays it for two minutes and tells you one part that is unclear.

8.2 TEST IT AND MAKE IT FAIR

OBJECTIVES

- Playtest a game many times and record the results.
- Explain first-move advantage and ways games balance it.
- Change one rule at a time and judge whether the change made the game fairer.

Warm-up. Look back at your scorebook from Unit 1. In Connect Four and tic-tac-toe, did the first player win more often? Count. Then think: in chess, White always moves first. Is that fair? Write one idea for making a game fair when one player must go first.

WATCH

Game Designing – Playtesting Tips

HABA USA • 4:41

<https://www.youtube.com/watch?v=drr5nLXLOpA>

WHEN TO WATCH

After the plan paragraph. Write down two playtesting tips you will use.

BACKUP VIDEO

My 5.25 Best Board Game Playtesting Tips

Board Game Design Lab • 7:52

<https://www.youtube.com/watch?v=Alb9jjNwGCg>

For older students: a game designer's playful list of tips for running a good test session.

KEY TERMS

playtest

Playing a game you are designing in order to find and fix its problems.

balance

When a game gives each player a fair chance, so that the better player, not the starting position, decides the result.

first-move advantage

The extra chance of winning that comes from moving first.

komi

In the game of Go, extra points given to the second player to make up for the first player's advantage.

CORE IDEAS

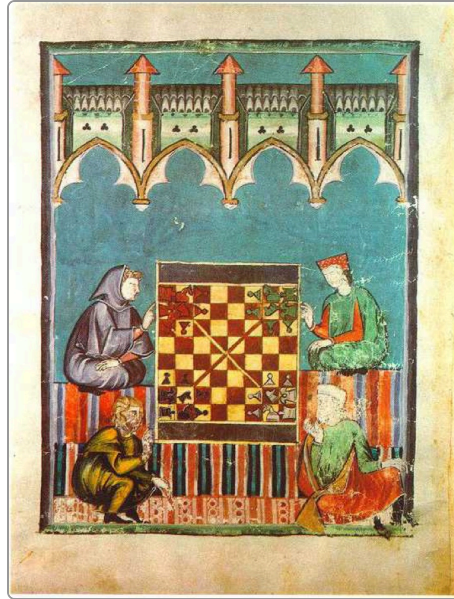
The story. You learned this year that in Connect Four the first player can always win with perfect play, and that tic-tac-toe and checkers are draws. In chess, White moves first and wins somewhat more often than Black in games between strong players. In the ancient Asian game of Go, players also noticed that moving first was a real advantage. During the twentieth century, Japanese Go tournaments began giving the second player extra points, called **komi**, so that both players would have an even chance. Game designers today do the same kind of thing: they test, count and adjust until a game is fair.

The plan. Good **playtesting** has four steps. (1) Play the game many times, with different players if you can. (2) Record every game: who went first, who won, how long it took, and anything strange that happened. (3) Look for patterns: does the first player win almost every time? Do games never end? Is one move always the best? (4) Change **one rule at a time** and test again, so you know which change made the difference. That is the same “fair test” idea scientists use.

The principle. A game is **balanced** when skill, not the starting position or a single trick, decides who wins. Ways to balance a first-move advantage include: letting the second player have an extra piece or extra points; letting the second player choose which side to play after the first move (sometimes called the “pie rule”: one player cuts the pie and the other chooses the slice); or simply playing two games and switching who goes first. Fairness is not only a rule of good design; it is a matter of right and wrong.

On the board and the field. Scripture says, “A false balance is abomination to the LORD: but a just weight is his delight” (Proverbs 11:1). In Bible times a dishonest merchant used a false weight on his scales to cheat customers. A game whose rules secretly favor one side is like a false balance. When you design and test your game, aim for a “just weight”: a fair contest that rewards good play.

PICTURE STUDY



Four Seasons Chess, from the Book of Games, Workshop of King Alfonso X of Castile, 1283 · Painted illustration (tempera and gold on parchment) · Libro de los juegos, Royal Library of the Monastery of El Escorial, Spain

Image: [Wikimedia Commons](#), public domain

This page from King Alfonso's book shows a game for four players: chess of the four seasons. Each player has an army of a different color in one corner of the board, and the four colors stood for spring, summer, autumn and winter. Designing a fair game for four players is even harder than for two!

Look closely

- Count the players. Where does each one sit?
- Find the four groups of pieces. Where does each army start?
- Look at the faces and hands. Who seems to be moving and who is waiting?
- Look at the shape of the board. Is it the same as a chessboard?

Talk about it

1. In a four-player game, which player do you think has an advantage: the first, the last, or none? Why?
2. Starting each army in its own corner is one way to be fair. Can you think of another?
3. How would you playtest a game for four players?

PROJECT

Ten Games and One Change at a Time

You will playtest the game you designed in Lesson 8.1 at least ten times, find its biggest problem, and fix it one rule at a time.

You will need

- Your game prototype and rule cards from Lesson 8.1
- At least two different family members or friends to play against
- Your scorebook

Steps

1. Make a playtest table: Game, Players, Who went first, Winner, Number of moves, Notes.
2. Play five games with your current rules. Take turns going first. Record everything.
3. Look for patterns. Did the first player win most games? Were games too short or too long? Did players always make the same move?
4. Choose the biggest problem and write one rule change to fix it.
5. Play five more games with the change. Record them in the same table.
6. Compare the two sets of games. Did the change help? If not, try a different change.
7. Ask each tester two questions: “What did you like?” and “What would you change?” Write down their answers.
8. Write your final, improved rules on fresh cards.

Tips

- Change only one rule at a time, or you will not know which change helped.
- Watch your testers play without helping them. Where do they get confused?
- A fair game is not always a draw. It just means both players have a real chance.

Check your work

- ☐ I playtested my game at least ten times and recorded every game.

- ☐ I changed one rule at a time and compared results.
- ☐ I wrote a final set of rules and can explain why the game is now fairer.

SCOREBOOK

1. Copy your playtest table for all ten (or more) games.
2. Make a bar graph: first-player wins and second-player wins, before and after your rule change.
3. Write the rule you changed, why you changed it, and what happened.

COMMON MISTAKES

- Testing only once or twice. A few games can mislead; play at least ten.
- Changing several rules at once.
- Only testing against the same person, who has learned your tricks. Try different testers.

Make it a game • One Change Playtest. Play your own game with a parent and write down the winner. Change only one rule, then play again. Tally which side wins more often over four rounds. Explain what first-move advantage means and how komi, or another small bonus, might balance it. Keep the change that makes games closer.

Scripture. “A false balance is abomination to the LORD: but a just weight is his delight.” (Proverbs 11:1, KJV)

God delights in fairness. A fair game, like an honest scale, rewards what is really there: good thinking and good play.

8.3 A GOOD WINNER AND A GOOD LOSER

OBJECTIVES

- Describe how a good winner and a good loser act, in words and in deeds.
- Tell the story of Bobby Jones and the penalty he called on himself in 1925.
- Explain Proverbs 16:32 and practice self-control in competition.

Warm-up. Think of a time you won a game and a time you lost one. How did you feel each time? What did you say or do? Write one sentence about each. Was there anything you wish you had done differently?

WATCH

Kids tell us how to be a good sport

MPR News • 3:30

<https://www.youtube.com/watch?v=3gnjRl1KJpk>

WHEN TO WATCH

After the story paragraph. Listen for one idea about winning and one about losing that you agree with.

KEY TERMS

sportsmanship

Playing fairly and honorably, respecting the rules, opponents and officials (from Lesson 7.4).

self-control

Ruling your own feelings and actions, especially when you are angry, disappointed or excited.

gracious

Kind and courteous, especially toward someone who has just lost or won.

integrity

Being honest and keeping the rules even when no one else would know.

CORE IDEAS

The story. Bobby Jones of Atlanta was the greatest golfer of his time. In the 1925 U.S. Open at the Worcester Country Club in Massachusetts, his ball lay in long grass beside the 11th hole. As he set his club behind it, he saw the ball move slightly. No official saw it, and no one in the crowd saw it. Jones called a one-stroke penalty on himself anyway. At the end of the tournament he was tied for first place, and he lost

the playoff. Newspapers praised his honesty, but Jones did not want praise for simply keeping the rules; he said it was like praising a man for not robbing a bank.

The plan. A good sport has a plan for both endings of a game. When you **win**: shake hands, thank your opponent, say something true and kind (“You played that endgame well”), and do not boast or tease. When you **lose**: shake hands, congratulate the winner, do not make excuses or blame others, and ask yourself what you can learn. In both cases, keep the rules honestly, even when no one is looking, and treat officials and referees with respect.

The principle. The Bible says, “He that is slow to anger is better than the mighty; and he that ruleth his spirit than he that taketh a city” (Proverbs 16:32). All year you have studied people who took cities: Joshua at Ai, Hannibal, Washington at Trenton. Scripture says ruling your own spirit is greater still. Strategy games give you hundreds of small chances to practice **self-control**: when you blunder your queen, when your opponent gets lucky, when you are about to win and want to gloat. Proverbs also warns, “Rejoice not when thine enemy falleth” (Proverbs 24:17).

On the board and the field. Remember Coach Wooden’s definition: success is giving your best. A good loser can still be successful, and a bad winner has missed something important. Chess players shake hands before and after every game. Many games end with “Good game.” Make those habits yours, and mean them.

PICTURE STUDY



Bobby Jones, Unknown photographer, About 1921 · Photograph · News photograph of the young Bobby Jones

Image: [Wikimedia Commons](#), public domain

This photograph shows Bobby Jones as a young man, when he was already one of the best golfers in America. In 1930 he won the four biggest golf championships of his time in a single year. But many people remember him best for the penalty he called on himself in 1925.

Look closely

- Look at Jones's swing. Where are his hands and the club?
- Look at his clothes. How are they different from what golfers wear today?
- Find the spectators behind the rope. What might they be thinking?
- Look at his face and balance. Does he look calm or hurried?

Talk about it

1. Why did Jones call a penalty on himself when no one else saw his ball move?
2. What did he mean when he said it was like praising a man for not robbing a bank?
3. When is it hardest for you to be honest in a game?

PROJECT

The Good Sport Challenge

You will write your own good-sport code, practice it in a series of games, and have a family member score your sportsmanship as well as your wins.

You will need

- Any games from this course (including your own game)
- A family member as opponent and another as “sportsmanship judge” if possible
- Index cards and your scorebook

Steps

1. Write a “Good Sport Code” of five promises on an index card: two for winning, two for losing, and one for honesty. Example: “I will shake hands and say ‘good game’ every time.”
2. Make a table: Game, Result, Sportsmanship score (1–5), Notes.
3. Play six games against a family member. After each game, the judge (or your opponent) gives you a sportsmanship score from 1 to 5 and writes one note.
4. After each game, also write how you felt and what you did with that feeling.
5. Choose one game where your sportsmanship was hardest. What helped you, or what would help next time?
6. Memorize Proverbs 16:32 and say it to your family.
7. Write a short paragraph: “The difference between winning a game and winning my own spirit.”

Tips

- It is easier to be a good sport if you decide how you will act before the game begins.
- When you lose, take a slow breath before you speak.
- When you win, find something true to praise in your opponent’s play.

Check your work

- ☐ I wrote a five-promise Good Sport Code.

- ☐ I played six games and recorded sportsmanship scores and notes.
- ☐ I can explain Proverbs 16:32 and the Bobby Jones story.

SCOREBOOK

1. Copy your Good Sport Code in your best handwriting and decorate it.
2. Copy your sportsmanship table.
3. Write Proverbs 16:32 from memory.

COMMON MISTAKES

- Thinking sportsmanship matters only when you lose. Winners need it just as much.
- Saying “good game” without meaning it, or rolling your eyes. Words and face should match.
- Keeping the rules only when someone is watching.

Make it a game • Good Sport Awards. Make two columns on paper: good winner and good loser. Race to fill each with at least four actions from memory. Your parent plays a bad-mannered player in a short skit, and you spot each mistake and show the gracious response. Then tell the story of Bobby Jones and his penalty in 1925.

Scripture. “He that is slow to anger is better than the mighty; and he that ruleth his spirit than he that taketh a city.” (Proverbs 16:32, KJV)

The greatest victory in any game is over your own temper and boasting.

8.4 THE FAMILY TOURNAMENT

OBJECTIVES

- Organize a round-robin tournament with a schedule and a results table.
- Run a family game day featuring your own game and classics from the year.
- Use the scorebook habit to record every game and reflect on the year.

Warm-up. Suppose four people want every player to play every other player once. List every pair (A–B, A–C and so on). How many games is that? Now try five people. Can you find a pattern?

WATCH

Create a Round Robin Tournament

MatherPE · 5:39

https://www.youtube.com/watch?v=bP7v_EYWnUY

WHEN TO WATCH

In session 1, before you make your schedule. A physical education teacher shows how to make a round-robin chart by hand.

KEY TERMS

round robin

A tournament in which every player plays every other player.

bracket

A chart for an elimination tournament, in which winners move on and losers are out.

standings

A table showing each player's wins, draws and losses, and their place.

tiebreak

A rule for deciding the order when two players have the same score.

CORE IDEAS

The story. In August 1895, the seaside town of Hastings in England hosted one of the most famous chess tournaments in history. Twenty-two of the world's best players, including the world champion, Emanuel Lasker, came to play. It was a **round robin**: every player played every other player once, 21 games each. To everyone's surprise, the winner was a 22-year-old American playing in his first international tournament,

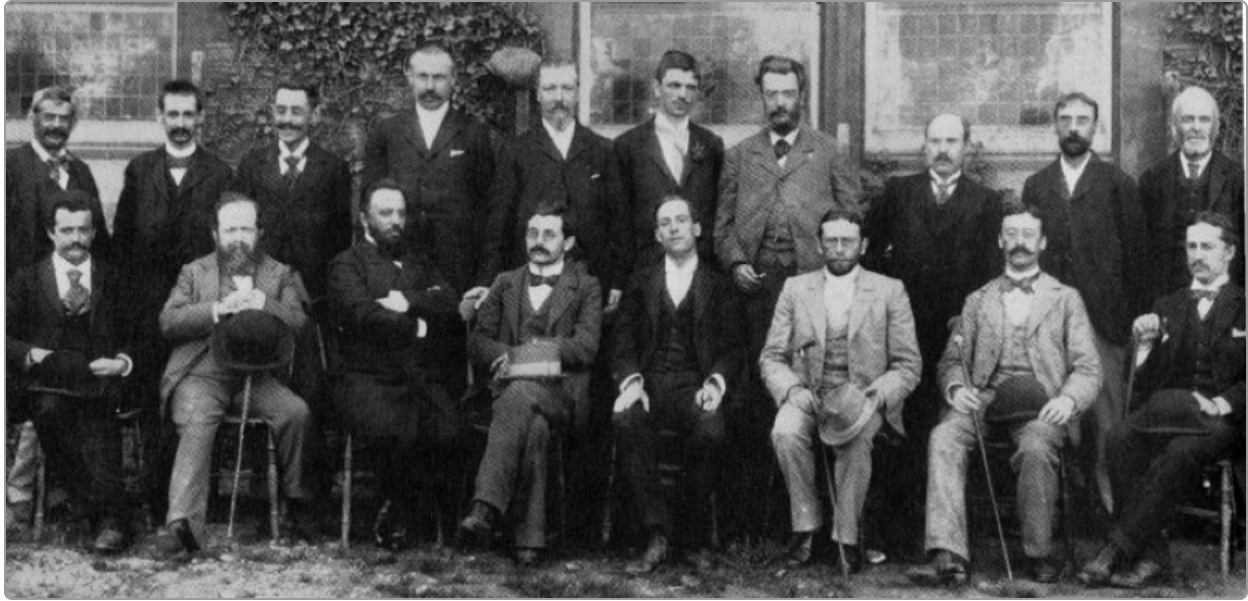
Harry Nelson Pillsbury of Boston. Because everyone played everyone, no one could say he had an easy path to first place.

The plan. A family tournament needs a few decisions. Which games will be played (your own game plus classics from the year: Nim, Connect Four, checkers, chess)? Which format? In a **round robin**, everyone plays everyone; with 4 players that is 6 games, and with 5 players it is 10. In an elimination **bracket**, losers are out, so it is quicker but less fair to someone who has one bad game. Decide on scoring (for example, 1 point for a win, $\frac{1}{2}$ for a draw), a **tiebreak** rule, a schedule, and who keeps the official **standings**.

The principle. A good tournament is fair, clear and joyful. Fair: everyone knows the rules in advance and the same rules apply to all. Clear: a schedule and a standings table posted where everyone can see. Joyful: snacks, cheering for good moves, and handshakes before and after every game. As organizer, you are like a commander who shares the plan (Lesson 5.4) and a referee who keeps the rules (Lesson 7.4) at the same time.

On the board and the field. This is the end of a year of thinking ahead. In your closing words at the tournament, thank your family, name one thing you learned in each unit, and remember Proverbs 16:3: plans made with prayer and committed to the Lord. Play your best, rule your spirit, and enjoy the gift of games together.

PICTURE STUDY



*Contestants at the Hastings 1895 International Chess Tournament, Horace F. Cheshire, 1895 · Photograph · Published in the tournament book, *The Hastings Chess Tournament 1895* (1896)*

Image: [Wikimedia Commons](#), public domain

This is the official group photograph of the players at Hastings in 1895. They came from England, Germany, Russia, Austria, France, Italy and the United States. Somewhere in this picture are the world champion, Emanuel Lasker, and the young winner, Harry Nelson Pillsbury.

Look closely

- Count the players in the photograph.
- Look at their clothes. What do they tell you about the time?
- Look at the faces. Can you guess who might be the youngest?
- Look at how the group is arranged. Why might a tournament take a group photograph?

Talk about it

1. In a round robin with 22 players, why does each player play 21 games?
2. Why might a round robin be fairer than an elimination bracket?
3. How would you like your family tournament to be remembered?

Safety first. If your game day includes outdoor games from Units 6 and 7, warm up, use soft balls, play flag or touch rules, and have an adult watching.

PROJECT

Family Game Day

This is the family game day for the whole year. You will plan, run and record a family tournament, featuring your own game and the classics you learned, and keep a scorebook page for every player.

You will need

- Your own game from Lessons 8.1–8.2, with final rules
- Games from the year: Nim counters, Connect Four grids, a checkerboard, a chess set
- A large sheet of paper or poster board for the schedule and standings
- Scorebook pages or index cards for each player, pencils, and simple prizes or certificates if you like
- Snacks and a time agreed with your family

Steps

1. Choose the players (at least three) and the games. Plan for about 90 minutes.
2. Choose the format. For 3–5 players, a round robin works well. Use the pattern from the warm-up to count the games.
3. Make a schedule chart with every pairing and which game each pair will play.
4. Make a standings table: Player, Wins, Draws, Losses, Points. Decide the tiebreak (for example, the winner of the game between the tied players).
5. Give each player a scorebook card to record their games: opponent, game, result, and one good move.
6. Open the tournament: explain the rules, teach your own game, read Proverbs 16:32, and have everyone shake hands.
7. Play the games. Update the standings after every game.
8. At the end, announce the standings, thank everyone, and give each player a compliment about a good move or good sportsmanship.
9. Afterward, write a page in your own scorebook: how the tournament went, how your game was received, and what you learned this year.

Tips

- Keep games short so the tournament does not drag: Nim and Connect Four are quick.
- Give younger players a fair chance: let them choose their game, or give them the first move.
- Take a photograph of the standings and the players for your portfolio.

Check your work

- ☐ I planned the tournament with a schedule, a standings table and a tiebreak.
- ☐ Every game was recorded, and every player had a scorebook card.
- ☐ I ran the event fairly, taught my own game and wrote a reflection afterward.

SCOREBOOK

1. Copy the final standings table.
2. Paste or copy your own scorebook card from the tournament.
3. Write a one-page reflection: one thing you learned in each of the eight units this year.

From history. Harry Nelson Pillsbury was famous for his memory. He once played many games blindfolded at the same time, and he could remember long lists of unusual words after hearing them once. Hastings 1895 remained the greatest success of his short career.

COMMON MISTAKES

- Forgetting to decide the tiebreak before the tournament starts.
- Planning too many games for the time you have.
- Being so busy organizing that you forget to enjoy it and to thank everyone.

Make it a game • Bracket and Table. Draw a round-robin schedule for four players on paper from memory, plus a blank results table with a tiebreak column. Then fill in made-up results and find the winner. Your parent asks a question about the standings. Pick two games from the year to feature at your own family game day.

UNIT 8

BE THE STRATEGIST

All year you have studied other people's strategies: Franklin's foresight, Morphy's development, Gideon's night attack, Nelson's shared plan and Wooden's pyramid. Now it is your turn. In this last unit you will design your own strategy game, from the board and pieces to the rules for winning, the way King Alfonso's book of games recorded new chess variants more than 700 years ago.

Then you will test your game again and again until it is fair, so that both players have a real chance and the better plan wins. You will learn how to win without boasting and lose without sulking, from the golfer Bobby Jones, who called a penalty on himself that no one else had seen. And you will finish the year by running a family tournament: a game day with a bracket, a scorebook for every player, your own game alongside the classics from the year, and a handshake after every game.

PREREQUISITES

- Has played and recorded many games this year (Units 1–3)
- Knows the ideas of strategy, tactics, double threats and fair play
- Can make a table and count results

MASTERY CHECKLIST

- ☐ I can design an original strategy game with a board, pieces, a goal and clear rules.
- ☐ I can playtest my game, record results, and change one rule at a time to make it fair.
- ☐ I can explain first-move advantage and one way games balance it.
- ☐ I can win and lose graciously, and explain Proverbs 16:32.
- ☐ I can organize and run a round-robin tournament with a schedule and a results table.

LESSONS IN THIS UNIT

8.1 Design Your Own Strategy Game

2 sessions of 45 minutes

8.2 Test It and Make It Fair

2 sessions of 45 minutes

8.3 A Good Winner and a Good Loser

2 sessions of 45 minutes

UNIT 8 REVIEW

Answer each question in complete sentences unless it asks for a number. The review is worth 50 points.

1. (5 pts)

Name the five parts every strategy game needs.

2. (4 pts)

What makes a game a game of strategy rather than luck?

3. (5 pts)

What is first-move advantage? Name one game where it matters.

4. (5 pts)

Name two ways to balance a first-move advantage.

5. (5 pts)

Why should you change only one rule at a time when playtesting?

6. (5 pts)

What did Bobby Jones do in the 1925 U.S. Open, and why does it matter?

7. (5 pts)

Write Proverbs 16:32 and explain it in your own words.

8. (5 pts)

How many games are in a round robin with 4 players? With 6 players? Show how you know.

9. (5 pts)

What would happen if... a tournament had no tiebreak rule and two players finished with the same points?

10. **6 pts**

Name one strategy idea you learned this year that you used in your own game or in the tournament, and explain how.

ANSWER KEY

1. A board, pieces, a goal (victory condition), rules for moving, and rules for ending the game (including ties).
2. Players have real choices and information, and good decisions usually beat bad ones; the result is not decided mostly by dice or chance.
3. The extra chance of winning that comes from moving first. Examples: Connect Four (the first player can always win), chess (White wins somewhat more often), Go.
4. Any two: give the second player extra points or pieces (like komi in Go); the pie rule (the second player chooses sides after the first move); play two games and switch who goes first.
5. So you know which change caused the difference in the results, like a fair test in science.
6. He called a one-stroke penalty on himself when his ball moved slightly, though no one else saw it, and then lost in a playoff. It shows integrity: keeping the rules even when no one would know.
7. "He that is slow to anger is better than the mighty; and he that ruleth his spirit than he that taketh a city." Controlling your own temper and boasting is greater than winning a battle or a game.
8. 4 players: 6 games ($3 + 2 + 1$). 6 players: 15 games ($5 + 4 + 3 + 2 + 1$).
9. No one would know who placed first, which could lead to arguments. A tiebreak decided in advance keeps the tournament fair and clear.
10. Example: the double threat. In my game a piece can attack two squares at once, so players try to make two threats. Other accurate, specific answers accepted.

PORTFOLIO PIECE: MY GAME, PUBLISHED

Make a finished “published” edition of the strategy game you designed. Include: a neat, durable board; a full set of pieces; a rule booklet with a cover, the setup, the rules for moving and winning, and a diagram of an example turn; a page called “How I Tested It” with your playtest table and the rule changes you made; and a page called “Strategy Tips” with two or three pieces of advice for new players, using ideas from this year. Present your game at the family game day, teach it, and play at least one game with someone new.

LOOK FOR	WHAT IT MEANS
Complete game	Board, pieces and rule booklet are complete and neat enough for someone else to play.
Clear rules	A new player can learn the game from the booklet, with a diagram of an example turn.
Testing	The playtest record shows at least ten games and at least one rule changed one at a time.
Strategy	The game rewards good decisions, and the tips page uses ideas from the year correctly.
Presentation	The game was taught and played at the family game day with good sportsmanship.