GEOGRAPHY · KINDERGARTEN–GRADE 8 · QUICK REFERENCE

GEOGRAPHY (Maps · Land · World)

Grades K–8 | 3 pages

Map skills and the grid of the globe, landforms, water and climate, the continents, oceans and world records, the fifty states and capitals with the regions of the United States, the explorers, and why ports and cities stand where they do.

1 Map skills | 2 Land & climate | 3 The world | 4 United States | 5 Explorers & cities

1 MAP SKILLS

K–8 · reading and making maps

Parts of a map

Title (what it shows) · **key / legend** (what the symbols mean) · **compass rose** (which way is north) · **scale** (1 inch = 50 miles) · **grid** (letters and numbers, or latitude and longitude). A map is a picture of a place from above, a bird's-eye view; a globe is a small round earth.

Directions

- **Cardinal:** North, East, South, West, clockwise ("Never Eat Soggy Waffles"). **Intermediate:** NE, SE, SW, NW.
- The sun rises in the east and sets in the west; at noon it is south (in the northern hemisphere). A magnet points north.
- **Bearings:** N = 0°, E = 90°, S = 180°, W = 270°. Orienteering: set the map to north, take a bearing, pace the distance.

The grid of the globe

Line	Degrees	Note
Equator	0° latitude	divides northern and southern hemispheres; hot
Tropic of Cancer	23.5°N	sun overhead in June
Tropic of Capricorn	23.5°S	sun overhead in December
Arctic / Antarctic Circle	66.5°N / S	midnight sun, polar night
Prime Meridian	0° longitude	Greenwich; divides eastern and western hemispheres
International Date Line	180°	a new day begins
North / South Pole	90°N / 90°S	the ends of the axis

Latitude lines lie flat like ladder rungs (parallels); **longitude** lines run pole to pole (meridians). Say latitude first: 40°N, 74°W. **Time zones:** 24 zones of 15°, one hour apart, set in 1883 for the railroads.

Topographic maps (grades 6, 8)

- **Contour lines** join points of equal height; the **contour interval** is the step between them. Close lines = steep; far apart = gentle; a V points upstream where lines cross a river.
- Draw a **profile** by plotting heights along a line.
- A flat map must stretch somewhere: Mercator stretches the poles (Greenland looks as big as Africa).

GPS and GIS

GPS: satellites broadcast the time; a phone measures how long each signal took from four or more satellites and fixes its place. **GIS** stacks map layers (roads, rivers, elevation, people) by coordinates; QGIS is free. Old maps and new maps compared show how a city grew.

2 LANDFORMS, WATER & CLIMATE

K–6 · the shape of the land

Landforms

Word	Meaning
mountain / hill	high land; a range is a chain; a pass is a low way through
plateau	high flat land
plain / prairie	low flat land; grassland
valley	low land between hills; a canyon is a deep, steep valley
island	land with water all around
peninsula	land with water on three sides (Florida, Italy)
isthmus	narrow land joining two larger (Panama)
cape	a point of land into the sea
desert	under 10 inches of rain a year; hot or cold
coast / beach	where land meets sea
delta	fan of mud where a river meets the sea (Nile, Mississippi)
glacier	a slow river of ice

Water words

Word	Meaning
source → mouth	where a river starts → where it ends
tributary	a river that joins a bigger one; a **confluence** is the joining
floodplain	flat land a river floods
lake / pond	water with land all around; fresh
sea / ocean	salt water; a **gulf** or **bay** is sea reaching into land
strait	narrow water joining two seas (Gibraltar)
harbor	sheltered water for ships
spring / well / aquifer	water that comes up / is dug for / is stored in rock

The water cycle

Evaporation → condensation (clouds) → precipitation (rain, snow) → rivers run to the sea → springs and wells. Rivers at work: weathering breaks rock, erosion carries it, deposition builds deltas and floodplains.

Climate

- **Weather** is today; **climate** is the pattern over years.
- **Latitude:** near the equator the sun strikes straight down (hot); near the poles it slants (cold). Four seasons in between.
- **Altitude:** higher is colder (snow on Kilimanjaro at the equator).
- **Rain shadow:** wet on the windward side of mountains, dry behind.
- **Oceans:** the Gulf Stream warms Europe; gyres circle the oceans; the moon makes two tides a day.
- **Köppen zones:** tropical, dry, temperate, continental, polar.

Biomes

Biome	Marks
Tropical rain forest	hot, wet, layered, most kinds of life
Desert	dry; cactus, camel
Grassland / savanna	grass; herds
Temperate forest	four seasons, broadleaf trees
Taiga	cold evergreen forest
Tundra / ice	frozen ground, no trees

3 THE WORLD: CONTINENTS, OCEANS & RECORDS

grades K–3, 7 · around the globe

Seven continents (largest first)

Continent	Marks
Asia	biggest; Himalaya, Everest; Yangtze, Yellow, Ganges, Indus; most people
Africa	Sahara, Nile, Congo, Rift Valley, Kilimanjaro, savanna
North America	Rockies, Appalachians, Mississippi, Great Lakes; Canada, U.S., Mexico
South America	Andes, Amazon (biggest river), rain forest, pampas
Antarctica	ice, coldest, no countries; penguins
Europe	a peninsula of peninsulas; Alps, Rhine, Danube; small countries
Australia	the island continent; outback, kangaroos; with the Pacific islands, Oceania

MEMORY TRICK **Five oceans by size**

Pacific (largest and deepest) · **Atlantic** · **Indian** · **Southern** (around Antarctica) · **Arctic** (smallest, frozen).

World records

Record	Answer
Highest mountain	Everest, Himalaya, 29,032 ft (Hillary and Tenzing, 1953)
Longest rivers	Nile (about 4,100 mi) and Amazon (biggest by water)
Largest hot desert	Sahara; the largest desert of all is Antarctica
Largest lake	Caspian Sea (salt); Superior is the largest freshwater lake by area; Baikal the deepest
Largest island	Greenland
Biggest country	Russia, eleven time zones
Most people	India and China
Deepest place	Mariana Trench, Pacific, about 36,000 ft

Mountains and rivers by continent

Where	Mountains	Rivers
N. America	Rockies, Appalachians, Sierra Nevada, Cascades	Mississippi, Missouri, Ohio, Colorado, Rio Grande, St. Lawrence
S. America	Andes	Amazon, Paraná, Orinoco
Europe	Alps, Pyrenees, Urals, Carpathians	Rhine, Danube, Thames, Seine, Volga
Africa	Atlas, Kilimanjaro, Drakensberg	Nile, Congo, Niger, Zambezi
Asia	Himalaya, Hindu Kush, Zagros	Yangtze, Yellow, Ganges, Indus, Tigris, Euphrates, Mekong
Australia	Great Dividing Range	Murray, Darling

Regions of the world (grade 7)

Europe · Russia and Central Asia · the Middle East and North Africa (Fertile Crescent, the lands of the Bible, oil and straits) · Sub-Saharan Africa · South Asia (monsoon) · East Asia · Southeast Asia and Oceania · the Americas.

4 THE UNITED STATES

grades 1–2 · our country, coast to coast

Fifty states and their capitals

State	Capital	State	Capital	State	Capital	State	Capital
Alabama	Montgomery	Indiana	Indianapolis	Nebraska	Lincoln	South Carolina	Columbia
Alaska	Juneau	Iowa	Des Moines	Nevada	Carson City	South Dakota	Pierre
Arizona	Phoenix	Kansas	Topeka	New Hampshire	Concord	Tennessee	Nashville
Arkansas	Little Rock	Kentucky	Frankfort	New Jersey	Trenton	Texas	Austin
California	Sacramento	Louisiana	Baton Rouge	New Mexico	Santa Fe	Utah	Salt Lake City
Colorado	Denver	Maine	Augusta	New York	Albany	Vermont	Montpelier
Connecticut	Hartford	Maryland	Annapolis	North Carolina	Raleigh	Virginia	Richmond
Delaware	Dover	Massachusetts	Boston	North Dakota	Bismarck	Washington	Olympia
Florida	Tallahassee	Michigan	Lansing	Ohio	Columbus	West Virginia	Charleston
Georgia	Atlanta	Minnesota	St. Paul	Oklahoma	Oklahoma City	Wisconsin	Madison
Hawaii	Honolulu	Mississippi	Jackson	Oregon	Salem	Wyoming	Cheyenne
Idaho	Boise	Missouri	Jefferson City	Pennsylvania	Harrisburg		
Illinois	Springfield	Montana	Helena	Rhode Island	Providence		

The national capital is **Washington, D.C.** Neighbors: Canada to the north, Mexico to the south.

Five regions

Region	States and marks
Northeast	New England and the Mid-Atlantic; Appalachians, Boston, New York, old cities
Southeast	Florida to Virginia; warm, coasts, the Mississippi delta
Midwest	the heartland: Great Plains farms, Great Lakes, Chicago
Southwest	Texas, Oklahoma, New Mexico, Arizona; deserts, the Grand Canyon
West	Rockies to the Pacific, plus Alaska and Hawaii; Sierra Nevada, Cascades

Land and water

- **Rivers:** the Mississippi (with the Missouri and Ohio) drains the middle; the Colorado cut the Grand Canyon; the Rio Grande is the Mexican border; the Columbia runs to the Pacific.
- **Mountains:** the old, rounded Appalachians in the east; the young, high Rockies in the west. **Deserts:** Mojave, Sonoran, Great Basin.
- **Great Lakes:** Huron, Ontario, Michigan, Erie, Superior (HOMES). **Ties:** Lewis and Clark (1804–06), the Oregon Trail, the Pony Express (1860), the telegraph (1844), the railroad (1869).

5 EXPLORERS, PORTS & WHY CITIES STAND WHERE THEY DO

grades 3–5, 8

Explorers

Who	When	What
Leif Erikson	c. 1000	Vikings reach Vinland (North America)
Marco Polo	1271–95	Venice to the court of Kublai Khan by the Silk Road
Ibn Battuta	1325–54	the great traveler of Africa and Asia
Columbus	1492	crosses the Atlantic to the New World
Magellan / Elcano	1519–22	first voyage around the world
Captain Cook	1768–79	maps New Zealand, Australia, the Pacific; cured scurvy with diet
Lewis and Clark	1804–06	across the Louisiana Purchase to the Pacific
Peary and Henson	1909	near the North Pole
Amundsen	1911	South Pole (Shackleton's Endurance, 1914–16)
Hillary and Tenzing	1953	Everest

Missionaries as geographers: William Carey (India), David Livingstone (crossed Africa), Hudson Taylor (inland China), Mary Slessor (Calabar). Judge explorers honestly: courage and skill, real wrongs, exchange across the ocean.

Site and situation

- Cities grow where a river could be crossed (**ford**, then bridge: Oxford, Frankfurt), where rivers meet (**confluence**: Pittsburgh), at the **fall line** where boats stop and mills start (Richmond), and on a defensible **hill** beside a **harbor** (Athens).
- **River civilizations:** the Nile (Egypt), Tigris and Euphrates (Ur, Babylon), Indus (Mohenjo-daro), Yellow River (Yu the Great).

Ports, straits and canals

Kind	Names
Great ports	Venice, Amsterdam, London (Thames), New York (Erie Canal, 1825), Rotterdam (Rhine), Singapore, Hong Kong
Choke-point straits	Gibraltar, the Bosporus, Malacca, Hormuz, the English Channel
Canals	Grand Canal of China, Suez (1869), Panama (1914), St. Lawrence Seaway (1959)

Malcom McLean's container (1956) made a ship load in hours instead of days; the Silk Road, the compass and sails that beat against the wind made trade possible.

MEMORY TRICK **Water first**

Almost every great city began at **water**: a crossing, a confluence, a fall line or a harbor. Ask of your own town: where is the river, and why here?