

GRADE 8 ART

First edition

8 units

32 lessons

A video for every lesson

FIRST EDITION

COURSE GUIDE

This is the last year of the School Launch art sequence before high school, and it asks more of the student than any year before. The same eight strands return (line, shape and form, color, value and light, materials, space, composition, and the masters) but each is now taken to the level where a student can explain *why* a picture works and can make one on purpose. Students draw the head by its planes, paint in transparent glazes over a grisaille underpainting, mix a color to match what they see, construct buildings in two- and three-point perspective, and design a page of lettering the way a medieval scribe or a printer would.

A whole unit is given to material science. Students grind their own watercolor and egg tempera from pigment and binder, cook walnut ink and brew oak gall ink, and learn how conservators clean and protect old paintings. Knowing what a paint is made of explains how it behaves, and it connects the student to centuries of craftsmen who made their own materials by hand.

Every lesson follows the same rhythm: look, learn, make. A picture study by a master shows the lesson's idea at its best, the teaching explains it in plain words, and the studio project puts it into the student's hands. The year closes with the landscape and portrait painters of the 1700s and 1800s and a capstone portfolio and art show, judged by the old measure of beauty, truth and goodness. We work as makers who are themselves made in the image of the Maker: *Fabricando fit faber*, by making, one becomes a maker.

Videos come from working artists, art teachers and museums: Circle Line Art School, The Virtual Instructor, The National Gallery (London), the Getty Museum, Smarthistory and several independent painters and calligraphers. Every video was chosen to teach the lesson's idea and checked for content, but most channels end with a request to subscribe, a link to paid courses or a short product mention; you can stop the video when the teaching ends. A parent should preview the painting and restoration videos, which sometimes show a painter's

other work in passing. Every video, including every artwork that appears on screen, was checked frame by frame for wholesome content: nothing immodest, nothing violent and nothing divisive.

Start with Lesson 1.1 →

WHO IT IS FOR

Students about 13–14 years old (eighth grade) who can read independently, follow multi-step written directions and work for an hour at a time. Earlier School Launch art years are helpful but not required; a student new to art will simply find the first unit a little harder and should spend extra time on the sketchbook exercises.

HOW TO USE THIS COURSE

1. **Weekly rhythm.** One lesson a week in two sessions of about 60 minutes, for 32 weeks. Session 1: warm-up, core ideas, video and picture study. Session 2: studio project and sketchbook. Some projects (glazed paintings, egg tempera, the capstone) need drying time, so start them early in the week.
2. **Picture study.** Show the picture large on a screen or printed in color. The student looks in silence for two full minutes, then the picture is put away and the student tells back everything he or she saw, in order, without help. Then bring the picture back and work through the “look” prompts and questions. At this age, ask for full sentences and real vocabulary (value, edge, glaze, vanishing point).
3. **The sketchbook.** Use a sturdy sketchbook for warm-ups and sketchbook exercises, and date every page. Ten minutes most days outside of lessons is the best habit an artist can build. The sketchbook is a workshop, not a gallery; mistakes belong in it.
4. **Read the core ideas aloud together** or have the student read them and then explain them back. Key terms are worth learning by heart; the unit reviews ask for them.
5. **Unit reviews and portfolio pieces.** After the fourth lesson of each unit, the student takes the written review (100 points, open sketchbook is fine for the drawing questions) and makes the portfolio piece, which brings the whole unit together. Grade the portfolio piece with its rubric.
6. **Materials.** Gather the year’s supplies at the start (see the materials list). The material science unit needs a few extra items such as gum arabic, a glass muller

or flat stone, eggs and walnut hulls or oak galls; read Unit 5 a few weeks ahead.

7. **Safety.** Craft knives only with an adult present. Dry pigments are fine powders: always wear a dust mask when handling them and never use lead, cadmium, cobalt or chrome pigments at home. Ventilate when using fixative and use it outdoors. Food tools used for art stay art tools forever.

SCOPE AND SEQUENCE

UNIT 1 • WEEKS 1–4

Mastering the Elements and Principles

A full review of the elements of art and the principles of design, then visual weight, contrast and emphasis, and how to give and receive a thoughtful critique.

- 1.1 The Elements and Principles Reviewed
- 1.2 Visual Weight and Balance
- 1.3 Contrast and Emphasis
- 1.4 Critique: Describe, Analyze, Interpret, Judge

UNIT 3 • WEEKS 9–12

Color in Painting

Color in painting: transparent glazing, limited palettes, mixing a color to match what you see, and how the color of light changes everything it touches.

- 3.1 Glazing: Light Through Layers
- 3.2 Limited Palettes
- 3.3 Seeing and Mixing Color Accurately
- 3.4 Color and Light

UNIT 2 • WEEKS 5–8

Advanced Drawing

Advanced drawing: portrait proportions, the planes of the head, the clothed figure in gesture and proportion, and learning from casts and old master drawings.

- 2.1 The Portrait: Proportion and Likeness
- 2.2 The Head and Its Planes
- 2.3 The Clothed Figure: Gesture and Proportion
- 2.4 Learning from Casts and Old Master Drawings

UNIT 4 • WEEKS 13–16

Light and Tone

Light and tone: painting in values alone, rendering glass and metal, grisaille underpainting, and light falling through a window in the manner of Vermeer.

- 4.1 Tonal Painting
- 4.2 Rendering Complex Forms: Metal and Glass
- 4.3 Grisaille and Underpainting
- 4.4 Light Through a Window

UNIT 5 • WEEKS 17–20

Material Science: Making Materials

Material science: making watercolor and egg tempera from pigment and binder, cooking walnut ink and oak gall ink, and how conservators clean and protect old paintings.

- 5.1 Make Your Own Paint: Pigment and Binder
- 5.2 Egg Tempera
- 5.3 Oak Gall and Walnut Ink
- 5.4 Conservation and Restoration

UNIT 7 • WEEKS 25–28

Design, Lettering and Illustration

Design, lettering and illustration: broad-edge calligraphy, telling a story in a picture, the basics of poster and graphic design, and how a book is designed.

- 7.1 Calligraphy and Lettering
- 7.2 Illustration and Storytelling
- 7.3 Poster and Graphic Design Basics
- 7.4 Book Design

UNIT 6 • WEEKS 21–24

Perspective and Architecture

Perspective and architecture: two- and three-point perspective, drawing real buildings, the cityscape, and the design of churches from Romanesque to Gothic.

- 6.1 Two- and Three-Point Perspective
- 6.2 Drawing Buildings
- 6.3 The Cityscape
- 6.4 Church Architecture: Romanesque to Gothic

UNIT 8 • WEEKS 29–32

From the 1700s to 1900, and a Capstone

From the 1700s to 1900: Constable and Turner, the Hudson River School and American painters, Monet and Van Gogh's landscapes, and a capstone portfolio and art show.

- 8.1 Constable and Turner
- 8.2 The Hudson River School and American Painters
- 8.3 Monet and Van Gogh: Landscapes of Color and Light
- 8.4 Capstone: Portfolio and Art Show

WEEKLY PACING CALENDAR

WEEK	PLAN
1	- Session 1: Lesson 1.1 The Elements and Principles Reviewed: warm-up, video, teaching and picture study - Session 2: Lesson 1.1 studio project and sketchbook practice <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>

WEEK	PLAN
2	• Session 1: Lesson 1.2 Visual Weight and Balance: warm-up, video, teaching and picture study • Session 2: Lesson 1.2 studio project and sketchbook practice
3	• Session 1: Lesson 1.3 Contrast and Emphasis: warm-up, video, teaching and picture study • Session 2: Lesson 1.3 studio project and sketchbook practice
4	• Session 1: Lesson 1.4 Critique: Describe, Analyze, Interpret, Judge: warm-up, video, teaching and picture study • Session 2: Lesson 1.4 studio project and sketchbook practice • Session 3: Unit 1 review and portfolio piece
5	• Session 1: Lesson 2.1 The Portrait: Proportion and Likeness: warm-up, video, teaching and picture study • Session 2: Lesson 2.1 studio project and sketchbook practice
6	• Session 1: Lesson 2.2 The Head and Its Planes: warm-up, video, teaching and picture study • Session 2: Lesson 2.2 studio project and sketchbook practice
7	• Session 1: Lesson 2.3 The Clothed Figure: Gesture and Proportion: warm-up, video, teaching and picture study • Session 2: Lesson 2.3 studio project and sketchbook practice
8	• Session 1: Lesson 2.4 Learning from Casts and Old Master Drawings: warm-up, video, teaching and picture study • Session 2: Lesson 2.4 studio project and sketchbook practice • Session 3: Unit 2 review and portfolio piece
9	• Session 1: Lesson 3.1 Glazing: Light Through Layers: warm-up, video, teaching and picture study • Session 2: Lesson 3.1 studio project and sketchbook practice
10	• Session 1: Lesson 3.2 Limited Palettes: warm-up, video, teaching and picture study • Session 2: Lesson 3.2 studio project and sketchbook practice

WEEK	PLAN
11	• Session 1: Lesson 3.3 Seeing and Mixing Color Accurately: warm-up, video, teaching and picture study • Session 2: Lesson 3.3 studio project and sketchbook practice
12	• Session 1: Lesson 3.4 Color and Light: warm-up, video, teaching and picture study • Session 2: Lesson 3.4 studio project and sketchbook practice • Session 3: Unit 3 review and portfolio piece
13	• Session 1: Lesson 4.1 Tonal Painting: warm-up, video, teaching and picture study • Session 2: Lesson 4.1 studio project and sketchbook practice
14	• Session 1: Lesson 4.2 Rendering Complex Forms: Metal and Glass: warm-up, video, teaching and picture study • Session 2: Lesson 4.2 studio project and sketchbook practice
15	• Session 1: Lesson 4.3 Grisaille and Underpainting: warm-up, video, teaching and picture study • Session 2: Lesson 4.3 studio project and sketchbook practice
16	• Session 1: Lesson 4.4 Light Through a Window: warm-up, video, teaching and picture study • Session 2: Lesson 4.4 studio project and sketchbook practice • Session 3: Unit 4 review and portfolio piece
17	• Session 1: Lesson 5.1 Make Your Own Paint: Pigment and Binder: warm-up, video, teaching and picture study • Session 2: Lesson 5.1 studio project and sketchbook practice
18	• Session 1: Lesson 5.2 Egg Tempera: warm-up, video, teaching and picture study • Session 2: Lesson 5.2 studio project and sketchbook practice
19	• Session 1: Lesson 5.3 Oak Gall and Walnut Ink: warm-up, video, teaching and picture study • Session 2: Lesson 5.3 studio project and sketchbook practice
20	• Session 1: Lesson 5.4 Conservation and Restoration: warm-up, video, teaching and picture study • Session 2: Lesson 5.4 studio project and sketchbook practice

WEEK	PLAN
	Session 3: Unit 5 review and portfolio piece
21	- Session 1: Lesson 6.1 Two- and Three-Point Perspective: warm-up, video, teaching and picture study - Session 2: Lesson 6.1 studio project and sketchbook practice
22	- Session 1: Lesson 6.2 Drawing Buildings: warm-up, video, teaching and picture study - Session 2: Lesson 6.2 studio project and sketchbook practice
23	- Session 1: Lesson 6.3 The Cityscape: warm-up, video, teaching and picture study - Session 2: Lesson 6.3 studio project and sketchbook practice
24	- Session 1: Lesson 6.4 Church Architecture: Romanesque to Gothic: warm-up, video, teaching and picture study - Session 2: Lesson 6.4 studio project and sketchbook practice - Session 3: Unit 6 review and portfolio piece
25	- Session 1: Lesson 7.1 Calligraphy and Lettering: warm-up, video, teaching and picture study - Session 2: Lesson 7.1 studio project and sketchbook practice
26	- Session 1: Lesson 7.2 Illustration and Storytelling: warm-up, video, teaching and picture study - Session 2: Lesson 7.2 studio project and sketchbook practice
27	- Session 1: Lesson 7.3 Poster and Graphic Design Basics: warm-up, video, teaching and picture study - Session 2: Lesson 7.3 studio project and sketchbook practice
28	- Session 1: Lesson 7.4 Book Design: warm-up, video, teaching and picture study - Session 2: Lesson 7.4 studio project and sketchbook practice - Session 3: Unit 7 review and portfolio piece
29	- Session 1: Lesson 8.1 Constable and Turner: warm-up, video, teaching and picture study - Session 2: Lesson 8.1 studio project and sketchbook practice

WEEK	PLAN
30	• Session 1: Lesson 8.2 The Hudson River School and American Painters: warm-up, video, teaching and picture study • Session 2: Lesson 8.2 studio project and sketchbook practice
31	• Session 1: Lesson 8.3 Monet and Van Gogh: Landscapes of Color and Light: warm-up, video, teaching and picture study • Session 2: Lesson 8.3 studio project and sketchbook practice
32	• Session 1: Lesson 8.4 Capstone: Portfolio and Art Show: warm-up, video, teaching and picture study • Session 2: Lesson 8.4 studio project and sketchbook practice • Session 3: Unit 8 review and portfolio piece <i>Last week. Hold a family art show: hang the best piece from each unit and let the student tell guests about one of them.</i>

MATERIALS

Sketchbook (9×12 in, mixed-media paper, at least 60 sheets)

For warm-ups, studies and sketchbook exercises all year.

Drawing paper pad (11×14 in or 9×12 in, 80 lb or heavier)

For finished drawings and portfolio pieces.

Graphite pencils: 2H, HB, 2B, 4B, 6B

Hard pencils for light construction lines, soft pencils for darks.

Kneaded eraser, a white plastic eraser and a pencil sharpener or craft knife (adult supervision)

The kneaded eraser lifts tone without damaging paper; it is a drawing tool, not only a correction tool.

Vine charcoal, compressed charcoal, a white charcoal pencil and a paper blending stump

For portraits, value studies and drawing on toned paper.

Toned paper (gray or tan, a few sheets)

For drawings in black and white on a middle value, used in Units 2 and 4.

Acrylic paints (student grade): titanium white, ivory or mars black, cadmium yellow light hue, yellow ochre, cadmium red light hue, alizarin crimson hue, ultramarine blue, burnt umber, burnt sienna

Hue versions of cadmium colors are safer and cheaper. This is the main painting set for Units 3, 4 and 8.

Acrylic glazing medium (gloss or matte)

Thins acrylic into transparent glazes without weakening the paint film.

Brushes: synthetic flats (1/4 in, 1/2 in), rounds (sizes 2, 6), a small liner and a 1 in flat

Synthetic brushes work well for acrylic and are easy to clean with soap and water.

Canvas panels or acrylic paper (8×10 in and 11×14 in) and a jar of acrylic gesso

Supports for paintings; gesso primes cardboard or hardboard as a cheaper support.

Watercolor pan set, a round watercolor brush (size 8) and 140 lb watercolor paper

For studies, illustration and the material science unit.

Palette (a white plate, a disposable paper palette or a plastic palette) and a palette knife

A palette knife mixes cleanly and is needed for making paint in Unit 5.

Calligraphy pen: a Pilot Parallel pen (3.8 mm) or a broad-edge dip nib and holder with India ink

For Unit 7. The Parallel pen is the easiest start.

Material science kit for Unit 5: powdered earth pigments (yellow ochre, red iron oxide, burnt umber), gum arabic solution, honey or glycerin, a small glass muller or flat smooth stone, a glass or tile slab, eggs, black walnut hulls or oak galls, plain steel wool and white vinegar, coffee filters, small glass jars

Buy only non-toxic earth pigments. A dust mask and disposable gloves are needed when handling dry pigment and ink.

Ruler (18 in), a T-square or straightedge, a viewfinder (a card with a small rectangle cut in it), masking tape and a drawing board

For perspective, composition and taping paper flat.

Workable fixative (spray)

Use outdoors only, by an adult or with an adult present, to keep charcoal from smudging.

GRADING

Eighth grade art is graded on craftsmanship, effort and understanding, not on talent. Studio projects and portfolio pieces show what the student can make; unit reviews show what the student understands and can explain.

PART	%
Studio projects	35
Portfolio pieces (one per unit, graded with the rubric)	25
Sketchbook (completeness, effort, dated pages)	20
Unit reviews (100 points each)	20

Scale: A 90–100, B 80–89, C 70–79, D 60–69, below 60 needs to be redone. For a studio project, a fair rule of thumb: A is careful work that shows the lesson’s idea clearly; B shows the idea with some carelessness; C attempts the idea but leaves parts unfinished.

- Grade the studio project against its “check” statements. If the student can honestly say yes to each one, the project has met the lesson’s goal.
- Any project may be redone for a higher grade. Redoing is how artists improve.
- Keep all portfolio pieces flat in a large folder; they become the capstone portfolio and art show in Unit 8.

A NOTE TO PARENTS

You do not need to be an artist to teach this course. Read the core ideas together, watch the video, and do the picture study alongside your student; the questions are written so that careful looking, not expert knowledge, finds the answers. When you are unsure whether a drawing is right, use the project’s “check” list and ask your student to show you where each point is met.

Eighth graders are often hard on their own work. Praise specific things (“that edge on the cheek is soft and convincing”) rather than general ones, and treat every weak

drawing as information about what to practice next. The old masters spent years copying, measuring and correcting, and they thought of it as a discipline and a gift. Our hope is that by the end of this year your student will be able to see more truly, work more patiently and make something beautiful on purpose.

UNIT 1

MASTERING THE ELEMENTS AND PRINCIPLES

Every picture ever made is built from the same few ingredients. The **elements of art** (line, shape, form, value, color, texture and space) are the materials; the **principles of design** (balance, contrast, emphasis, movement, pattern and rhythm, proportion, unity and variety) are the ways an artist arranges them. You have met all of these before. This unit pulls them together so that you can use them on purpose and talk about them clearly.

We will study how some parts of a picture seem heavier than others (visual weight), how contrast pulls the eye to a center of interest, and how to give a careful, honest critique of a work of art, including your own. Good critique is not fault-finding; it is learning to see what is really there and why it works.

PREREQUISITES

- Basic drawing with pencil, including shading from light to dark
- Familiarity with the color wheel (primary, secondary and complementary colors)
- A sketchbook and the habit of dating each page

MASTERY CHECKLIST

- ☐ I can name and define the seven elements of art and the main principles of design.
- ☐ I can explain what gives a shape more or less visual weight and use that to balance a composition.
- ☐ I can create a clear focal point using contrast of value, color, edge or detail.
- ☐ I can critique a work of art in four steps: describe, analyze, interpret and judge.
- ☐ I can plan a picture with small thumbnail sketches before beginning a finished work.

LESSONS IN THIS UNIT

1.1 The Elements and Principles Reviewed

2 sessions of 60 minutes

1.2 Visual Weight and Balance

2 sessions of 60 minutes

1.3 Contrast and Emphasis

2 sessions of 60 minutes

UNIT 1 REVIEW

Answer each question in complete sentences unless a drawing is asked for. You may use your sketchbook for drawing questions. Total: 100 points.

1. 7 pts

List the seven elements of art.

2. 7 pts

Name five principles of design.

3. 8 pts

What is the difference between a shape and a form? Draw an example of each.

4. 8 pts

Name four things that can give a small area of a picture a lot of visual weight.

5. 8 pts

Explain the difference between symmetrical and asymmetrical balance and give one example of where each might be used.

6. 8 pts

What is a focal point, and what is the strongest kind of contrast for creating one?

7. 8 pts

What is subordination, and why does emphasis need it?

8. 8 pts

List the four steps of art criticism in order and say in a few words what each one asks.

9. 8 pts

Rewrite this sentence as an objective description: "The sky is gorgeous and the people look sad."

10. **8 pts**

In Hobbema's *The Avenue at Middelharnis*, what creates the strong central axis, and what adds variety?

11. **10 pts**

Short answer: Describe how Rembrandt creates emphasis in *The Night Watch*. Name at least three kinds of contrast he uses.

12. **12 pts**

Short answer: Judge Millet's *The Angelus* using the standards of truth, goodness and beauty. Give at least one piece of evidence for each.

ANSWER KEY

1. Line, shape, form, value, color, texture and space.
2. Any five of: balance, contrast, emphasis, movement, pattern and rhythm, proportion, unity and variety.
3. A shape is flat and two-dimensional (a circle); a form is three-dimensional or looks so through shading (a shaded sphere). Drawings should show a flat circle and a shaded ball.
4. Strong value contrast (dark against light), bright or saturated color, sharp detail or edges, an unusual shape, or an interesting subject such as a face or figure.
5. Symmetrical balance mirrors both sides of a center line and feels formal and calm (a church façade, an altarpiece). Asymmetrical balance uses different things of equal visual weight on each side and feels more natural and lively (a landscape with a big tree on one side and a small bright house on the other).
6. The focal point is the center of interest, where the eye goes first. Value contrast, light against dark, is usually the strongest.
7. Subordination is quieting the less important parts of a picture (softer edges, less detail, less contrast). Without it every part competes and nothing stands out.
8. Describe (what do I see?), analyze (how is it organized?), interpret (what does it mean?), judge (how successful is it and why?).
9. Example: “The sky is pale yellow near the horizon and gray-blue at the top. The two figures stand with their heads bowed.”
10. The straight road and the rows of tall trees create the central axis. Variety comes from the different buildings, fields, figures and trees on each side, and the varied clouds.
11. Rembrandt lights the captain and lieutenant in front and the girl behind them while many figures fall into shadow. He uses value contrast (the black-clad captain beside the pale gold lieutenant against dark surroundings), color contrast (the red sash, the gold costumes), edge contrast (sharp edges on the lit figures, lost edges in shadow) and detail contrast (fine detail on the lieutenant’s coat).
12. Truth: the figures, tools and field are observed honestly, with real weight and posture of tired farm workers. Goodness: it honors prayer, humility and honest work, and it was made with care. Beauty: the quiet evening light, simple

balanced composition and harmony of warm earth colors give it peace and dignity. A strong answer reaches a clear judgment supported by these points.

PORTFOLIO PIECE: A STILL LIFE DESIGNED ON PURPOSE

Set up a still life of five to seven objects that you have chosen for their different shapes, values and textures. Plan it with at least three thumbnails, then make a finished drawing or painting (11×14 in) with deliberate asymmetrical balance and one clear focal point created by at least three kinds of contrast. Attach a one-paragraph, four-step critique of your finished piece.

LOOK FOR	WHAT IT MEANS
Planning	At least three thumbnails show different arrangements; the chosen one is clearly the strongest.
Balance	The composition is asymmetrical yet steady; nothing feels accidentally lopsided.
Emphasis	A single clear focal point is created by combined contrasts of value, edge, color or detail, and the rest is subordinated.
Craftsmanship	Forms are carefully shaded with a full range of values; the work is clean, signed and dated.
Critique	The written critique uses all four steps and names a specific strength and a specific improvement.

1.1 THE ELEMENTS AND PRINCIPLES REVIEWED

OBJECTIVES

- Name and define the seven elements of art and the main principles of design.
- Find each element and several principles at work in a master painting.
- Make a design sheet that shows every element in a small, deliberate study.

Warm-up. Fill one sketchbook page with seven small boxes. In each, make the quickest possible example of one element: a single expressive line, a flat shape, a shaded form, a value scale of five steps, a scribble of color, a patch of texture, and two overlapping shapes that make space. Five minutes, no erasing.

WATCH

Elements of Art & Principles of Design

Jennifer Funnell • 10:12

<https://www.youtube.com/watch?v=BaKOjk8KU9w>

WHEN TO WATCH

After reading the core ideas. Pause after each element and point to an example of it in the room around you.

BACKUP VIDEO

Review of the Art Principles

Art Ed Guru • 13:06

<https://www.youtube.com/watch?v=sbHPvnIT2Cw>

Optional: an art teacher reviews each principle of design with photographs.

KEY TERMS

elements of art

The basic visual ingredients of any picture: line, shape, form, value, color, texture and space.

principles of design

The ways the elements are arranged: balance, contrast, emphasis, movement, pattern and rhythm, proportion, and unity with variety.

value

How light or dark something is, from white through grays to black.

form

A three-dimensional object, or the illusion of one on a flat surface, made by shading.

unity

The sense that every part of a picture belongs to the same whole.

variety

Differences in size, shape, color or value that keep a unified picture from being dull.

CORE IDEAS

Think of the **elements** as the bricks and the **principles** as the architecture. Line, shape, form, value, color, texture and space are what you can actually put on paper. Balance, contrast, emphasis, movement, rhythm, proportion and unity are the decisions about where those things go and how they relate to one another. A beginner tends to think only about the bricks (“I need to draw the nose right”); a mature artist thinks about the architecture too (“the nose is in the right place, but is this the part of the picture I want people to look at first?”).

Each element has its own job. **Line** leads the eye and describes edges. **Shape** is a flat area; **form** is the illusion of volume made by light and shadow. **Value** is the most important element for making things look solid and for organizing a picture: if the values are right, a painting reads well even in black and white. **Color** adds hue, temperature and mood. **Texture** is the feel of a surface, real or drawn. **Space** is the illusion of depth, made by overlapping, size, placement, perspective and atmosphere.

The principles are how a picture holds together. **Balance** is the distribution of visual weight. **Contrast** is difference: light against dark, warm against cool, sharp against soft. **Emphasis** is the center of interest that contrast usually creates. **Movement** is the path the eye travels. **Pattern and rhythm** are repetition, regular or varied. **Proportion** is the relationship of sizes. **Unity with variety** is the goal of all of them: a picture that is one thing, yet interesting in its parts.

Why learn names for these? Because a name lets you notice something and talk about it. A musician who knows what a key change is hears it; one who does not only

feels that something happened. When you can say “the light values all cluster on the left, so the picture feels lopsided,” you can fix it. Naming is the first step to seeing.

The old masters did not have a list called “the principles of design”; these terms were organized by art teachers in the last century and a half. But the masters used every one of them, learned by long practice in workshops. Studying their pictures with these words is like learning grammar by reading great writers.

PICTURE STUDY



The Art of Painting, Johannes Vermeer, about 1666–1668 · Oil on canvas · Kunsthistorisches Museum, Vienna

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

Vermeer kept this painting for himself and never sold it; it seems to be his own statement about what painting is. Almost every element and principle you know is at work in it, which makes it a perfect place to start the year.

Look closely

- Find the elements one by one: straight lines in the map and floor, curved lines in the curtain, flat shapes, rounded forms, and a full range of values.
- Look at the textures: the heavy tapestry curtain, the smooth map, the shining brass chandelier, the soft fabric of the model's dress.
- Notice how the black-and-white floor tiles carry your eye back into the room. What principle is that?
- Compare the dark curtain on the left with the light wall on the right. How does this contrast frame the scene?

Talk about it

1. Where does your eye go first, and what brought it there?
2. What is repeated in this painting? Where does the repetition change slightly to give variety?

3. Why do you think Vermeer turned the painter's back to us instead of showing his face?

STUDIO PROJECT

A Design Sheet of the Elements

You will make a single sheet that shows all seven elements, each in a carefully made small study taken from objects around you. Together they become a reference page for the whole year and a test of craftsmanship.

You will need

- Drawing paper (11×14 in or 9×12 in)
- Ruler and pencil (HB, 2B, 4B)
- Colored pencils or watercolor
- Kneaded eraser
- A few small household objects (a cup, a leaf, a piece of fabric, a key)

Steps

1. With a ruler, lightly divide your paper into eight equal rectangles (two rows of four). Leave a 1/2 in border around the edge.
2. Label the first seven boxes neatly in small capital letters: LINE, SHAPE, FORM, VALUE, COLOR, TEXTURE, SPACE. Label the eighth UNITY.
3. LINE: draw the contour of a leaf or a key with one continuous line, pressing harder where the edge turns away into shadow and lighter where it faces the light.
4. SHAPE and FORM: draw the same cup twice. In the SHAPE box, fill its outline flat with one tone. In the FORM box, shade it from light to dark so it looks round.
5. VALUE: make a seven-step value scale from white to black, each step clearly different, with smooth even tone in each square.
6. COLOR: paint or color a small piece of fruit or a leaf using at least three hues, with a lighter tint where the light hits and a darker shade in the shadow.
7. TEXTURE: draw a close-up of a piece of fabric, bark or a woven basket, using marks that imitate how it would feel.
8. SPACE: draw three simple objects that overlap, the nearest one larger, lower on the page and more detailed, the farthest one smaller, higher and paler.

9. **UNITY:** in the last box, combine a few of the elements above into one tiny composition using the same objects. Then sign and date the sheet.

Tips

- Keep every box equally careful; this sheet is about craftsmanship as much as knowledge.
- Use the hard pencil for the grid and lettering so it stays light and clean.

Check your work

- ☐ Every box shows its element clearly enough that someone else could name it without the label.
- ☐ My value scale has seven distinct steps from white to black.
- ☐ My SPACE box uses at least three ways to show depth.
- ☐ The sheet is neat, labeled, signed and dated.

SKETCHBOOK PRACTICE

1. Choose one principle of design and find three examples of it in your house or yard. Make a quick thumbnail sketch of each and label it.
2. Copy the floor tiles and curtain of Vermeer's *The Art of Painting* in a small value sketch using only three values: light, middle and dark.

From history. Vermeer painted about 35 pictures that survive, almost all of quiet rooms in Delft. In *The Art of Painting* the model is dressed as Clio, the muse of history in classical tradition, holding a horn of fame and a book; Vermeer is saying that painting records and honors what is worth remembering.

COMMON MISTAKES

- Confusing shape and form: a circle is a shape; a shaded ball is a form.
- Making a value scale where the middle steps all look the same. Squint and compare neighbors; each step should be a clear jump.
- Thinking of the principles as rules. They are tools for seeing; great pictures sometimes break one on purpose.

Make it a game • Last Name Standing. Take turns naming the seven elements of art and the main principles of design, one per turn, with no repeats. Whoever freezes loses the round. Then pick an object in the room and each of you must name one element and one principle at work in it. Play three rounds and keep score.

Scripture. “And I have filled him with the spirit of God, in wisdom, and in understanding, and in knowledge, and in all manner of workmanship,” (Exodus 31:3, KJV)

God gave Bezalel not only skill but wisdom and understanding for his work. Learning the elements and principles is part of that understanding, which turns skill into craftsmanship.

1.2 VISUAL WEIGHT AND BALANCE

OBJECTIVES

- Explain what makes one part of a picture feel heavier than another.
- Distinguish symmetrical, asymmetrical and radial balance.
- Plan and complete a balanced asymmetrical still life composition.

Warm-up. On a sketchbook page draw two rectangles side by side. In the first, place one large dark square on the left and balance it with small shapes on the right. In the second, balance a single small bright red dot against a large pale gray shape. Which small things can balance big ones?

WATCH

Tell Better Tales with Visual Weight

Let's Learn About Art • 6:16

<https://www.youtube.com/watch?v=Xf3sTkh9o8o>

WHEN TO WATCH

After the core ideas, before the picture study. Pause at the section on analyzing art and try the same analysis on the Hobbema painting.

BACKUP VIDEO

Good Composition #3: Asymmetrical Balance

Walcott Fine Art • 6:48

<https://www.youtube.com/watch?v=1FxOQUP9kWc>

Before the studio project, to see how a painter balances unequal shapes.

KEY TERMS

visual weight

How strongly a part of a picture attracts the eye and seems to pull on the composition.

symmetrical balance

Balance made by matching both sides of a central axis, like a mirror image.

asymmetrical balance

Balance made with different things on each side that carry equal visual weight.

radial balance

Balance in which parts spread out from a center, like spokes of a wheel or a rose window.

fulcrum

The balance point; in a picture, the place around which the visual weights seem to balance.

CORE IDEAS

Every mark in a picture has **visual weight**: it pulls on the eye. Weight is not the same as size. A small area can be very heavy if it is dark against light, bright in color, sharply detailed, oddly shaped, or interesting in subject (a face always weighs more than a rock of the same size). Large, pale, plain, soft-edged areas are light, even when they take up much of the picture.

Think of a picture as a seesaw. A heavy shape close to the center can be balanced by a lighter shape far from the center, just as a small child at the end of a seesaw balances a grown-up sitting near the middle. This is why a painter can put a small dark figure near the edge of a big pale field and the picture still feels steady.

Symmetrical balance mirrors one side to the other. It feels formal, calm, permanent and dignified, which is why it is used for altarpieces, church façades and portraits of rulers. **Asymmetrical balance** sets different things against each other: a large tree against a small house, a dark mass against a bright spot. It feels more natural and lively. **Radial balance** spreads from a center, as in a rose window, a flower or a clock face.

A picture can be perfectly symmetrical in its large structure and still be full of variety, as in Hobbema's avenue of trees: the road runs straight down the middle, but the farmhouse, the church tower, the trees and the figures are all different on each side. A good test of balance is to look at your picture in a mirror or turn it upside down. If it suddenly feels lopsided, the weights were not as even as you thought.

Balance serves meaning. A calm subject wants calm balance; a scene of wind or motion can use a deliberately tipped, uneasy balance. Ask first what feeling the picture should have, then arrange the weights to support it.

PICTURE STUDY



The Avenue at Middelharnis, Meindert Hobbema, 1689 · Oil on canvas · The National Gallery, London

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

Hobbema's avenue is one of the most famous examples of a picture built on a strong central axis. Yet the more you look, the more you see that the two sides are not alike at all. It is a lesson in how symmetry and variety work together.

Look closely

- Trace the road with your finger from the bottom of the picture to the horizon. Where does it end?
- Compare the left side with the right side. List three things that are different.
- Find the small man walking with his dog. How much visual weight does he carry for his size? Why?
- Notice how much of the picture is sky. How does the high, light sky balance the darker land below?

Talk about it

1. Is this picture symmetrical, asymmetrical, or both? Defend your answer.
2. If the church tower were moved to the far right edge, how would the balance change?
3. What feeling does the strong straight road give the picture?

STUDIO PROJECT

A Balanced Asymmetrical Still Life

You will arrange a still life of objects with different visual weights and draw it so that it feels balanced without being symmetrical. Planning with thumbnails is the heart of this project.

You will need

- Drawing paper (9×12 in)
- Pencils (HB, 2B, 4B, 6B)
- Kneaded eraser
- Three to five objects of different sizes and darkness (a dark bottle, a white cup, a small bright fruit, a book)
- A lamp
- A viewfinder card

Steps

1. Set your objects on a table against a plain background, lit from one side by a lamp.
2. Arrange them so the biggest, darkest object is off-center, then move small objects until the arrangement feels balanced. Try at least three arrangements.
3. Look through the viewfinder and choose a frame. Make three thumbnail sketches (about 2×3 in) in your sketchbook, each with a different arrangement or crop, shaded in three values.
4. Choose the best thumbnail. Draw a small arrow under it showing where you think the fulcrum (balance point) is.
5. Lightly sketch the chosen composition on your drawing paper, keeping the proportions of the thumbnail.
6. Block in the darkest shapes first with a 4B or 6B pencil, then the middle values, leaving the paper white for the lightest areas.
7. Refine the forms with shading, cast shadows and a few sharp details on the object you most want people to notice.

8. Check the balance by looking at the drawing in a mirror. Adjust the background tone or a cast shadow if one side feels too heavy.

Tips

- A small, very bright or very dark object can balance a large plain one.
- Do not line objects up in a row like soldiers; overlap some of them.

Check your work

- ☐ My composition is not symmetrical, yet it feels steady.
- ☐ I made at least three thumbnails before choosing.
- ☐ My drawing has a full range of values from white to near black.
- ☐ The drawing still feels balanced when I look at it in a mirror.

SKETCHBOOK PRACTICE

1. Find a photograph in a book or magazine with strong asymmetrical balance. Make a three-value thumbnail of it and mark the fulcrum.
2. Draw a symmetrical design (a church door, a window or a chair from the front) and then a second version that keeps the same objects but is asymmetrally balanced.

From history. Meindert Hobbema was a pupil of Jacob van Ruisdael, the great Dutch landscape painter. After he married, he took a job as a wine gauger for the city of Amsterdam and painted much less; *The Avenue at Middelharnis* is one of the few masterpieces of his later years.

COMMON MISTAKES

- Placing the main object dead center by habit. Try thirds before you settle on the middle.
- Assuming big always means heavy. Check value, color and detail too.
- Skipping thumbnails. Five minutes of planning saves an hour of fixing.

Make it a game • Fulcrum Seesaw. Balance a ruler on a pencil as a fulcrum. Put a big pale paper square on one end and a small black one on the other, and predict which feels heavier before testing. Then arrange buttons on paper in a symmetrical, an asymmetrical and a radial layout. Your parent names each type.

1.3 CONTRAST AND EMPHASIS

OBJECTIVES

- Explain how contrast creates a focal point.
- Identify five kinds of contrast: value, color, edge, detail and isolation.
- Make a drawing whose focal point is created deliberately by contrast.

Warm-up. Draw six small identical circles in a row. Then make one of them stand out in a different way each time you redraw the row: darker, a different color, a sharper edge, more detail, set apart from the others. Which method is strongest?

WATCH

Art Education - Principles of Design - Contrast - Getting Back to the Basics - Art Lesson

Paint It Kids · 3:34

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

WHEN TO WATCH

After the core ideas. Pause after each kind of contrast the video shows and find an example of it in *The Night Watch*.

BACKUP VIDEO

3 Rules for Better Composition in Your Art

Artwod · 6:05

<https://www.youtube.com/watch?v=te9Efr1VT9U>

Optional: how value contrast and simple shapes lead the eye in a composition.

KEY TERMS

contrast

A strong difference between two things placed side by side, such as light and dark, warm and cool, or sharp and soft.

emphasis

The principle of making one part of a picture more important than the rest.

focal point

The place where the eye goes first and returns to most often; also called the center of interest.

subordination

Deliberately quieting the less important parts of a picture so the focal point can stand out.

lost and found edges

Edges that are sharp in some places and soft or disappearing in others, used to steer attention.

CORE IDEAS

The eye is drawn to **difference**. Wherever the strongest contrast in a picture is, that is where people will look first. This is why painters plan their contrasts: if the greatest contrast happens by accident in a corner, the picture's attention goes to the corner.

There are several kinds of contrast. **Value contrast** (light against dark) is the strongest. **Color contrast** uses complements, like a red coat in a green field, or a bright color among dull ones. **Edge contrast** puts a crisp, sharp edge among soft ones. **Detail contrast** places fine detail in one area while keeping the rest simple. **Isolation** sets one thing apart from a group. The most powerful focal points usually combine several of these in the same spot.

Emphasis needs **subordination**. For one part to shout, the rest must speak more quietly. Beginners often make every part of a drawing equally dark, detailed and sharp, and the result looks busy and flat. Masters keep most of the picture softer and simpler, saving their sharpest edges, brightest lights and darkest darks for the place that matters most.

A picture may have one main focal point and one or two lesser accents, like a sentence with a main clause and a few supporting phrases. The accents should be clearly weaker than the main point, and they often help lead the eye toward it.

Contrast is a moral as well as a visual tool: it tells the viewer what you think matters. A painter of a sacred scene who puts the strongest light on the face of Christ is making a statement as well as a composition.

PICTURE STUDY



The Night Watch, Rembrandt van Rijn, 1642 · Oil on canvas · Rijksmuseum, Amsterdam

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

This enormous group portrait of an Amsterdam civic guard company is one of the most famous examples of emphasis by contrast. Rembrandt did not paint the men lined up in rows, as was the custom; he gathered them in a moving crowd and used light to tell us where to look.

Look closely

- Find the two men in front. One wears black, one wears pale gold. How does Rembrandt make them stand out from the crowd?
- Find the girl in gold behind them on the left. Why does your eye keep going back to her?
- Notice how many figures fade into shadow. Which edges are sharp, and which are lost in the dark?
- Look at the captain's hand. How does its shadow fall across the lieutenant's coat?

Talk about it

1. What is the main focal point of this painting, and what are the secondary accents?
2. Which kinds of contrast does Rembrandt combine at the focal point?

3. Why might some of the guardsmen who paid to be in this painting have been disappointed by it?

STUDIO PROJECT

Spotlight: A Drawing with One Focal Point

You will draw a group of similar objects, then use contrast to make one of them the clear star of the picture while subordinating the rest.

You will need

- Toned paper (gray or tan, 9×12 in) or white drawing paper
- Charcoal pencil or 4B and 6B pencils
- White charcoal pencil (if using toned paper)
- Kneaded eraser
- Five to seven similar objects (eggs, apples, spools, pears)
- A lamp

Steps

1. Arrange five to seven similar objects in a loose group. Light the group from one side with a lamp, so that one object catches the brightest light.
2. Make two quick thumbnails in your sketchbook and mark the focal point in each with a small X. Choose the stronger one.
3. Lightly draw the whole group on your paper. Keep lines soft everywhere.
4. Mass in the shadows of all the objects with a middle value. Keep this tone simple and soft on everything except your focal object.
5. On the focal object, place your darkest dark right next to your brightest light. On toned paper, add the light with white charcoal only here and on one or two small accents.
6. Sharpen the edges of the focal object and add its fine details. Leave the edges of the other objects softer, letting some of them dissolve into the background.
7. Step back two meters. If another object competes, soften its edges with a finger or lighten it with the kneaded eraser.

Tips

- Squint often. Squinting hides details and shows you where the strongest contrast really is.

- Resist the urge to finish every object equally. Unfinished areas are part of the design.

Check your work

- ☐ Someone seeing my drawing for the first time looks at the same object I intended.
- ☐ My darkest dark and lightest light meet at the focal point.
- ☐ I used at least three kinds of contrast at the focal point.
- ☐ The other objects are quieter: softer edges, less detail, smaller value range.

SKETCHBOOK PRACTICE

1. Copy the central two figures of *The Night Watch* as a three-value study (paper white, middle gray, black). Ignore details; get the big contrasts right.
2. Draw a row of five trees in a landscape. Make one tree the focal point using color contrast only.

From history. The painting's real title is *Militia Company of District II under the Command of Captain Frans Banninck Cocq*. It earned the name "Night Watch" in later centuries because its varnish had darkened so much that people thought it showed a night scene; cleaning has revealed that it is actually set in daylight.

COMMON MISTAKES

- Outlining every object with the same dark line, which makes everything equally important.
- Using pure white or pure black in many places, which scatters the emphasis.
- Putting the focal point exactly in the center or right at the edge. Most strong focal points sit somewhere near a third.

Make it a game • Five Contrasts Challenge. Draw five boxes. In each, make a single circle pop out with a different kind of contrast: value, color, edge, detail or isolation. Give yourself three minutes. Your parent names the contrast used in each box. Missing one means a redraw. Name the focal point in each. Beat your own time.

1.4 CRITIQUE: DESCRIBE, ANALYZE, INTERPRET, JUDGE

OBJECTIVES

- Use the four steps of art criticism to discuss a master painting.
- Support every judgment with evidence from the work itself.
- Write a short critique and give a respectful critique of a peer's or family member's work.

Warm-up. Look at any object in the room for one full minute without drawing. Then, without looking back, write down ten things you noticed. Look again and add five more. This is the first step of critique: seeing what is actually there.

WATCH

How to Analyze Art (Composition)

Let's Learn About Art • 8:20

https://www.youtube.com/watch?v=qx08Ms1_sX4

WHEN TO WATCH

After reading the core ideas and before the picture study. Watch how the narrator describes and analyzes a painting's composition before she interprets it.

BACKUP VIDEO

Feldman's 4 Steps to Art Criticism

mandersart • 9:17

<https://www.youtube.com/watch?v=UFXQgRd4UZ0>

Optional, a step-by-step walk through Feldman's four steps: describe, analyze, interpret, judge.

KEY TERMS

critique

A careful, reasoned discussion of a work of art: what it is, how it works, what it means and how well it succeeds.

description

The first step: naming what you can see, without opinion.

analysis

The second step: explaining how the elements and principles are organized.

interpretation

The third step: explaining what the work means or expresses, supported by evidence.

judgment

The fourth step: deciding how successful the work is and why, using clear standards.

CORE IDEAS

A critique moves from the obvious to the deep in four steps, and the order matters.

Describe: what is in the picture? Name the subject, the medium, the size, the objects, the colors, without any opinion. **Analyze:** how is it organized? Where is the focal point, how is the balance achieved, what path does the eye follow, how is light used? **Interpret:** what does it mean or express, and what in the picture tells you so? **Judge:** is it a good work of art, and by what standard?

The most common mistake is to jump straight to judgment: “I like it” or “It’s boring.” Those statements tell us about the speaker, not the picture. By first describing and analyzing, you earn the right to an opinion, and your opinion becomes worth hearing because it rests on evidence.

What standards should we use to judge? The classical tradition offers three that have stood for a long time: **truth** (is the work honest, skillful and faithful to what it represents?), **goodness** (does it point toward what is worthy, and is it made with care?), and **beauty** (does it have harmony, proportion and radiance that delight the eye and mind?). You can also judge craftsmanship (how well it was made) and success (did it achieve what it set out to do?).

Critiquing your own work uses the same steps. Prop your drawing up, step back, and describe it as though a stranger made it. Then analyze: where does my eye go? Is that where I wanted it? Then judge, and decide one or two things to fix. Honest self-critique is the fastest way to improve.

When critiquing someone else’s work, be kind and specific. Begin with what works, then offer one or two concrete suggestions, phrased as questions or possibilities

(“What would happen if the background were darker?”). The goal is to help the maker see more clearly, not to show off.

PICTURE STUDY



The Angelus, Jean-François Millet, 1857–1859 · Oil on canvas · Musée d'Orsay, Paris

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

Millet painted a farm couple pausing in the potato field to pray the Angelus when the evening church bell rings. It became one of the most beloved paintings of the nineteenth century. It is a perfect painting to practice the four steps of critique on, because it is simple in subject and deep in meaning.

Look closely

- Describe first: list everything you can see, including the tools, the basket, the wheelbarrow and the distant church.
- Notice where the two figures stand against the sky. How does this make them stand out?
- Look at the light. Where is the sun, and how does it touch the figures?
- Find the church spire. How big is it, and why might Millet have put it there?

Talk about it

1. Analyze: how has Millet balanced the composition, and where is the focal point?
2. Interpret: what is this painting about? What details support your interpretation?

3. Judge: is this a great painting? Use truth, goodness and beauty in your answer.

STUDIO PROJECT

A Written Critique and a Studio Response

You will write a four-step critique of *The Angelus*, then make a small painting or drawing of a quiet everyday moment of your own, and critique it using the same four steps.

You will need

- Lined paper or a notebook
- Drawing or watercolor paper (8×10 in)
- Pencils, colored pencils or watercolor
- A family member or friend to receive a critique

Steps

1. Write a heading for each of the four steps: Describe, Analyze, Interpret, Judge.
2. Under Describe, write at least six sentences of plain observation about *The Angelus*, with no opinions.
3. Under Analyze, write at least four sentences that use vocabulary from this unit: balance, contrast, focal point, value, movement.
4. Under Interpret, write what you think the painting means and give two pieces of evidence from the picture.
5. Under Judge, write your judgment, using truth, goodness and beauty as standards.
6. Now make a small drawing or painting of a quiet everyday moment from your own life: someone reading, cooking or working. Plan it with one thumbnail and give it a clear focal point.
7. Write a short four-step critique of your own work. End with one specific thing you would change if you made it again.
8. Ask a family member to critique your piece out loud using the four steps, and listen without defending your work.

Tips

- In Describe, pretend you are explaining the painting over the telephone to someone who cannot see it.
- In Judge, avoid “good” and “bad” without reasons. Always say why.

Check your work

- ☐ My critique uses all four steps in order.
- ☐ Every interpretation and judgment points to evidence in the picture.
- ☐ I used at least five art vocabulary words correctly.
- ☐ I critiqued my own work honestly and named one specific improvement.

SKETCHBOOK PRACTICE

1. Choose a painting you have studied in an earlier year. Write a four-sentence critique, one sentence for each step.
2. Make a quick sketch of someone in your family at work or rest. Underneath, describe it in three objective sentences.

From history. The Angelus is a prayer recalling the angel’s announcement to Mary, traditionally said morning, noon and evening when a church bell rings. Millet said the painting came from a memory of his grandmother, who would stop work in the fields at the sound of the bell to pray for the dead.

COMMON MISTAKES

- Judging before describing.
- Describing with opinion words (“a beautiful sky”) instead of facts (“a pale yellow sky fading to gray at the top”).
- Interpreting without evidence. Every claim should point to something in the picture.

Make it a game • Four-Corner Critique. Label four corners of the room Describe, Analyze, Interpret and Judge. Pick a painting from a book. Walk to each corner in order and give one sentence there, each with evidence you can point to. Your parent can say 'Show me' at any point. Reach the fourth corner with every claim supported.

Scripture. “Finally, brethren, whatsoever things are true, whatsoever things are honest, whatsoever things are just, whatsoever things are pure, whatsoever things are lovely, whatsoever things are of good report; if there be any virtue, and if there be any praise, think on these things.” (Philippians 4:8, KJV)

Paul gives us a standard for what to dwell on. It makes a fine measure for judging art: is it true, honest, pure, lovely and worthy of praise?

UNIT 1

MASTERING THE ELEMENTS AND PRINCIPLES

Every picture ever made is built from the same few ingredients. The **elements of art** (line, shape, form, value, color, texture and space) are the materials; the **principles of design** (balance, contrast, emphasis, movement, pattern and rhythm, proportion, unity and variety) are the ways an artist arranges them. You have met all of these before. This unit pulls them together so that you can use them on purpose and talk about them clearly.

We will study how some parts of a picture seem heavier than others (visual weight), how contrast pulls the eye to a center of interest, and how to give a careful, honest critique of a work of art, including your own. Good critique is not fault-finding; it is learning to see what is really there and why it works.

PREREQUISITES

- Basic drawing with pencil, including shading from light to dark
- Familiarity with the color wheel (primary, secondary and complementary colors)
- A sketchbook and the habit of dating each page

MASTERY CHECKLIST

- ☐ I can name and define the seven elements of art and the main principles of design.
- ☐ I can explain what gives a shape more or less visual weight and use that to balance a composition.
- ☐ I can create a clear focal point using contrast of value, color, edge or detail.
- ☐ I can critique a work of art in four steps: describe, analyze, interpret and judge.
- ☐ I can plan a picture with small thumbnail sketches before beginning a finished work.

LESSONS IN THIS UNIT

1.1 The Elements and Principles Reviewed

2 sessions of 60 minutes

1.2 Visual Weight and Balance

2 sessions of 60 minutes

1.3 Contrast and Emphasis

2 sessions of 60 minutes

UNIT 1 REVIEW

Answer each question in complete sentences unless a drawing is asked for. You may use your sketchbook for drawing questions. Total: 100 points.

1. 7 pts

List the seven elements of art.

2. 7 pts

Name five principles of design.

3. 8 pts

What is the difference between a shape and a form? Draw an example of each.

4. 8 pts

Name four things that can give a small area of a picture a lot of visual weight.

5. 8 pts

Explain the difference between symmetrical and asymmetrical balance and give one example of where each might be used.

6. 8 pts

What is a focal point, and what is the strongest kind of contrast for creating one?

7. 8 pts

What is subordination, and why does emphasis need it?

8. 8 pts

List the four steps of art criticism in order and say in a few words what each one asks.

9. 8 pts

Rewrite this sentence as an objective description: "The sky is gorgeous and the people look sad."

10. **8 pts**

In Hobbema's *The Avenue at Middelharnis*, what creates the strong central axis, and what adds variety?

11. **10 pts**

Short answer: Describe how Rembrandt creates emphasis in *The Night Watch*. Name at least three kinds of contrast he uses.

12. **12 pts**

Short answer: Judge Millet's *The Angelus* using the standards of truth, goodness and beauty. Give at least one piece of evidence for each.

ANSWER KEY

1. Line, shape, form, value, color, texture and space.
2. Any five of: balance, contrast, emphasis, movement, pattern and rhythm, proportion, unity and variety.
3. A shape is flat and two-dimensional (a circle); a form is three-dimensional or looks so through shading (a shaded sphere). Drawings should show a flat circle and a shaded ball.
4. Strong value contrast (dark against light), bright or saturated color, sharp detail or edges, an unusual shape, or an interesting subject such as a face or figure.
5. Symmetrical balance mirrors both sides of a center line and feels formal and calm (a church façade, an altarpiece). Asymmetrical balance uses different things of equal visual weight on each side and feels more natural and lively (a landscape with a big tree on one side and a small bright house on the other).
6. The focal point is the center of interest, where the eye goes first. Value contrast, light against dark, is usually the strongest.
7. Subordination is quieting the less important parts of a picture (softer edges, less detail, less contrast). Without it every part competes and nothing stands out.
8. Describe (what do I see?), analyze (how is it organized?), interpret (what does it mean?), judge (how successful is it and why?).
9. Example: “The sky is pale yellow near the horizon and gray-blue at the top. The two figures stand with their heads bowed.”
10. The straight road and the rows of tall trees create the central axis. Variety comes from the different buildings, fields, figures and trees on each side, and the varied clouds.
11. Rembrandt lights the captain and lieutenant in front and the girl behind them while many figures fall into shadow. He uses value contrast (the black-clad captain beside the pale gold lieutenant against dark surroundings), color contrast (the red sash, the gold costumes), edge contrast (sharp edges on the lit figures, lost edges in shadow) and detail contrast (fine detail on the lieutenant’s coat).
12. Truth: the figures, tools and field are observed honestly, with real weight and posture of tired farm workers. Goodness: it honors prayer, humility and honest work, and it was made with care. Beauty: the quiet evening light, simple

balanced composition and harmony of warm earth colors give it peace and dignity. A strong answer reaches a clear judgment supported by these points.

PORTFOLIO PIECE: A STILL LIFE DESIGNED ON PURPOSE

Set up a still life of five to seven objects that you have chosen for their different shapes, values and textures. Plan it with at least three thumbnails, then make a finished drawing or painting (11×14 in) with deliberate asymmetrical balance and one clear focal point created by at least three kinds of contrast. Attach a one-paragraph, four-step critique of your finished piece.

LOOK FOR	WHAT IT MEANS
Planning	At least three thumbnails show different arrangements; the chosen one is clearly the strongest.
Balance	The composition is asymmetrical yet steady; nothing feels accidentally lopsided.
Emphasis	A single clear focal point is created by combined contrasts of value, edge, color or detail, and the rest is subordinated.
Craftsmanship	Forms are carefully shaded with a full range of values; the work is clean, signed and dated.
Critique	The written critique uses all four steps and names a specific strength and a specific improvement.

UNIT 2

ADVANCED DRAWING

This unit is about drawing people: the head, the face and the clothed figure. They are the hardest and most rewarding subjects in art, because we all know faces so well that the smallest error shows. The good news is that faces and figures follow proportions and structures that can be learned, just as the old masters learned them.

We will measure the proportions of the head, then turn it into a solid object by learning its planes. We will draw clothed figures from life in quick gestures and longer poses. Finally, we will do what every Renaissance apprentice did: copy master drawings closely, to train the eye and hand by following someone better than ourselves.

PREREQUISITES

- Shading a sphere and a cube with light, shadow and cast shadow
- Measuring proportions with a pencil held at arm's length (sighting)
- Basic face proportions from earlier grades (eyes about halfway down the head)

MASTERY CHECKLIST

- ☐ I can lay out the proportions of a head from the front and in three-quarter view.
- ☐ I can describe the head as a set of planes and shade it by those planes.
- ☐ I can draw a clothed figure with a convincing gesture and proportions of about seven and a half heads.
- ☐ I can make a careful copy of a master drawing and explain what I learned from it.
- ☐ I can use sighting and comparative measurement to check my drawings.

LESSONS IN THIS UNIT

2.1 The Portrait: Proportion and Likeness

2 sessions of 60 minutes

2.2 The Head and Its Planes

2 sessions of 60 minutes

2.3 The Clothed Figure: Gesture and Proportion

2 sessions of 60 minutes

UNIT 2 REVIEW

Answer in complete sentences unless a drawing is asked for. Use your sketchbook for the drawing questions. Total: 100 points.

1. 8 pts

Where are the eyes placed on an adult head seen from the front?

2. 8 pts

Name the three equal divisions of the face.

3. 8 pts

In a three-quarter view, how does the far eye differ from the near eye, and why?

4. 8 pts

Draw a Loomis head looking up and to the left, with its center line and brow line.

5. 8 pts

What is a plane, and why do artists simplify the head into planes?

6. 8 pts

Name three under planes of the face that are usually in shadow when light comes from above.

7. 8 pts

About how many heads tall is an adult figure? Where do the knees fall?

8. 8 pts

What is contrapposto, and why does it make a figure look natural?

9. 8 pts

Where do clothing folds usually gather?

10. **8 pts**

Why did students in academies draw from plaster casts before drawing from living models?

11. **10 pts**

Short answer: Describe how Dürer shows form in *Praying Hands*. Mention the paper, the dark lines and the white lines.

12. **10 pts**

Short answer: How does Millet use gesture and clothing to show hard work in *The Gleaners*?

ANSWER KEY

1. About halfway between the top of the head and the bottom of the chin.
2. Hairline to brow, brow to the bottom of the nose, bottom of the nose to the chin.
3. The far eye looks narrower (shorter from side to side) because that side of the face is turning away from us.
4. The drawing should show a ball with a flattened side, a jaw attached, and the center and brow lines curving around the form in the direction of the turn and tilt.
5. A plane is a surface facing one direction. Simplifying the head into planes shows where light and shadow will fall, because planes facing the light are lit and planes turning away are in shadow.
6. The under plane of the nose, the under plane of the brow (eye socket), and the under plane of the jaw or chin. The upper lip is also often in shadow.
7. About seven and a half heads tall; the knees fall at about six heads down from the top of the head.
8. Contrapposto is a standing pose with the weight on one leg, so the hips and shoulders tilt in opposite directions. It is how people really stand at rest, so it looks relaxed and alive.
9. At the joints (elbows, knees, shoulders, waist) and at points of tension where cloth is pulled across the body.
10. A cast holds perfectly still and is all one color, so students could concentrate on proportion, light and shadow without the distractions of color and movement.
11. Dürer used a blue prepared paper as the middle tone, fine dark hatching lines that curve around the fingers in the shadows, and fine white lines on the knuckles, fingertips and sleeves for the lights. Together they make the hands look rounded and solid without any smudging.
12. The women bend deeply from the waist with strong, simple lines of action; one reaches to the ground, another rises with a bundle. Their heavy clothes pull tight across their backs and gather at the waist and knees, showing the strain of bending. Millet keeps the figures simple and solid so their effort and dignity read clearly.

PORTFOLIO PIECE: A PORTRAIT AT WORK

Make a finished drawing (11×14 in) of a family member doing a quiet task, such as reading, knitting or playing an instrument, showing at least the head, shoulders and hands. Construct the head with correct proportions, shade it by its planes with one clear light source, and draw the clothing so its folds follow the body. Use charcoal or pencil, or charcoal and white on toned paper.

LOOK FOR	WHAT IT MEANS
Proportion	The head, features and hands are in believable proportion, checked by measurement.
Planes and light	Light comes from one direction; the face is shaded by its planes, with lights and shadows kept in separate families.
Gesture and drapery	The pose feels natural and the clothing folds follow the body's movement.
Likeness and character	The drawing looks like the particular person and shows something of who they are.
Craftsmanship	Clean, controlled marks; construction lines removed or softened; signed and dated.

2.1 THE PORTRAIT: PROPORTION AND LIKENESS

OBJECTIVES

- Lay out the proportions of the head from the front, side and three-quarter view.
- Use the Loomis method of a ball and a jaw to construct a head in any direction.
- Draw a portrait from life or a photograph with accurate proportions.

Warm-up. Draw ten quick ovals, each tilted a different way. Through each draw a center line down the face and a line around the middle where the eyes go, as if the oval were an egg with a line drawn around it. Notice how the lines curve as the egg turns.

WATCH

How to draw heads with Loomis Method (Tutorial) | DrawlikeaSir

Draw like a Sir · 17:50

<https://www.youtube.com/watch?v=A6KMT4Potss>

WHEN TO WATCH

After the core ideas. Draw along, pausing after each view (front, side, three-quarter).

Note: The first minute is a joke about the artist's accent; the teaching starts at about 1:00.

KEY TERMS

proportion

The size of one part compared to another and to the whole.

Loomis method

A way of building the head from a ball (the cranium) with the sides sliced flat and a jaw attached, taught by the American illustrator Andrew Loomis.

brow line

The horizontal line at the eyebrows, one third of the way down the face from the hairline.

three-quarter view

A view of the head turned partly away, between the front view and the profile.

likeness

The quality of a portrait that makes it recognizable as a particular person.

CORE IDEAS

The adult head follows simple proportions. From the front, the **eyes sit halfway** between the top of the head and the chin; most beginners put them too high because they forget the hair and the forehead. The face (hairline to chin) divides into **three equal parts**: hairline to brow, brow to the bottom of the nose, nose to chin. The space between the eyes is about one eye wide, and the head is about five eyes wide. The corners of the mouth line up roughly under the pupils, and the ears run from the brow line to the bottom of the nose.

The **Loomis method** turns these flat measurements into a solid head that can turn in any direction. Begin with a ball for the cranium. Slice a flat oval off each side (where the ears and temples are). Draw a center line down the front of the ball and a horizontal brow line around it. Then hang the jaw and chin from the ball, measuring the three equal divisions of the face down the center line. Because the guidelines wrap around the ball, they curve as the head turns or tilts, and the features follow them.

In a **three-quarter view**, the far side of the face gets narrower and the far eye shorter, because it is turning away. The nose overlaps the far cheek, and the center line curves. Many beginners draw both eyes the same size in a three-quarter view; look carefully and you will see the far eye is narrower.

Proportions get you a head; **likeness** gets you a person. Likeness lives in small differences from the average: a longer nose, wider-set eyes, a square jaw. Measure your sitter instead of drawing what you assume. Compare: is the nose longer or shorter than the space from nose to chin? Is the face wider or narrower than it is long? Each person departs from the standard proportions in his own way, and capturing those departures is what makes a portrait true.

Children's heads differ from adults': the cranium is much larger compared to the face, so the eyes sit below the halfway line. That is why a portrait of a child must be measured fresh rather than drawn from adult rules.

PICTURE STUDY



Portrait of the Artist's Mother at the Age of 63, Albrecht Dürer, 1514 · Charcoal on paper ·
Kupferstichkabinett, Berlin

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

Dürer drew his mother, Barbara, a few months before she died. It is one of the most honest portraits ever made: he did not flatter her, but he drew her with great tenderness. It shows how real proportions and careful observation make a likeness that feels alive five hundred years later.

Look closely

- Find the line of the eyes. Is it halfway down the head? Remember the head cloth hides the top of her head.
- Notice how far the far eye is turned away from us, and how it looks narrower than the near eye.
- Look at the bones of her face: cheekbone, brow and jaw. How does Dürer show them with shading?
- Look at the inscription at the top. Dürer wrote on the drawing after she died, recording the date.

Talk about it

1. How would you describe this woman's character from her face alone?
2. Why do you think Dürer chose not to make his mother look younger or prettier?

3. Is this drawing beautiful? Explain what kind of beauty it has.

STUDIO PROJECT

A Portrait in Proportion

You will draw a portrait of a family member from life (or from a well-lit photograph you take yourself), building the head with the Loomis method and checking every proportion by measurement.

You will need

- Drawing paper (11×14 in)
- Pencils (2H, HB, 2B, 4B)
- Kneaded eraser
- A sitter willing to hold still for 20-minute stretches, or a clear photograph
- A lamp to light the sitter from one side

Steps

1. Seat your sitter in a three-quarter view, lit from one side. Sit about two meters away at eye level.
2. With a 2H pencil, lightly draw the ball of the cranium, about the size of your fist, placed so there is room for the neck and shoulders.
3. Draw the center line and brow line wrapping around the ball, following the tilt and turn of your sitter's head. Slice off the side plane.
4. Add the jaw and chin, then mark the three equal divisions of the face (hairline, brow, base of nose, chin) along the center line.
5. Measure your sitter with your pencil at arm's length: compare the width of the face to its length, and the length of the nose to the space below it. Adjust your construction to match.
6. Place the eyes on the eye line, making the far eye narrower. Place the nose, mouth and ears, using the guidelines to keep them aligned.
7. Draw the hair as a big shape with its own light and shadow side, not as individual strands.
8. Shade the shadow side of the face as one connected middle tone, then add the darkest accents (nostrils, eye corners, under the jaw).

9. Gently erase the construction lines and refine the features with an HB and 2B pencil. Sign and date the drawing.

Tips

- Draw the whole head lightly first. Do not finish one eye before the other is placed.
- Ask your sitter to rest every 20 minutes and mark the position of the chair so he or she can return to the same pose.

Check your work

- ☐ The eyes are about halfway down the head.
- ☐ The three divisions of the face are close to equal, adjusted to my sitter's real measurements.
- ☐ In my three-quarter view, the far eye and far cheek are narrower.
- ☐ The light comes from one consistent direction across the whole face.

SKETCHBOOK PRACTICE

1. Fill a page with Loomis heads in ten different positions: looking up, down, left, right and tilted.
2. Draw your own face from a mirror in five minutes, only placing the proportions. Then check them by measuring.

From history. Andrew Loomis (1892–1959) was an American illustrator whose instruction books, such as *Drawing the Head and Hands*, taught generations of artists. His method of the ball and jaw is still the most common way to teach head construction.

COMMON MISTAKES

- Placing the eyes too high and making the forehead too small.
- Drawing features as symbols (almond eyes, a U nose) instead of looking at the real shapes.
- Outlining the face with a hard dark line. Real faces have soft edges that turn into shadow.

Make it a game • Turn the Ball. Draw a ball on paper and add a brow line, a center line and a jaw to build a head by the Loomis method. Your parent turns an orange to face front, side and three-quarter, and you redraw the construction in forty-five seconds each. Check where the brow line sits. Best construction wins.

Scripture. “So God created man in his own image, in the image of God created he him;” (Genesis 1:27, KJV)

Every face you draw belongs to a person made in God’s image. That is reason enough to draw it with care and honesty.

2.2 THE HEAD AND ITS PLANES

OBJECTIVES

- Describe the major planes of the head: front, side, top and under planes, and the planes of the features.
- Use the planes to decide where light and shadow fall on a face.
- Make a value drawing of a head lit from one side, shaded plane by plane.

Warm-up. Draw a cube and shade it with one light source: top lightest, one side middle, the other side darkest. Then draw an egg next to it, lit the same way. Which is easier to shade, and why?

WATCH

Painting the Planes of The Face Broken Down So You Can Understand

Paint Coach • 8:16

<https://www.youtube.com/watch?v=gpMXNqEwj7E>

WHEN TO WATCH

After the core ideas and before the studio project. Pause to sketch each group of planes as he explains it.

KEY TERMS

plane

A flat or nearly flat surface facing one direction. Complex forms can be simplified into planes.

planar head

A simplified model of the head made of flat facets, used by artists to understand how light falls on the face.

terminator

The line on a form where the light side turns into the shadow side.

form shadow

The shadow on the side of an object turned away from the light.

eye socket

The hollow under the brow in which the eye sits; it usually holds a shadow when light comes from above.

CORE IDEAS

A face looks complicated, but light treats it simply. Light falls most strongly on surfaces that face it and less on surfaces that turn away. If you can imagine the head as a set of flat **planes**, like a gem with facets, you can predict where every light and shadow will be. Artists use a model called the **planar head** for exactly this reason.

Start with the big planes. The head is roughly a box: a **front plane** (the face), two **side planes** (the temples and cheeks back to the ears), a **top plane** and an **under plane** (beneath the jaw and chin). Where the front plane turns into the side plane is a strong edge running from the outer corner of the brow down through the cheekbone to the corner of the jaw. With light from the front and one side, that edge is usually where the light turns into shadow: the **terminator**.

Then the smaller planes. The brow ridge projects and has a top plane that catches light and an under plane over the eye socket that falls in shadow. The nose is a wedge with a top, two sides and an under plane; its underside is almost always in shadow. The upper lip slopes inward and down, often catching less light, while the lower lip turns up toward the light. The chin has a front and an under plane, and the under plane of the jaw casts a shadow on the neck.

Once you see the planes, you can shade a face as a sculptor carves stone. Group all the planes facing the light into one family of light values, and all the planes turned away into one family of shadow values. Keep the two families separate. Most poorly shaded faces mix them up, with spotty darks in the light and bright spots in the shadow, and look flat and patchy.

Real faces are not flat-sided, of course. After you understand the planes, you soften the edges between them so the face becomes round and alive. The planes are a scaffold for thinking, like the guidelines of the Loomis head; they help you see what is really there.

PICTURE STUDY



Portrait of Sir Thomas More, Hans Holbein the Younger, 1527 · Oil on oak panel · The Frick Collection, New York

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

Holbein was one of the greatest portrait draftsmen who ever lived. In this portrait of the English scholar and statesman Thomas More, every plane of the face is understood and modeled with complete control, yet the result feels like a living man looking past us.

Look closely

- Find the line where the light side of the face turns into shadow. Follow it from the brow, down the cheek, to the jaw.
- Look at the eye sockets. Which one is in more shadow, and why?
- Find the under plane of the nose and the shadow below the lower lip.
- Compare the soft modeling of the face with the crisp texture of the fur, the velvet and the gold chain.

Talk about it

1. From which direction does the light come? How do you know?
2. How does Holbein make the face look solid and three-dimensional?
3. What do you think this portrait tells you about the man's character?

STUDIO PROJECT

A Head Shaded by Its Planes

You will draw a head lit strongly from one side and shade it by grouping its planes into a light family and a shadow family. You can use a plaster or foam head, a sculpture, a family member, or a printed photograph of a portrait bust with strong side light.

You will need

- Toned paper (gray or tan, 11×14 in)
- Charcoal pencil or vine charcoal
- White charcoal pencil
- Kneaded eraser
- A strong lamp
- A model: family member, sculpted head, or photograph

Steps

1. Light your model from one side and slightly above, in an otherwise dim room, so that about one third of the face is in shadow.
2. In your sketchbook, make a quick five-minute drawing of the head as a box with planes: front, side, top, under. Mark the terminator line.
3. On toned paper, lay out the head with Loomis construction. Lightly draw the edge where the front plane meets the side plane.
4. Draw the shapes of the shadows as clear, simple outlines: the side of the face, the eye sockets, the under plane of the nose, the under plane of the jaw.
5. Fill all the shadow shapes with one even middle-dark tone of charcoal. Do not let any light into them yet.
6. With white charcoal, add light only to the planes that face the light most directly: forehead, top of the nose, cheekbone, top of the lower lip, chin. Let the toned paper stay as the middle value.
7. Add the darkest accents where planes fold sharply: the corner of the eye, the nostril, the line between the lips, under the chin.

8. Soften the edge between light and shadow where the form is round (cheek) and keep it sharper where it is angular (nose, brow).

Tips

- On toned paper the paper does half the work. Use white only for the lights and charcoal only for the shadows.
- Squint to see the big shadow shape as one mass.

Check your work

- ☐ My shadows form one connected family, separate from the lights.
- ☐ The terminator follows the edge between the front and side planes.
- ☐ The under planes (nose, lip, chin, jaw) are in shadow.
- ☐ The head looks solid when I step back.

SKETCHBOOK PRACTICE

1. Draw a simplified planar head (all flat facets) from three angles.
2. Find a portrait photograph with strong side light and trace the shadow shapes only, then fill them in with one tone.

From history. Holbein, a German painter from Basel, made dozens of portrait drawings in chalk at the English court, and many survive in the Royal Collection at Windsor. He usually drew his sitters from life in a short sitting and painted the finished portrait later from the drawing.

COMMON MISTAKES

- Mixing light and shadow values, which makes a face look dirty or patchy.
- Outlining features instead of finding their planes.
- Making every edge the same; some edges between planes are sharp and some are soft.

Make it a game • Light Tag. A model sits still while your parent moves a lamp to the top, side, front and below. For each, call out which planes catch light, front, side, top or under, and where the terminator falls. Check by looking. Then swap. Eight rounds. Score a point for each correct plane.

2.3 THE CLOTHED FIGURE: GESTURE AND PROPORTION

OBJECTIVES

- Capture the action of a clothed figure in quick gesture drawings.
- Use the proportion of about seven and a half heads tall for an adult figure.
- Show how clothing folds follow and reveal the body's movement.

Warm-up. Ask a family member to take five 1-minute poses doing ordinary things: reaching for a shelf, sweeping, sitting with a book, tying a shoe, carrying a basket. Draw each with one flowing line for the spine and a few quick lines for the limbs.

WATCH

How to Draw Clothing

Drawing & Painting - The Virtual Instructor • 7:19

<https://www.youtube.com/watch?v=u05YFFh6044>

WHEN TO WATCH

After the core ideas, before drawing from your model. Watch how folds gather at the elbow and knee and hang from the shoulders.

BACKUP VIDEO

Figure Drawing - Gesture

Drawing & Painting - The Virtual Instructor • 6:56

<https://www.youtube.com/watch?v=xbE0vYgng00>

Before the quick gesture drawings: loose, fast lines that catch the action of a clothed model.

KEY TERMS

gesture

The action, movement and attitude of a figure, captured quickly with flowing lines.

head unit

The height of the head used as a unit of measure for the whole figure.

line of action

A single curved line through the body that sums up the gesture of the pose.

contrapposto

A natural standing pose with weight on one leg, so the hips and shoulders tilt in opposite directions.

drapery

Cloth and clothing as drawn or painted, including the folds it makes as it hangs and moves.

CORE IDEAS

Every pose begins with **gesture**: the action of the whole body. Before you draw any detail, find the **line of action**, a single curve through the spine and the weight-bearing leg that sums up what the body is doing. A gesture drawing takes thirty seconds to two minutes and is about energy, not accuracy. Artists draw hundreds of them because they train the eye to see the whole before the parts.

Next comes **proportion**. An adult stands about **seven and a half heads tall**. Useful landmarks: the chest line is about two heads down, the navel or waist about three, the hip joint and the middle of the body at about four, the knees at about six. The elbows fall near the waist, and the wrists near the hip joint. The shoulders are about two heads wide on a man and a little narrower on a woman. Children have larger heads in proportion: a young child may be only five heads tall.

When standing at rest, most people put their weight on one leg. The hip over that leg rises, the shoulders tilt the other way, and the spine curves between them. This pose, called **contrapposto**, makes a figure look relaxed and alive instead of stiff. Always ask: where is the weight? A vertical line from the pit of the neck should fall down to the foot that carries the weight.

Clothing is not a separate thing pasted on the figure; it hangs from the body and is pulled by it. Folds gather at the joints (elbows, knees, waist, shoulders), radiate from points of tension (where the cloth is pulled across a bent knee or a raised arm), and hang in long vertical folds where gravity rules. Good drapery reveals the body's movement underneath. Draw the gesture and the body's big forms first; then let the folds follow.

The best figure drawings are drawings of people doing things: working, reading, praying, playing an instrument. The old masters filled their sketchbooks with farmers, shepherds, merchants and children at their daily tasks. Millet spent his whole career drawing people working in fields with the same sympathy you will see in *The Gleaners*.

PICTURE STUDY



The Gleaners, Jean-François Millet, 1857 · Oil on canvas · Musée d'Orsay, Paris

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

Gleaners were poor people who were allowed to gather the stalks of grain left behind after the harvest, as the law of Moses had commanded in Leviticus and as Ruth did in the field of Boaz. Millet gave these three women the weight and dignity of figures in a great history painting.

Look closely

- Find the line of action in each of the three women. How do the three gestures differ?
- Look at the heavy clothing. Where do the folds gather and pull?
- Notice how simple the figures are: big forms, few details. Why might Millet have simplified them?
- Compare the dark, solid women in front with the pale, busy harvest in the distance.

Talk about it

1. How does Millet show the weight and effort of bending over all day?
2. Why do you think he made the gleaners so large and the wealthy harvest so small and far away?
3. Which story from the Bible does this painting bring to mind, and how?

STUDIO PROJECT

A Figure at Work

You will draw a family member, fully clothed, doing an everyday task, first in a series of gesture drawings and then in one longer study with correct proportions and convincing drapery.

You will need

- Newsprint or cheap copy paper for gestures
- Drawing paper (11×14 in)
- Vine charcoal or a 4B pencil
- Kneaded eraser
- A clothed model doing a simple task (folding laundry, reading, sweeping, playing an instrument)

Steps

1. Do ten 1-minute gesture drawings of your model in different working poses. Use loose, sweeping lines starting with the line of action.
2. Do three 3-minute drawings, now adding the head-unit proportions: measure the head and check how many heads tall the figure is.
3. Choose the strongest pose for a 30-minute study. Ask your model to hold it, resting every 10 minutes. Mark the position of the feet with tape so the pose can be resumed.
4. Lightly draw the line of action and the head. Mark the landmarks: shoulders, waist, hips, knees and feet.
5. Block in the big forms of the body underneath the clothes: rib cage, pelvis, upper and lower limbs, as simple boxes and cylinders.
6. Draw the clothing over the forms. Put folds where joints bend and where cloth is pulled tight; let long folds hang straight down where nothing pulls.
7. Add light and shadow with one light source, keeping the shadow shapes simple.
8. Finish the hands and the object the model is using, which makes the action clear.

Tips

- Move quickly in the gestures; there is no time for erasing.
- If the figure looks stiff, exaggerate the line of action a little.

Check your work

- ☐ My gesture drawings show action, not just outlines.
- ☐ My long study is close to seven and a half heads tall (or matches my model's measured proportions).
- ☐ The clothing folds gather at the joints and follow the body.
- ☐ It is clear what task my figure is doing.

SKETCHBOOK PRACTICE

1. Draw people at a park, a library or a church gathering in 30-second gestures (no faces, just action). Fill a page.
2. Copy one of the three gleaners in a simple line drawing, finding her line of action first.

From history. Millet grew up on a farm in Normandy and worked in the fields before he trained as a painter. When he settled in the village of Barbizon near Paris, he spent the rest of his life painting the farmers around him, often with a quiet religious feeling.

COMMON MISTAKES

- Starting with the face and running out of room for the feet.
- Drawing a stiff figure standing evenly on both feet. Find where the weight is.
- Drawing folds everywhere. Clothes are smooth where nothing pulls or bends.

Make it a game • Action Charades. Your parent mimes a chore, such as sweeping or carrying a bucket, for thirty seconds. Draw the line of action and the weight shift in gesture first, then fill in a figure about seven and a half heads tall. Your parent guesses the chore from your drawing. Switch.

2.4 LEARNING FROM CASTS AND OLD MASTER DRAWINGS

OBJECTIVES

- Explain why artists for centuries trained by copying casts and master drawings.
- Use careful measuring to make an accurate copy of a master drawing.
- Describe what they learned from the master's choices of line, value and edge.

Warm-up. Hold your own left hand in a relaxed pose and draw it for four minutes. Keep this drawing; you will compare it with your master copy at the end of the lesson.

WATCH

LIKENESS, LIKENESS, LIKENESS !!! Master Copy of a Renaissance Drawing by Jean Clouet

Florent Farges - arts · 18:16

<https://www.youtube.com/watch?v=2bsGbDR01os>

WHEN TO WATCH

Before the studio project. Watch how he measures and compares before he shades.

BACKUP VIDEO

How To Draw Fabric Folds: Drawing based on Leonardo da Vinci

Circle Line Art School · 5:25

<https://www.youtube.com/watch?v=mBHak4W7bFI>

A second, shorter master copy, of one of Leonardo's drapery studies.

KEY TERMS

master copy

A careful copy of a great artist's work, made to learn from the artist's choices.

cast drawing

Drawing from a plaster cast of a sculpture, used in academies to teach light, shadow and proportion.

comparative measurement

Checking a drawing by comparing one length or angle to another, such as the width of a hand to its length.

plumb line

An imaginary or real vertical line used to see which points line up above and below each other.

heightening

Adding white or light chalk to the lights of a drawing on toned paper, as Dürer did in *Praying Hands*.

CORE IDEAS

For about four hundred years, from the Renaissance workshops to the art academies of the 1800s, nearly every serious artist began by copying. Apprentices copied their master's drawings, then drew from **plaster casts** of sculpture, and only later from living models. The reason is simple: a copy or a cast holds perfectly still, and the student can concentrate entirely on seeing and measuring.

Copying is not cheating; it is apprenticeship. When you copy a master drawing line by line, you are forced to notice every decision: where the master pressed harder, where he left the paper white, which edges are sharp and which are lost, how few lines he needed. You learn more from one careful hour of copying than from a day of looking.

A good copy depends on **measuring**. Find the biggest shape first and get its height-to-width ratio right. Use a **plumb line** (a vertical) and a horizontal to see which points line up. Compare angles by holding your pencil along an edge and transferring the tilt to your drawing. Check the small spaces between things, the negative shapes, which are often easier to see correctly than the objects themselves.

Choose masters whose drawing is clear and structured: Dürer, Holbein, Raphael's studies of heads and drapery, Leonardo's drapery studies, and the portrait drawings of Jean Clouet in sixteenth-century France. Work the same size as the original, or use a grid if you must enlarge, and work from the largest shapes to the smallest details, just as the master did.

After copying, compare. Put your copy and the original side by side, upside down, and look for differences. Then write down what the master did that you would not

have thought of. This reflection turns copying into understanding, and you will find his choices appearing in your own drawings.

PICTURE STUDY



Praying Hands, Albrecht Dürer, 1508 · Brush and gray and white ink on blue prepared paper · Albertina, Vienna

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

Dürer drew these hands as a study for one of the apostles in an altarpiece. The altarpiece burned long ago, but the drawing survives and has become one of the best-known images of prayer in the world. It shows how a master builds form with nothing but fine lines of dark and light on a toned paper.

Look closely

- Notice the blue paper. Which parts are left as plain paper, which are dark lines and which are white?
- Follow the hatching lines on the fingers. Do they go straight across or curve around the form?
- Look at the knuckles, veins and fingernails. How much detail does Dürer give, and where?
- Find the edge where the two hands touch. How does he separate them?

Talk about it

1. Why does a mid-tone paper make it easier to show both light and shadow?
2. What does this drawing teach you about how hands are built?
3. Why do you think this study of hands moves people so much?

STUDIO PROJECT

A Master Copy of Dürer's Praying Hands

You will copy *Praying Hands* on toned paper with dark and white pencils, using careful measuring. Then you will compare your copy with your warm-up drawing of your own hand.

You will need

- Toned paper (blue, gray or tan, 9×12 in)
- Black or dark gray colored pencil, or a charcoal pencil
- White colored pencil or white charcoal pencil
- HB pencil for the layout
- A ruler
- A printed or on-screen copy of *Praying Hands*, as large as possible

Steps

1. Measure the height and width of the hands in your reference. Decide how large your copy will be and mark the top, bottom and sides lightly on your paper.
2. Draw a light vertical plumb line and a horizontal line through the middle of both your reference and your paper. Use them to place the fingertips, the wrists and the knuckles.
3. Block in the overall shape of the two hands and the sleeves with light, straight lines. Check every angle against the reference.
4. Turn your reference and your drawing upside down and compare them. Correct any shapes that differ.
5. Refine the contours of each finger, the nails and the knuckles with the HB pencil.
6. With the dark pencil, add hatching in the shadows. Make your lines curve around the fingers, following Dürer's direction.
7. With the white pencil, add the highlights on the knuckles, fingertips and sleeve edges, using the same kind of fine hatching. Leave the paper itself as the middle tone.

8. Place your copy beside your warm-up drawing of your own hand. Write three sentences in your sketchbook about what you learned from Dürer.

Tips

- Work slowly. A good master copy can take two full sessions.
- Do not smudge. Dürer built every tone from separate lines.

Check your work

- ☐ The proportions and angles of my copy closely match the original.
- ☐ My hatching curves around the forms.
- ☐ I used white only for the lights and dark only for the shadows, with the paper as the middle tone.
- ☐ I wrote down at least three things I learned from the copy.

SKETCHBOOK PRACTICE

1. Copy a small portion of a Holbein or Clouet portrait drawing (one eye and the nose) as exactly as you can.
2. Draw a white object (an egg, a cup, a small plaster figure) under a lamp as if it were a cast: only light, shadow and edges, no color.

From history. In the 1860s the French artist Charles Bargue and the painter Jean-Léon Gérôme published a drawing course of nearly two hundred plates for students to copy, beginning with casts of feet, hands and faces. The young Vincent van Gogh copied many of these plates when he was teaching himself to draw.

COMMON MISTAKES

- Copying details before the big shape is right.
- Tracing. A traced copy teaches the hand nothing; measure instead.
- Overusing white so the drawing looks chalky. Keep white for the brightest lights.

Make it a game • Mark Five Points. Choose a small master drawing in a book. In two minutes, mark five key points on blank paper using comparative measurement, with a pencil and a plumb line. Then hold both sheets up to a window to check how close you are. Fewer points off wins. Repeat for the next five.

UNIT 2

ADVANCED DRAWING

This unit is about drawing people: the head, the face and the clothed figure. They are the hardest and most rewarding subjects in art, because we all know faces so well that the smallest error shows. The good news is that faces and figures follow proportions and structures that can be learned, just as the old masters learned them.

We will measure the proportions of the head, then turn it into a solid object by learning its planes. We will draw clothed figures from life in quick gestures and longer poses. Finally, we will do what every Renaissance apprentice did: copy master drawings closely, to train the eye and hand by following someone better than ourselves.

PREREQUISITES

- Shading a sphere and a cube with light, shadow and cast shadow
- Measuring proportions with a pencil held at arm's length (sighting)
- Basic face proportions from earlier grades (eyes about halfway down the head)

MASTERY CHECKLIST

- ☐ I can lay out the proportions of a head from the front and in three-quarter view.
- ☐ I can describe the head as a set of planes and shade it by those planes.
- ☐ I can draw a clothed figure with a convincing gesture and proportions of about seven and a half heads.
- ☐ I can make a careful copy of a master drawing and explain what I learned from it.
- ☐ I can use sighting and comparative measurement to check my drawings.

LESSONS IN THIS UNIT

2.1 The Portrait: Proportion and Likeness

2 sessions of 60 minutes

2.2 The Head and Its Planes

2 sessions of 60 minutes

2.3 The Clothed Figure: Gesture and Proportion

2 sessions of 60 minutes

UNIT 2 REVIEW

Answer in complete sentences unless a drawing is asked for. Use your sketchbook for the drawing questions. Total: 100 points.

1. (8 pts)

Where are the eyes placed on an adult head seen from the front?

2. (8 pts)

Name the three equal divisions of the face.

3. (8 pts)

In a three-quarter view, how does the far eye differ from the near eye, and why?

4. (8 pts)

Draw a Loomis head looking up and to the left, with its center line and brow line.

5. (8 pts)

What is a plane, and why do artists simplify the head into planes?

6. (8 pts)

Name three under planes of the face that are usually in shadow when light comes from above.

7. (8 pts)

About how many heads tall is an adult figure? Where do the knees fall?

8. (8 pts)

What is contrapposto, and why does it make a figure look natural?

9. (8 pts)

Where do clothing folds usually gather?

10. **8 pts**

Why did students in academies draw from plaster casts before drawing from living models?

11. **10 pts**

Short answer: Describe how Dürer shows form in *Praying Hands*. Mention the paper, the dark lines and the white lines.

12. **10 pts**

Short answer: How does Millet use gesture and clothing to show hard work in *The Gleaners*?

ANSWER KEY

1. About halfway between the top of the head and the bottom of the chin.
2. Hairline to brow, brow to the bottom of the nose, bottom of the nose to the chin.
3. The far eye looks narrower (shorter from side to side) because that side of the face is turning away from us.
4. The drawing should show a ball with a flattened side, a jaw attached, and the center and brow lines curving around the form in the direction of the turn and tilt.
5. A plane is a surface facing one direction. Simplifying the head into planes shows where light and shadow will fall, because planes facing the light are lit and planes turning away are in shadow.
6. The under plane of the nose, the under plane of the brow (eye socket), and the under plane of the jaw or chin. The upper lip is also often in shadow.
7. About seven and a half heads tall; the knees fall at about six heads down from the top of the head.
8. Contrapposto is a standing pose with the weight on one leg, so the hips and shoulders tilt in opposite directions. It is how people really stand at rest, so it looks relaxed and alive.
9. At the joints (elbows, knees, shoulders, waist) and at points of tension where cloth is pulled across the body.
10. A cast holds perfectly still and is all one color, so students could concentrate on proportion, light and shadow without the distractions of color and movement.
11. Dürer used a blue prepared paper as the middle tone, fine dark hatching lines that curve around the fingers in the shadows, and fine white lines on the knuckles, fingertips and sleeves for the lights. Together they make the hands look rounded and solid without any smudging.
12. The women bend deeply from the waist with strong, simple lines of action; one reaches to the ground, another rises with a bundle. Their heavy clothes pull tight across their backs and gather at the waist and knees, showing the strain of bending. Millet keeps the figures simple and solid so their effort and dignity read clearly.

PORTFOLIO PIECE: A PORTRAIT AT WORK

Make a finished drawing (11×14 in) of a family member doing a quiet task, such as reading, knitting or playing an instrument, showing at least the head, shoulders and hands. Construct the head with correct proportions, shade it by its planes with one clear light source, and draw the clothing so its folds follow the body. Use charcoal or pencil, or charcoal and white on toned paper.

LOOK FOR	WHAT IT MEANS
Proportion	The head, features and hands are in believable proportion, checked by measurement.
Planes and light	Light comes from one direction; the face is shaded by its planes, with lights and shadows kept in separate families.
Gesture and drapery	The pose feels natural and the clothing folds follow the body's movement.
Likeness and character	The drawing looks like the particular person and shows something of who they are.
Craftsmanship	Clean, controlled marks; construction lines removed or softened; signed and dated.

UNIT 3

COLOR IN PAINTING

Color is where painting becomes most like music: a few notes, combined well, can produce a whole world. In earlier years you learned the color wheel, hue, value and intensity. This unit puts those ideas to work in real painting with acrylics, the way professional painters use them.

We will learn to paint in transparent layers called glazes, as the Flemish masters did; to work with a limited palette of only a few colors; to mix a color that matches exactly what we see; and to understand how the color of light changes the color of everything it touches. By the end you should be able to look at any object and say, “I can mix that.”

PREREQUISITES

- The color wheel: primary, secondary and tertiary colors
- Hue, value and intensity (also called chroma or saturation)
- Basic acrylic or tempera brush handling and cleanup

MASTERY CHECKLIST

- ☐ I can explain the difference between opaque and transparent paint and build a painting in glazes.
- ☐ I can paint a convincing study with a limited palette of three or four colors plus white.
- ☐ I can analyze a color by hue, value and intensity and mix it to match.
- ☐ I can explain how warm or cool light changes the colors of lit and shadowed surfaces.
- ☐ I can clean and care for acrylic brushes and palettes properly.

LESSONS IN THIS UNIT

3.1 Glazing: Light Through Layers

2 sessions of 60 minutes

3.2 Limited Palettes

2 sessions of 60 minutes

3.3 Seeing and Mixing Color Accurately

2 sessions of 60 minutes

3.4 Color and Light

2 sessions of 60 minutes

UNIT 3 REVIEW

Answer in complete sentences unless asked to paint or draw. Total: 100 points.

1. 8 pts

What is a glaze?

2. 8 pts

Name two transparent pigments and two opaque pigments.

3. 8 pts

Why should you thin acrylic glazes with glazing medium rather than lots of water?

4. 8 pts

In glazing, why is it usual to paint light and opaque underneath and dark and transparent on top?

5. 8 pts

Give two advantages of a limited palette.

6. 8 pts

Name the earth colors you might use in a limited earth palette.

7. 8 pts

What three questions should you ask to mix any color?

8. 8 pts

How can you make a color duller without making it dirty?

9. 8 pts

What is a color check?

10. 8 pts

On a sunny day outdoors, why do shadows often look bluish?

11. **10 pts**

Short answer: Describe how Sargent shows two colors of light in *Carnation, Lily, Lily, Rose*.

12. **10 pts**

Short answer: Explain why van Eyck's colors in the *Arnolfini Portrait* still glow after almost six hundred years.

ANSWER KEY

1. A thin, transparent layer of paint applied over a dry layer, so that the color beneath shows through and is changed by it.
2. Transparent: any two of alizarin crimson, ultramarine blue, phthalo blue or green, burnt sienna. Opaque: any two of titanium white, the cadmium colors, yellow ochre.
3. Too much water breaks down the acrylic binder, so the paint becomes weak and can lift off. Medium thins the paint while keeping it strong.
4. A transparent glaze can only darken or tint what is beneath it, so the lights must be established first in opaque paint; the glazes then add color and depth.
5. It creates color harmony, because every mixture shares the same few colors, and it teaches you to mix colors and understand hue, value and intensity.
6. Yellow ochre, red ochre or light red, raw and burnt sienna, raw and burnt umber (with white and a black or blue).
7. What is its hue? What is its value (how light or dark)? What is its intensity (how bright or dull)?
8. Add a little of its complement (or an earth color) rather than black.
9. Holding a dab of the mixed paint on a knife or card next to the real object, in the same light, to compare and adjust.
10. Because they are lit mainly by the blue sky (ambient light) rather than by the warm sun.
11. The twilight fills the garden with cool blue-green light, so the white dresses and lilies look bluish and soft. The paper lanterns give a warm orange glow that touches the girls' faces, hands and nearby flowers. The contrast of the warm lantern light against the cool dusk makes both lights feel real.
12. He built the colors in many thin, transparent oil glazes over a smooth white ground. Light passes through the glazes, reflects off the white ground and comes back through the color, giving it depth and brilliance, and the well-made layers have lasted.

PORTFOLIO PIECE: A STILL LIFE IN GOLDEN LIGHT

Paint a still life of three or four objects (11×14 in) lit by a single warm light, such as a lamp or late-afternoon sun. Use a limited palette of no more than five colors plus white, match colors carefully with color checks, and finish with at least one unifying glaze. On the back, list your palette and describe the color of your light and shadows.

LOOK FOR	WHAT IT MEANS
Limited palette and harmony	No more than five colors plus white; the colors look like they belong together.
Accurate color	Each object has distinct light and shadow colors, matched to observation.
Color of light	The warm light is consistent; shadows show cooler or contrasting temperature and some reflected light.
Glazing	At least one glaze deepens shadows or unifies the painting without muddying it.
Craftsmanship	Clean edges where needed, thoughtful composition, signed and dated, with palette notes on the back.

3.1 GLAZING: LIGHT THROUGH LAYERS

OBJECTIVES

- Explain how a glaze works and why it makes color glow.
- Tell transparent pigments from opaque ones by testing them.
- Build a small painting in a light underlayer and several transparent glazes.

Warm-up. Paint a strip of black across a piece of paper with marker or paint and let it dry. Then paint a short stripe of each of your acrylic colors across it, straight from the tube. Which colors disappear into the black (transparent) and which sit on top of it (opaque)? Label each.

WATCH

How Acrylic Glazing Creates Depth in Your Artwork

Jeannine Close • 10:07

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

WHEN TO WATCH

After the core ideas and the black-stripe warm-up, before the studio project.

BACKUP VIDEO

4 Minutes On Glazing Techniques With Acrylic Paint | Liquitex

Liquitex Official • 4:16

<https://www.youtube.com/watch?v=Vnn8Pq-XZyo>

A short demonstration of mixing paint with glazing medium.

KEY TERMS

glaze

A thin, transparent layer of paint applied over a dry layer, so that the color below shows through and is changed by it.

transparent pigment

A pigment that lets light pass through it, such as alizarin crimson, ultramarine blue or phthalo green.

opaque pigment

A pigment that blocks light and covers what is beneath it, such as titanium white, the cadmium colors and yellow ochre.

medium

A liquid added to paint to change how it handles; glazing medium makes acrylic thinner and more transparent without weakening it.

optical mixing

Color mixed in the eye rather than on the palette, as when a blue glaze over yellow looks green.

CORE IDEAS

When you mix blue and yellow on a palette, you get green. When you paint a **transparent** film of blue over a dry layer of yellow, you also see green, but a different green: richer, deeper and more luminous. That is because light passes through the blue film, bounces off the yellow beneath and comes back through the blue again. The colors are mixed in your eye, not in the paint. This is a **glaze**.

Glazing depends on knowing which pigments are **transparent** and which are **opaque**. Transparent pigments, such as alizarin crimson, ultramarine blue, phthalo blue and green, and burnt sienna, make the best glazes. Opaque pigments, such as titanium white, cadmium reds and yellows and yellow ochre, cover what is beneath. Any paint can be made more transparent by thinning it with **glazing medium**. With acrylics, use medium rather than lots of water, because too much water breaks down the acrylic binder and the paint can lift off later.

The usual order is **light and opaque underneath, dark and transparent on top**. Painters often lay down a light, opaque underpainting that establishes the drawing and values, and then build color and depth with glazes. Each glaze can only darken or tint what is below; to go lighter, you must paint opaque light paint again. This is why glazing rewards planning.

Glazes do several jobs. They deepen shadows without making them muddy. They unify a whole painting under one warm or cool tone, like the golden light of evening. They make jewel-like colors in fabrics and skies. And they give a painting an inner glow that thick, opaque paint cannot match. Every glaze must be completely dry before the next; acrylic dries in minutes, which makes it ideal for practice.

The Flemish painters of the 1400s, such as Jan van Eyck, perfected glazing in oil paint. They built up dozens of thin layers on smooth white gesso panels, which is why their colors still glow after nearly six hundred years.

PICTURE STUDY



Arnolfini Portrait, Jan van Eyck, 1434 · Oil on oak panel · The National Gallery, London

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

This double portrait of an Italian merchant and his wife in Bruges is one of the earliest great oil paintings. Its deep greens and reds were built up in many transparent glazes, and almost six centuries later they still glow like stained glass.

Look closely

- Look at the woman's green gown. Find where the green is light and where it is deep. How might many thin glazes have made those deep folds?
- Compare the red of the bed hangings with the green of the dress. Why do they look so strong side by side?
- Find the round mirror on the back wall. What do you see reflected in it?
- Look at the brass chandelier and the light from the window. How do highlights sit on top of the glazed colors?

Talk about it

1. Why do you think van Eyck's colors still look so fresh after so many centuries?
2. What would be lost if the green gown were painted in one flat, opaque layer?
3. What do the many small objects in the room tell you about the couple?

STUDIO PROJECT

A Glazed Still Life

You will paint a single piece of fruit or a simple object in two stages: an opaque underpainting in light values, then three or more transparent glazes that build color and depth. You will also make a small glazing chart to keep in your sketchbook.

You will need

- Canvas panel or acrylic paper (8×10 in)
- Acrylic paints: titanium white, burnt umber, yellow ochre, alizarin crimson, ultramarine blue, a yellow and a transparent green or blue
- Acrylic glazing medium
- Flat and round synthetic brushes
- Palette, palette knife, water jar and paper towels
- A piece of fruit (an apple, a pear or a lemon) and a lamp

Steps

1. Make a glazing chart in your sketchbook: paint four squares of yellow, red, blue and white, let them dry, then glaze a thin stripe of each transparent color across all four squares. Label what each glaze does.
2. Set the fruit on a plain cloth, lit from one side.
3. Draw the fruit and its shadow lightly in pencil on your panel.
4. Underpainting: using only white, yellow ochre and a little burnt umber, paint the whole picture opaquely in values that are one or two steps lighter than the real thing. Model the form clearly. Let it dry completely (about 15 minutes, or use a hair dryer on low).
5. First glaze: mix a little transparent color with plenty of glazing medium (about one part paint to five parts medium). Brush it evenly over the whole fruit. Let it dry.
6. Second glaze: glaze a deeper transparent color only over the shadow side and the cast shadow. Let it dry.

7. Third glaze: add a warm or cool glaze over the background or the whole picture to unify it. Let it dry.
8. Finish with a few small opaque touches: the brightest highlight on the fruit in thick white with a touch of yellow.

Tips

- Glazes should be thin and even; if you can see brush marks of thick paint, add more medium.
- Never glaze over wet paint. Test with a fingertip on the edge first.

Check your work

- ☐ My underpainting shows the form clearly in light values.
- ☐ I used at least three glazes, each one dry before the next.
- ☐ The color in my shadows looks deep and clear, not muddy.
- ☐ My glazing chart shows the difference between transparent and opaque colors.

SKETCHBOOK PRACTICE

1. Paint a small square of yellow ochre. When dry, glaze half of it with ultramarine blue and half with alizarin crimson. Describe each result.
2. Look closely at a stained glass window, a glass of grape juice or a colored bottle in sunlight and write how the light passes through it. Sketch it.

From history. Van Eyck was once wrongly credited with inventing oil paint. Oil had been used for centuries, but van Eyck and his fellow Flemish painters perfected the technique of thin, transparent oil glazes over a white ground, which gave their work a brilliance that amazed all of Europe.

COMMON MISTAKES

- Thinning acrylic with too much water instead of medium, which makes weak paint that lifts off.
- Glazing with opaque colors, which look chalky instead of glowing.
- Painting a glaze before the layer below is completely dry, which lifts and muddies it.

Make it a game • Glow Test. Stack layers of colored tissue paper or clear plastic over white paper. Before each layer, predict the color it will make. Then test it. Say why a glaze makes color glow and how that differs from an opaque pigment. One point for each correct prediction. Play to eight.

3.2 LIMITED PALETTES

OBJECTIVES

- Explain the advantages of painting with only a few colors.
- Mix a full range of usable colors from an earth palette of four colors plus white.
- Paint a portrait study or still life in a limited palette that has natural color harmony.

Warm-up. Using only yellow ochre, burnt sienna, ultramarine blue and white, mix and paint ten small swatches in your sketchbook: a sky blue, a gray, a skin tone, a dark brown, a green, a pale cream, a dull purple, a near black, a light warm gray and a cool gray. Label how you mixed each.

WATCH

Limited palette: benefits and examples. Painting with acrylics for beginners.

Drawing and Painting with Toon Nagtegaal (EN) · 6:01

<https://www.youtube.com/watch?v=IYsOaL2oUGc>

WHEN TO WATCH

After the core ideas and the warm-up.

BACKUP VIDEO

Colour Mixing Demo: How to create an amazing limited palette

Louise Fletcher Art · 4:59

<https://www.youtube.com/watch?v=rX1l7ti9UjE>

A second short demonstration of choosing a few colors that work together.

KEY TERMS

limited palette

A small, deliberately chosen set of colors, usually three to five plus white.

earth colors

Pigments made from natural iron-oxide clays: yellow ochre, red ochre, raw and burnt sienna, raw and burnt umber.

color harmony

The pleasing sense that all the colors in a picture belong together.

neutral

A grayed or brownish color made by mixing complements or adding earth colors; neutrals make pure colors look brighter beside them.

key color

A color mixed into many of the other mixtures so the whole painting shares it.

CORE IDEAS

It seems that more colors would make better paintings, but the opposite is often true. A **limited palette** of three to five colors plus white forces every mixture in the painting to share the same few ingredients. The result is automatic **color harmony**: everything belongs together, the way the voices in a choir blend when they sing from the same score.

Limited palettes also teach mixing. With twenty tubes, a beginner squeezes out a ready-made green or purple and never learns how they are made. With four colors, you must think about hue, value and intensity in every mixture, and you quickly learn how far you can push each color.

One classic limited palette uses **earth colors**: yellow ochre, a red earth (light red or burnt sienna), a black or a dark blue, and white. Because these pigments are naturally low in intensity, they produce beautiful, believable skin tones, browns and grays. The black or blue serves as the “cool” color: mixed with white it makes cool grays that look surprisingly blue beside the warm earths. Rembrandt painted many of his greatest portraits with a palette not much bigger than this.

Another approach is a **split primary** or simple primary palette: one warm and one cool version of each primary, or just one red, one yellow and one blue plus white. This gives a wider range of bright colors while still keeping harmony.

The secret of a limited palette is that color is relative. A gray next to a warm orange looks blue; a dull red next to gray looks bright. Painters who master a few colors learn to make colors look brighter by placing them among **neutrals**, rather than by making everything loud.

PICTURE STUDY



Self-Portrait with Two Circles, Rembrandt van Rijn, about 1665–1669 · Oil on canvas · Kenwood House, London

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

Rembrandt painted this self-portrait near the end of his life. Almost the whole painting is made with a handful of earth colors, black and white, yet the face is warm and alive and the whole picture glows with harmony.

Look closely

- Name the colors you can see. Are there any bright blues, greens or purples?
- Look at the face. How many different warm tones can you find, from pale cream to deep red-brown?
- Compare the grays of the background with the warm face. Do the grays look slightly cool?
- Look at the hands and palette, which are barely sketched. Why might Rembrandt have left them so rough?

Talk about it

1. How does Rembrandt make the face the brightest and warmest part of the painting?
2. Why does this painting feel so unified in color?
3. What do you think the two circles on the wall might mean?

STUDIO PROJECT

An Earth Palette Portrait Study

You will paint a head-and-shoulders study of a family member, or a still life of bread, a jug and an apple, using only yellow ochre, burnt sienna, ultramarine blue (or black) and white.

You will need

- Canvas panel or acrylic paper (9×12 in)
- Acrylic paints: titanium white, yellow ochre, burnt sienna, ultramarine blue (or ivory black)
- Flat brushes (1/4 in and 1/2 in) and a small round
- Palette and palette knife
- A model or simple still life, lit from one side

Steps

1. Tone your panel with a thin wash of burnt sienna and let it dry. A warm middle-value ground makes the limited colors glow.
2. Draw the head or still life with a small brush and thinned ultramarine, using the proportions from Unit 2.
3. On your palette, mix three piles before you paint: a light (white with a little ochre), a middle (ochre and sienna with white) and a dark (sienna with ultramarine). These are your main values.
4. Paint the shadow shapes first with the dark and middle-dark mixtures. Keep them thin.
5. Paint the light side with the light and middle mixtures. Keep the lights thicker than the shadows.
6. Paint the background with a cool gray of ultramarine, ochre and white; notice how it makes the face look warmer.
7. Adjust colors by comparing: is this area warmer or cooler, lighter or darker, brighter or duller than its neighbor?
8. Add the final highlights and darkest accents. Sign the painting and write the four colors on the back.

Tips

- Mix a little of your key color (yellow ochre) into nearly every mixture.
- If a color looks too bright, add a touch of its complement rather than black.

Check your work

- ☐ I used only four colors plus white.
- ☐ My painting has a range of warm and cool colors, including believable grays.
- ☐ The shadows are thin and the lights are thicker.
- ☐ The colors look harmonious, as if they belong together.

SKETCHBOOK PRACTICE

1. Paint the same small landscape twice: once with a primary palette (red, yellow, blue, white), once with an earth palette. Compare the moods.
2. Make a mixing grid: across the top, three colors; down the side, the same three. In each box, mix the two colors that meet.

From history. Ancient Greek painters were said to have used a four-color palette of white, yellow ochre, red earth and black. Rembrandt's palette was not much larger: lead white, ochres, earth reds, umbers, a few lake reds and black. With these he painted some of the most profound portraits in history.

COMMON MISTAKES

- Sneaking in extra colors “just for this part,” which breaks the harmony.
- Making everything brown. Use the blue to make cool grays and contrast.
- Mixing too little paint and having to remix it slightly differently halfway through.

Make it a game • Match with Five. Choose five colors only: four earth colors plus white. Set a timer for five minutes and scavenge the house for items whose color you can match using only those. Write each recipe. Your parent tests two of them. Say why a limited palette gives a harmonious picture. Best match wins.

3.3 SEEING AND MIXING COLOR ACCURATELY

OBJECTIVES

- Analyze any color by asking three questions: what hue, how light, how bright?
- Mix a color to match a real object and test it beside the object.
- Paint a small still life with accurately matched colors.

Warm-up. Choose three objects of the same general color (for example, three “white” things: paper, an egg, a sock). Put them side by side in daylight. Write down how each white differs: warmer, cooler, grayer, lighter. There is no such thing as plain white.

WATCH

Colour mixing basics - Acrylic painting technique to match a colour

[willkempartschool](https://www.youtube.com/watch?v=bNnlz_4xJD0) · 4:16

https://www.youtube.com/watch?v=bNnlz_4xJD0

WHEN TO WATCH

After the core ideas. Then try his method with one of your own objects before the studio project.

BACKUP VIDEO

Oil Painting How to Match Any Color

[Paint Coach](https://www.youtube.com/watch?v=MGWclwHR2I8) · 12:14

<https://www.youtube.com/watch?v=MGWclwHR2I8>

A fuller demonstration. He paints in oil, but the method of comparing and adjusting is the same with acrylics.

KEY TERMS

hue

The name of a color family: red, orange, yellow, green, blue, violet and the colors between them.

value

How light or dark a color is.

intensity (chroma)

How bright or dull, pure or grayed, a color is.

local color

The actual color of an object in plain, even light, apart from the effects of light and shadow.

color check

Holding a dab of mixed paint on a palette knife or card next to the real object to compare them directly.

CORE IDEAS

Every color has three dimensions, and you can mix any color by answering three questions about it. **Hue**: what color family is it? Is this green leaning toward yellow or toward blue? **Value**: how light or dark is it, on a scale from white to black?

Intensity (or chroma): how bright or grayed is it? Most colors in nature are much duller and grayer than the colors in a paint tube.

Answer the questions in a sensible order. First get the **hue** roughly right by mixing the main colors. Then adjust the **value** with white (or a light color) to lighten, or a dark color to darken. Finally, adjust the **intensity**: to dull a color, add a little of its complement (a touch of red into a green, a touch of orange into a blue) or an earth color. Black also dulls colors but tends to make them dirty; use it with care.

Do a **color check**. Put a dab of your mixture on a palette knife or a scrap of card and hold it right up against the object, in the same light, and squint. Is your mixture too light? Too warm? Too bright? Adjust and check again. Painters who mix accurately are not geniuses; they just check more often.

Remember that an object has a **local color** but rarely shows it in one flat tone. The lit side of a red apple might be an orange-red, the shadow a deep crimson-brown, the reflected light on the bottom a duller red-violet. Each of these must be mixed separately. A good habit is to mix the light and shadow versions of a color side by side before you begin.

Accurate color is a form of honesty: it is painting what is truly there instead of what we assume. Chardin, whose painting we study this week, was admired in his own time precisely because his colors were so true to life that visitors felt they could pick up his cups and loaves.

PICTURE STUDY



Saying Grace, Jean-Siméon Chardin, 1740 · Oil on canvas · Louvre, Paris

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

Chardin painted ordinary French households with extraordinary truth of color. In this quiet scene a mother waits while her youngest child says grace before dinner. His colors are soft, subtle and exactly observed: dozens of different whites, browns and grays, each one mixed to match what he saw.

Look closely

- Find all the whites: the mother's cap and apron, the tablecloth, the dishes. Are they all the same white?
- Look at the browns and grays of the walls and furniture. How many different ones can you find?
- Find the few spots of stronger color. How do they stand out against the soft neutrals?
- Notice where the light comes from, and how the colors change from the lit side to the shadow side of the mother's dress.

Talk about it

1. How does Chardin make such a quiet painting feel warm and alive?
2. Why would mixing exact, subtle colors matter more in a scene like this than bright colors?

3. What does this painting suggest about home and family?

STUDIO PROJECT

A Color-Matched Still Life

You will paint a simple still life of two or three everyday objects (a loaf of bread, a white cup, a lemon) and check every color against the real thing.

You will need

- Canvas panel or acrylic paper (8×10 in)
- Acrylic paints: white, a warm and cool yellow, a warm and cool red, ultramarine blue, burnt umber
- Palette knife, palette, brushes
- A scrap of white card
- Two or three objects of different colors on a plain cloth, lit by a lamp or window

Steps

1. Set up the still life where the light will not change while you work (a lamp is best).
2. Draw the objects on your panel with thinned paint.
3. For each object, name the local color, then write in your sketchbook its hue, value (on a 1–10 scale) and intensity (bright, medium, dull) in the light and in the shadow.
4. Mix the shadow color of the first object. Put a dab on the card and hold it next to the object. Adjust until it matches. Then mix its light color the same way.
5. Paint the object with its matched light and shadow colors, leaving the edges a little loose.
6. Repeat for each object and for the background and tablecloth.
7. Do a final comparison: stand back and look from the setup to the painting. Correct any colors that look wrong next to their neighbors.
8. Add highlights last. Notice their color: they are usually tinted by the light source, not pure white.

Tips

- Mix more paint than you think you need.
- Clean your palette knife between mixtures so colors stay clean.

Check your work

- ☐ I color-checked every main color against the real object.
- ☐ Each object has a distinct light color and shadow color, not one flat tone.
- ☐ My whites and grays are not all the same; they lean warm or cool as in life.
- ☐ A viewer can tell the objects are made of different materials and colors.

SKETCHBOOK PRACTICE

1. Choose five objects of different colors around your home. For each, paint a swatch that matches it exactly and tape or glue a label beside it.
2. Paint a value scale for a single hue: from the lightest tint to the darkest shade of one color.

From history. Chardin made this painting so popular that he painted several versions, and one was given to King Louis XV. The great French critic Denis Diderot wrote that Chardin did not use red, white or black so much as “the very substance of the objects” themselves.

COMMON MISTAKES

- Using tube colors straight without adjusting them.
- Darkening every shadow with black, which makes colors dirty. Try the complement or a darker hue.
- Judging a color by itself on the palette instead of next to the object.

Make it a game • Color Check Duel. Pick one object. Before mixing, each of you answers three questions: what hue, how light, how bright? Mix a match, then hold your sample beside the object. Your parent chooses the closer one. Switch objects. Explain what local color means. First to three wins.

Scripture. “Seest thou a man diligent in his business? he shall stand before kings; he shall not stand before mean men.” (Proverbs 22:29, KJV)

Chardin’s patient, honest work on humble subjects earned a place before a king. Diligence in small things, like checking each color, is the mark of a true craftsman.

3.4 COLOR AND LIGHT

OBJECTIVES

- Explain how the color of the light source changes the color of lit surfaces.
- Explain why shadows often look cooler in warm light and warmer in cool light.
- Paint a study of the same object in two different lights.

Warm-up. Look at a white piece of paper under a lamp at night, then under daylight from a window, then outdoors in shadow. Paint or color three small swatches showing how the “white” changes in each light.

WATCH

How to Paint Light and Shadow

James Gurney · 11:19

<https://www.youtube.com/watch?v=cuAogFEFI3s>

WHEN TO WATCH

After the core ideas. Notice how he paints the shadows first to capture the feeling of sunlight.

BACKUP VIDEO

Finding the Color in the Shadows.

Ian Roberts · 13:48

<https://www.youtube.com/watch?v=MSYi0r2k3go>

Optional: how the color of the light changes the color of the shadows.

KEY TERMS

color temperature

Whether a color leans warm (toward red, orange and yellow) or cool (toward blue, green and violet).

light source

Where the light comes from: the sun, the sky, a lamp, a candle or a window.

ambient light

The soft, indirect light that fills shadows, often from the blue sky or from light bouncing off nearby surfaces.

reflected light

Light bouncing off a nearby surface into a shadow, carrying that surface's color with it.

color key

The overall color of the light in a painting, such as the warm gold of late afternoon or the cool gray of an overcast day.

CORE IDEAS

Light itself has color. Late-afternoon sunlight is golden; noon sunlight is nearly white; the light from a north window is cool and silvery; candlelight and old lamp light are orange. Whatever the light touches takes on some of its color. A white dress in evening sun is not white at all but cream or pale gold.

Shadows are lit too, by **ambient light**. Outdoors on a sunny day, the shadows are lit mainly by the blue sky, so they lean cool and bluish while the sunlit planes are warm. Indoors by a cool north window, the lights may be cool while the shadows look comparatively warm. This is the painter's rule of thumb, "warm light, cool shadows; cool light, warm shadows." It is not a law of nature but a strong tendency, and it is worth checking every time against what you actually see.

Reflected light carries color into shadows. A red apple on a white cloth throws a pinkish glow onto the cloth; a face near a green wall picks up a slight green in its shadow side. Noticing these small color shifts makes a painting feel bathed in real air and light.

A painting usually has one **color key**, the overall color of its light. Everything in the picture should agree with it. If you paint a lemon in golden evening light but the blue cup beside it in cool noon light, the picture will feel wrong even if each object looks right on its own. One way to unify a painting is to mix a little of the light's color into every lit area, or to glaze over it all, as you learned in lesson 3.1.

Above all, the beauty of light is a gift. Every painter who has tried to capture the glow of sunset knows that no paint can match the real thing. We paint light to honor

it, and to help others notice it.

PICTURE STUDY



Carnation, Lily, Lily, Rose, John Singer Sargent, 1885–1886 · Oil on canvas · Tate Britain, London
Image: [Wikimedia Commons](#), public domain

Sargent painted this picture of two little girls lighting lanterns in an English garden only in the few minutes of twilight each evening, over two summers, so that he could capture exactly the color of that light. It is a study of two lights at once: the cool blue dusk and the warm glow of the lanterns.

Look closely

- Look at the girls' white dresses. What colors do you actually see in them?
- Find where the lantern light touches their faces and hands. What color is it?
- Compare the color of the lilies in the cool twilight with the lilies near a lantern.
- Look at the background. Is it dark, or full of soft greens and blues?

Talk about it

1. Why did Sargent paint only for a few minutes each evening?
2. How does he show two different colors of light in one painting?
3. What feeling does the combination of warm and cool light create?

STUDIO PROJECT

One Object, Two Lights

You will paint the same white object (an egg, a cup or a crumpled sheet of paper) twice: once in warm lamp light and once in cool daylight or under a cool bulb. Comparing the two will show you how much light changes color.

You will need

- Two canvas panels or a sheet of acrylic paper divided in half
- Acrylic paints: white, yellow, red, blue, burnt umber
- Brushes, palette and palette knife
- A white egg or cup on a white cloth
- A warm lamp (incandescent or warm-white bulb) and a window with daylight or a cool-white bulb

Steps

1. Set the white object on a white cloth by a window during the day. Look carefully: what color is the lit side, the shadow side and the cast shadow?
2. Paint the first study. Mix each color by comparing it to the real thing, as in lesson 3.3. Notice that nothing is pure white.
3. Later, close the curtains and light the same setup with a warm lamp from the same side.
4. Paint the second study the same size and composition, again matching every color.
5. When both are dry, place them side by side. Label the colors of the lit side, shadow and cast shadow in each.
6. Write a paragraph in your sketchbook explaining how the light changed the colors, and whether the warm light gave cooler shadows.

Tips

- Turn off all other lights for the lamp study so only one light source shows.
- Paint quickly and loosely; these are color studies, not finished paintings.

Check your work

- ☐ My two studies clearly show two different colors of light.
- ☐ Neither study uses pure white straight from the tube for the object.
- ☐ I can point to the warm and cool colors in each study.
- ☐ I wrote an explanation of what I observed.

SKETCHBOOK PRACTICE

1. Paint a small sky at sunset and the same view at noon from memory, then check them against the real thing the next day.
2. Find the reflected light in a shadow (for example, under a red bowl on a white table) and paint a small swatch of it.

From history. Sargent was the most sought-after portrait painter of his day, but he loved painting outdoors. The title comes from a popular song of the time; the painting was bought for the British nation in the year it was first shown.

COMMON MISTAKES

- Painting white objects with white straight from the tube.
- Making all shadows gray or black. Look for their temperature and color.
- Mixing lights from different times of day in one painting.

Make it a game • Filtered Light Forecast. Cover a flashlight with colored cellophane and shine it on white paper in a dim room. Before each new color, predict the color of the paper and the shadow cast by a cup. Then check. Explain why shadows look cooler in warm light. Never use a hot bulb. Score each prediction.

Scripture. “Every good gift and every perfect gift is from above, and cometh down from the Father of lights, with whom is no variableness, neither shadow of turning.” (James 1:17, KJV)

Earthly light changes all day long, and painters chase it. James reminds us that God, the Father of lights, never changes, and every good gift, including the beauty of light, comes from Him.

UNIT 3

COLOR IN PAINTING

Color is where painting becomes most like music: a few notes, combined well, can produce a whole world. In earlier years you learned the color wheel, hue, value and intensity. This unit puts those ideas to work in real painting with acrylics, the way professional painters use them.

We will learn to paint in transparent layers called glazes, as the Flemish masters did; to work with a limited palette of only a few colors; to mix a color that matches exactly what we see; and to understand how the color of light changes the color of everything it touches. By the end you should be able to look at any object and say, “I can mix that.”

PREREQUISITES

- The color wheel: primary, secondary and tertiary colors
- Hue, value and intensity (also called chroma or saturation)
- Basic acrylic or tempera brush handling and cleanup

MASTERY CHECKLIST

- ☐ I can explain the difference between opaque and transparent paint and build a painting in glazes.
- ☐ I can paint a convincing study with a limited palette of three or four colors plus white.
- ☐ I can analyze a color by hue, value and intensity and mix it to match.
- ☐ I can explain how warm or cool light changes the colors of lit and shadowed surfaces.
- ☐ I can clean and care for acrylic brushes and palettes properly.

LESSONS IN THIS UNIT

3.1 Glazing: Light Through Layers

2 sessions of 60 minutes

3.2 Limited Palettes

2 sessions of 60 minutes

3.3 Seeing and Mixing Color Accurately

2 sessions of 60 minutes

3.4 Color and Light

2 sessions of 60 minutes

UNIT 3 REVIEW

Answer in complete sentences unless asked to paint or draw. Total: 100 points.

1. 8 pts

What is a glaze?

2. 8 pts

Name two transparent pigments and two opaque pigments.

3. 8 pts

Why should you thin acrylic glazes with glazing medium rather than lots of water?

4. 8 pts

In glazing, why is it usual to paint light and opaque underneath and dark and transparent on top?

5. 8 pts

Give two advantages of a limited palette.

6. 8 pts

Name the earth colors you might use in a limited earth palette.

7. 8 pts

What three questions should you ask to mix any color?

8. 8 pts

How can you make a color duller without making it dirty?

9. 8 pts

What is a color check?

10. 8 pts

On a sunny day outdoors, why do shadows often look bluish?

11. **10 pts**

Short answer: Describe how Sargent shows two colors of light in *Carnation, Lily, Lily, Rose*.

12. **10 pts**

Short answer: Explain why van Eyck's colors in the *Arnolfini Portrait* still glow after almost six hundred years.

ANSWER KEY

1. A thin, transparent layer of paint applied over a dry layer, so that the color beneath shows through and is changed by it.
2. Transparent: any two of alizarin crimson, ultramarine blue, phthalo blue or green, burnt sienna. Opaque: any two of titanium white, the cadmium colors, yellow ochre.
3. Too much water breaks down the acrylic binder, so the paint becomes weak and can lift off. Medium thins the paint while keeping it strong.
4. A transparent glaze can only darken or tint what is beneath it, so the lights must be established first in opaque paint; the glazes then add color and depth.
5. It creates color harmony, because every mixture shares the same few colors, and it teaches you to mix colors and understand hue, value and intensity.
6. Yellow ochre, red ochre or light red, raw and burnt sienna, raw and burnt umber (with white and a black or blue).
7. What is its hue? What is its value (how light or dark)? What is its intensity (how bright or dull)?
8. Add a little of its complement (or an earth color) rather than black.
9. Holding a dab of the mixed paint on a knife or card next to the real object, in the same light, to compare and adjust.
10. Because they are lit mainly by the blue sky (ambient light) rather than by the warm sun.
11. The twilight fills the garden with cool blue-green light, so the white dresses and lilies look bluish and soft. The paper lanterns give a warm orange glow that touches the girls' faces, hands and nearby flowers. The contrast of the warm lantern light against the cool dusk makes both lights feel real.
12. He built the colors in many thin, transparent oil glazes over a smooth white ground. Light passes through the glazes, reflects off the white ground and comes back through the color, giving it depth and brilliance, and the well-made layers have lasted.

PORTFOLIO PIECE: A STILL LIFE IN GOLDEN LIGHT

Paint a still life of three or four objects (11×14 in) lit by a single warm light, such as a lamp or late-afternoon sun. Use a limited palette of no more than five colors plus white, match colors carefully with color checks, and finish with at least one unifying glaze. On the back, list your palette and describe the color of your light and shadows.

LOOK FOR	WHAT IT MEANS
Limited palette and harmony	No more than five colors plus white; the colors look like they belong together.
Accurate color	Each object has distinct light and shadow colors, matched to observation.
Color of light	The warm light is consistent; shadows show cooler or contrasting temperature and some reflected light.
Glazing	At least one glaze deepens shadows or unifies the painting without muddying it.
Craftsmanship	Clean edges where needed, thoughtful composition, signed and dated, with palette notes on the back.

UNIT 4

LIGHT AND TONE

Value, the lightness or darkness of things, is the backbone of every picture. A painting with beautiful color but confused values falls apart; a painting with strong, well-organized values works even in black and white. In this unit we paint with value alone, so that we can master it before color returns.

We will make tonal paintings in a single color, render the most difficult surfaces of all (shining metal and clear glass), learn the old masters' method of painting a gray underpainting called a grisaille and glazing color over it, and study how Vermeer painted the gentle light of a window falling across a quiet room.

PREREQUISITES

- A seven-step value scale
- Light, form shadow, cast shadow, highlight and reflected light on simple forms
- Acrylic glazing from Unit 3

MASTERY CHECKLIST

- ☐ I can paint a convincing value study in one color plus white.
- ☐ I can group values into a few simple masses before adding detail.
- ☐ I can render reflective metal and transparent glass by observing their value shapes.
- ☐ I can paint a grisaille underpainting and glaze color over it.
- ☐ I can paint the gradual fall-off of window light across a room or object.

LESSONS IN THIS UNIT

4.1 Tonal Painting	2 sessions of 60 minutes
4.2 Rendering Complex Forms: Metal and Glass	2 sessions of 60 minutes
4.3 Grisaille and Underpainting	2 sessions of 60 minutes
4.4 Light Through a Window	2 sessions of 60 minutes

UNIT 4 REVIEW

Answer in complete sentences unless asked to draw. Total: 100 points.

1. 8 pts

Why do painters say “value does all the work, color gets all the credit”?

2. 8 pts

What is a value mass, and why paint the masses first?

3. 8 pts

What is the difference between a high-key and a low-key painting?

4. 8 pts

Name three traits of a shiny metal surface.

5. 8 pts

Why do the edges of a clear glass often look darker or lighter than its middle?

6. 8 pts

What is refraction? Give an example.

7. 8 pts

What is a grisaille?

8. 8 pts

Why should a grisaille underpainting be a little lighter than the finished painting?

9. 8 pts

Explain light fall-off from a window.

10. 8 pts

Why does window light make soft-edged shadows?

11. 10 pts

Short answer: Describe how Vermeer shows light in *The Milkmaid*. Mention at least three things he does.

12. 10 pts

Short answer: How does van Eyck make gray paint look like carved stone in his *Annunciation Diptych*?

ANSWER KEY

1. Because the eye reads form, depth and light mostly through value; if the values are right, a picture works even in black and white, while good color cannot save confused values.
2. A large area of similar value read as one shape. Painting the masses first sets up the whole picture's structure before details, which only refine it.
3. A high-key painting uses mostly light values and feels airy; a low-key painting uses mostly dark values and feels serious or dramatic.
4. Reflections of the surroundings, sharp high-contrast edges between values, and a small bright specular highlight.
5. Because you look through more glass at the edges, and the curved glass bends and reflects light there.
6. The bending of light as it passes through glass or water. A pencil in a glass of water looks broken or shifted.
7. A painting done entirely in grays, either as a finished work or as an underpainting for color glazes.
8. Because each transparent glaze over it darkens it somewhat.
9. Light grows weaker as it travels farther from the window, so surfaces near the window are bright and those farther away are gradually darker.
10. Because a window is a large light source; large sources make soft edges, small sources make hard ones.
11. Light comes from a window on the left and models the maid's figure, with a lit side and a soft shadow side. The bare wall behind her grows gradually lighter toward the window, showing fall-off. Reflected light softens the shadows. Small dots of pale paint make the light sparkle on the bread and basket. The cool daylight color touches every lit surface.
12. He models the figures with a full range of grays, sharp, deep folds like chiseled drapery, and consistent light from one side. He sets them in dark, polished niches whose reflections show the figures, and paints the frames so they seem part of the stone. The result fools the eye into seeing sculpture.

PORTFOLIO PIECE: A WINDOW-LIT PAINTING BUILT IN LAYERS

Paint a still life or a simple interior (11×14 in) lit by a single window. Begin with a grisaille or brown underpainting that settles all the values, then glaze color over it and finish with opaque lights. Show light fall-off across the background, soft window shadows with reflected light, and at least one reflective or transparent object rendered by its value shapes.

LOOK FOR	WHAT IT MEANS
Values	Clear value masses and a full range; the painting reads well in black and white.
Window light	Light comes consistently from one side; the background shows fall-off; shadows are soft and include reflected light.
Layered method	A visible underpainting stage and transparent glazes, finished with opaque lights.
Rendering	A metal or glass object is convincing, with sharp reflections and highlights.
Craftsmanship	Careful drawing, clean edges where needed, signed and dated.

4.1 TONAL PAINTING

OBJECTIVES

- Simplify a subject into three to five value masses.
- Paint a monochrome study in burnt umber and white, or in black and white.
- Explain why painters often judge a picture by its values before its colors.

Warm-up. Make four thumbnails (2×3 in) of the room you are in, using only three values: paper white, a middle gray and black. Make each thumbnail in under two minutes. Squint at the room to see the big shapes.

WATCH

Value Painting Tutorial

Paul Foxtan • 6:20

<https://www.youtube.com/watch?v=HEi4C68dgWE>

WHEN TO WATCH

After the core ideas, before the studio project.

BACKUP VIDEO

Painting Accurate Values

Ian Roberts • 11:11

<https://www.youtube.com/watch?v=iVJAJTk2uNI>

A landscape painter explains how to judge values against each other rather than against a photograph.

KEY TERMS

tone

Another word for value: the lightness or darkness of an area.

value mass

A large area of similar value that the eye reads as one shape.

monochrome

Made with one color (plus white or black) in many values.

value range

The span of values in a picture, from its lightest light to its darkest dark.

high key and low key

A high-key picture uses mostly light values; a low-key picture uses mostly dark ones.

CORE IDEAS

Painters have a saying: “**Value does all the work, color gets all the credit.**” The eye reads form, depth and light mostly through value. That is why a black-and-white photograph of a good painting still looks good, and why a painting with confused values looks muddled no matter how pretty its colors.

The first step in tonal painting is to **simplify**. Squint until details disappear and you see only big shapes of light, middle and dark. Most strong pictures can be reduced to three to five **value masses**. Paint these masses first, flat and simple, before any detail. If the masses are right, the picture already works; the details only refine it.

Painting in **monochrome**, one color plus white, removes the distraction of hue and intensity so you can think only about value. Burnt umber and white is a classic choice because umber is a warm, dark, transparent brown that makes a full range from cream to near black. Many old masters began their paintings this way.

A picture’s **key** shapes its mood. A high-key picture, mostly light values, feels airy, gentle or joyful, like a misty morning. A low-key picture, mostly dark values, feels serious, quiet or dramatic, like a candlelit room. A picture with its values spread evenly across the whole range feels strong and clear. Decide on the key before you start.

Judge each value against its neighbors, not on its own. A middle gray looks light beside black and dark beside white. Painters constantly ask, “Is this lighter or darker than that?” and adjust until the relationships are right.

PICTURE STUDY



Arrangement in Grey and Black No. 1 (Whistler's Mother), James McNeill Whistler, 1871 · Oil on canvas ·
Musée d'Orsay, Paris

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

Whistler called this portrait of his mother an “arrangement in grey and black,” to make the point that a painting is first of all an arrangement of shapes and tones. It is one of the most famous tonal paintings ever made, built almost entirely from a narrow range of grays, blacks and soft whites.

Look closely

- Name the main value masses: how many can you count?
- Find the lightest areas. How much of the picture do they take up?
- Look at the shapes of the black dress, the gray wall, the curtain and the picture frame. How are they arranged like a design of rectangles?
- Notice the tiny touches of pattern in the curtain. What do they add?

Talk about it

1. Is this painting high key, low key, or neither? Why?
2. Why might Whistler have chosen a profile view for his mother?
3. Does this quiet, restrained painting tell you anything about the sitter's character?

STUDIO PROJECT

A Monochrome Value Painting

You will paint a still life of three simple objects in burnt umber and white, beginning with flat value masses and refining toward form.

You will need

- Canvas panel or acrylic paper (9×12 in)
- Acrylic paints: burnt umber and titanium white (or ivory black and white)
- Flat brushes (1/2 in and 1/4 in) and a small round
- Palette and palette knife
- Three simple objects of different values (a dark bottle, a mid-toned bowl, a white egg) and a lamp

Steps

1. Light the still life from one side so there are clear lights, shadows and cast shadows.
2. Make a three-value thumbnail of it in your sketchbook.
3. Premix a five-step value scale on your palette: pure white, light, middle, dark and pure umber. Put each pile in its own spot.
4. Draw the objects on your panel with thinned umber.
5. Paint the darkest masses first using your darkest mixtures. Then the middle values. Then the lights. Keep each mass flat.
6. Squint and compare the painting to the setup. Adjust any mass whose value is wrong.
7. Now blend the edges between light and shadow where the forms are round, and add the half-tones that turn the forms.
8. Add the darkest accents and the brightest highlights last, in small amounts.

Tips

- Wipe your brush between values so the piles stay clean.
- Do not add details until the big masses look right from across the room.

Check your work

- ☐ My painting reads clearly as light, middle and dark masses from across the room.
- ☐ Each object looks solid, with a light side and a shadow side.
- ☐ I saved my brightest whites and darkest darks for small areas.
- ☐ My values were mixed ahead of time and compared with the setup.

SKETCHBOOK PRACTICE

1. Make a value thumbnail of a favorite painting from an earlier unit, using only three values.
2. Paint the same small landscape twice: once high key, once low key. Describe the change in mood.

From history. Whistler, an American who worked in London and Paris, liked to give his paintings musical titles such as “arrangement,” “harmony” and “nocturne.” This portrait was bought by the French government in 1891 and became so famous that it is often called simply “Whistler’s Mother.”

COMMON MISTAKES

- Starting with details before the value masses are right.
- Using too many similar middle values, which makes the painting look foggy.
- Making the shadows too light because they look dark only compared to the lights.

Make it a game · Key Switch. Draw one simple still life twice in ninety seconds each: once high key, mostly light values, and once low key, mostly dark. Use only three to five value masses. Your parent guesses which is which and tells how the mood changes. Then name the value range of each drawing.

4.2 RENDERING COMPLEX FORMS: METAL AND GLASS

OBJECTIVES

- Explain why shiny and transparent objects look the way they do.
- Draw metal and glass by copying their shapes of value instead of guessing.
- Complete a finished value drawing of a reflective object.

Warm-up. Hold a spoon close to your face and look into the bowl of it, then turn it over and look into the back. Sketch what you see in each. Why are the reflections different?

WATCH

How to Draw a Glass of Water

Drawing & Painting - The Virtual Instructor • 15:06

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

WHEN TO WATCH

After the core ideas and before the studio project. Watch how he draws the glass as shapes of light and dark, not as an outline.

BACKUP VIDEO

How to Draw Metal

Drawing & Painting - The Virtual Instructor • 10:45

<https://www.youtube.com/watch?v=10x1JiD1Q0A>

Optional: the same approach on a shiny metal teapot.

KEY TERMS

specular highlight

The small, sharp, bright reflection of the light source on a shiny surface.

reflection

An image of the surroundings seen on a shiny surface, distorted by its shape.

transparency

The quality of a material that lets light and images pass through it, like clear glass or water.

refraction

The bending of light as it passes through glass or water, which distorts what is seen behind it.

value shapes

Distinct patches of light, middle and dark that, drawn accurately, create the illusion of a surface.

CORE IDEAS

Metal and glass frighten beginners because they seem to have no color or form of their own. The secret is that you do not draw “metal” or “glass”; you draw **value shapes**. A polished silver jug is a patchwork of sharp-edged dark and light shapes, which are reflections of the room around it. If you copy those shapes exactly, the jug appears.

Shiny surfaces have three main traits. They show **reflections** of their surroundings, curved and stretched by the shape of the object. They have very **sharp, high-contrast edges** between light and dark, much sharper than on a dull surface like cloth or bread. And they have a small, intense **specular highlight**, a mirror image of the light source. Matte objects have soft gradations; shiny ones have abrupt jumps.

Glass is **transparent**, so you see through it, but not perfectly. The background behind a glass is distorted by **refraction**, often shifted or flipped. The edges of a glass are usually darker or lighter than the center, because you are looking through more glass at the edges. The rim is an ellipse with a bright highlight and a dark line, and the base often gathers light into a bright, bending shape. Draw what you see, even if it looks strange.

Work from big to small. First draw the contour of the object carefully, with correct ellipses. Then map the value shapes inside it as if they were pieces of a puzzle. Fill the darks, then the middles, leaving the paper white for the brightest highlights. Keep edges crisp. Finally, place a few small, very sharp highlights.

Learning to render these surfaces trains the eye to see what is actually there, not what we think is there. The Dutch still-life painters of the 1600s took this skill to astonishing heights, painting silver, glass and porcelain so convincingly that viewers wanted to touch them.

PICTURE STUDY



Still Life with a Silver Jug, Willem Kalf, about 1655–1660 · Oil on canvas · Rijksmuseum, Amsterdam

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

Willem Kalf painted luxurious objects (silver, porcelain, glass and exotic fruit) emerging from shadow. His silver jug is a masterclass in how reflective surfaces are made from sharp shapes of light and dark.

Look closely

- Look at the silver jug. Find the sharp dark and light shapes. What might they be reflections of?
- Find the specular highlights. Where are the brightest, smallest lights?
- Look at the glass. How can you tell it is transparent?
- Compare the edges on the silver with the edges on the peeled lemon and the cloth.

Talk about it

1. Why did Kalf place these bright objects against such a dark background?
2. What clues tell you the jug is silver and not pewter, wood or clay?
3. Why do you think wealthy Dutch families wanted paintings like this in their homes?

STUDIO PROJECT

Silver and Glass

You will make a careful value drawing of a shiny metal object (a spoon, a kettle, a metal bowl) beside a clear glass, rendering both by their value shapes.

You will need

- Drawing paper or toned paper (9×12 in)
- Pencils (HB, 2B, 4B, 6B) or charcoal with white charcoal on toned paper
- Kneaded eraser
- A shiny metal object and a clear drinking glass
- A dark cloth or paper behind them and a single lamp

Steps

1. Set the metal object and glass on a light surface against a dark background. Light them with one lamp so there are clear highlights.
2. Draw the contours carefully. Use ellipses for the rims and bases, checking that each ellipse is symmetrical.
3. Squint and map the value shapes inside the metal object with light lines, like a jigsaw puzzle. Include the reflections of the background and the glass.
4. Fill the darkest shapes first with a 4B or 6B pencil. Keep their edges sharp.
5. Fill the middle shapes, leaving the paper bare for the highlights.
6. Now the glass: draw the distorted background seen through it, the dark edges, the bright rim highlight and the bright shape at the base.
7. Add the cast shadows. Notice that the glass casts a lighter shadow with a bright spot of focused light inside it.
8. Finally, use the kneaded eraser pressed to a point to sharpen the brightest highlights.

Tips

- Turn your drawing and reference upside down to see the shapes as abstract patterns.
- Resist blending everything smooth. Metal needs abrupt edges.

Check your work

- ☐ My metal object shows sharp-edged reflections and a bright specular highlight.
- ☐ My glass looks transparent, with the background visible and distorted through it.
- ☐ My ellipses are smooth and symmetrical.
- ☐ The full value range, from paper white to dark, is used.

SKETCHBOOK PRACTICE

1. Draw a metal spoon three times: front of the bowl, back of the bowl, and handle. Notice how the reflections change.
2. Draw a glass of water with a pencil standing in it. Show where the pencil appears to bend.

From history. In the 1600s the Dutch Republic became a great trading nation, and still lifes of silver, Chinese porcelain and lemons from southern Europe showed the goods that flowed through Dutch ports. Kalf, working in Amsterdam, became the master of this “pronk” (showy) still life.

COMMON MISTAKES

- Drawing an outline and shading it smoothly like a matte object.
- Inventing reflections instead of observing them.
- Lopsided ellipses on the rims and bases.

Make it a game • Shine Hunt. Hunt for five shiny or see-through things: a spoon, a glass of water, foil, a jar. Describe the specular highlight and the reflection in each. Put a pencil in water and describe what happens. That is refraction. Then draw one by copying its shapes of value. One point per correct name.

4.3 GRISAILLE AND UNDERPAINTING

OBJECTIVES

- Explain what a grisaille is and why painters use underpaintings.
- Paint a grisaille underpainting with a full value range.
- Glaze color over a grisaille to create a finished painting.

Warm-up. Look at a color photograph in a book and try to see it in black and white. Paint a small gray-scale copy of a part of it in three to five grays.

WATCH

Painting Lesson - How to Glaze With Acrylics

Drawing & Painting - The Virtual Instructor · 14:02

<https://www.youtube.com/watch?v=huescUFe3al>

WHEN TO WATCH

After the core ideas. Watch it all once, then use it as a guide during the studio project.

BACKUP VIDEO

GRISAILLE - Oil Painting Tutorial with Step by Step Demonstration

Florent Farges - arts · 17:01

<https://www.youtube.com/watch?v=hoCpj0vwmHU>

Optional: a grisaille head painted in grays, the first step of the old masters' layered method.

KEY TERMS

grisaille

A painting done entirely in shades of gray, either as a finished work or as an underpainting (from the French *gris*, gray).

indirect painting

Building a painting in separate layers (underpainting, then glazes), as opposed to direct painting in one layer.

underpainting

The first layer of a painting, which sets out the drawing and values before color is added.

trompe l'oeil

“Fool the eye”: painting so realistic that it seems to be a real object, as with grisailles that imitate carved stone.

verdaccio and brunaille

Underpaintings in green-gray
(verdaccio) or brown (brunaille)
instead of gray.

CORE IDEAS

Painting has to solve two problems at once: values (light and dark) and colors (hue and intensity). Many old masters solved them one at a time. First they painted a **grisaille**, a complete picture in grays, which settled the drawing, the light and the form. Then they laid transparent glazes of color over it. This is called **indirect painting**.

The advantages are great. While painting the grisaille, you can concentrate entirely on values and form. When you glaze color over it, the values are already right, so the color only has to be beautiful. The gray underneath also cools and unifies the colors above, and the lights of the underpainting shine up through the glazes with a soft glow.

A good grisaille for glazing should be a **little lighter and a little higher in contrast** than the finished painting will be, because every glaze darkens it somewhat. It must also be fully modeled, with clear lights, half-tones and shadows, since the glazes will not fix weak form.

Some grisailles are finished works in their own right. On the outside wings of altarpieces, Flemish painters often painted saints and the Annunciation in gray, imitating stone statues standing in niches. These painted sculptures are a kind of **trompe l'oeil**, “fool the eye.” When the wings were closed, during Lent, the altarpiece was quiet and gray; when they were opened on feast days, the brilliant color inside was revealed.

Not every underpainting is gray. Italian painters often used a green-gray called **verdaccio** under flesh tones, and many painters use a warm brown **brunaille**. The principle is the same: values first, color second.

PICTURE STUDY



Annunciation Diptych, Jan van Eyck, about 1433–1435 · Oil on oak panel · Museo Nacional Thyssen-Bornemisza, Madrid

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

Van Eyck painted the angel Gabriel and the Virgin Mary as if they were white stone statues standing in polished black marble niches. Everything is painted in grays, yet the figures look so solid that you feel you could touch them. It is one of the finest grisailles ever made.

Look closely

- Look at the folds of the angel's robe. How does van Eyck make them look like carved stone?
- Find the reflections of the figures in the polished stone behind them.
- Look at the frames. Are they part of the painting or real frames?
- Notice the light. From which direction does it come in each panel?

Talk about it

1. Why would a painter imitate sculpture in paint rather than color?
2. How does van Eyck make paint look like three different materials: pale carved stone, black polished stone and red marble?
3. What moment in the Gospel of Luke does this diptych show?

STUDIO PROJECT

A Grisaille with Glazes

You will paint a simple still life (a piece of fruit and a cup, or a pear on a cloth) as a grisaille in black and white acrylic, then glaze transparent color over it to finish it.

You will need

- Canvas panel or acrylic paper (8×10 in)
- Acrylic paints: titanium white and ivory or mars black (for the grisaille); transparent colors such as alizarin crimson, ultramarine blue, a transparent yellow and burnt sienna (for the glazes)
- Acrylic glazing medium
- Brushes, palette and palette knife
- A still life lit from one side

Steps

1. Draw the still life on your panel in pencil.
2. Premix five grays from white and black, from very light to very dark.
3. Paint the grisaille: shadows first, then half-tones, then lights. Model each form carefully. Make it slightly lighter overall than the real still life.
4. Let the grisaille dry completely. Look at it from across the room: it should already look solid and convincing.
5. First glaze: mix a transparent color for each object with plenty of medium (for example, a red-yellow glaze for an apple, a blue glaze for a cup). Brush it over that object only. Let it dry.
6. Glaze the background and tablecloth with their own colors. Let them dry.
7. Add a second glaze in the shadows to deepen and warm or cool them.
8. Finish with small opaque highlights and touches of light where the glazes made an area too dark.

Tips

- If a glaze makes something too dark, you can paint opaque light over it and glaze again.
- Keep a photograph of your finished grisaille before glazing so you can compare.

Check your work

- ☐ My grisaille is fully modeled in at least five values.
- ☐ The color glazes are transparent; I can see the gray modeling through them.
- ☐ The finished painting has clear light and shadow and believable color.
- ☐ I can explain why I painted the values first.

SKETCHBOOK PRACTICE

1. Paint a small grisaille that imitates a stone carving, such as a shell or a leaf carved in relief.
2. Glaze one color over half of an old gray-scale study and compare the two halves.

From history. The outside of van Eyck's Ghent Altarpiece (1432) shows saints painted in grisaille as stone statues, and many later Flemish altarpieces followed the same plan. In the 1700s and 1800s, art academies again taught grisaille underpainting as part of the classical method.

COMMON MISTAKES

- Making the grisaille too dark, which leaves the final painting heavy and muddy.
- Skipping the half-tones so the forms look flat.
- Glazing before the underpainting is completely dry.

Make it a game • Fool the Eye. In three minutes, draw a cube or egg in grays only, with a full range of values. Your parent stands six feet back and says whether it looks three-dimensional. Then order the steps of indirect painting: grisaille underpainting first, then glazes. Say what verdaccio and brunaille are.

4.4 LIGHT THROUGH A WINDOW

OBJECTIVES

- Describe how light from a window falls off gradually across a room.
- Explain how Vermeer used side light, soft edges and reflected light.
- Paint a small interior or still life lit by a single window.

Warm-up. Sit near a window and hold a white sheet of paper close to it, then step back one meter at a time, five times. At each step, notice how much darker the paper gets. Paint five swatches showing the change.

WATCH

HOW to create a VERMEER painting. | Rijksmuseum tutorial

RijksCreative · 16:12

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

WHEN TO WATCH

After the picture study. An artist at the Rijksmuseum shows Vermeer's layered method step by step.

KEY TERMS

side light

Light coming from one side of a subject, often from a window, which models forms strongly.

light fall-off

The way light grows weaker as it travels farther from its source.

soft edge

A gradual transition between two values or colors, as where a rounded form turns from light into shadow.

reflected light

Light that bounces off a wall, table or cloth back into a shadow, gently lightening it.

camera obscura

A dark box or room with a small hole or lens that projects an image of the scene outside; Vermeer may have studied its effects.

CORE IDEAS

Window light is the light of Dutch painting, and of many portrait studios to this day. A window lets in soft, broad light from one side. Near the window it is bright; across the room it is dim. This gradual **light fall-off** means that a wall beside a window is not one flat value but a slow gradient from light near the window to dark far away. Painting that gradient well makes a room feel full of air.

Side light from a window models forms beautifully: one side of a face, a jug or a loaf is lit, the other falls into shadow, and the turn between them is gentle because the light source is large. Large light sources make **soft edges** and soft cast shadows. Small light sources, like a bare bulb or a candle, make hard ones.

Light also bounces. The light from a window hits a white wall or tablecloth and is **reflected** back into the shadows, so they are never pitch black. Vermeer loved this effect: the shadow side of a jug glows with reflected light from the table, and the wall behind a figure is lit by light bouncing around the room.

Vermeer also noticed how bright light breaks into tiny points of light on rough or shiny surfaces such as bread crusts, brass and pottery. He painted these as small dots of pale paint, sometimes called pointillés. Some scholars think he studied this effect with a **camera obscura**, an early optical device that blurs light into little circles.

To paint window light, keep everything consistent: all lights come from the same direction, the values fall off steadily away from the window, the shadows are soft and filled with reflected light, and the color of the light (cool daylight) touches every lit surface.

PICTURE STUDY



The Milkmaid, Johannes Vermeer, about 1657–1658 · Oil on canvas · Rijksmuseum, Amsterdam

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

A kitchen maid concentrates on pouring a thin stream of milk. Nothing else happens, yet this small painting is one of the most loved in the world, mostly because of the way Vermeer painted daylight from a window falling across her, the bread and the bare plaster wall.

Look closely

- Find the window. Follow the light from it across the maid, the table and the wall.
- Look at the wall behind her. Is it the same value everywhere, or does it change? Where is it lightest?
- Find the tiny dots of light on the bread and basket.
- Look at the shadow side of the maid's arm and face. Can you see any reflected light?

Talk about it

1. How does Vermeer make an ordinary kitchen task feel calm and important?
2. Why does the bare wall matter so much to the painting?
3. What tells you that the light is cool daylight and not candlelight?

STUDIO PROJECT

A Still Life by the Window

You will set up a simple still life on a table beside a window, with a plain wall behind it, and paint it in acrylic with special attention to the fall-off of light, soft shadows and reflected light.

You will need

- Canvas panel (9×12 in or 11×14 in)
- Acrylic paints: white, yellow ochre, burnt umber, burnt sienna, ultramarine blue, a red and a yellow
- Glazing medium
- Brushes, palette and palette knife
- A table by a window, a jug or pitcher, a loaf of bread or some fruit, and a cloth

Steps

1. Place the table so the window is to one side and a plain light-colored wall is behind the objects. Close other curtains and turn off lamps so only the window lights the scene.
2. Make a three-value thumbnail. Mark the direction of the light with an arrow.
3. Tone your panel with a thin wash of burnt umber and yellow ochre and let it dry.
4. Draw the objects with a brush in thinned umber.
5. Paint the wall first as a gradient: lightest nearest the window, gradually darker away from it. Blend the steps smoothly.
6. Paint the shadow sides of the objects with soft edges. Mix a little of the table's color into each shadow for reflected light.
7. Paint the lit sides, adding a touch of cool white-blue to the lights to show daylight.
8. Add small dots and dabs of pale paint where light sparkles on crust, glaze or metal, as Vermeer did.
9. If needed, glaze a thin warm or cool tone over the shadows to unify them.

Tips

- Paint at the same time of day each session so the light stays the same.
- Squint to compare the wall's value near the window with the value far from it.

Check your work

- ☐ All my lights and shadows agree with one window on one side.
- ☐ The wall shows a smooth fall-off from light to dark.
- ☐ Shadow edges are soft, and shadows contain some reflected light.
- ☐ My painting feels quiet and filled with daylight.

SKETCHBOOK PRACTICE

1. Draw a family member reading by a window. Shade only the light and shadow shapes.
2. Make a small value study of a room corner showing how the light falls off across two walls.

From history. Vermeer painted most of his pictures in one room of his house in Delft, lit from windows on the left. X-ray and other scans show that he worked in layers, beginning with a brown and gray underpainting and finishing with glazes, including precious ultramarine made from lapis lazuli.

COMMON MISTAKES

- Painting the background wall one flat color.
- Making shadows too dark or too sharp for soft window light.
- Letting the light direction change from one object to the next.

Make it a game • Window Light Meter. Stand at the window, then at six, ten and fourteen feet. At each spot, hold a white paper and rate its brightness from one to five. Predict before each step, then record. Say how Vermeer used side light and soft edges. Closest predictions win a point. Compare with your parent.

Scripture. “For with thee is the fountain of life: in thy light shall we see light.” (Psalms 36:9, KJV)

Every painter depends on light to see. The psalmist says that God's light is what lets us see truly at all.

UNIT 4

LIGHT AND TONE

Value, the lightness or darkness of things, is the backbone of every picture. A painting with beautiful color but confused values falls apart; a painting with strong, well-organized values works even in black and white. In this unit we paint with value alone, so that we can master it before color returns.

We will make tonal paintings in a single color, render the most difficult surfaces of all (shining metal and clear glass), learn the old masters' method of painting a gray underpainting called a grisaille and glazing color over it, and study how Vermeer painted the gentle light of a window falling across a quiet room.

PREREQUISITES

- A seven-step value scale
- Light, form shadow, cast shadow, highlight and reflected light on simple forms
- Acrylic glazing from Unit 3

MASTERY CHECKLIST

- ☐ I can paint a convincing value study in one color plus white.
- ☐ I can group values into a few simple masses before adding detail.
- ☐ I can render reflective metal and transparent glass by observing their value shapes.
- ☐ I can paint a grisaille underpainting and glaze color over it.
- ☐ I can paint the gradual fall-off of window light across a room or object.

LESSONS IN THIS UNIT

4.1 Tonal Painting	2 sessions of 60 minutes
4.2 Rendering Complex Forms: Metal and Glass	2 sessions of 60 minutes
4.3 Grisaille and Underpainting	2 sessions of 60 minutes
4.4 Light Through a Window	2 sessions of 60 minutes

UNIT 4 REVIEW

Answer in complete sentences unless asked to draw. Total: 100 points.

1. 8 pts

Why do painters say “value does all the work, color gets all the credit”?

2. 8 pts

What is a value mass, and why paint the masses first?

3. 8 pts

What is the difference between a high-key and a low-key painting?

4. 8 pts

Name three traits of a shiny metal surface.

5. 8 pts

Why do the edges of a clear glass often look darker or lighter than its middle?

6. 8 pts

What is refraction? Give an example.

7. 8 pts

What is a grisaille?

8. 8 pts

Why should a grisaille underpainting be a little lighter than the finished painting?

9. 8 pts

Explain light fall-off from a window.

10. 8 pts

Why does window light make soft-edged shadows?

11. 10 pts

Short answer: Describe how Vermeer shows light in *The Milkmaid*. Mention at least three things he does.

12. 10 pts

Short answer: How does van Eyck make gray paint look like carved stone in his *Annunciation Diptych*?

ANSWER KEY

1. Because the eye reads form, depth and light mostly through value; if the values are right, a picture works even in black and white, while good color cannot save confused values.
2. A large area of similar value read as one shape. Painting the masses first sets up the whole picture's structure before details, which only refine it.
3. A high-key painting uses mostly light values and feels airy; a low-key painting uses mostly dark values and feels serious or dramatic.
4. Reflections of the surroundings, sharp high-contrast edges between values, and a small bright specular highlight.
5. Because you look through more glass at the edges, and the curved glass bends and reflects light there.
6. The bending of light as it passes through glass or water. A pencil in a glass of water looks broken or shifted.
7. A painting done entirely in grays, either as a finished work or as an underpainting for color glazes.
8. Because each transparent glaze over it darkens it somewhat.
9. Light grows weaker as it travels farther from the window, so surfaces near the window are bright and those farther away are gradually darker.
10. Because a window is a large light source; large sources make soft edges, small sources make hard ones.
11. Light comes from a window on the left and models the maid's figure, with a lit side and a soft shadow side. The bare wall behind her grows gradually lighter toward the window, showing fall-off. Reflected light softens the shadows. Small dots of pale paint make the light sparkle on the bread and basket. The cool daylight color touches every lit surface.
12. He models the figures with a full range of grays, sharp, deep folds like chiseled drapery, and consistent light from one side. He sets them in dark, polished niches whose reflections show the figures, and paints the frames so they seem part of the stone. The result fools the eye into seeing sculpture.

PORTFOLIO PIECE: A WINDOW-LIT PAINTING BUILT IN LAYERS

Paint a still life or a simple interior (11×14 in) lit by a single window. Begin with a grisaille or brown underpainting that settles all the values, then glaze color over it and finish with opaque lights. Show light fall-off across the background, soft window shadows with reflected light, and at least one reflective or transparent object rendered by its value shapes.

LOOK FOR	WHAT IT MEANS
Values	Clear value masses and a full range; the painting reads well in black and white.
Window light	Light comes consistently from one side; the background shows fall-off; shadows are soft and include reflected light.
Layered method	A visible underpainting stage and transparent glazes, finished with opaque lights.
Rendering	A metal or glass object is convincing, with sharp reflections and highlights.
Craftsmanship	Careful drawing, clean edges where needed, signed and dated.

UNIT 5

MATERIAL SCIENCE: MAKING MATERIALS

For most of history, artists did not buy paint in tubes. They and their apprentices ground minerals, cooked inks, separated eggs and boiled glues. Knowing how materials were made was part of being an artist, and it explains why old paintings look and age the way they do.

In this unit you will become a materials maker. You will grind your own watercolor from pigment and gum arabic, paint with egg tempera as the icon painters and early Renaissance masters did, brew walnut ink and oak gall ink, and learn how conservators clean and protect paintings so that they last for centuries. All of the recipes here are chosen to be safe at home with sensible care and an adult nearby.

PREREQUISITES

- Pigment and binder: every paint is colored powder held together by a sticky substance
- Transparent and opaque paint (Unit 3)
- Careful brush and palette cleanup

MASTERY CHECKLIST

- ☐ I can explain that paint is pigment plus binder and name the binder in watercolor, egg tempera, oil paint and acrylic.
- ☐ I can grind a usable watercolor paint from a dry pigment and gum arabic.
- ☐ I can mix and paint with egg tempera, and explain why it is painted in thin hatched strokes.
- ☐ I can make walnut ink and oak gall ink and explain the chemistry of iron gall ink in simple terms.
- ☐ I can explain how conservators clean, repair and protect paintings, and why their work must be reversible.
- ☐ I can handle dry pigments and inks safely.

LESSONS IN THIS UNIT

5.1 Make Your Own Paint: Pigment and Binder

2 sessions of 60 minutes

5.2 Egg Tempera

2 sessions of 60 minutes

5.3 Oak Gall and Walnut Ink

2 sessions of 60 minutes

5.4 Conservation and Restoration

2 sessions of 60 minutes

UNIT 5 REVIEW

Answer in complete sentences. Total: 100 points.

1. 8 pts

What two things is every paint made of, and what does each do?

2. 8 pts

Name the binder in each: watercolor, egg tempera, oil paint, acrylic.

3. 8 pts

Why is honey or glycerin added to watercolor?

4. 8 pts

Why is burnt sienna redder than raw sienna?

5. 8 pts

List four safety rules for handling dry pigments.

6. 8 pts

Why must egg tempera be painted in thin hatched strokes?

7. 8 pts

Why is egg tempera painted on rigid panels rather than on canvas?

8. 8 pts

Explain in simple terms why iron gall ink turns black.

9. 8 pts

Why must the jar of steel wool and vinegar be covered only loosely?

10. **8 pts**

What is the rule of reversibility in conservation?

11. **10 pts**

Short answer: Explain why Leonardo's *The Last Supper* began to decay so soon and what the 1978–1999 restoration did.

12. **10 pts**

Short answer: What did your lightfastness test show, and how would it affect the materials you choose for a painting you want to last?

ANSWER KEY

1. Pigment, which gives color, and binder, which holds the pigment together and sticks it to the surface.
2. Watercolor: gum arabic. Egg tempera: egg yolk. Oil paint: linseed (drying) oil. Acrylic: acrylic polymer emulsion.
3. It is a humectant that keeps a little moisture in the dried paint so it stays slightly soft and rewets easily.
4. Heating (burning) the iron-oxide clay drives off water and changes the iron compound, turning it from yellow-brown to red-brown.
5. Wear a dust mask and gloves; clean up with damp towels, never sweep or blow; use only safe pigments (no lead, cadmium, cobalt or chromium); no eating or drinking, and keep art tools out of the kitchen.
6. It dries in seconds and cannot be blended on the panel, so tone is built by layering many small strokes; thick tempera also cracks.
7. The tempera film is not flexible and would crack on canvas that bends; a rigid gessoed panel keeps it stable.
8. Tannins from the oak galls combine with iron to form a dark compound, which grows darker as it dries and reacts with the air.
9. The reaction gives off a small amount of gas, which could build up pressure in a sealed jar.
10. Everything a conservator adds (varnish, fills, retouching) must be removable later without harming the original work.
11. Leonardo painted with tempera and oil on dry plaster rather than in true fresco, so the paint did not bond with the wall and began to flake within his lifetime. Later restorers repainted it many times. The long restoration cleaned away dirt and those later repaintings, stabilized the remaining original paint and revealed what survives of Leonardo's work.
12. A good answer reports which colors faded (often the marker or plant colors) and which did not (earth pigments), and concludes that lasting work should use lightfast pigments like the earths, ultramarine and quality artist paints, on acid-free paper, kept out of direct sunlight.

PORTFOLIO PIECE: A HANDMADE MATERIALS PANEL

Make a finished small work (about 8×10 in) using at least two materials you made yourself in this unit, such as homemade watercolor with walnut-ink drawing, or an egg tempera panel with iron-gall-ink lettering. Attach a label on the back listing every material, how it was made and its lightfastness, as a conservator would want to know.

LOOK FOR	WHAT IT MEANS
Handmade materials	At least two homemade paints or inks are used, and they hold well (no dusting or flaking).
Technique	Each medium is used in its proper way (hatching in tempera, washes in watercolor, controlled pen work in ink).
Composition	The work has a clear subject, a focal point and a thoughtful arrangement.
Documentation	The label on the back accurately lists materials, recipes and lightfastness.
Craftsmanship and care	Clean, careful work, safely made, signed, dated and stored properly.

5.1 MAKE YOUR OWN PAINT: PIGMENT AND BINDER

OBJECTIVES

- Explain the roles of pigment, binder and additives in paint.
- Grind a watercolor paint from dry earth pigment and gum arabic.
- Compare the same pigment in different binders and begin a lightfastness test.

Warm-up. Rub a pinch of dirt, a crumb of charcoal and a bit of chalk across a sheet of paper with your finger. Then blow on the paper or tip it. What happens to the color? What is missing to make it stay?

WATCH

How To Make Your Own Watercolor Paint

Owings Art · 11:18

<https://www.youtube.com/watch?v=OdP2xSWHvRw>

WHEN TO WATCH

After the core ideas and before you begin grinding. Note his recipe proportions in your sketchbook.

Note: Near the end he shows the work of another artist, and he mentions the suppliers he uses; any art supplier's gum arabic and earth pigments will work.

BACKUP VIDEO

How to make watercolour paints from natural pigments

Jyotsna Pippal · 7:07

https://www.youtube.com/watch?v=L_F-ZmUnMAI

Shows how to make watercolor from earth and rocks you have collected and ground yourself.

KEY TERMS

pigment

A finely ground colored powder that does not dissolve in the binder; it gives paint its color.

binder

The substance that holds pigment particles together and sticks them to the surface: gum arabic, egg, oil or acrylic polymer.

gum arabic

The hardened sap of the acacia tree, which dissolves in water and is the binder of watercolor and gouache.

humectant

An additive, such as honey or glycerin, that holds a little moisture so dried watercolor can be rewetted easily.

mulling

Grinding pigment into binder with a flat glass tool called a muller on a smooth slab, to spread each particle evenly.

lightfastness

How well a color resists fading in light.

CORE IDEAS

Every paint is made of the same two things: **pigment**, which gives color, and **binder**, which holds the pigment together and glues it to the surface. Pigment alone is just colored dust; it will blow away. The binder is what makes it paint, and the binder decides what kind of paint it is. With **gum arabic** it is watercolor; with **egg yolk**, egg tempera; with **linseed oil**, oil paint; with **acrylic polymer**, acrylic paint. The very same red ochre can become any of the four.

Pigments come from many sources. The oldest are **earth pigments**: clays colored by iron oxides, giving yellow ochre, red ochre, siennas and umbers. Heating yellow ochre drives off water and turns it red, which is why “burnt” sienna is redder than “raw” sienna. Some pigments are ground minerals, like ultramarine from lapis lazuli or green from malachite. Some are made from plants or insects and fixed onto a white powder (called lakes). Many modern pigments are made in factories. Earth pigments are the safest and cheapest for home work.

Watercolor has a simple recipe. Gum arabic is dissolved in water to make a thick syrup. A little **honey or glycerin** is added as a **humectant**, so the dried paint stays slightly soft and rewets easily. The pigment is first wetted with a few drops of water into a paste, then mixed with about the same amount of gum arabic solution and ground with a **muller** in slow circles. Mulling does not make the particles smaller so much as it coats every particle with binder. Under-ground paint is grainy and weak; well-ground paint is smooth and strong.

Not all pigments are equally permanent. **Lightfastness** is a pigment’s resistance to fading. Earth pigments and ultramarine are extremely lightfast; many plant colors

and cheap dyes fade within weeks in sunlight. Painters test their colors by painting a strip, covering half and leaving it in a sunny window for a month. You will start such a test today and check it at the end of the unit.

Safety: dry pigment is a fine dust that should never be breathed. Wear a dust mask and gloves, work on damp newspaper, open containers gently, and clean up with a damp paper towel, never by sweeping or blowing. Use only earth pigments, ultramarine, chalk or charcoal at home. Never use pigments labeled lead, cadmium, cobalt, chromium or arsenic, and never eat or drink while handling pigments. Tools used for paint must never return to the kitchen.

PICTURE STUDY



Girl with a Pearl Earring, Johannes Vermeer, about 1665 · Oil on canvas · Mauritshuis, The Hague

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

Recent scientific study of this painting has revealed exactly which pigments Vermeer used and where they came from. Its blue turban is made with ultramarine, ground from lapis lazuli brought from the mountains of Afghanistan, and it was worth more than gold. Looking at this painting is also looking at a lesson in material science.

Look closely

- Find the blue of the turban. Compare it with the yellow cloth hanging from it. Why do they look so strong together?
- Look at the background. Today it looks black; scientists found it was originally a dark green glaze that has faded. What might that tell you about lightfastness?
- Look at the pearl. How many brushstrokes do you think it took?
- Notice the soft edges of the face against the dark background.

Talk about it

1. Why would a painter spend so much money on one blue pigment?
2. If the green background faded, what does that teach a painter about choosing materials?

3. Does knowing what the painting is made of change how you look at it?

STUDIO PROJECT

Grind Your Own Watercolor

You will make two or three pans of your own watercolor from earth pigments and gum arabic, then paint a small landscape with them. You will also start a four-week lightfastness test.

You will need

- Dust mask and disposable gloves
- Two or three dry earth pigments (yellow ochre, red iron oxide, burnt umber)
- Gum arabic solution (from an art supplier)
- Honey or glycerin
- A glass muller, or a smooth flat stone or the flat bottom of a small heavy glass
- A glass or ceramic tile slab
- Palette knife
- Empty half-pans or a plastic ice-cube tray or bottle caps
- Dropper and clean water
- Watercolor paper (two small sheets)
- Newspaper, damp paper towels

Steps

1. Cover your table with newspaper and dampen it slightly. Put on your mask and gloves.
2. Mix your binder: about 4 parts gum arabic solution to 1 part honey or glycerin. Stir well.
3. Put about half a teaspoon of pigment on the slab. Add water drop by drop and work it with the palette knife into a smooth, thick paste.
4. Add about the same amount of binder as pigment paste. Mix it in with the knife.
5. Grind with the muller in slow figure-eight circles for at least three minutes. Scrape the paint back to the center with the knife every so often. It should

become glossy and smooth.

6. Test it: brush a swatch on scrap paper. If it rubs off when dry, add a little more binder; if it looks shiny and won't rewet, add more pigment.
7. Scrape the paint into a half-pan or bottle cap and let it dry for a day or two. Clean the slab and muller with a damp towel.
8. Repeat with each pigment. Then paint a small landscape (4×6 in) with your own colors.
9. Lightfastness test: on a strip of watercolor paper, paint a stripe of each homemade color and a stripe of a bright marker. Cover half the strip with thick cardboard and tape it in a sunny window. Write the date on it.

Tips

- Earth pigments often need more binder than you expect; test often.
- Label every pan with the pigment name and the date.

Check your work

- ☐ I wore a mask and gloves and cleaned up with damp towels.
- ☐ My paint is smooth, rewets with a wet brush and does not rub off when dry.
- ☐ I painted a small landscape with my own colors.
- ☐ My lightfastness strip is in the window, labeled and dated.

SKETCHBOOK PRACTICE

1. Make the same pigment into three paints by mixing tiny amounts with gum arabic, a little egg yolk and a little acrylic medium. Paint a swatch of each and describe how they differ.
2. Collect small samples of colored soil or crumbly rock (with permission). Dry them, grind a little and see whether they make usable pigment.

From history. Until the 1800s, professional “colourmen” and painters’ apprentices prepared paints by hand. Collapsible metal paint tubes were invented in 1841 by the American painter John Goffe Rand; they let painters carry oil paint outdoors and helped make open-air landscape painting possible.

COMMON MISTAKES

- Using too little binder, so the paint dusts off the paper.
- Using too much honey, so the paint stays sticky and never dries.

- Breathing over open pigment or sweeping it up dry.

Make it a game · Who Does the Job? Write pigment, binder, humectant, gum arabic and mulling on slips. Your parent reads a job: 'keeps the paint wet longer' or 'holds the color on the paper.' Name the match from memory. Switch roles and write three jobs yourself. Ten correct matches wins the round.

Scripture. “Moreover thou shalt make the tabernacle with ten curtains of fine twined linen, and blue, and purple, and scarlet: with cherubims of cunning work shalt thou make them.” (Exodus 26:1, KJV)

The blue, purple and scarlet of the tabernacle had to be made by hand from shells, insects and plants. God called skilled craftsmen to know their materials and use them for His glory.

5.2 EGG TEMPERA

OBJECTIVES

- Explain how egg yolk works as a binder and why egg tempera is so durable.
- Prepare egg tempera paint safely from egg yolk and pigment.
- Paint a small panel in egg tempera using thin, hatched strokes.

Warm-up. With a fine brush and watered-down ink or watercolor, practice hatching: fill a 2-inch square with tiny parallel strokes, then a second layer at a slight angle. Try to make a smooth tone from many small lines.

WATCH

How to make Medieval Paint - Egg Tempera Paint Like DaVinci Made

CLIVE5ART • 14:44

<https://www.youtube.com/watch?v=5GCK5Y1rFEw>

WHEN TO WATCH

After the core ideas and before making your paint. Watch how he separates the yolk, breaks the sac and mixes the yolk with pigment.

BACKUP VIDEO

So THAT'S How You Make Paint? Egg Tempera | #MetKids Microscope

The Met • 2:54

<https://www.youtube.com/watch?v=WeugO7rZZqQ>

Optional: a short Met animation on why egg yolk works as a binder.

KEY TERMS

egg tempera

Paint made of pigment bound with egg yolk, the main painting medium in Europe before oil.

emulsion

A stable mixture of oily and watery substances; egg yolk is a natural emulsion.

gesso

A white, absorbent ground for painting; traditional gesso is chalk and animal glue, modern acrylic gesso is chalk and acrylic.

hatching (in tempera)

Building tone and color with many small parallel strokes, because tempera dries too quickly to blend.

gold leaf

Gold beaten into extremely thin sheets, applied to panels as backgrounds and halos in sacred paintings.

CORE IDEAS

Before oil paint, most panel paintings in Europe were made in **egg tempera**: pigment mixed with egg yolk and a little water. Egg yolk is an **emulsion** of water, oils and proteins. When it dries, the water evaporates and the proteins and oils harden into a tough, water-resistant film. Tempera paintings from the 1300s, such as Duccio's, are still bright and stable today, more so than many later oil paintings.

Tempera behaves very differently from acrylic or oil. It dries in seconds, so you cannot blend it on the panel. Instead, painters build up tone with many thin layers of small **hatched strokes**, the way you did in the warm-up. Darks are made by layering, lights by leaving the white gesso to shine through or by adding layers of lighter paint. The result has a crisp, luminous, slightly matte surface that can be polished to a soft sheen.

Tempera needs a rigid, absorbent surface. Traditional panels were wood covered with many coats of **gesso** made from chalk and rabbit-skin glue, sanded as smooth as ivory. Tempera would crack on flexible canvas. For practice, a piece of hardboard or heavy cardboard coated with several thin layers of acrylic gesso, lightly sanded, works well.

To make the binder, separate a yolk from the white, roll the yolk gently on a paper towel to dry it, pinch the yolk sac and let the liquid yolk run into a small jar, leaving the skin behind. Add about the same amount of water and a few drops of white vinegar to slow spoiling. Mix this with pigment paste (pigment wetted with water) in roughly equal parts. Keep the yolk binder covered in the refrigerator and use it within two days.

Safety: raw egg can carry germs, so wash hands and surfaces afterward and never taste the paint. Mark any cups or spoons used as art tools and never return them to the kitchen. Handle dry pigment with a mask, as in lesson 5.1.

PICTURE STUDY



Maestà, Duccio di Buoninsegna, 1308–1311 · Tempera and gold on wood panel · Museo dell'Opera del Duomo, Siena

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

Duccio's great altarpiece for the cathedral of Siena was carried from his workshop to the cathedral in a joyful procession through the city in 1311, with bells ringing. It was painted entirely in egg tempera and gold leaf, and it shows what this medium can do.

Look closely

- Look at the gold background and halos. How does gold change the feeling of the painting?
- Look closely at the faces. Can you imagine them built up from many tiny strokes?
- Find the deep blue of Mary's robe. What precious pigment might it be?
- Notice the rows of saints and angels. How does Duccio arrange so many figures?

Talk about it

1. Why do you think the people of Siena celebrated the arrival of this altarpiece?
2. How is this painting different in feeling from a later oil painting, such as the *Arnolfini Portrait*?

3. Why might egg tempera have suited sacred paintings meant to last for centuries?

STUDIO PROJECT

A Small Panel in Egg Tempera

You will make egg tempera from your own earth pigments or from watercolor pigment, then paint a small panel of a simple subject (a leaf, a pear, a flower or a simple cross) with hatched strokes.

You will need

- A small rigid panel (hardboard or heavy cardboard, about 5×7 in) coated with 4–5 thin layers of acrylic gesso, sanded smooth between coats
- Fresh egg
- Paper towels, a small jar with a lid, white vinegar
- Dry earth pigments (from lesson 5.1) or good-quality pigment, plus a little ultramarine if available
- Palette (a white tile or ceramic dish), palette knife
- Small round brushes (sizes 0 to 4)
- Dust mask and gloves

Steps

1. Prepare the panel a day ahead with thin coats of gesso, sanding each lightly when dry.
2. Draw your design lightly on the panel in pencil, then go over it with thin brown paint.
3. Separate the egg. Roll the yolk on a paper towel until it is dry outside, then hold the sac over the jar, pierce it and let the yolk run out. Discard the sac.
4. Add an equal amount of water and three drops of vinegar to the yolk. Stir well.
5. Wet a small amount of each pigment with water on your palette to make a paste. Add an equal amount of yolk binder and mix.
6. Test: paint a stroke on a scrap of gessoed board. When dry, it should not rub off; if it does, add more yolk.
7. Paint the darkest areas first with small hatched strokes. Do not try to fill areas with one stroke; build tone by layering.

8. Build the middle values and colors over several layers, letting each dry for a minute.
9. Add the lights with layers of paler paint, and let the panel dry overnight. Polish gently with a soft cloth for a soft sheen.

Tips

- Keep your paint thin; thick tempera cracks.
- Mix small amounts at a time and add a drop of water as the paint thickens on the palette.

Check your work

- ☐ My tempera paint stuck to the panel and did not rub off when dry.
- ☐ I built tone with hatched strokes in several layers.
- ☐ My panel shows a clear light and shadow or a clear design.
- ☐ I cleaned up safely and kept art tools out of the kitchen.

SKETCHBOOK PRACTICE

1. Write a short recipe card for egg tempera in your own words, with a labeled sketch of each step.
2. Copy one face from Duccio's *Maestà* in fine pencil hatching, as practice for tempera strokes.

From history. The Italian painter Cennino Cennini wrote a handbook for painters around 1400, *Il Libro dell'Arte*, with detailed recipes for gesso, egg tempera and gilding. It remains a key source for how medieval painters worked, and modern tempera painters still follow it.

COMMON MISTAKES

- Applying paint too thickly, which cracks and flakes.
- Trying to blend wet strokes as in oil or acrylic.
- Using too little yolk, so the paint dusts off.

Make it a game • Master and Apprentice. You are the master tempera painter and your parent is the apprentice. Mime the process: separate the yolk, wash hands, add pigment and water, and paint in thin hatched strokes. Your parent makes one safety mistake on purpose, such as touching the face. Catch it, then explain why tempera lasts.

5.3 OAK GALL AND WALNUT INK

OBJECTIVES

- Explain how walnut ink and iron gall ink are made and why iron gall ink turns black.
- Make a walnut ink and an iron gall ink safely.
- Make a pen-and-ink drawing using the inks they have made.

Warm-up. Drop a used tea bag into a little water you have mixed with a few drops of the iron water from the steel-wool jar (see the project; an adult should prepare this a few days ahead). Watch the color change. What do you think is happening?

WATCH

Making ink like it's 1795

Making History • 11:13

https://www.youtube.com/watch?v=v7sNHIFXV_4

WHEN TO WATCH

After the core ideas and before making the oak gall ink.

Note: She calls the color change when the iron is added the “magic bit.” It is simple chemistry, explained in the core ideas.

BACKUP VIDEO

Making and Using WALNUT INK

Peter Draws • 10:24

<https://www.youtube.com/watch?v=psDAHD-uchc>

Before making the walnut ink. He also shows how he draws with it.

KEY TERMS

oak gall

A round growth on an oak twig, formed by the tree around the egg of a tiny wasp; galls are rich in tannins.

tannin

A bitter plant substance (in oak galls, walnut hulls, tea and bark) that reacts with iron to form a dark color.

iron gall ink

Ink made by combining tannins from oak galls with an iron salt and gum arabic; the standard writing ink of Europe for over a thousand years.

walnut ink

A warm brown ink made by boiling the outer hulls of walnuts.

ink corrosion

Damage to old documents caused when too much acid and iron in iron gall ink slowly eats through the paper.

CORE IDEAS

Two inks were used by artists and scribes for centuries. The first, **walnut ink**, is easy: the green outer hulls of black walnuts are soaked and boiled in water for hours until the water turns deep brown, then strained and boiled down. It is a warm, transparent brown, lovely for drawing with a pen or brush and for washes.

The second, **iron gall ink**, is the ink of medieval manuscripts, Leonardo's notebooks, Rembrandt's drawings, Bach's music and the Declaration of Independence. It begins with **oak galls**, small round balls that oak trees grow around the eggs of tiny wasps. Galls are rich in **tannins**. Crushed and soaked in water, they give a pale brown liquid. Then an **iron salt** is added. The iron and the tannins combine into a new compound that darkens to deep blue-black, especially as it dries and meets the air on the page. A little gum arabic thickens it so it flows well from a pen.

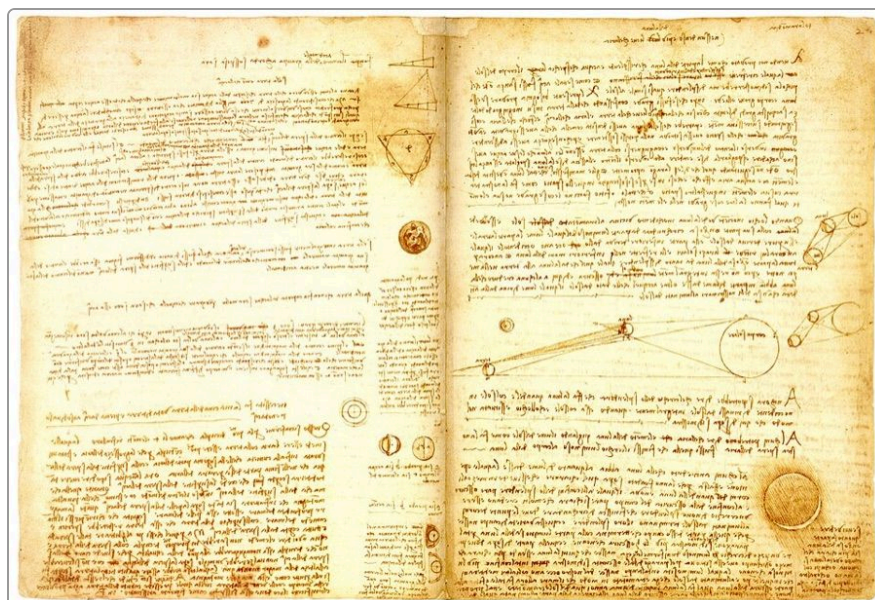
At home, the safest source of iron is **iron water**: a pad of plain steel wool (washed with soap to remove oil) soaked in white vinegar for several days. The vinegar slowly dissolves the iron, making an iron acetate solution. Keep the jar **loosely covered**, **never sealed**, because the reaction gives off a small amount of gas, and keep it labeled and away from children. Use galls if you can find them on oak twigs in autumn; strong black tea also contains tannins and makes a weaker version of the same ink.

Iron gall ink has a flaw. If it is made with too much iron or acid, it slowly attacks the paper over centuries, a problem called **ink corrosion**: letters turn brown, crack and sometimes fall out of the page. Conservators today work hard to stabilize old

documents damaged this way. Iron gall ink also rusts steel nibs, so rinse your pen after use.

Safety: walnut hulls stain skin and clothes dark brown for days, so wear gloves and old clothes and simmer them outdoors or with a window open, on a pot used only for art. An adult should handle the boiling. Iron water and iron gall ink are acidic and must never be swallowed; wash hands afterward. Label every jar with its contents and the date.

PICTURE STUDY



Codex Leicester (a page), Leonardo da Vinci, about 1506–1510 · Ink and chalk on paper · Private collection

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

Leonardo filled thousands of notebook pages with observations of nature, written backward in mirror script and illustrated with quick pen diagrams. This notebook is mostly about water, rocks and light. On these pages he explains why the dark part of a crescent moon glows faintly: sunlight reflects off the earth onto the moon. Look at it as a work of art made of ink.

Look closely

- Find the small diagrams among the writing. Which one looks like a moon? Which show lines of light?
- Look at the color of the ink. Is it black today? Why might it have changed over five hundred years?
- Notice how the lines of writing and the drawings fit together on the page.
- Look for places where the pen line is thick and where it is thin.

Talk about it

1. Why might Leonardo have written in mirror script?
2. What does this page tell you about how Leonardo looked at the world?
3. If this ink was iron gall ink, what would a conservator worry about?

STUDIO PROJECT

Two Inks and a Nature Study

You will make a walnut ink and an iron gall ink (from oak galls or strong tea), then use both to make a pen-and-ink nature study on a page that combines drawing and handwritten notes, like a page from Leonardo's notebook.

You will need

- Gloves, apron and old clothes
- For walnut ink: about 10 black walnut hulls (fresh or dried), water, an old pot used only for art, a strainer, coffee filters, a jar
- For iron water (start 3–5 days ahead): a pad of plain steel wool washed with dish soap, white vinegar, a labeled jar with a loose lid
- For iron gall ink: 4–6 oak galls crushed in a cloth with a hammer (or 4 strong black tea bags), water, a jar, a teaspoon of gum arabic solution
- A dip pen with a nib, or a sharpened stick or bamboo pen; a small round brush
- Watercolor or heavy drawing paper

Steps

1. Iron water (adult, a few days ahead): put the washed steel wool in a jar, cover it with white vinegar and set the lid on loosely. Leave it for 3–5 days until the liquid turns orange-brown. Strain it into a labeled jar.
2. Walnut ink (adult at the stove, outdoors or with a window open): cover the walnut hulls with water in the art pot and simmer for 2–3 hours, adding water as needed. Let it cool, strain through a coffee filter into a jar and label it.
3. Gall ink: soak the crushed galls (or tea bags) in about half a cup of hot water overnight. Strain out the solids.
4. Add iron water to the gall liquid a teaspoon at a time, stirring, until it turns dark gray or blue-black. Add a teaspoon of gum arabic solution and stir. Label the jar.

5. Test both inks on scrap paper with the pen and the brush. Notice that the gall ink darkens as it dries.
6. Choose a natural subject (a leaf, a pinecone, a shell, a feather, a flowing stream if you can draw outdoors).
7. Draw it with the pen in walnut ink, using hatching and cross-hatching for shadows.
8. Add brush washes of diluted walnut ink for the middle tones, and accents of iron gall ink for the darkest details.
9. Around the drawing, write notes about your subject and about how you made the ink, in your best handwriting. Date the page.

Tips

- Hold the pen at a low angle and pull it toward you; pushing makes it catch and splatter.
- Rinse and dry your nib after every session to keep it from rusting.

Check your work

- ☐ I made two inks and labeled both jars.
- ☐ My drawing uses line, hatching and wash.
- ☐ My page combines drawing and handwritten notes, like a naturalist's notebook.
- ☐ I followed the safety rules: gloves, ventilation, loose lid, no food tools.

SKETCHBOOK PRACTICE

1. Write a paragraph explaining in your own words why iron gall ink turns black.
2. Draw a tree with a sharpened stick dipped in walnut ink. How does the stick change the kind of line you make?

From history. When the Codex Leicester was sold at auction in 1994 for about thirty million dollars, it was the most ever paid for a book at that time. It is named after the Earl of Leicester, who bought it in 1719. It is shown to the public only occasionally, a few pages at a time, partly to protect its ink and paper from light.

COMMON MISTAKES

- Sealing the iron water jar tightly.
- Adding too much iron water, which makes a rusty, acidic ink.

- Overloading the pen so it blots. Tap off the extra ink on the jar's rim.

Make it a game · Ink Chain Story. Tell the story of iron gall ink in a chain, one sentence each, starting with the oak gall. You must include tannin, the iron salts, the dark black color and the corrosion that damages old pages. Then do the same for walnut ink. Keep the chain going until every term is used.

5.4 CONSERVATION AND RESTORATION

OBJECTIVES

- Explain the difference between conservation and restoration and the rule of reversibility.
- Describe how varnish, light, humidity and time affect paintings.
- Practice a simple condition report and a reversible inpainting exercise, and read the results of their lightfastness test.

Warm-up. Bring in the lightfastness strip from lesson 5.1. Remove the cover and compare the covered and uncovered halves. Which colors faded? Write down the results.

WATCH

Restoring the Gallery's oldest painting. | Behind the scenes in Conservation | National Gallery

The National Gallery • 9:21

<https://www.youtube.com/watch?v=9MylOtulQJQ>

WHEN TO WATCH

After the core ideas. Watch how the conservator documents, cleans and fills before retouching.

BACKUP VIDEO

How We Are Removing Varnish From The Night Watch

Rijksmuseum • 4:00

<https://www.youtube.com/watch?v=S-2tIXR0Sb4>

A second example: how the Rijksmuseum removes old varnish from Rembrandt's *Night Watch*.

KEY TERMS

conservation

Protecting and stabilizing a work of art so that it lasts, with as little change as possible.

varnish

A clear protective coating on a painting; older natural varnishes turn yellow and cloudy with age.

reversibility

The rule that anything a conservator adds must be removable later without harming the original.

restoration

Treating a damaged work to bring it closer to its original appearance, such as removing yellow varnish or filling losses.

inpainting

Carefully painting only inside areas where the original paint is lost, using removable materials, never painting over original paint.

condition report

A written and illustrated record of a work's state: its materials, damage and any past repairs.

CORE IDEAS

Every material ages. Varnish turns yellow, canvas loosens, wood panels crack, paint flakes when it gets brittle, and pigments can fade or darken. **Conservation** tries to slow this decay and stabilize the work. **Restoration** tries to recover what has been lost, for example by removing old yellowed varnish so the true colors show again, or by filling and retouching damaged areas.

Conservators follow strict rules. First, **document** everything before touching the work, with photographs, notes and often X-rays and infrared scans. Second, **do as little as possible**. Third, and most important, **reversibility**: every material a conservator adds, whether a varnish, a filling or retouching paint, must be removable in the future without harming the original. Retouching is done only in the areas where paint is actually missing, called **inpainting**, and never over the artist's own paint.

Cleaning a painting is skilled and slow. Natural resin varnishes yellow with age, and dirt and smoke settle on them. A conservator tests tiny areas to find a mixture that dissolves the old varnish but not the paint, then rolls small cotton swabs across the

surface a few square centimeters at a time. This is done in a laboratory with proper ventilation; it is not something to try at home on any real painting.

Some works are especially fragile because of how they were made. Leonardo painted *The Last Supper* in tempera and oil directly on a dry plaster wall instead of in true fresco, and within his lifetime it began to flake. Over the centuries it was repainted many times by well-meaning restorers. A twenty-year conservation finished in 1999 removed those later layers and revealed what remains of Leonardo's own paint.

You can be a conservator of your own work. Light, damp and acid are the enemies of art on paper. Use acid-free paper for work you want to keep, choose lightfast colors, store drawings flat in a folder away from sunlight and damp basements, never use ordinary tape on the front of a drawing, and frame important pieces behind glass. The ink and paint you made by hand deserve to last.

PICTURE STUDY



The Last Supper, Leonardo da Vinci, 1495–1498 · Tempera and oil on dry plaster · Santa Maria delle Grazie, Milan

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

Leonardo painted the Last Supper on the wall of a monastery dining hall at the moment Christ says, “One of you shall betray me.” Because of the experimental way he painted it, it began to decay almost at once. Its story is one of the great case studies in conservation.

Look closely

- Look closely at the surface. Where can you see damage, missing paint or worn areas?
- Find Christ at the center. How do the lines of the room and the window behind Him lead your eye to His head?
- Look at the groups of apostles. How do their gestures show their reactions?
- Compare the clearer areas with the worn ones. What has survived best?

Talk about it

1. Why do you think Leonardo chose to paint on dry plaster instead of using true fresco?
2. Should restorers repaint missing areas so the painting looks complete, or leave the losses visible? Explain your view.

3. Why do you think people have worked so hard for five hundred years to save this painting?

STUDIO PROJECT

A Conservator's Exercise

You will write a condition report on one of your own older artworks, then do a reversible inpainting exercise on a small painted study prepared for the purpose. Never practice on a real painting or a family heirloom.

You will need

- One of your older drawings or paintings
- A small watercolor or acrylic study made for this exercise (4×6 in)
- A small piece of white paper and a glue stick
- Watercolor paints and a fine brush (size 0 or 1)
- A magnifying glass and a ruler
- Notebook and pencil
- Your lightfastness strip from lesson 5.1

Steps

1. Condition report: choose an older artwork of yours. Record its title, date, size and materials.
2. Examine it with the magnifying glass in good light. Note any creases, tears, smudges, stains, faded areas or tape marks, and draw a small diagram of the work marking where each is.
3. Write a recommendation: how should it be stored or framed to protect it?
4. Inpainting exercise: take your small study (fully dry). With scissors, cut a small notch (about 1 cm) out of one edge to imitate a loss.
5. Fill the loss: glue a small piece of white paper behind the notch so it fills the gap, flush with the surface. This is your “fill.”
6. With watercolor (which can be removed with a damp brush, so it is reversible), carefully paint the fill to match the colors around it. Paint only inside the fill, never over the original painting.
7. Mix and test the color on scrap paper beside the study until it matches, using the color-check method from lesson 3.3.

8. When you finish, write a short treatment report: what you did, what materials you used and how they could be removed.
9. Record the results of your lightfastness test with the strip glued into your sketchbook. Which of your homemade colors would you trust for a painting meant to last?

Tips

- Use less paint than you think; build up thin layers.
- Good inpainting is invisible from a normal distance but can be found up close.

Check your work

- ☐ My condition report describes and diagrams the artwork's state.
- ☐ My inpainting stays inside the fill and does not cover the original paint.
- ☐ My matched colors are close enough that the repair is hard to see from a meter away.
- ☐ I recorded my lightfastness results and what they mean.

SKETCHBOOK PRACTICE

1. Make a “care label” for your portfolio folder listing five rules for protecting artwork.
2. Look up a famous painting that was cleaned in recent years and sketch a before-and-after comparison of one small area.

From history. During the Second World War a bomb destroyed much of the monastery around *The Last Supper*; the wall survived only because it had been braced with sandbags. The great restoration led by Pinin Brambilla Barcilon took from 1978 to 1999, longer than Leonardo took to paint it.

COMMON MISTAKES

- Painting over the original paint instead of only inside the loss.
- Using a permanent material (acrylic, marker) for a repair that should be reversible.
- Storing finished work rolled up, taped to walls in sunlight, or in damp places.

Make it a game • Reversible or Not?. Your parent names an action: removing varnish, filling a crack with permanent glue, taping a tear, inpainting a loss. Say whether it is reversible and why the rule matters. Then examine an old book for five minutes and write a condition report with at least five observations. Two points for each.

Scripture. “and thou shalt be called, The repairer of the breach, The restorer of paths to dwell in.” (Isaiah 58:12, KJV)

Repairing what is broken and preserving what is good for those who come after us is honorable work, whether it is a city wall or a treasured painting.

UNIT 5

MATERIAL SCIENCE: MAKING MATERIALS

For most of history, artists did not buy paint in tubes. They and their apprentices ground minerals, cooked inks, separated eggs and boiled glues. Knowing how materials were made was part of being an artist, and it explains why old paintings look and age the way they do.

In this unit you will become a materials maker. You will grind your own watercolor from pigment and gum arabic, paint with egg tempera as the icon painters and early Renaissance masters did, brew walnut ink and oak gall ink, and learn how conservators clean and protect paintings so that they last for centuries. All of the recipes here are chosen to be safe at home with sensible care and an adult nearby.

PREREQUISITES

- Pigment and binder: every paint is colored powder held together by a sticky substance
- Transparent and opaque paint (Unit 3)
- Careful brush and palette cleanup

MASTERY CHECKLIST

- ☐ I can explain that paint is pigment plus binder and name the binder in watercolor, egg tempera, oil paint and acrylic.
- ☐ I can grind a usable watercolor paint from a dry pigment and gum arabic.
- ☐ I can mix and paint with egg tempera, and explain why it is painted in thin hatched strokes.
- ☐ I can make walnut ink and oak gall ink and explain the chemistry of iron gall ink in simple terms.
- ☐ I can explain how conservators clean, repair and protect paintings, and why their work must be reversible.
- ☐ I can handle dry pigments and inks safely.

LESSONS IN THIS UNIT

5.1 Make Your Own Paint: Pigment and Binder

2 sessions of 60 minutes

5.2 Egg Tempera

2 sessions of 60 minutes

5.3 Oak Gall and Walnut Ink

2 sessions of 60 minutes

5.4 Conservation and Restoration

2 sessions of 60 minutes

UNIT 5 REVIEW

Answer in complete sentences. Total: 100 points.

1. 8 pts

What two things is every paint made of, and what does each do?

2. 8 pts

Name the binder in each: watercolor, egg tempera, oil paint, acrylic.

3. 8 pts

Why is honey or glycerin added to watercolor?

4. 8 pts

Why is burnt sienna redder than raw sienna?

5. 8 pts

List four safety rules for handling dry pigments.

6. 8 pts

Why must egg tempera be painted in thin hatched strokes?

7. 8 pts

Why is egg tempera painted on rigid panels rather than on canvas?

8. 8 pts

Explain in simple terms why iron gall ink turns black.

9. 8 pts

Why must the jar of steel wool and vinegar be covered only loosely?

10. **8 pts**

What is the rule of reversibility in conservation?

11. **10 pts**

Short answer: Explain why Leonardo's *The Last Supper* began to decay so soon and what the 1978–1999 restoration did.

12. **10 pts**

Short answer: What did your lightfastness test show, and how would it affect the materials you choose for a painting you want to last?

ANSWER KEY

1. Pigment, which gives color, and binder, which holds the pigment together and sticks it to the surface.
2. Watercolor: gum arabic. Egg tempera: egg yolk. Oil paint: linseed (drying) oil. Acrylic: acrylic polymer emulsion.
3. It is a humectant that keeps a little moisture in the dried paint so it stays slightly soft and rewets easily.
4. Heating (burning) the iron-oxide clay drives off water and changes the iron compound, turning it from yellow-brown to red-brown.
5. Wear a dust mask and gloves; clean up with damp towels, never sweep or blow; use only safe pigments (no lead, cadmium, cobalt or chromium); no eating or drinking, and keep art tools out of the kitchen.
6. It dries in seconds and cannot be blended on the panel, so tone is built by layering many small strokes; thick tempera also cracks.
7. The tempera film is not flexible and would crack on canvas that bends; a rigid gessoed panel keeps it stable.
8. Tannins from the oak galls combine with iron to form a dark compound, which grows darker as it dries and reacts with the air.
9. The reaction gives off a small amount of gas, which could build up pressure in a sealed jar.
10. Everything a conservator adds (varnish, fills, retouching) must be removable later without harming the original work.
11. Leonardo painted with tempera and oil on dry plaster rather than in true fresco, so the paint did not bond with the wall and began to flake within his lifetime. Later restorers repainted it many times. The long restoration cleaned away dirt and those later repaintings, stabilized the remaining original paint and revealed what survives of Leonardo's work.
12. A good answer reports which colors faded (often the marker or plant colors) and which did not (earth pigments), and concludes that lasting work should use lightfast pigments like the earths, ultramarine and quality artist paints, on acid-free paper, kept out of direct sunlight.

PORTFOLIO PIECE: A HANDMADE MATERIALS PANEL

Make a finished small work (about 8×10 in) using at least two materials you made yourself in this unit, such as homemade watercolor with walnut-ink drawing, or an egg tempera panel with iron-gall-ink lettering. Attach a label on the back listing every material, how it was made and its lightfastness, as a conservator would want to know.

LOOK FOR	WHAT IT MEANS
Handmade materials	At least two homemade paints or inks are used, and they hold well (no dusting or flaking).
Technique	Each medium is used in its proper way (hatching in tempera, washes in watercolor, controlled pen work in ink).
Composition	The work has a clear subject, a focal point and a thoughtful arrangement.
Documentation	The label on the back accurately lists materials, recipes and lightfastness.
Craftsmanship and care	Clean, careful work, safely made, signed, dated and stored properly.

UNIT 6

PERSPECTIVE AND ARCHITECTURE

Linear perspective is a system for drawing three-dimensional space on a flat surface so that it looks the way it looks to one eye from one place. It was worked out by Florentine architects and painters in the early 1400s and has been part of every artist's training ever since. In this unit we take perspective as far as you need it for drawing real buildings, streets and churches.

We will review two-point perspective and add a third vanishing point for looking up at tall buildings or down from a height. Then we will draw real buildings from observation, put them together into a cityscape, and finally study the great churches of Christendom, from heavy Romanesque arches to soaring Gothic vaults, and draw one.

PREREQUISITES

- One-point perspective: horizon line, vanishing point and orthogonals
- Drawing a box in two-point perspective
- Using a ruler and keeping construction lines light

MASTERY CHECKLIST

- ☐ I can explain eye level, horizon line, vanishing points and why parallel lines appear to converge.
- ☐ I can draw boxes and buildings in two-point and three-point perspective.
- ☐ I can draw doors, windows and roofs correctly on a building in perspective.
- ☐ I can draw a believable street or cityscape with figures to scale.
- ☐ I can name the main features of Romanesque and Gothic churches and draw an arch in perspective.

LESSONS IN THIS UNIT

6.1 Two- and Three-Point Perspective

2 sessions of 60 minutes

6.2 Drawing Buildings

2 sessions of 60 minutes

6.3 The Cityscape

2 sessions of 60 minutes

UNIT 6 REVIEW

Answer in complete sentences unless asked to draw. Use a ruler for drawings. Total: 100 points.

1. 8 pts

Where is the horizon line always found in a perspective drawing?

2. 8 pts

Why do parallel lines going away from us appear to meet at a vanishing point?

3. 8 pts

Draw a box below the horizon in two-point perspective.

4. 8 pts

When do you need a third vanishing point?

5. 8 pts

How do you find the true center of a wall in perspective?

6. 8 pts

If you are standing on flat ground, where are the heads of other standing adults in your picture?

7. 8 pts

Name three ways, besides linear perspective, to show depth in a cityscape.

8. 8 pts

Name the nave, transept and apse, and say what each is.

9. 8 pts

Give three differences between Romanesque and Gothic churches.

10. 8 pts

What does a flying buttress do?

11. **10 pts**

Short answer: Explain how pointed arches, ribbed vaults and flying buttresses worked together to fill Gothic churches with light.

12. **10 pts**

Short answer: Describe how Caillebotte uses perspective in *Paris Street; Rainy Day*.

ANSWER KEY

1. At the viewer's eye level.
2. Because things look smaller the farther away they are, so the distance between the lines seems to shrink until they appear to meet.
3. The drawing should show a vertical front edge, top and bottom edges going to two vanishing points on the horizon, vertical back edges, and the top of the box visible.
4. When looking steeply up at something tall (worm's-eye view) or steeply down from a height (bird's-eye view), so that vertical lines also appear to converge.
5. Draw an X from corner to corner; where the diagonals cross is the perspective center.
6. Near the horizon line, whether the people are near or far.
7. Any three of: atmospheric perspective (paler, cooler, less detailed in the distance), overlapping, decreasing size, stronger value contrast in front, cast shadows.
8. Nave: the long central hall where the people gather. Transept: the arms that cross the nave. Apse: the rounded end behind the altar.
9. Romanesque: round arches, thick walls, small windows, barrel vaults, dark interiors. Gothic: pointed arches, ribbed vaults, flying buttresses, thin walls with large stained glass windows, tall and bright interiors.
10. It is an arched stone prop outside the wall that carries the outward push of the vault down to the ground, so the walls do not have to be thick.
11. The pointed arch sends weight more steeply downward, the ribbed vault gathers the ceiling's weight onto a few ribs and columns, and flying buttresses outside carry the remaining outward push to the ground. Because the walls no longer had to bear the load, they could be opened into huge stained glass windows, filling the church with colored light.
12. He sets the horizon at the eye level of the walking figures, so their heads line up near it. The corner building in the middle distance recedes in sharp two-point perspective, with its roof and window lines going to vanishing points on the horizon; the paving stones shrink as they go back. The precise perspective makes the wide new street feel deep and orderly, while the lamppost divides the composition.

PORTFOLIO PIECE: A BUILDING I KNOW

Make a finished drawing (11×14 in) of a real building that matters to you, such as your church, your house or a building in your town, in two- or three-point perspective, drawn from observation if possible. Include its setting (street, trees or neighboring buildings), scale figures, a consistent light source with cast shadows, and atmospheric perspective. Pencil, or pen with gray washes.

LOOK FOR	WHAT IT MEANS
Perspective	Horizon at eye level; all lines go to the correct vanishing points; verticals are true (or converge correctly in three-point).
Construction	Roofs, doors, windows and arches are placed correctly, including perspective centers.
Depth and scale	Scale figures sit correctly against the horizon; atmospheric perspective and overlapping deepen the space.
Light	One light source; cast shadows and shadows in openings make the building solid.
Craftsmanship	Clean lines, construction lines softened, thoughtful detail at the focal point; signed and dated.

6.1 TWO- AND THREE-POINT PERSPECTIVE

OBJECTIVES

- Explain why parallel lines appear to meet at vanishing points.
- Draw boxes in two-point perspective above, on and below the horizon line.
- Draw a tall building in three-point perspective from a worm's-eye view.

Warm-up. Look down a long hallway or a straight road. Hold a pencil at arm's length along the line where the wall meets the ceiling or floor, and notice its angle. Then sketch the hallway in two minutes.

WATCH

How to Draw in 3-Point Perspective: Narrated

Circle Line Art School · 8:26

<https://www.youtube.com/watch?v=EPBaHkj753I>

WHEN TO WATCH

After you have drawn the two-point boxes in step 1 to 4 of the project.
Draw along.

BACKUP VIDEO

Perspective Drawing - 04: Three Point Perspective

Matt Laskowski (fox-orian) · 4:33

<https://www.youtube.com/watch?v=BPWbZt9EiAw>

A short explanation of when and why three-point perspective is used.

KEY TERMS

eye level (horizon line)

A horizontal line at the height of the viewer's eyes; in perspective, the horizon is always at eye level.

vanishing point

The point on the horizon (or above or below it) where parallel lines going away from the viewer appear to meet.

two-point perspective

A system using two vanishing points on the horizon, for objects seen corner-first.

three-point perspective

A system adding a third vanishing point above or below the horizon, for very tall or very low views where vertical lines also converge.

worm's-eye and bird's-eye view

Looking steeply up from below, or steeply down from above.

CORE IDEAS

Things look smaller the farther away they are. Because of this, the two rails of a straight railway track seem to come closer and closer until they meet at a point in the distance. Every set of parallel lines going away from you behaves the same way: the lines appear to meet at a **vanishing point**. Linear perspective is simply a careful way of drawing this effect.

The **horizon line** is always at your **eye level**. Stand up and it rises; sit down and it drops. Things above your eye level (a ceiling, the eaves of a roof) slope down toward the horizon; things below it (a floor, a tabletop) slope up toward it. Vanishing points for level lines always sit on the horizon.

In **two-point perspective**, you see a box or building corner-first. It has two sets of horizontal edges going away from you, so there are two vanishing points, one on the left and one on the right of the horizon. Vertical lines stay vertical. Placing the vanishing points far apart (even off the page) gives a natural look; placing them close together makes the box look stretched and distorted.

When you look steeply up at a skyscraper or tower, its vertical edges also appear to come together toward the sky. That is **three-point perspective**: two vanishing points on the horizon and a third far above (a worm's-eye view) or far below (a bird's-eye view, looking down from a high tower). The third point gives a dramatic feeling of height or depth.

Perspective was invented by architects. Filippo Brunelleschi, who built the great dome of Florence Cathedral, showed the system around 1415 with a painted panel of the Baptistery seen through a peephole and a mirror. Painters such as Masaccio

quickly used it to make sacred scenes look as though they opened right through the wall of the church.

PICTURE STUDY



Paris Street; Rainy Day, Gustave Caillebotte, 1877 · Oil on canvas · Art Institute of Chicago

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

Caillebotte trained as an engineer before he became a painter, and it shows. This huge painting of a new Paris crossroads is built on a precise perspective structure, yet it feels like a real moment on a gray, rainy afternoon.

Look closely

- Find the horizon line. Look at the heads of the people walking: where are they compared with the horizon?
- Find the building on the left with its sharp corner pointing toward us. Follow its roof line and its rows of windows. Where do they go?
- Look at the paving stones. How do they get smaller and closer together as they go back?
- Notice the lamppost. How does it divide the picture?

Talk about it

1. Why do the heads of most walking adults sit near the horizon line?
2. Is this one-point, two-point or three-point perspective? Explain.
3. What does the perspective add to the feeling of a big, modern city?

STUDIO PROJECT

Boxes and a Tower

You will draw a page of boxes in two-point perspective, then a tall tower in three-point perspective seen from below.

You will need

- Drawing paper (two sheets, 11×14 in)
- Ruler (18 in) and pencils (2H, HB, 2B)
- Kneaded eraser
- Masking tape (to extend the paper for far vanishing points if needed)

Steps

1. On the first sheet, draw a horizon line across the middle. Mark two vanishing points near the left and right edges.
2. Draw a vertical line for the front corner of a box below the horizon. Connect its top and bottom to both vanishing points. Add the back vertical edges and finish the box.
3. Draw a second box on the horizon (you will see neither top nor bottom) and a third above it (you will see its underside).
4. Add one long box like a bus and one tall thin box like a chimney. Erase the extra construction lines when you are done.
5. On the second sheet, draw a horizon line low on the page with two vanishing points far apart. Mark a third vanishing point high above the center of the page.
6. Draw the bottom front corner of the tower just above the horizon. Connect its base to the two horizon vanishing points.
7. Draw the tower's vertical edges as lines going up toward the third vanishing point. Choose a height and draw the top edges back to the two side vanishing points.
8. Add rows of windows: each floor's lines go to the side vanishing points, and window sides go to the third point. Notice that floors get shorter toward the top.

9. Shade one side of the tower darker to show the light, and add clouds behind it.

Tips

- Keep construction lines very light with a 2H pencil.
- If your vanishing points are close together, the boxes look distorted. Spread them out.

Check your work

- ☐ My boxes above, on and below the horizon all go to the same two vanishing points.
- ☐ All vertical edges in my two-point drawing are truly vertical.
- ☐ In my three-point drawing, vertical edges converge toward the third point.
- ☐ My windows get smaller and closer together as they go back and up.

SKETCHBOOK PRACTICE

1. Draw a box in your room (a dresser, a bookcase, a chest) in two-point perspective from observation, finding the vanishing points by sighting the angles of its edges.
2. Draw a view looking down from a high window or a staircase in three-point perspective.

From history. Caillebotte came from a wealthy family and used his money to buy the paintings of his struggling friends Monet, Renoir and Pissarro. When he died he left his collection to the French nation, and it now forms part of the Musée d'Orsay.

COMMON MISTAKES

- Putting the horizon line somewhere other than eye level.
- Letting vertical lines lean in two-point perspective.
- Spacing windows evenly instead of letting them get closer together as they recede.

Make it a game • Point Counter. Your parent draws a box in light lines, no labels. Say how many vanishing points it uses and whether the eye level is above, on or below the box. Then draw a box from a worm's-eye view with three points. Switch roles and make your parent decide. Ten boxes. One point for each correct answer.

6.2 DRAWING BUILDINGS

OBJECTIVES

- Construct a building in two-point perspective with a pitched roof, doors and windows.
- Find the center of a wall in perspective to place a roof peak or a door.
- Draw a real building from observation, checking angles by sighting.

Warm-up. From a window or doorway, draw the outline of one building you can see in three minutes. Draw only the big shapes: walls, roof and the largest windows.

WATCH

How to Draw Two-Point Perspective Buildings: Step-by-Step

Circle Line Art School · 16:56

<https://www.youtube.com/watch?v=ixE0y1kUNzA>

WHEN TO WATCH

After the core ideas. Draw along, pausing as needed.

Note: The video ends with a mention of the channel's paid course.

BACKUP VIDEO

How to Draw Architecture

Stephen Travers Art · 16:31

<https://www.youtube.com/watch?v=8f3zWsbC704>

Before drawing your real building from observation; shows how an artist simplifies a complicated building.

KEY TERMS

pitched roof

A roof with two sloping sides meeting at a ridge.

gable

The triangular upper part of a wall under a pitched roof.

perspective center

The true middle of a wall in perspective, found by drawing an X from corner to corner.

sighting

Holding a pencil at arm's length to measure angles and proportions of a real object.

elevation

An architect's flat drawing of one side of a building, without perspective.

CORE IDEAS

A building is a box, sometimes several boxes joined together, with a roof on top and openings cut into it. Draw the box first in two-point perspective, then add the roof, then the doors and windows. Details last.

To put a roof on a box, you need the middle of the end wall, where the ridge sits above. In perspective, the middle is not halfway on the page, because the far half looks shorter. Find the **perspective center** by drawing an X from corner to corner of the wall; where the lines cross is the true center. Draw a vertical line up through it to the height of the ridge. Then draw the ridge line back to the same vanishing point as the long walls, and connect the slopes of the roof.

Windows and doors are smaller boxes cut into the wall. Their tops and bottoms go to the same vanishing point as the wall they sit in. Repeated windows can be spaced correctly by the same diagonal method or by measuring the first one and judging the rest by eye; remember that each one looks slightly narrower as it recedes.

When you draw a real building from **observation**, you do not need to find the vanishing points on paper. Instead, **sight** the angles: hold your pencil at arm's length, line it up with a roof edge or a window row, and copy that angle to your drawing. Check that all the lines on one side of the building would meet at one point if you extended them.

Buildings have character: a sagging old barn, a crisp new house, a stone church. Once the perspective is right, show that character with texture (brick, clapboard, stone), the thickness of window frames and the shadows under eaves. These shadows, cast by the roof overhang and in the recesses of windows and doors, are what make a building look solid.

PICTURE STUDY



The Little Street, Johannes Vermeer, about 1657–1658 · Oil on canvas · Rijksmuseum, Amsterdam

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

Vermeer painted the front of a modest brick house in his hometown of Delft, with its neighbors doing ordinary chores. Researchers recently identified the very street where it stood. It shows how a building painted straight on, almost like an elevation, can be full of life and character.

Look closely

- Look at the brick wall. How did Vermeer suggest thousands of bricks without painting every one?
- Find the cracks and patches in the whitewash and the worn edges of the stone. What do they tell you about the building's age?
- Look at the windows. Which are open, which are closed, and how deep do they look?
- Find the four people. What is each one doing?

Talk about it

1. Is this building drawn in strong perspective, or nearly flat? Why might Vermeer have chosen that?
2. How does Vermeer make the house look solid and real?
3. What does this painting say about everyday life and home?

STUDIO PROJECT

A House in Two-Point Perspective

You will construct a house with a pitched roof in two-point perspective, then draw a real building near you from observation, using what you learned.

You will need

- Drawing paper (two sheets, 11×14 in)
- Ruler, pencils (2H, HB, 2B, 4B)
- Kneaded eraser
- Fine black pen (optional, for finishing)
- A clipboard or board for drawing outdoors

Steps

1. Draw a horizon line and two vanishing points far apart. Draw the front corner of the house as a vertical line crossing the horizon.
2. Build the box of the house to both vanishing points and choose its length and depth.
3. On the end wall, draw an X from corner to corner to find the perspective center. Draw a vertical line through it up to the height of the roof peak.
4. From the peak, draw the ridge line back toward the vanishing point of the long side. Draw the sloping edges of the roof on both gables.
5. Add an overhang to the roof by extending its edges a little beyond the walls.
6. Add a door and windows. All their horizontal edges go to the vanishing point of the wall they sit in.
7. Add a chimney as a small box on the roof, and steps or a porch as boxes at the door.
8. Shade: one wall lighter, one darker, with shadows under the eaves and inside the window frames.
9. Second drawing: go outside (or to a window) and draw a real building from observation, sighting the angles. Draw the big box first, then the roof, openings and details.

Tips

- Draw lightly until the structure is right; you can darken lines later.
- Simplify complicated buildings into their main boxes.

Check your work

- ☐ My constructed house has a roof whose peak sits at the true perspective center of the gable.
- ☐ All the windows and doors line up with the correct vanishing points.
- ☐ My observed building's angles were checked by sighting.
- ☐ Shadows under eaves and in openings make the buildings look solid.

SKETCHBOOK PRACTICE

1. Draw a front elevation of your own house (flat, no perspective), then the same house in two-point perspective.
2. Fill a page with close-up studies of building textures: brick, stone, shingles, wood siding.

From history. For centuries Delft was famous for its pottery, blue-and-white “Delftware” made in imitation of Chinese porcelain. Vermeer spent his whole life there; only about three dozen of his paintings survive, and *The Little Street* and *View of Delft* are his only two views of the town.

COMMON MISTAKES

- Placing the roof peak halfway across the gable on the page instead of at the perspective center.
- Making windows the same width all along a receding wall.
- Drawing every brick, which looks mechanical. Suggest texture in a few places.

Make it a game • Build It in Three. Draw a house in two-point perspective in three minutes. Your parent calls the steps: box, door in the center via diagonals, roof peak, windows. Beat your score next round. Name the gable and pitched roof on your drawing. A step done out of order costs a point.

6.3 THE CITYSCAPE

OBJECTIVES

- Combine several buildings into a single street scene with a consistent horizon line.
- Place figures to scale using the horizon line.
- Use atmospheric perspective and value to give a cityscape depth.

Warm-up. Draw a horizon line across a page. Draw five people standing on flat ground at different distances, all with their heads on the horizon line. Notice how their size shows their distance.

WATCH

How to Draw Buildings in Perspective: A Street in Edinburgh

Circle Line Art School • 11:58

<https://www.youtube.com/watch?v=uKKFiL-rdEI>

WHEN TO WATCH

Before the studio project. Watch once, then draw your own street.

BACKUP VIDEO

How to Draw Perspective - A Simple Guide and Sketching Tutorial

TobySketchLoose - Artist and Urban Sketcher • 16:53

<https://www.youtube.com/watch?v=vs9f9shBpNI>

An urban sketcher shows a looser, freehand way of drawing streets on location.

KEY TERMS

cityscape

A picture whose main subject is a town or city.

scale figures

Small people added to a scene to show its size and to bring it to life.

veduta

Italian for “view”: a detailed, accurate painting of a city, popular in the 1700s.

horizon rule for figures

On flat ground, the heads of standing adults are all near the horizon line if the viewer is standing.

atmospheric perspective

The way distant things look paler,
bluer, softer and less detailed because
of the air between us and them.

CORE IDEAS

A cityscape is many buildings in one space. The key is that they all share **one horizon line**, because there is only one viewer. Buildings set at different angles will have different vanishing points, but all of those points sit on the same horizon. Buildings lined up along a straight street share vanishing points.

Scale figures bring a city to life and tell us how big everything is. Here is a reliable rule: if you are standing on level ground, the heads of other standing adults are all at about the same height as your eyes, so their heads sit on the horizon line whether they are near or far. Their feet get higher on the page as they go back. Draw the head on the horizon first, then measure down to the feet.

Depth in a city comes from more than linear perspective. **Atmospheric perspective** makes distant buildings paler, cooler and less detailed. **Overlapping** places near buildings in front of far ones. **Value contrast** is strongest in the foreground and weakest in the distance. And **light and shadow**, especially cast shadows across a street, tie the buildings together and show the time of day.

Composing a cityscape uses everything from Unit 1. Choose a focal point (a church tower, a bridge, a busy corner). Lead the eye there with the lines of the street, with light, or with figures. Leave quiet areas (sky, a plain wall) to rest the eye. A good cityscape has order and variety, like a good city.

In the 1700s, travelers on the Grand Tour of Europe wanted pictures of the cities they visited, and painters such as Canaletto in Venice produced detailed views called **vedute**. Canaletto sometimes used a camera obscura to study his views, but he freely moved buildings around to make a better composition.

PICTURE STUDY



The Stonemason's Yard, Canaletto, about 1725 · Oil on canvas · The National Gallery, London

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

Most of Canaletto's views show Venice's famous sights for tourists. This one is different: a busy, ordinary workyard where stone is being cut for a church, seen in morning light. Its perspective, light and everyday detail make it one of his greatest paintings.

Look closely

- Find the horizon line. Where are the heads of the workmen compared with it?
- Follow the lines of the buildings on the left back into the distance.
- Look at the bell tower across the canal. How is it painted differently from the near buildings?
- Find the small scenes of daily life: laundry, a woman at a window, a child, the workmen.

Talk about it

1. How does Canaletto use light and shadow to tie the scene together?
2. What is the focal point, and how does he lead your eye to it?
3. Why might this ordinary scene be more interesting than a postcard view?

STUDIO PROJECT

A Street Scene

You will draw a street scene of at least four buildings, with figures to scale and atmospheric perspective, either from observation in your town or from your own photograph.

You will need

- Drawing paper (11×14 in)
- Ruler, pencils (2H, HB, 2B, 4B)
- Kneaded eraser
- Optional: fine pen and gray watercolor wash
- A photograph you took of a street, or a sketching spot with a good view

Steps

1. Make two thumbnails of your street from different viewpoints. Mark the horizon line and the focal point in each, and choose the better one.
2. Draw the horizon line on your paper at your eye level. Mark the vanishing points for the street.
3. Block in the buildings as boxes along the street, near ones larger and overlapping far ones.
4. Add roofs, windows, doors and the curb lines, all going to the correct vanishing points.
5. Draw at least five figures at different distances with their heads on the horizon line.
6. Shade with one light source: decide which sides of the buildings are lit and draw the cast shadows across the street.
7. Apply atmospheric perspective: keep the most contrast and detail in the foreground; make distant buildings paler and simpler.
8. Add details last around your focal point: signs, a lamppost, trees, a church tower.

Tips

- Light, loose construction first; the street must work before the details.
- A low eye level makes buildings look grand; a high one shows more of the street.

Check your work

- ☐ All my buildings share one horizon line.
- ☐ My figures' heads sit near the horizon, and they shrink correctly with distance.
- ☐ The distance looks paler and simpler than the foreground.
- ☐ There is a clear focal point and a path for the eye to reach it.

SKETCHBOOK PRACTICE

1. Sit somewhere in town (a café, a park bench, a car parked safely) and draw what you see for 15 minutes.
2. Make a value study of *The Stonemason's Yard* in four values, showing how the light and shadow organize it.

From history. Canaletto's real name was Giovanni Antonio Canal; "Canaletto" means "little Canal," to tell him apart from his father, a theater-scenery painter. Many of his paintings were bought by English visitors, which is why so many of them are in British collections today.

COMMON MISTAKES

- Using different horizon lines for different buildings.
- Drawing distant people too large or with their feet on the same line as near people.
- Giving the far buildings as much detail and contrast as the near ones.

Make it a game • Dictated Street. Your parent dictates a street scene. 'Three buildings, one tall at the corner, a person halfway down the street, a distant spire pale in the haze.' Draw it in three minutes with one horizon line. Check the scale of the figures and the atmospheric perspective. Swap roles.

6.4 CHURCH ARCHITECTURE: ROMANESQUE TO GOTHIC

OBJECTIVES

- Name the parts of a traditional church: nave, aisles, transept, apse and choir.
- Explain the differences between Romanesque and Gothic architecture and how pointed arches and flying buttresses let walls open into windows.
- Draw a church interior or façade with arches in perspective.

Warm-up. Draw a round arch and a pointed arch side by side. Then draw a row of five round arches going back in one-point perspective, as if you were looking down a cloister.

WATCH

How to Draw Notre Dame Cathedral: Buildings in Perspective

Circle Line Art School · 11:18

<https://www.youtube.com/watch?v=Y5mPOe8MFVE>

WHEN TO WATCH

Before the studio project, to see how a complex Gothic façade is built from simple shapes.

BACKUP VIDEO

Gothic architecture explained

Smarthistory · 4:31

<https://www.youtube.com/watch?v=G94jFWH8NSM>

After the core ideas. Two art historians explain the Gothic features while standing inside Beverley Minster in England.

KEY TERMS

nave

The long central hall of a church, from the entrance toward the altar.

transept

The arms crossing the nave, giving many churches the plan of a cross.

apse

The rounded or many-sided end of the church behind the altar.

Romanesque

The style of about 1000–1150, with thick walls, round arches, small windows and barrel vaults.

Gothic

The style beginning about 1140, with pointed arches, ribbed vaults, flying buttresses and large stained glass windows.

flying buttress

An arched stone prop outside the wall that carries the outward push of the vault down to the ground.

CORE IDEAS

Traditional churches are designed as pictures of faith in stone. Most follow a **cross-shaped plan**: the long **nave**, where the people gather, is crossed by the **transept**, and beyond them is the choir and the **apse**, where the altar stands. Churches were usually built facing east, toward the rising sun, a sign of the Resurrection. Entering the west door and walking up the nave toward the light of the altar was meant to feel like a journey toward God.

Romanesque churches (about 1000–1150) used round arches like the ancient Romans. A round arch pushes outward strongly, so the walls had to be very thick, with small windows. Romanesque interiors feel solid, dark, calm and fortress-like.

Gothic builders, beginning at the Abbey of Saint-Denis near Paris around 1140, solved the problem with three inventions working together. The **pointed arch** directs weight more steeply downward. The **ribbed vault** gathers the weight of the ceiling into a few stone ribs and columns. The **flying buttress**, outside the building, catches the remaining outward push and carries it to the ground. Because the walls no longer carried the weight, they could be opened up into enormous **stained glass windows**, and the churches could rise to astonishing heights.

Abbot Suger of Saint-Denis believed that beautiful light and color could lift the mind from material things toward God, the true Light. Gothic cathedrals are tall, bright and full of upward lines, so that the eye and the heart are drawn up.

To draw a church interior, use one-point perspective looking down the nave: the floor, the tops of the arcades and the vault all go to one vanishing point at the far

end, near the altar. Arches in perspective get narrower and closer together as they recede; draw the columns first, then spring the arches between them.

PICTURE STUDY



Interior of St Bavo's Church in Haarlem, Pieter Jansz. Saenredam, 1648 · Oil on panel · Rijksmuseum, Amsterdam

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

Saenredam spent his career painting the interiors of Dutch churches with extraordinary precision. He made careful measured drawings on the spot and then constructed his paintings in perspective, slowly, sometimes years later. His churches are bathed in calm, silvery light.

Look closely

- Find the vanishing point. Where do the lines of the floor and arches lead?
- Look at the pointed arches. How do they change shape and spacing as they go back?
- Notice the scale figures. How do they show the size of the church?
- Look at the light. Where does it come from, and what color is it?

Talk about it

1. What feeling does this church interior give you?
2. Why do you think Saenredam left the church so bare and the colors so pale?
3. How do the tall columns and pointed arches lead your eye upward?

STUDIO PROJECT

A Church in Perspective

You will draw either a church interior looking down the nave in one-point perspective, or a church façade with a tower in two-point perspective. If possible, visit a church near you and sketch it from life; otherwise use a good photograph.

You will need

- Drawing paper (11×14 in)
- Ruler, pencils (2H, HB, 2B, 4B)
- Kneaded eraser
- Optional: fine pen and a gray wash or watercolor
- A church to visit or a clear photograph of one

Steps

1. Make a thumbnail of your church view and mark the horizon line and vanishing point(s).
2. For an interior: draw the horizon and one vanishing point near the far end of the nave. Draw the floor lines, the bases of the columns and the line of the tops of the arcades, all going to the vanishing point.
3. Draw the columns as vertical lines, getting closer together as they go back.
4. Spring the arches between the columns. Find the center of each opening (draw an X if needed) for the point of each arch.
5. Add the clerestory windows above the arcade and the vault ribs, also going to the vanishing point.
6. For a façade: draw the main block and tower as boxes in two-point perspective, then add the doorways, rose window and pointed windows, keeping their lines true to the vanishing points.
7. Add light: in an interior, light pours in from windows; in a façade, one side is lit. Shade the shadows inside arches and doorways.
8. Add a few scale figures to show the great height, and finish the details around your focal point (the altar, the main door or the rose window).

Tips

- Draw the arches lightly by hand after the columns are placed; arches look better freehand than with a compass.
- If you visit a church, ask permission before sketching inside, and sit quietly.

Check your work

- ☐ My drawing has a clear horizon line and correct vanishing point(s).
- ☐ The arches get narrower and closer together as they recede.
- ☐ Light and shadow make the stone look solid and the space feel deep.
- ☐ I can name at least three parts of the church in my drawing.

SKETCHBOOK PRACTICE

1. Draw the floor plan of a cross-shaped church and label the nave, aisles, transept, choir and apse.
2. Draw a Romanesque window and a Gothic window side by side, and write two differences beneath them.

From history. Building a great Gothic cathedral often took a century or more. Generations of masons, carpenters and glaziers worked on cathedrals they would never see finished, which many understood as an offering to God and a gift to their grandchildren.

COMMON MISTAKES

- Spacing columns evenly in a receding row.
- Drawing the arches all the same width as they go back.
- Forgetting scale figures, so the church looks small.

Make it a game • Walk the Church. Lay yarn on the floor in the shape of a church: a long nave, two aisles, a crossing transept, a curved apse. Your parent calls a part and you walk to it. Then say how Romanesque and Gothic builders differed and how flying buttresses opened walls into windows.

Scripture. “Except the LORD build the house, they labour in vain that build it:” (Psalms 127:1, KJV)

The cathedral builders knew this verse. Their buildings, rising toward heaven, were meant to say that all our building depends on God.

UNIT 6

PERSPECTIVE AND ARCHITECTURE

Linear perspective is a system for drawing three-dimensional space on a flat surface so that it looks the way it looks to one eye from one place. It was worked out by Florentine architects and painters in the early 1400s and has been part of every artist's training ever since. In this unit we take perspective as far as you need it for drawing real buildings, streets and churches.

We will review two-point perspective and add a third vanishing point for looking up at tall buildings or down from a height. Then we will draw real buildings from observation, put them together into a cityscape, and finally study the great churches of Christendom, from heavy Romanesque arches to soaring Gothic vaults, and draw one.

PREREQUISITES

- One-point perspective: horizon line, vanishing point and orthogonals
- Drawing a box in two-point perspective
- Using a ruler and keeping construction lines light

MASTERY CHECKLIST

- ☐ I can explain eye level, horizon line, vanishing points and why parallel lines appear to converge.
- ☐ I can draw boxes and buildings in two-point and three-point perspective.
- ☐ I can draw doors, windows and roofs correctly on a building in perspective.
- ☐ I can draw a believable street or cityscape with figures to scale.
- ☐ I can name the main features of Romanesque and Gothic churches and draw an arch in perspective.

LESSONS IN THIS UNIT

6.1 Two- and Three-Point Perspective

2 sessions of 60 minutes

6.2 Drawing Buildings

2 sessions of 60 minutes

6.3 The Cityscape

2 sessions of 60 minutes

UNIT 6 REVIEW

Answer in complete sentences unless asked to draw. Use a ruler for drawings. Total: 100 points.

1. 8 pts

Where is the horizon line always found in a perspective drawing?

2. 8 pts

Why do parallel lines going away from us appear to meet at a vanishing point?

3. 8 pts

Draw a box below the horizon in two-point perspective.

4. 8 pts

When do you need a third vanishing point?

5. 8 pts

How do you find the true center of a wall in perspective?

6. 8 pts

If you are standing on flat ground, where are the heads of other standing adults in your picture?

7. 8 pts

Name three ways, besides linear perspective, to show depth in a cityscape.

8. 8 pts

Name the nave, transept and apse, and say what each is.

9. 8 pts

Give three differences between Romanesque and Gothic churches.

10. 8 pts

What does a flying buttress do?

11. 10 pts

Short answer: Explain how pointed arches, ribbed vaults and flying buttresses worked together to fill Gothic churches with light.

12. 10 pts

Short answer: Describe how Caillebotte uses perspective in *Paris Street; Rainy Day*.

ANSWER KEY

1. At the viewer's eye level.
2. Because things look smaller the farther away they are, so the distance between the lines seems to shrink until they appear to meet.
3. The drawing should show a vertical front edge, top and bottom edges going to two vanishing points on the horizon, vertical back edges, and the top of the box visible.
4. When looking steeply up at something tall (worm's-eye view) or steeply down from a height (bird's-eye view), so that vertical lines also appear to converge.
5. Draw an X from corner to corner; where the diagonals cross is the perspective center.
6. Near the horizon line, whether the people are near or far.
7. Any three of: atmospheric perspective (paler, cooler, less detailed in the distance), overlapping, decreasing size, stronger value contrast in front, cast shadows.
8. Nave: the long central hall where the people gather. Transept: the arms that cross the nave. Apse: the rounded end behind the altar.
9. Romanesque: round arches, thick walls, small windows, barrel vaults, dark interiors. Gothic: pointed arches, ribbed vaults, flying buttresses, thin walls with large stained glass windows, tall and bright interiors.
10. It is an arched stone prop outside the wall that carries the outward push of the vault down to the ground, so the walls do not have to be thick.
11. The pointed arch sends weight more steeply downward, the ribbed vault gathers the ceiling's weight onto a few ribs and columns, and flying buttresses outside carry the remaining outward push to the ground. Because the walls no longer had to bear the load, they could be opened into huge stained glass windows, filling the church with colored light.
12. He sets the horizon at the eye level of the walking figures, so their heads line up near it. The corner building in the middle distance recedes in sharp two-point perspective, with its roof and window lines going to vanishing points on the horizon; the paving stones shrink as they go back. The precise perspective makes the wide new street feel deep and orderly, while the lamppost divides the composition.

PORTFOLIO PIECE: A BUILDING I KNOW

Make a finished drawing (11×14 in) of a real building that matters to you, such as your church, your house or a building in your town, in two- or three-point perspective, drawn from observation if possible. Include its setting (street, trees or neighboring buildings), scale figures, a consistent light source with cast shadows, and atmospheric perspective. Pencil, or pen with gray washes.

LOOK FOR	WHAT IT MEANS
Perspective	Horizon at eye level; all lines go to the correct vanishing points; verticals are true (or converge correctly in three-point).
Construction	Roofs, doors, windows and arches are placed correctly, including perspective centers.
Depth and scale	Scale figures sit correctly against the horizon; atmospheric perspective and overlapping deepen the space.
Light	One light source; cast shadows and shadows in openings make the building solid.
Craftsmanship	Clean lines, construction lines softened, thoughtful detail at the focal point; signed and dated.

UNIT 7

DESIGN, LETTERING AND ILLUSTRATION

Much of the art people see every day is not hanging in museums. It is in books, signs, posters, labels and lettering. This unit turns to the arts of the page, where pictures and words work together. They have a long and noble history: the monks who wrote and painted the Gospels by hand, the printers who first set the Bible in metal type, and the illustrators whose pictures we remember from childhood.

You will learn to write a formal hand with a broad-edged pen, to tell a story in a picture, to design a poster that communicates clearly, and to plan and bind a small book of your own. The principles of design from Unit 1 return here in new forms: hierarchy, alignment, contrast and proportion.

PREREQUISITES

- The principles of design (Unit 1), especially emphasis, balance and unity
- Ink and pen handling (Unit 5)
- Drawing figures and settings with correct proportion and perspective

MASTERY CHECKLIST

- ☐ I can write the foundational hand with a broad-edged pen at a consistent pen angle and letter height.
- ☐ I can plan an illustration that tells a story at a single, telling moment.
- ☐ I can design a poster with clear visual hierarchy, alignment and a limited set of fonts and colors.
- ☐ I can explain the parts of a book page and lay out a page with good margins.
- ☐ I can bind a simple booklet by hand.

LESSONS IN THIS UNIT

7.1 Calligraphy and Lettering

2 sessions of 60 minutes

7.2 Illustration and Storytelling

2 sessions of 60 minutes

7.3 Poster and Graphic Design Basics

2 sessions of 60 minutes

7.4 Book Design

2 sessions of 60 minutes

UNIT 7 REVIEW

Answer in complete sentences unless asked to letter or draw. Total: 100 points.

1. **8 pts**
Why does a broad-edged pen make thick and thin strokes without changing pressure?
2. **8 pts**
What is the pen angle and x-height of the foundational hand?
3. **8 pts**
Letter the word “grace” in the foundational hand on ruled lines.
4. **8 pts**
What is an incipit, and how does the Lindisfarne Gospels show one?
5. **8 pts**
What is the “pregnant moment” in an illustration?
6. **8 pts**
How can you test whether the action in an illustration is clear?
7. **8 pts**
What is visual hierarchy, and name three ways to create it.
8. **8 pts**
Why is white space important in a poster?
9. **8 pts**
In classical book design, which margin is smallest and which is largest?
10. **8 pts**
What was Gutenberg’s great invention, and why did it matter?

11. 10 pts

Short answer: What could a poster designer learn from Hokusai's *The Great Wave off Kanagawa*?

12. 10 pts

Short answer: Explain how the Gutenberg Bible combines printing and hand work, and why.

ANSWER KEY

1. Because its flat tip is held at a constant angle; strokes in one direction use the full width of the nib and strokes in another use only its thin edge.
2. A pen angle of about 30 degrees and an x-height of four nib widths.
3. Letters should be round and consistent, with the g's descender below the line, even spacing, and consistent thicks and thins at 30 degrees.
4. The opening words of a text. The Lindisfarne Gospels opens Matthew with huge decorated interlaced letters that fill much of the page.
5. The single moment that best suggests what happened before and what will happen next, often just before or after the climax.
6. Fill the figures in as solid silhouettes; if the action still reads, it is clear.
7. The order in which a viewer notices things. It is created with size, contrast, weight (boldness), color and position.
8. It gives the elements room, separates groups of information and makes the important things easier to see.
9. The inner margin (gutter) is smallest and the bottom margin is largest.
10. Movable metal type that could be arranged, printed and reused. It made books far cheaper and faster to produce, spreading books and the Bible widely across Europe.
11. Use a few flat colors and bold, simple shapes; create a clear focal point and hierarchy (the wave first, then the boats, then Mount Fuji); balance strong visual weight with open space; and place lettering deliberately in the design.
12. The black text was printed with movable type, but spaces were left for initials, headings in red and decorated borders, which were painted by hand afterward. Gutenberg wanted his printed Bible to look as beautiful and dignified as the finest handwritten manuscripts, so buyers would accept it.

PORTFOLIO PIECE: A BOOK OF ONE'S OWN

Bring the unit together in a finished hand-bound booklet of at least eight pages (or your booklet from lesson 7.4 made into a finished piece) that includes a designed cover, a title page, lettered text with a decorated initial, at least two illustrations that tell a story, and classical margins. Alternatively, design a finished set of two pieces: a lettered and illustrated page plus a poster for the art show.

LOOK FOR	WHAT IT MEANS
Lettering	Consistent pen angle, letter height and spacing; decorated initial well integrated.
Illustration	Pictures show telling moments with clear staging and gesture.
Layout and hierarchy	Margins, alignment and hierarchy make every page or poster easy to read.
Craftsmanship	Neat ruling, clean ink, careful color, firm binding.
Unity	Cover, lettering, illustrations and layout feel like one designed whole.

7.1 CALLIGRAPHY AND LETTERING

OBJECTIVES

- Hold a broad-edged pen at a consistent angle and make thick and thin strokes.
- Write the lowercase foundational hand with correct letter height measured in nib widths.
- Letter a short verse with good spacing on a ruled page.

Warm-up. With your broad-edged pen held at about 30 degrees, fill a line with zigzags, then a line of circles, then a line of short vertical strokes. Notice where the line is thick and where it is thin without changing your pressure.

WATCH

FOUNDATIONAL HAND CALLIGRAPHY FOR BEGINNER (BROAD EDGE NIB CALLIGRAPHY)

Calligraphy Masters • 7:48

<https://www.youtube.com/watch?v=aggRLvLg00s>

WHEN TO WATCH

After the core ideas. Pause after each letter group and practice it on your ruled sheet.

BACKUP VIDEO

Making Manuscripts

Getty Museum • 6:19

<https://www.youtube.com/watch?v=nuNfdHNTv9o>

Before the picture study, to see how medieval scribes prepared parchment, pens and ink and wrote a manuscript by hand.

KEY TERMS

calligraphy

Beautiful handwriting, from the Greek for “beautiful writing.”

broad-edged pen

A pen with a flat, chisel-shaped tip that makes thick and thin strokes depending on its direction.

pen angle

The angle of the pen's edge to the writing line, kept constant to give letters a consistent rhythm.

x-height

The height of the body of lowercase letters, such as x, a and o, measured in nib widths.

ascender and descender

The parts of letters that rise above the x-height (b, d, h) or drop below the line (g, p, y).

incipit

The opening words of a text, often written very large and decorated in medieval manuscripts.

CORE IDEAS

A **broad-edged pen** makes letters beautiful almost by itself, if you hold it correctly. Because the tip is flat, a stroke pulled in one direction is wide and a stroke in another is a hairline. The secret is to keep the **pen angle** the same throughout. For the foundational hand it is about 30 degrees to the writing line. You do not press harder for thick strokes; the direction of the stroke makes the thick and thin.

Letter size is measured in **nib widths**. To set up a page, turn the pen sideways and make a small ladder of square marks, one above another, touching corner to corner. For the foundational hand, the **x-height** is four nib widths; ascenders and descenders add about three more. Rule light pencil lines for every row before you write.

The **foundational hand** was developed about a hundred years ago by the English calligrapher Edward Johnston from a tenth-century English manuscript. It is based on the circle: the letter o is round, and the arches of n, m, h and the bowls of a, b, d, p, q all echo its curve. Letters are made of a few simple strokes, each pulled toward you, never pushed. Learn them in families: the o family (o, c, e), the arch family (n, m, h, r), the bowl family (a, b, d, g, p, q) and the straight family (i, l, t, f, j).

Good lettering depends as much on **spacing** as on letter shapes. The space inside letters (their counters) and between letters should look even, not measured. Round letters can be set a little closer; straight letters need a little more space between them. Leave about the width of an o between words.

Calligraphy was once the only way to make a book. The monks who wrote the Lindisfarne Gospels and the Book of Kells spent years on a single volume, treating

the copying of Scripture as an act of worship. Writing a verse slowly and beautifully is still a way of honoring the words.

PICTURE STUDY



Lindisfarne Gospels: Incipit to the Gospel of Matthew, Eadfrith, Bishop of Lindisfarne (attributed), about 715–720 · Ink and pigments on vellum · British Library, London

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

The Lindisfarne Gospels were written and decorated by one master scribe on the small island monastery of Lindisfarne, off the coast of northern England. This page opens the Gospel of Matthew with enormous decorated letters: lettering turned into a glorious work of art.

Look closely

- Find the giant letters. What words might they begin? (The Latin begins “Liber generationis,” “The book of the generation.”)
- Look at the smaller lettering lower on the page. Are the letters round or angular? Are they all the same height?
- Follow one strand of knotwork with your eye. Does it go over and under?
- Find the tiny red dots. How many might there be? What do they add?

Talk about it

1. Why would a scribe spend so much effort on the first words of a book?
2. How does the size of the letters create a hierarchy on the page?
3. What does this page tell you about how the monks felt about the Scriptures?

STUDIO PROJECT

A Lettered Verse

You will practice the lowercase foundational hand, then letter a short verse of Scripture or poetry on good paper, with a large decorated first letter.

You will need

- Pilot Parallel pen (3.8 mm) or a broad-edged dip nib (about 3 mm) with holder and ink
- Layout or marker paper for practice
- Smooth heavy paper (cardstock or hot-press watercolor paper) for the final piece
- Ruler, sharp HB pencil and a soft eraser
- Colored pencils, watercolor or gouache for the initial letter

Steps

1. Make a nib-width ladder of four squares on your practice paper. Rule pairs of lines four nib widths apart, with a gap of seven nib widths between pairs.
2. Practice the pen angle with zigzags and circles at 30 degrees until the thicks and thins are consistent.
3. Practice the letter families, one line each: o c e; n m h r; a b d g p q; i l t f j; then the remaining letters (k s u v w x y z).
4. Write a full practice line of words. Check the spacing: does any gap look too wide or too narrow?
5. Choose a short verse (for example Psalm 45:1 or Psalm 19:1). Write it out in pencil to plan the line breaks so no word is split.
6. Rule your final paper lightly, leaving wider margins at the bottom than at the top.
7. Leave a square space at the beginning for a large first letter, about three lines tall. Letter the verse in ink.
8. Draw the large initial letter in pencil, then outline it with the pen and fill it with color and a simple pattern, like the Lindisfarne scribes.
9. When the ink is completely dry, gently erase the pencil lines.

Tips

- Pull every stroke toward you; never push the pen up.
- Keep a scrap of paper under your hand so your skin oils don't spoil the paper.

Check your work

- ☐ My pen angle is consistent, so the thick and thin strokes match from letter to letter.
- ☐ My letters are all the same height, four nib widths.
- ☐ My spacing between letters and words looks even.
- ☐ My decorated initial fits the space and works with the lettering.

SKETCHBOOK PRACTICE

1. Copy one line of the smaller lettering from the Lindisfarne Gospels with your pen.
2. Write your full name in the foundational hand five times, improving the spacing each time.

From history. A note added to the Lindisfarne Gospels in the 900s names Eadfrith, bishop of Lindisfarne, as the scribe. Between its lines a priest named Aldred later wrote an Old English translation, the oldest surviving copy of the Gospels in any form of English.

COMMON MISTAKES

- Twisting the pen while writing, which changes the angle and the thicks and thins.
- Pressing hard; the broad nib does the work.
- Skipping the ruled lines. Even experts rule their pages.

Make it a game • Nib Width Drill. Use a chisel-tip marker held at a steady angle. Write five of the same letter and count how many you made with consistent thick and thin strokes. Your parent checks the pen angle. Write the lowercase alphabet, with height measured in nib widths. Beat your best count on the second try.

Scripture. “My heart is inditing a good matter: I speak of the things which I have made touching the king: my tongue is the pen of a ready writer.” (Psalms 45:1, KJV)

The psalmist compares his speech to a skillful writer's pen. A scribe's pen, moving with practiced care, can honor the King too.

7.2 ILLUSTRATION AND STORYTELLING

OBJECTIVES

- Choose the most telling moment of a story to illustrate.
- Use composition, gesture and setting to make a picture tell a story without words.
- Plan an illustration with thumbnails and complete it in pen and watercolor.

Warm-up. Think of a familiar story (for example, the Good Samaritan or the Three Little Pigs). Make three tiny thumbnails of three different moments from it. Which moment tells the most?

WATCH

Tell Better Tales with Composition

Let's Learn About Art • 5:30

<https://www.youtube.com/watch?v=tyb6r0sekXU>

WHEN TO WATCH

After the core ideas and before your thumbnails. Notice how the same story (Little Red Riding Hood) changes with each compositional choice.

KEY TERMS

illustration

A picture made to go with a text, to explain, decorate or tell its story.

storyboard

A series of small sketches planning the sequence of pictures in a story or book.

page turn

In a picture book, the moment of surprise or suspense when the reader turns to the next spread.

pregnant moment

The single moment in a story that best suggests what came before and what will come after.

staging

Arranging figures, setting and viewpoint so the action is instantly clear.

CORE IDEAS

An illustration must do in one picture what a writer does in many sentences. The illustrator's first choice is **which moment** to show. The best is often the moment just before or just after the climax, when the viewer can sense what happened and wonder what will happen next. Artists have called this the “pregnant moment”: the boy reaching for the forbidden lettuce, the father running toward the returning son.

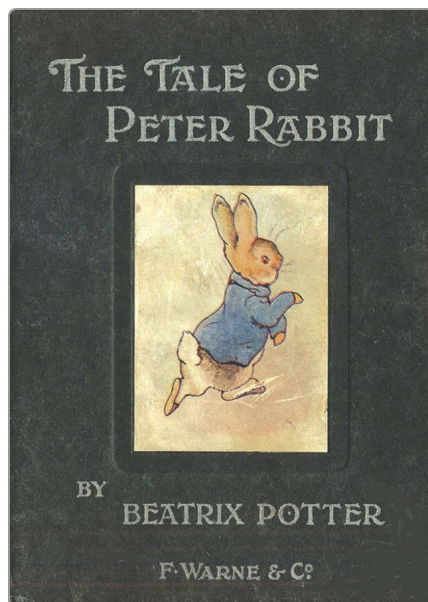
Next comes **staging**, as in a play. Who is the main character, and how do we know at a glance? Put him or her at the focal point, using contrast (Unit 1). Make the action readable as a **silhouette**: if you filled the figures in solid black, could you still tell what they are doing? Choose a viewpoint that serves the story: a low viewpoint makes a character look big and powerful; a high one makes him look small and vulnerable.

Gesture and expression carry emotion. A slumped figure, a hand raised in alarm, a child hiding behind a door: body language often tells more than a face. Setting tells us where and when: a few well-chosen details (a garden gate, a lantern, a market stall) can establish a whole world.

Illustration must also **fit the page**. Leave room for the text. Think about the page turn: the left page sets up, the right page leads the eye forward toward the next spread. Plan with a **storyboard** of small thumbnails before you draw anything large.

Many of the best illustrators were trained in the fine arts and in careful observation. Beatrix Potter spent years drawing animals and plants with scientific precision before she wrote and illustrated her small books, which is why her rabbits and gardens are so convincing even when the rabbits wear jackets.

PICTURE STUDY



The Tale of Peter Rabbit (cover of the first edition), Beatrix Potter, 1902 · Color illustration printed from the artist's watercolor · Published by Frederick Warne & Co., London

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

Beatrix Potter first told the story of Peter Rabbit in a picture letter to a sick child. When she published it, she insisted on a small book that a child could hold, with a picture on every page. Her careful watercolors, based on years of nature study, made it one of the best-selling books ever printed.

Look closely

- Look at how Peter is drawn running. How do you know he is a real rabbit, even though he wears a jacket?
- Notice the colors. Are they bright and loud, or soft and natural?
- Look at how the picture and the lettering are arranged together on the cover.
- What does the cover make you expect about the story inside?

Talk about it

1. Why do you think Potter wanted the book to be small enough for a child's hands?
2. How does her scientific nature study help her storytelling?
3. What makes a good book cover? Does this one succeed?

STUDIO PROJECT

Illustrate a Parable

You will illustrate one of Jesus's parables (the Lost Sheep, the Good Samaritan, the Prodigal Son, the Sower or the Wise and Foolish Builders) in a single picture that shows its most telling moment, in pen and watercolor.

You will need

- Sketchbook for thumbnails
- Watercolor paper (9×12 in)
- Pencil and eraser
- Waterproof fine-line pen or dip pen with walnut ink from Unit 5
- Watercolor paints and brushes

Steps

1. Read your chosen parable aloud. List its main events.
2. Make a storyboard of four thumbnails showing four different moments. Circle the one that tells the most.
3. Make two more thumbnails of that moment from different viewpoints. Test each by filling the figures in solid as silhouettes: is the action clear?
4. Decide where any words would go (a title or a line of the parable) and leave room for them.
5. Draw the final composition lightly in pencil, with clear gestures and a few details that set the scene in Bible lands.
6. Ink the drawing with a waterproof pen. Vary your line weight: thicker for near figures, thinner for distant ones.
7. Paint with watercolor, keeping the strongest color and contrast at the focal point.
8. Letter the title or verse neatly, using the foundational hand if you can.

Tips

- Reference real objects: photograph a family member in the pose you need, or look at pictures of sheep, donkeys or stone houses.

- Keep the background simple so the story reads first.

Check your work

- ☐ My picture shows a telling moment that suggests what came before and after.
- ☐ The main character is at the focal point and the action is clear in silhouette.
- ☐ Gesture and setting help tell the story.
- ☐ Text and picture fit together on the page.

SKETCHBOOK PRACTICE

1. Draw a figure in five poses that show five emotions without drawing the face: joy, fear, sorrow, waiting, hurrying.
2. Choose a favorite book from your childhood and sketch a new illustration for it.

From history. Beatrix Potter was also a serious naturalist who studied fungi under the microscope and wrote a scientific paper on how their spores germinate. With the money from her books she bought farmland in the English Lake District, which she left to the nation to preserve.

COMMON MISTAKES

- Illustrating the most obvious moment instead of the most telling one.
- Crowding the picture with detail so the action is hard to read.
- Forgetting space for the text.

Make it a game • Pick the Moment. Your parent tells a short parable and pauses at four moments. Choose which moment to illustrate and say why it is the most telling. Draw it in ninety seconds with gesture and setting. Explain why a picture should make the viewer want to turn the page.

7.3 POSTER AND GRAPHIC DESIGN BASICS

OBJECTIVES

- Explain visual hierarchy, alignment, contrast and white space in graphic design.
- Choose and pair fonts and a limited color scheme for a clear message.
- Design and make a poster for a real event.

Warm-up. Find three posters, signs or book covers at home or in town. For each, write down in order what you read first, second and third. What made the first thing come first?

WATCH

Hierarchy in design — the most important principle you can master

Canva • 4:56

<https://www.youtube.com/watch?v=007wh92y32Y>

WHEN TO WATCH

After the core ideas and before your thumbnails. Listen for the order he wants a viewer to read a poster in, then watch him fix a layout.

Note: Made by a design-software company; any tool, including pencil and paper, works for these ideas.

KEY TERMS

graphic design

The art of arranging words and images to communicate a message clearly and attractively.

alignment

Lining up the edges of text and images so the design looks orderly and connected.

visual hierarchy

The order in which a viewer notices and reads things, controlled by size, weight, color and placement.

white space

Empty space around and between elements, which gives the design room to breathe.

typeface

A designed set of letters in a particular style; serif typefaces have small finishing strokes, sans-serif typefaces do not.

grid

A hidden framework of columns and margins used to place elements consistently.

CORE IDEAS

A poster has a few seconds to speak to someone walking past. That is why graphic design is above all about **visual hierarchy**: deciding what must be seen first, second and third, and making sure the design delivers it in that order. Usually the first thing is a striking image or a large headline; the second is the essential information (what, when, where); the third is the details.

Hierarchy is made with the same tools as emphasis in painting: **size** (bigger is seen first), **contrast** (dark on light, bright on dull), **weight** (bold type stands out), **color** and **position** (the top and the optical center draw attention). If everything is big and bold, nothing stands out.

Alignment makes a design look intentional. Line up text along a common edge or center line, and use an invisible **grid** to place things. Group related information together (proximity) and separate unrelated things with space. **White space** is not wasted space; it makes the important things easier to see, as silence makes music clear.

Be disciplined with **type and color**. Use one or two typefaces at most: for example, a strong display letter for the headline and a plain, readable one for the details. Choose two or three colors that work together, perhaps from a color scheme you learned in earlier years, plus black or white. Make sure the text contrasts strongly with its background so it can be read from across a room.

Great graphic design often comes from strong, simple shapes. Japanese woodblock prints like Hokusai's *Great Wave*, with their flat colors, bold outlines and dramatic compositions, deeply influenced European poster artists of the late 1800s. Simplicity is not lack of skill; it is the result of many decisions about what to leave out.

PICTURE STUDY



The Great Wave off Kanagawa, Katsushika Hokusai, about 1831 · Color woodblock print · Many impressions survive; one is in the Metropolitan Museum of Art, New York

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

Hokusai's print was made by carving wooden blocks, one for each color, and printing them in sequence, so thousands of copies could be sold cheaply. Its flat colors, bold shapes and daring composition make it one of the most recognized images in the world, and a perfect lesson in graphic design.

Look closely

- What do you see first, second and third? What makes the order?
- Count the colors. How many are there?
- Find Mount Fuji. How does the shape of the wave frame it?
- Look at the box of lettering at the top left. How is it placed in the design?

Talk about it

1. How does Hokusai use a limited set of colors and flat shapes to create drama?
2. Where is the visual weight, and how is the picture balanced?
3. What could a poster designer learn from this print?

STUDIO PROJECT

A Poster for the Art Show

You will design a poster for the family art show at the end of this year (Unit 8), or for a real church or community event. It must communicate clearly from across a room.

You will need

- Sketchbook for thumbnails
- Heavy paper or poster board (11×17 in or 12×18 in)
- Ruler and pencil
- Markers, colored pencils, gouache or cut colored paper
- A black fine-line and a broad marker or your calligraphy pen

Steps

1. Write down the message: the event title, date, time, place and one line of description. Decide the order of importance.
2. Choose a strong central image or symbol for the event (a paintbrush, a frame, a palette, a church window). Simplify it into bold shapes.
3. Make at least four small thumbnails with different layouts. Try a big image with small text, big text with a small image, and an off-center arrangement.
4. Squint at your thumbnails or view them from across the room. Choose the one whose hierarchy reads most clearly.
5. Choose a color scheme of two or three colors plus black or white.
6. On the poster board, rule a margin and a simple grid. Lightly pencil in the layout, aligning the text along a common edge or the center.
7. Draw and color the image with flat, bold color.
8. Letter the headline large and bold, and the details smaller and plain. Check that every word can be read from three meters away.
9. Pin it up and ask someone to tell you the event, date and place after glancing at it for five seconds.

Tips

- When in doubt, make the headline bigger and remove something.
- Use a ruler for guidelines so your lettering is straight.

Check your work

- ☐ A viewer can tell the event, date and place within five seconds.
- ☐ My design has a clear visual hierarchy: first, second, third.
- ☐ I used no more than two lettering styles and three colors plus black or white.
- ☐ Elements are aligned and there is enough white space.

SKETCHBOOK PRACTICE

1. Redesign a cluttered sign or label you have seen so its message is clearer.
2. Make a thumbnail copy of *The Great Wave* in three flat colors only.

From history. The Great Wave belongs to Hokusai's series *Thirty-Six Views of Mount Fuji*, published when he was about seventy. Japanese prints reached Europe in the 1850s and 1860s, and painters such as Monet and Van Gogh collected them and learned from their flat color and bold design.

COMMON MISTAKES

- Using many fonts and colors, which looks chaotic.
- Making all the text the same size, so nothing stands out.
- Crowding elements to the edges with no margin.

Make it a game · Three-Second Poster. In four minutes, make a poster for the family art show with one message, clear hierarchy, alignment and plenty of white space. Show it to your parent for three seconds. Your parent must tell you the main message. Fail, and redo it larger. Explain why you chose your fonts and colors.

7.4 BOOK DESIGN

OBJECTIVES

- Name the parts of a book and of a page: spread, gutter, margins, text block, running head, folio.
- Explain classical page proportions and why margins matter.
- Design, letter or print, and hand-bind a small booklet.

Warm-up. Open three different books. Measure the four margins of a page in each (inner, top, outer, bottom). Which margin is usually the biggest? Which is the smallest?

WATCH

Storytime Episode 17 - The Gutenberg Press

Museum of the Bible • 6:42

<https://www.youtube.com/watch?v=AqFJ7oMyNEA>

WHEN TO WATCH

After the core ideas and before the picture study. A printer at the Museum of the Bible demonstrates a replica of Gutenberg's press.

BACKUP VIDEO

The Gutenberg Bible | Collection in Focus

The Morgan Library & Museum • 2:53

<https://www.youtube.com/watch?v=tyBbj5hj8DQ>

Optional: a curator shows one of the Morgan Library's three Gutenberg Bibles, with its hand-painted initials.

KEY TERMS

spread

Two facing pages seen together when a book lies open, designed as one unit.

gutter

The inner margins where the pages meet at the binding.

text block

The rectangle on a page that holds the main text.

movable type

Individual metal letters that can be arranged, printed and reused, perfected in Europe by Johannes Gutenberg around 1450.

signature

A group of sheets folded together to form a section of a book, sewn through the fold.

rubrication

Adding headings or initial letters in red (from the Latin *ruber*, red) to guide the reader.

CORE IDEAS

A well-designed book is almost invisible: the reader simply reads, comfortably and without strain. That comfort is designed. The page has a **text block** set within **margins**, and the two facing pages of a **spread** are designed together as one picture. The classical tradition, used in medieval manuscripts and early printed books, makes the margins grow in a steady ratio: the inner margin (gutter) smallest, then the top, then the outer, and the bottom largest. A common rule is about 2 : 3 : 4 : 6. This places the text blocks of the two pages close together and slightly high, which looks balanced and gives the thumbs room to hold the book.

Page proportions matter too. Many beautiful books use a page whose height is about one and a half times its width (2 : 3), and a text block of the same shape. Readable lines are not too long: about 45 to 75 letters per line. Space between lines (leading) should be enough that the eye can find the next line easily.

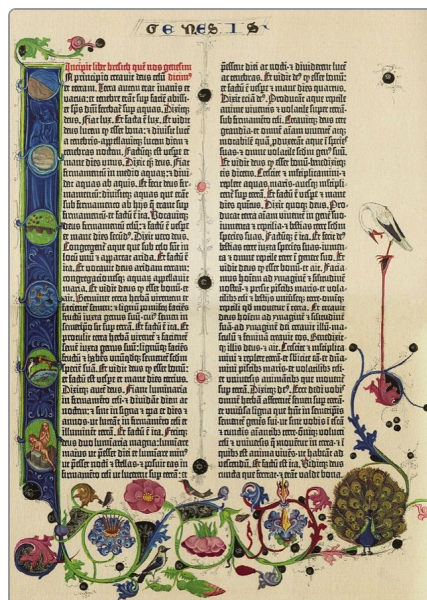
The parts of a book have names. The **title page** introduces it; **running heads** at the top of pages show where you are; **folios** (page numbers) help you find your way; large **initial letters** and headings in red (**rubrication**) mark the beginnings of sections. Pages are printed on large sheets that are folded into **signatures** and sewn through the fold.

Around 1450, Johannes Gutenberg of Mainz developed a way to cast individual metal letters, **movable type**, that could be arranged into pages, printed with oil-based ink on a screw press, and reused. His first great book was the Bible. He designed it to look like the finest handwritten manuscripts, with two columns of dense, dark Gothic letters, and left spaces for red headings and decorated initials to be added by

hand. Printing made books far cheaper, and within fifty years millions of books were in circulation across Europe.

Making a book by hand brings together everything in this unit: lettering, illustration, layout and craftsmanship. Even a small booklet, carefully designed and sewn, can be a lasting gift.

PICTURE STUDY



Gutenberg Bible: The Beginning of Genesis, Johannes Gutenberg (printer), with hand illumination, about 1454–1455 · Printed ink on paper, with hand-painted decoration · Staatsbibliothek zu Berlin

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

This page opens the Book of Genesis in one of the copies of Gutenberg's Bible. The black letters were printed with movable type; the decorated initial and the vines in the margin were painted by hand afterward, so every copy is slightly different.

Look closely

- Find the two columns of text. Are they the same width? How straight are their edges?
- Measure the margins with your eye. Which is the widest? Which is the narrowest?
- Find the big decorated letter. Which word of Genesis do you think it begins?
- Compare the printed letters with the hand-painted decoration. What is different?

Talk about it

1. Why do you think Gutenberg made his printed Bible look like a handwritten manuscript?
2. How does the page design help a reader find the beginning of a book?

3. How did printing change who could own a Bible?

STUDIO PROJECT

A Hand-Bound Booklet

You will design, letter and illustrate a small booklet (a psalm, a parable you illustrated, a family story or a collection of your nature drawings), then bind it with a simple three-hole pamphlet stitch.

You will need

- Three or four sheets of good paper (letter size, 8.5×11 in) and one sheet of cardstock for the cover
- Ruler, pencil, eraser, bone folder or the back of a spoon
- Calligraphy pen or fine pen, colored pencils or watercolor
- A large needle, an awl or push-pin (with care), strong thread or embroidery floss, and a binder clip

Steps

1. Fold each sheet in half to make a booklet with pages 5.5×8.5 in. Nest the sheets together inside the cover. Number the pages lightly in pencil so you know which page is which.
2. Plan the content on a small dummy booklet made of scrap paper: title page, text pages, illustration pages and a final page with your name and the date.
3. Rule margins on each page with the gutter smallest and the bottom largest (for example 1/2 in, 3/4 in, 1 in and 1 1/4 in).
4. Rule letter lines in each text block and letter the text with your calligraphy pen or neat handwriting. Add a large decorated initial at the beginning, and headings in red if you like.
5. Add illustrations within the margins of the text block or as full-page pictures.
6. When all ink and paint is dry, open the booklet flat on a scrap of cardboard. Mark three holes along the fold: one at the center and one about 1 in from each end.
7. Pierce the holes with the awl or push-pin (point it away from your fingers). Thread the needle with thread about three times the height of the booklet.

8. Sew from the inside center hole out, in through the top hole, along the outside past the center, in through the bottom hole, and out through the center hole again. Tie the two ends in a firm knot over the long stitch and trim.
9. Press the closed booklet under a heavy book overnight.

Tips

- Plan which pages face each other: design each spread as one unit.
- Make the dummy first; mistakes are cheaper on scrap paper.

Check your work

- ☐ My booklet has a title page and a final page with my name and date.
- ☐ My margins follow the classical order: gutter smallest, bottom largest.
- ☐ My lettering is even and my pages are designed as spreads.
- ☐ My binding is firm and the pages turn freely.

SKETCHBOOK PRACTICE

1. Sketch a spread from a favorite book and label its parts: margins, gutter, text block, running head and folio.
2. Design a decorated initial for your own first name's first letter.

From history. About 180 copies of the Gutenberg Bible were printed, some on paper and some on vellum; about 49 survive, in whole or in part. It is often called the 42-line Bible because most of its pages have 42 lines in each column.

COMMON MISTAKES

- Letting text run too close to the gutter, where it disappears into the fold.
- Forgetting which pages face each other after folding.
- Sewing with thread that is too short or tying a loose knot.

Make it a game • Book Parts Hunt. Take any real book and race to find these: gutter, margin, text block, running head and folio. Your parent calls each part. Point to it within ten seconds. Then measure the margins and decide whether they are proportional. A spread is two pages facing. Beat your own time.

Scripture. “In the beginning was the Word, and the Word was with God, and the Word was God.” (John 1:1, KJV)

Christians have always been people of the Book, and they have honored the Scriptures by making beautiful books. John reminds us that the written word points to Christ, the living Word.

UNIT 7

DESIGN, LETTERING AND ILLUSTRATION

Much of the art people see every day is not hanging in museums. It is in books, signs, posters, labels and lettering. This unit turns to the arts of the page, where pictures and words work together. They have a long and noble history: the monks who wrote and painted the Gospels by hand, the printers who first set the Bible in metal type, and the illustrators whose pictures we remember from childhood.

You will learn to write a formal hand with a broad-edged pen, to tell a story in a picture, to design a poster that communicates clearly, and to plan and bind a small book of your own. The principles of design from Unit 1 return here in new forms: hierarchy, alignment, contrast and proportion.

PREREQUISITES

- The principles of design (Unit 1), especially emphasis, balance and unity
- Ink and pen handling (Unit 5)
- Drawing figures and settings with correct proportion and perspective

MASTERY CHECKLIST

- ☐ I can write the foundational hand with a broad-edged pen at a consistent pen angle and letter height.
- ☐ I can plan an illustration that tells a story at a single, telling moment.
- ☐ I can design a poster with clear visual hierarchy, alignment and a limited set of fonts and colors.
- ☐ I can explain the parts of a book page and lay out a page with good margins.
- ☐ I can bind a simple booklet by hand.

LESSONS IN THIS UNIT

7.1 Calligraphy and Lettering

2 sessions of 60 minutes

7.2 Illustration and Storytelling

2 sessions of 60 minutes

7.3 Poster and Graphic Design Basics

2 sessions of 60 minutes

7.4 Book Design

2 sessions of 60 minutes

UNIT 7 REVIEW

Answer in complete sentences unless asked to letter or draw. Total: 100 points.

1. **8 pts**
Why does a broad-edged pen make thick and thin strokes without changing pressure?
2. **8 pts**
What is the pen angle and x-height of the foundational hand?
3. **8 pts**
Letter the word “grace” in the foundational hand on ruled lines.
4. **8 pts**
What is an incipit, and how does the Lindisfarne Gospels show one?
5. **8 pts**
What is the “pregnant moment” in an illustration?
6. **8 pts**
How can you test whether the action in an illustration is clear?
7. **8 pts**
What is visual hierarchy, and name three ways to create it.
8. **8 pts**
Why is white space important in a poster?
9. **8 pts**
In classical book design, which margin is smallest and which is largest?
10. **8 pts**
What was Gutenberg’s great invention, and why did it matter?

11. 10 pts

Short answer: What could a poster designer learn from Hokusai's *The Great Wave off Kanagawa*?

12. 10 pts

Short answer: Explain how the Gutenberg Bible combines printing and hand work, and why.

ANSWER KEY

1. Because its flat tip is held at a constant angle; strokes in one direction use the full width of the nib and strokes in another use only its thin edge.
2. A pen angle of about 30 degrees and an x-height of four nib widths.
3. Letters should be round and consistent, with the g's descender below the line, even spacing, and consistent thicks and thins at 30 degrees.
4. The opening words of a text. The Lindisfarne Gospels opens Matthew with huge decorated interlaced letters that fill much of the page.
5. The single moment that best suggests what happened before and what will happen next, often just before or after the climax.
6. Fill the figures in as solid silhouettes; if the action still reads, it is clear.
7. The order in which a viewer notices things. It is created with size, contrast, weight (boldness), color and position.
8. It gives the elements room, separates groups of information and makes the important things easier to see.
9. The inner margin (gutter) is smallest and the bottom margin is largest.
10. Movable metal type that could be arranged, printed and reused. It made books far cheaper and faster to produce, spreading books and the Bible widely across Europe.
11. Use a few flat colors and bold, simple shapes; create a clear focal point and hierarchy (the wave first, then the boats, then Mount Fuji); balance strong visual weight with open space; and place lettering deliberately in the design.
12. The black text was printed with movable type, but spaces were left for initials, headings in red and decorated borders, which were painted by hand afterward. Gutenberg wanted his printed Bible to look as beautiful and dignified as the finest handwritten manuscripts, so buyers would accept it.

PORTFOLIO PIECE: A BOOK OF ONE’S OWN

Bring the unit together in a finished hand-bound booklet of at least eight pages (or your booklet from lesson 7.4 made into a finished piece) that includes a designed cover, a title page, lettered text with a decorated initial, at least two illustrations that tell a story, and classical margins. Alternatively, design a finished set of two pieces: a lettered and illustrated page plus a poster for the art show.

LOOK FOR	WHAT IT MEANS
Lettering	Consistent pen angle, letter height and spacing; decorated initial well integrated.
Illustration	Pictures show telling moments with clear staging and gesture.
Layout and hierarchy	Margins, alignment and hierarchy make every page or poster easy to read.
Craftsmanship	Neat ruling, clean ink, careful color, firm binding.
Unity	Cover, lettering, illustrations and layout feel like one designed whole.

UNIT 8

FROM THE 1700S TO 1900, AND A CAPSTONE

The last unit of the year follows the great painters of land, sea and light from the late 1700s to 1900: John Constable and J. M. W. Turner in England, the Hudson River School and the American painters Winslow Homer, Mary Cassatt and John Singer Sargent, and the French and Dutch painters Claude Monet and Vincent van Gogh. Each of them looked hard at the created world and found new ways to paint it.

Then you will gather the best work of your year into a capstone portfolio, write about it, and present it at a family art show. The measure we will use is the old one: is the work true, is it good, is it beautiful? You have spent a year learning to see and to make. Now you will show what you have learned.

PREREQUISITES

- Atmospheric perspective and color temperature (Units 3 and 6)
- Acrylic painting with a limited palette and glazes
- The four steps of critique (Unit 1)

MASTERY CHECKLIST

- ☐ I can explain what made Constable's and Turner's landscapes new, and paint a sky from observation.
- ☐ I can describe the Hudson River School and name its main painters, and the American painters Homer, Cassatt and Sargent.
- ☐ I can explain how Monet and Van Gogh used color and brushwork, and paint in both manners.
- ☐ I can select and present my best work in a portfolio with a written artist's statement.
- ☐ I can judge my own work and others' by truth, goodness and beauty.

LESSONS IN THIS UNIT

8.1 Constable and Turner

2 sessions of 60 minutes

8.2 The Hudson River School and American Painters

2 sessions of 60 minutes

UNIT 8 REVIEW

Answer in complete sentences. Total: 100 points.

1. **8 pts**

What did Constable mean by “skying,” and why did he do it?

2. **8 pts**

What is the sublime, and which painter in this unit was especially drawn to it?

3. **8 pts**

Why must the sky and the land share one light?

4. **8 pts**

Who began the Hudson River School, and what did its painters paint?

5. **8 pts**

Describe how foreground, middle ground and background are usually painted differently.

6. **8 pts**

Name one subject each for Winslow Homer, Mary Cassatt and John Singer Sargent.

7. **8 pts**

What is broken color?

8. **8 pts**

Why did Monet paint the same subject many times?

9. **8 pts**

What is impasto, and what is directional brushwork? Which painter used both?

10. **8 pts**

List three things that belong in an artist's statement.

11. **10 pts**

Short answer: Compare Constable's *The Hay Wain* and Van Gogh's *Wheat Field with Cypresses*. Give one similarity and two differences.

12. **10 pts**

Short answer: Choose one piece from your capstone portfolio and judge it by truth, goodness and beauty.

ANSWER KEY

1. Making many quick outdoor studies of clouds and sky; he believed the sky sets the light and mood of a landscape and wanted to paint real weather truthfully.
2. The feeling of awe, even fear, before nature's vast power, such as storms at sea. J. M. W. Turner.
3. Because the sky is the source of the light that falls on the land; if they disagree, the landscape looks false.
4. Thomas Cole; they painted the American wilderness, such as the Hudson River valley, mountains, forests and waterfalls, in grand, detailed views.
5. Foreground: warm, dark, sharp and detailed. Middle ground: cooler and simpler. Background: pale, blue-gray, soft and with little detail (atmospheric perspective).
6. Homer: the sea, boats, fishermen and boys (also watercolors of the woods). Cassatt: mothers and children and family life. Sargent: portraits (and landscapes in watercolor).
7. Separate strokes of fairly pure color placed side by side so they mix in the viewer's eye, giving a shimmering effect.
8. To show how light and atmosphere change the same subject at different times of day and seasons.
9. Impasto is thick paint whose marks stand up from the surface; directional brushwork is strokes that follow the form or movement of the subject. Van Gogh.
10. Any three: what you made, what you were trying to learn, what was hardest, which artists influenced you, what you want to work on next.
11. Similarity: both are landscapes of ordinary countryside under large, lively skies, painted from close observation of real places. Differences: Constable's brushwork is smaller and more naturalistic with subtle greens and grays, while Van Gogh's is thick, swirling and directional; Van Gogh's colors are stronger and more expressive, and his forms seem to move with energy, while Constable's scene is calm and quiet.
12. A good answer names the piece, gives specific evidence for each standard (for example: truth, accurate proportions and observed light; goodness, patient craftsmanship and a worthy subject; beauty, harmonious color and balanced composition), and honestly names one way it could be better.

PORTFOLIO PIECE: THE CAPSTONE PORTFOLIO

This unit's portfolio piece is the capstone itself: 8–12 of the year's best works, mounted and labeled, with a growth pair, a one-page artist's statement, a four-step critique of the best piece, and a public presentation at a family art show. Include the landscape from this unit as one of the pieces.

LOOK FOR	WHAT IT MEANS
Choice and range	8–12 strong pieces show drawing, painting, perspective and design, including a clear growth pair.
Presentation	Work is clean, mounted or matted, labeled on the back and hung or displayed carefully with wall labels.
Artist's statement	An honest, specific, well-written page about the year's work, what was learned and next goals.
Critique	A thoughtful four-step critique of the best piece using truth, goodness and beauty.
Presentation talk	A clear three-minute talk explaining one piece, its making and the master who influenced it.

8.1 CONSTABLE AND TURNER

OBJECTIVES

- Explain how Constable and Turner changed landscape painting.
- Make quick oil-sketch-style studies of real skies from observation.
- Paint a landscape whose sky and land share the same light.

Warm-up. Go outside or to a window and spend three minutes looking only at the sky. Write down every color you see in it. Then make a two-minute sketch of one cloud with a soft pencil, showing its light and shadow sides.

WATCH

A guide to Constable's 'Hay Wain' | National Gallery

The National Gallery • 7:51

<https://www.youtube.com/watch?v=Bs6h7w91BU0>

WHEN TO WATCH

Before the picture study, then look at the painting again with fresh eyes.

BACKUP VIDEO

What's the story behind Turner's 'The Fighting Temeraire'? | National Gallery

The National Gallery • 12:05

<https://www.youtube.com/watch?v=s562v5bZL7c>

After the picture study, to look closely at Turner's *The Fighting Temeraire* with a National Gallery curator.

KEY TERMS

Romanticism

A movement of the late 1700s and early 1800s that valued deep feeling, the grandeur of nature and the individual imagination.

plein air

French for “open air”: painting outdoors directly from nature.

oil sketch

A quick, loosely painted study made to capture light, color and weather rather than detail.

skying

Constable's word for his many quick studies of clouds and sky.

the sublime

The feeling of awe, even fear, before nature's vastness and power, such as a storm at sea or a mountain avalanche.

CORE IDEAS

Before 1800, landscape painting in England was considered less important than history painting or portraits. Two painters born within a year of each other changed that. **John Constable** (1776–1837) painted the ordinary countryside of Suffolk where he grew up: mills, rivers, hay carts and the changing English sky. **J. M. W. Turner** (1775–1851) traveled across Europe and painted light, storms, sea and steam with ever greater freedom.

Constable's great discovery was to paint the actual weather. He made hundreds of small **oil sketches** outdoors, especially of skies, noting on the back the date, hour and wind direction. He called this "skying." He said the sky is "the chief organ of sentiment" in a landscape: it sets the light and mood for everything below. He also used flecks of pure white and touches of bright color to show sunlight sparkling on wet leaves, which critics mocked as "Constable's snow."

Turner pushed further toward light itself. In his later paintings, solid things dissolve into glowing mist, spray and sunlight, painted in thin washes and scraped highlights. He was fascinated by **the sublime**, the awe we feel before huge natural forces. He was also a master of watercolor, using washes, scratching out lights and letting colors run together to capture atmosphere.

Both men, in different ways, teach the same lesson: **sky and land must share one light**. If the sky is stormy and gray, the land cannot be lit as if by noon sun. Clouds cast shadows across fields; a bright patch of sky lights a river below. A landscape becomes believable when its light is unified.

Constable believed that close observation of nature was a kind of reverent attention. He wrote that he never saw an ugly thing in his life, for whatever the form of an

object may be, “light, shade, and perspective will always make it beautiful.”

PICTURE STUDY



The Hay Wain, John Constable, 1821 · Oil on canvas · The National Gallery, London

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

Constable painted this scene on the River Stour near Flatford Mill, where he grew up. It was painted in his London studio from his outdoor sketches. When it was shown in Paris in 1824, French painters were astonished by its fresh greens and its living sky.

Look closely

- Look at the sky first. How much of the picture does it take up? Which way is the wind blowing?
- Find the patches of sunlight in the fields beyond. How do they connect to the gaps in the clouds?
- Look for the small flecks of white paint on the leaves and water. What do they suggest?
- Find the dog, the cottage and the figure in the far field. How do they bring the scene to life?

Talk about it

1. How does Constable make you feel the weather in this painting?
2. Why might an ordinary farm scene be worth painting on such a large canvas?

3. How does the sky set the mood of the whole picture?

STUDIO PROJECT

Sky Studies and a Landscape

Like Constable, you will make several quick sky studies from observation over a few days, then paint a small landscape in which the sky and the land share one light.

You will need

- Acrylic paints (white, ultramarine, a lemon yellow, yellow ochre, burnt sienna, alizarin crimson) or watercolor
- Several small pieces of canvas paper or watercolor paper (about 5×7 in)
- One canvas panel (9×12 in)
- Brushes, palette, water, paper towels
- A clipboard or board and a place to work outdoors or at a window

Steps

1. On at least three different days, make a 15-minute sky study outdoors or from a window. Paint quickly, catching the shapes and colors of the clouds before they change.
2. On the back of each study, write the date, time of day and weather, as Constable did.
3. Choose a favorite sky study. Find a simple landscape view near your home (a field, a road, a line of trees, a river or a yard) that could sit under it.
4. On the canvas panel, make the horizon low so the sky takes up at least half the picture.
5. Paint the sky first, from your study, working from the top down and from dark to light.
6. Paint the land under the same light: if the sky has a bright gap, put a patch of sunlight on the land below it; put cloud shadows across the fields.
7. Use atmospheric perspective: cooler, paler colors in the distance, warmer and darker in the foreground.
8. Add a few touches of bright, broken color and white where light catches leaves or water, in the manner of Constable.

Tips

- Clouds have light tops and darker, warmer or grayer undersides; they are forms, like spheres, lit from one side.
- Clouds get smaller and flatter toward the horizon, following perspective.

Check your work

- ☐ I made at least three dated sky studies from observation.
- ☐ My landscape's sky takes up at least half the picture.
- ☐ The light on the land agrees with the sky.
- ☐ My distance is cooler and paler than my foreground.

SKETCHBOOK PRACTICE

1. Draw the same view of the sky at morning, noon and evening on one day.
2. Copy a small section of Turner's or Constable's sky in pencil, showing only the values.

From history. Constable and Turner were rivals at the Royal Academy in London. A famous story tells how, at an exhibition in 1832, Turner added a single red blob to his gray seascape hanging beside Constable's brightly colored painting, then shaped it into a buoy. Constable remarked that Turner had come and "fired a gun."

COMMON MISTAKES

- Painting clouds as flat white cutouts with no shadow side.
- Making the sky one even blue from top to bottom (it is usually darker at the top and paler near the horizon).
- Lighting the land with sunshine under a fully overcast sky.

Make it a game • Skies in a Minute. Go outside and make a one-minute cloud study. Write the time, wind and weather beside it as Constable did. Make three studies in different parts of the sky. Your parent picks the one that best shows light and movement. Explain how Turner and Constable changed landscape painting.

8.2 THE HUDSON RIVER SCHOOL AND AMERICAN PAINTERS

OBJECTIVES

- Describe the Hudson River School and its view of the American wilderness.
- Name Winslow Homer, Mary Cassatt and John Singer Sargent and describe one way each worked.
- Paint a panoramic landscape with a clear foreground, middle ground and background.

Warm-up. Divide a sketchbook page into three horizontal bands. Label them foreground, middle ground, background. In each, make a quick sketch of the kind of thing you might find there in a view from a hilltop.

WATCH

Winslow Homer: A Legacy in Watercolor

Museum of Fine Arts, Boston • 11:12

<https://www.youtube.com/watch?v=l4tDUGE9dTA>

WHEN TO WATCH

After the core ideas, alongside the picture study. See Homer's watercolors up close and his studio at Prouts Neck, Maine.

KEY TERMS

Hudson River School

A group of American landscape painters, about 1825–1875, who painted the wilderness of the Hudson River valley and beyond in grand, detailed views.

panorama

A wide view of a large area of landscape.

foreground, middle ground, background

The near, middle and far zones of a landscape, used to build depth.

luminism

A later development of the Hudson River School marked by calm, glowing light and smooth, hidden brushwork.

genre painting

A painting of scenes from everyday life.

CORE IDEAS

In the 1820s, an English-born painter named **Thomas Cole** traveled up the Hudson River in New York and painted the wild Catskill Mountains. His paintings started the first truly American school of landscape painting, later called the **Hudson River School**. Its painters, including Asher Durand, Frederic Church and Albert Bierstadt, painted the forests, mountains, waterfalls and sunsets of America on a grand scale, often with great detail.

Many of these painters saw the wilderness as a sign of the Creator's handiwork. Durand wrote that the true province of landscape art was to represent God's work in nature. Their pictures often move from a dark, detailed **foreground** (rocks, broken trees), through a **middle ground** (a valley, a river, a farm), to a luminous **background** of mountains and sky. This structure draws the eye on a journey into the light.

Later in the 1800s, other American painters took different paths. **Winslow Homer** (1836–1910) began as a magazine illustrator and became a great painter of the sea, of boys and fishermen, and of the woods of Maine and the Adirondacks; his watercolors are among the finest ever made. **Mary Cassatt** (1844–1926), from Pennsylvania, worked in Paris and painted tender scenes of mothers and children and of family life. **John Singer Sargent** (1856–1925) was the leading portrait painter of his age, famous for his dazzling brushwork, and also a superb painter of landscapes in watercolor.

A panoramic landscape needs careful organization. Use **overlapping** forms to lead the eye back. Make the foreground warm, dark and detailed; the middle ground cooler and simpler; the background pale, blue-gray and soft, following atmospheric perspective. A river or a road that winds into the distance makes a natural path for the eye.

Though their styles differ, these painters share a love of looking closely at the real world: the shape of a hill, the light on water, the gesture of a child. That honest observation is the thread running through all the landscape painting of this unit.

PICTURE STUDY



View from Mount Holyoke, Northampton, Massachusetts, after a Thunderstorm (The Oxbow), Thomas Cole, 1836 · Oil on canvas · Metropolitan Museum of Art, New York

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

Thomas Cole painted this huge view of the Connecticut River just after a summer thunderstorm. The storm is moving away on the left over the wild forest, while sunlight breaks over the farms and the great looping river on the right. Look carefully and you will find Cole himself, painting, in the foreground.

Look closely

- Compare the left half of the painting with the right half. How are they different in light, weather and land?
- Follow the river with your eye. What shape does it make?
- Find the tiny painter at his easel and his umbrella. Why might Cole have put himself in the picture?
- Find the foreground, middle ground and background. How is each painted differently?

Talk about it

1. What story does the movement of the storm across the picture tell?
2. How does Cole lead your eye from the dark foreground into the bright distance?

3. What feeling about the American land does this painting express?

STUDIO PROJECT

A Panoramic Landscape

You will paint a wide landscape, real or composed from several sketches and photographs of places you know, with a clear foreground, middle ground and background and a path for the eye leading into the light.

You will need

- Canvas panel or heavy paper in a wide format (about 9×16 in or 8×20 in; cut a larger sheet if needed)
- Acrylic paints: white, ultramarine, a lemon yellow, yellow ochre, burnt sienna, alizarin crimson, burnt umber
- Brushes (large flat, medium flat, small round, liner)
- Palette, water, paper towels
- Sketches or photographs of a wide view you know

Steps

1. Make two thumbnails in the wide format. Mark the three zones and draw a winding path (river, road, line of trees) that leads the eye back.
2. Lightly draw the main shapes on your panel with thinned paint.
3. Paint the sky first, lightest near the horizon, including the light that will fall on the land.
4. Paint the background mountains or hills in pale, cool, soft-edged colors (mix in white and a little blue).
5. Paint the middle ground: fields, river and trees, slightly warmer and darker, with simple shapes.
6. Paint the foreground last: the darkest, warmest colors, the sharpest edges and the most detail (rocks, grass, a tree).
7. Add light: sunlight on the river or fields, shadows of clouds across the land.
8. Optional: add a tiny figure, a house or a boat to show the great scale of the land, as Cole did.

Tips

- Work from back to front: sky, background, middle, foreground.
- Keep the background softer and paler than you think it should be.

Check your work

- ☐ My landscape has clear foreground, middle ground and background.
- ☐ Atmospheric perspective makes the distance pale and cool.
- ☐ A path (river, road or line of trees) leads the eye into the picture.
- ☐ The light is consistent across sky and land.

SKETCHBOOK PRACTICE

1. Make a small watercolor study in the manner of Homer: a boat or a figure by water, painted with few, confident washes.
2. Copy a detail from a Cassatt or Sargent portrait (a face, a hand, a dress) in pencil, studying how few strokes describe it.

From history. Thomas Cole's home and studio in Catskill, New York, is now a museum. His student Frederic Church became famous for enormous paintings of Niagara Falls, the Andes and icebergs, which people paid admission to see, sometimes looking at them through opera glasses to study the details.

COMMON MISTAKES

- Painting the distant mountains as dark as the near trees.
- Leaving the foreground empty, so there is nothing to step into.
- Placing the horizon exactly in the middle of a panorama.

Make it a game • Who Am I?. Take turns reading first-person clues and naming the artist. 'I painted the sea and rural life, often in watercolor.' Cover Homer, Cassatt and Sargent, and the Hudson River School's grand wilderness views. Your parent guesses. Write three clues of your own. Name the foreground, middle ground and background.

Scripture. "O LORD, how manifold are thy works! in wisdom hast thou made them all: the earth is full of thy riches." (Psalms 104:24, KJV)

The Hudson River School painters often saw the land as God's handiwork. Psalm 104 is a song of praise for that same created world.

8.3 MONET AND VAN GOGH: LANDSCAPES OF COLOR AND LIGHT

OBJECTIVES

- Explain how Monet used broken color to paint changing light.
- Explain how Van Gogh used directional brushstrokes and strong color to express what he saw and felt.
- Paint two small studies of the same scene, one in each manner.

Warm-up. With colored pencils or crayons, fill a small square with dabs of yellow and blue side by side, not mixed. Look at it from across the room. Then fill a second square with curving, swirling strokes of green and yellow. How do the two textures feel different?

WATCH

Monet's Palette and Technique

National Gallery of Art • 8:53

<https://www.youtube.com/watch?v=0JTazf7tH44>

WHEN TO WATCH

Before painting the Monet study.

BACKUP VIDEO

Tutorials || Let's Paint Like Van Gogh || Landscape

Van Gogh Museum • 8:09

<https://www.youtube.com/watch?v=m0BbIJzJuPw>

Before painting the Van Gogh study.

KEY TERMS

Impressionism

A movement begun in France in the 1870s by painters who tried to capture the momentary effects of light and atmosphere, often painting outdoors with quick, broken strokes.

broken color

Placing separate strokes of different colors side by side so they mix in the viewer's eye, giving a vibrant, shimmering effect.

series painting

Painting the same subject many times at different times of day or seasons, as Monet did with haystacks and cathedrals.

impasto

Thick paint applied so that the brush or knife marks stand up from the surface.

directional brushwork

Brushstrokes that follow the form or movement of a subject, as in Van Gogh's swirling skies and flame-like cypresses.

CORE IDEAS

Claude Monet (1840–1926) wanted to paint not things but the light on things at a particular moment. He painted outdoors quickly, laying down **broken color**: short strokes of fairly pure color placed side by side rather than blended. Seen from a distance, the strokes mix in the eye and shimmer like real sunlight. Shadows, for Monet, were rarely gray or black; they were violet, blue and green. He painted the same haystacks, poplars and the façade of Rouen Cathedral again and again in **series**, to show how the same subject changes with the hour and the season.

Vincent van Gogh (1853–1890), the son of a Dutch pastor, came to painting late, after working as an art dealer, a teacher and a lay preacher among poor miners. He taught himself by copying Millet and others, and in the south of France his color exploded. His brushstrokes are **directional**: they curve with the hills, flicker up the cypresses like flames, and swirl through the clouds, so the whole landscape seems alive with energy. He used thick **impasto** paint that catches the light.

Both painters learned from earlier masters. Monet admired Turner and Constable, whose work he saw in London. Van Gogh revered Millet and copied his peasants. And both were influenced by Japanese prints like Hokusai's, with their bold color and flat, decorative design.

The two approaches offer two lessons for your own work. Monet teaches you to observe light and color precisely and to keep the color clean by placing it rather than over-mixing. Van Gogh teaches you that the direction and texture of each stroke can

express form and feeling. Neither abandoned drawing: both made many drawings, and Van Gogh especially drew constantly.

Van Gogh wrote in a letter to his brother that he found in nature a sense of something greater, and he loved the Bible deeply for much of his life. Though his life was troubled and he suffered from illness, his paintings of wheat fields, orchards and starry skies are full of wonder at creation.

PICTURE STUDY



Wheat Field with Cypressess, Vincent van Gogh, 1889 · Oil on canvas · Metropolitan Museum of Art, New York

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

Van Gogh painted this wheat field in summer near Saint-Rémy in the south of France, where he was being cared for in a hospital. He thought it one of his best summer paintings and made three versions of it.

Look closely

- Look at the brushstrokes in the wheat, the cypress, the hills and the clouds. How is each one different?
- Find the thickest paint. Where is the impasto heaviest?
- Look at the colors of the sky. Is it one blue, or many?
- Compare the cypress with the clouds. How do their shapes echo or contrast?

Talk about it

1. How do Van Gogh's brushstrokes make the landscape feel alive?
2. How is this painting different from Constable's *The Hay Wain*? How is it similar?
3. What feeling about nature does this painting give you?

STUDIO PROJECT

One Scene, Two Manners

You will paint two small studies of the same simple landscape (a tree, a field or a garden, from life if possible): one in Monet's broken color, one in Van Gogh's directional, thick brushwork.

You will need

- Two canvas panels or heavy paper (8×10 in)
- Acrylic paints: white, lemon yellow, cadmium yellow hue, cadmium red hue, alizarin crimson, ultramarine, a green, and a violet if you have one
- Flat and round brushes, a palette knife
- Optional: acrylic gel medium or modeling paste to thicken paint for impasto

Steps

1. Choose a simple outdoor view and make a quick pencil sketch of its main shapes. Note the time of day and the direction of the light.
2. Monet study: tone the panel with a pale warm color. Lightly mark the big shapes.
3. Lay in the colors with short, separate strokes, side by side. Use pure-ish colors: yellows and oranges in sunlit areas, blues and violets in the shadows. Do not blend.
4. Step back often. Add strokes of complementary colors next to each other to make the light vibrate.
5. Van Gogh study: draw the same scene with a brush in thin blue lines.
6. Mix the paint thick (add gel medium if you have it). Paint each area with strokes that follow its form: curves for hills, upward flames for trees, rhythmic dashes for grass, swirls for clouds.
7. Outline a few forms with darker blue lines, as Van Gogh sometimes did, and use strong, clear color.
8. Set the two studies side by side and write a paragraph comparing them.

Tips

- In the Monet study, clean your brush often so the strokes stay pure.
- In the Van Gogh study, load your brush fully and make each stroke once; do not scrub.

Check your work

- ☐ My Monet study uses unblended strokes of color that mix in the eye from a distance.
- ☐ My Van Gogh study uses thick strokes that follow the forms and movement of the scene.
- ☐ Both studies show the same scene recognizably.
- ☐ I wrote a comparison of the two methods.

SKETCHBOOK PRACTICE

1. Draw the same tree in pencil in Van Gogh's manner, using only short directional marks (no shading by smudging).
2. Make three tiny color studies of the same view at three times of day, like a Monet series.

From history. Monet's painting *Impression, Sunrise* (1872) gave Impressionism its name when a critic used the title to mock the whole group. Van Gogh sold very few paintings in his lifetime, but his sister-in-law, Jo van Gogh-Bonger, devoted herself to publishing his letters and showing his work, and within a generation he was famous.

COMMON MISTAKES

- Blending the Monet strokes together until they become muddy.
- Making Van Gogh strokes all the same direction instead of following each form.
- Using thin paint for impasto; it needs to be thick.

Make it a game • Same Object, Three Lights. Put one object, such as a pear or cup, near a lamp. Change the light to warm, then cool, then side-lit, and make a three-minute color study each time, using broken dabs of color like Monet. Your parent guesses the light for each. Say how Van Gogh's brushwork differs.

8.4 CAPSTONE: PORTFOLIO AND ART SHOW

OBJECTIVES

- Select, prepare and present the best work of the year in a portfolio.
- Write an artist's statement and labels for an exhibition.
- Critique the portfolio using truth, goodness and beauty, and present it to an audience.

Warm-up. Lay out every portfolio piece from Units 1–7 on the floor. Walk around them slowly without speaking for three minutes. Then write down the one piece you are proudest of and the one that taught you the most.

WATCH

HOW TO PREP FOR A SCHOOL ART SHOW | ART TEACHER TIPS

Deep Space Sparkle · 5:04

<https://www.youtube.com/watch?v=HwhR595bOo4>

WHEN TO WATCH

Before setting up the art show; an art teacher's tips for mounting, labeling and hanging work.

KEY TERMS

portfolio

A carefully chosen collection of an artist's best work, presented to show skill and growth.

curate

To select and arrange works for an exhibition.

artist's statement

A short piece of writing in which an artist explains his or her work, aims and methods.

wall label

A small card beside an artwork giving its title, the artist, the date, the medium and sometimes a short description.

mat

A cardboard border placed around a picture to frame and protect it.

CORE IDEAS

A portfolio is not a pile of everything you made; it is a **careful choice**. Choose about eight to twelve pieces that show your best skill and the range of what you learned: drawing from life, painting, perspective, lettering and design. Include at least one piece that shows growth, for example an early drawing beside a later one of the same subject.

Presentation shows respect for your own work. Flatten and clean each piece. Trim ragged edges. Mount drawings and paintings on a slightly larger sheet of plain cardstock or put them in a simple **mat**, which gives them a quiet border. Label the back of each with your name, the title, the date and the medium.

An **artist's statement** is a short, honest piece of writing, about one page. It says what you made this year, what you were trying to learn, what you found hardest, which artists you learned from, and what you hope to work on next. Write plainly, in your own voice, without boasting or false modesty.

To **curate** a show, arrange the work so that it tells a story. You might group pieces by unit, by subject (people, places, things) or by medium. Hang work at eye level (the center of each piece about 57 inches, or 145 cm, from the floor is a museum standard). Space pieces evenly and align their centers or tops. Put a **wall label** beside each.

Finally, judge your year by the standard we began with. Is your work **true**: honestly observed, skillfully made? Is it **good**: made with care and patience, worthy of its subject? Is it **beautiful**: harmonious, well proportioned, giving delight? No artist meets these perfectly, but they are worth aiming at for a lifetime. Give thanks for the gifts of sight and skill, and for what you have learned to make.

PICTURE STUDY



Breezing Up (A Fair Wind), Winslow Homer, 1873–1876 · Oil on canvas · National Gallery of Art, Washington, D.C.

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

Homer's painting of a man and three boys sailing home on a bright, breezy day was one of the most admired American paintings of its time. It brings together much of what we studied this year: strong composition, a unified light, honest observation of figures and water, and a sense of joy.

Look closely

- Find the strong diagonal of the tilted boat and mast. How does it create movement?
- Look at the boys' gestures. How do their poses show the wind and the tilt of the boat?
- Find the light and shadow on the sail, the boat and the water. Do they agree on one light source?
- Look at the sea. How has Homer painted the choppy waves?

Talk about it

1. Which ideas from this year's units can you find in this painting? Name at least four.
2. What feeling does the painting give you, and how does Homer create it?

3. Judge it by truth, goodness and beauty. Is it a great painting?

STUDIO PROJECT

The Capstone Portfolio and Family Art Show

You will select, prepare and present your year's best work in a portfolio and a family art show, with an artist's statement and wall labels, and give a short talk about one piece.

You will need

- All portfolio pieces and best studio work from the year
- Cardstock or mat board for mounting, glue stick or archival photo corners
- Large folder or portfolio case
- Index cards for labels and your best pen
- Painter's tape or removable poster putty for hanging (or easels and tables)
- Your poster from lesson 7.3

Steps

1. Gather all your finished work from the year. Sort it into three piles: strongest, good, not yet.
2. From the strongest pile, choose 8–12 pieces that show your range: at least one each of drawing, painting, perspective or architecture, and lettering or design, plus one “growth pair” (an early and a later piece side by side).
3. Write a four-step critique (describe, analyze, interpret, judge) of your best piece.
4. Write your artist's statement (about one page) and print or letter it neatly.
5. Mount or mat each piece and label the back. Write a wall label for each: title, your name, date, medium, and one sentence about it.
6. Plan the hanging on paper: decide the order and grouping. Hang the work at eye level with even spacing.
7. Put up your poster and invite family and friends.
8. At the show, give a three-minute talk about one piece: what it is, how you made it, what you learned and which master helped you.

9. Afterward, store the portfolio flat in its folder, away from light and damp, as you learned in lesson 5.4.

Tips

- Choose fewer, stronger pieces rather than many weaker ones.
- Practice your talk once out loud before the show.

Check your work

- ☐ My portfolio has 8–12 well-chosen, cleanly mounted and labeled pieces.
- ☐ My artist's statement honestly describes my work, what I learned and my next goals.
- ☐ My show is arranged at eye level with labels and a clear grouping.
- ☐ I gave a short talk explaining one piece.

SKETCHBOOK PRACTICE

1. Write a list of ten things you can do now in art that you could not do in September.
2. Make a final self-portrait from a mirror and compare it with the portrait you drew in Unit 2.

From history. Winslow Homer taught himself painting after years as an illustrator for *Harper's Weekly*. In his later life he lived alone at Prouts Neck on the coast of Maine, painting the sea in all its moods; his studio there still stands.

COMMON MISTAKES

- Including too many pieces or unfinished work.
- Hanging work too high or unevenly.
- Writing a statement full of vague praise instead of specific, honest description.

Make it a game • Thirty-Second Docent. Choose three works from your year. Give each a thirty-second guide talk covering the title, the medium and why you made it. Your parent asks one question about each. Then write a one-sentence artist's statement and a wall label for your best piece. Finish each talk within a few seconds of the thirty-second mark.

Scripture. “And whatsoever ye do, do it heartily, as to the Lord, and not unto men;” (Colossians 3:23, KJV)

A year of careful work is worth offering with gratitude. Paul tells us to do all our work heartily, as for the Lord, and that includes the work of a maker.

UNIT 8

FROM THE 1700S TO 1900, AND A CAPSTONE

The last unit of the year follows the great painters of land, sea and light from the late 1700s to 1900: John Constable and J. M. W. Turner in England, the Hudson River School and the American painters Winslow Homer, Mary Cassatt and John Singer Sargent, and the French and Dutch painters Claude Monet and Vincent van Gogh. Each of them looked hard at the created world and found new ways to paint it.

Then you will gather the best work of your year into a capstone portfolio, write about it, and present it at a family art show. The measure we will use is the old one: is the work true, is it good, is it beautiful? You have spent a year learning to see and to make. Now you will show what you have learned.

PREREQUISITES

- Atmospheric perspective and color temperature (Units 3 and 6)
- Acrylic painting with a limited palette and glazes
- The four steps of critique (Unit 1)

MASTERY CHECKLIST

- ☐ I can explain what made Constable's and Turner's landscapes new, and paint a sky from observation.
- ☐ I can describe the Hudson River School and name its main painters, and the American painters Homer, Cassatt and Sargent.
- ☐ I can explain how Monet and Van Gogh used color and brushwork, and paint in both manners.
- ☐ I can select and present my best work in a portfolio with a written artist's statement.
- ☐ I can judge my own work and others' by truth, goodness and beauty.

LESSONS IN THIS UNIT

8.1 Constable and Turner

2 sessions of 60 minutes

8.2 The Hudson River School and American Painters

2 sessions of 60 minutes

UNIT 8 REVIEW

Answer in complete sentences. Total: 100 points.

1. **8 pts**

What did Constable mean by “skying,” and why did he do it?

2. **8 pts**

What is the sublime, and which painter in this unit was especially drawn to it?

3. **8 pts**

Why must the sky and the land share one light?

4. **8 pts**

Who began the Hudson River School, and what did its painters paint?

5. **8 pts**

Describe how foreground, middle ground and background are usually painted differently.

6. **8 pts**

Name one subject each for Winslow Homer, Mary Cassatt and John Singer Sargent.

7. **8 pts**

What is broken color?

8. **8 pts**

Why did Monet paint the same subject many times?

9. **8 pts**

What is impasto, and what is directional brushwork? Which painter used both?

10. (8 pts)

List three things that belong in an artist's statement.

11. (10 pts)

Short answer: Compare Constable's *The Hay Wain* and Van Gogh's *Wheat Field with Cypresses*. Give one similarity and two differences.

12. (10 pts)

Short answer: Choose one piece from your capstone portfolio and judge it by truth, goodness and beauty.

ANSWER KEY

1. Making many quick outdoor studies of clouds and sky; he believed the sky sets the light and mood of a landscape and wanted to paint real weather truthfully.
2. The feeling of awe, even fear, before nature's vast power, such as storms at sea. J. M. W. Turner.
3. Because the sky is the source of the light that falls on the land; if they disagree, the landscape looks false.
4. Thomas Cole; they painted the American wilderness, such as the Hudson River valley, mountains, forests and waterfalls, in grand, detailed views.
5. Foreground: warm, dark, sharp and detailed. Middle ground: cooler and simpler. Background: pale, blue-gray, soft and with little detail (atmospheric perspective).
6. Homer: the sea, boats, fishermen and boys (also watercolors of the woods). Cassatt: mothers and children and family life. Sargent: portraits (and landscapes in watercolor).
7. Separate strokes of fairly pure color placed side by side so they mix in the viewer's eye, giving a shimmering effect.
8. To show how light and atmosphere change the same subject at different times of day and seasons.
9. Impasto is thick paint whose marks stand up from the surface; directional brushwork is strokes that follow the form or movement of the subject. Van Gogh.
10. Any three: what you made, what you were trying to learn, what was hardest, which artists influenced you, what you want to work on next.
11. Similarity: both are landscapes of ordinary countryside under large, lively skies, painted from close observation of real places. Differences: Constable's brushwork is smaller and more naturalistic with subtle greens and grays, while Van Gogh's is thick, swirling and directional; Van Gogh's colors are stronger and more expressive, and his forms seem to move with energy, while Constable's scene is calm and quiet.
12. A good answer names the piece, gives specific evidence for each standard (for example: truth, accurate proportions and observed light; goodness, patient craftsmanship and a worthy subject; beauty, harmonious color and balanced composition), and honestly names one way it could be better.

PORTFOLIO PIECE: THE CAPSTONE PORTFOLIO

This unit's portfolio piece is the capstone itself: 8–12 of the year's best works, mounted and labeled, with a growth pair, a one-page artist's statement, a four-step critique of the best piece, and a public presentation at a family art show. Include the landscape from this unit as one of the pieces.

LOOK FOR	WHAT IT MEANS
Choice and range	8–12 strong pieces show drawing, painting, perspective and design, including a clear growth pair.
Presentation	Work is clean, mounted or matted, labeled on the back and hung or displayed carefully with wall labels.
Artist's statement	An honest, specific, well-written page about the year's work, what was learned and next goals.
Critique	A thoughtful four-step critique of the best piece using truth, goodness and beauty.
Presentation talk	A clear three-minute talk explaining one piece, its making and the master who influenced it.