

Map Skills Lesson 1

Student will be able to:

- Use cardinal directions, map grids, scales, and titles to locate places on a map.
- Interpret a map using information from its title, compass rose, scale, and legend.

Vocabulary: map, compass rose, legend, scale, grid

Materials: maps, pencils, Lesson 1 Worksheet, strips of paper, grid paper

Procedure:

1. Ask students for a basic definition of a map. Explain that a map is a picture of a place drawn on a flat surface and usually shows a view from above.
2. Divide students into groups. Give each group a map.
3. Tell students that maps have common parts. Have students locate the title, compass rose, legend, scale, and grid on their maps. Explain why each part is important to the map.
4. Identify the symbols in the legend.
5. Use the grid on the map to locate some cities and towns.
6. Use the compass rose to locate the direction of different places on the map in relation to each other.
7. Collect the maps. Distribute Lesson 1 Worksheet and strips of paper.
8. Complete the worksheet together. Show students how to mark a strip of paper with the map's scale and how to use it to answer the questions.
9. Once the worksheet is complete, distribute grid paper. Tell students to make a map of the classroom. The map should have a title, compass rose, legend, scale, and grid. Give students the basic dimensions of the space as a guide.

Map Skills Lesson 2

Student will be able to:

- Identify similarities and differences between maps of Boston over time.
- Use a subway map.

Vocabulary: historical map, cardinal directions, Boston

Materials: maps, pencils, paper

Procedure:

1. Review cardinal directions by illustrating compass rose on a map.
2. Discuss with students that maps are created for different purposes. Ask students whether maps can change over time and discuss some of the reasons maps may change.
3. Show students a map of Massachusetts and the location of Boston. Ask students what they know about Boston.
4. Show students maps of Boston from different time periods. Explain that a historical map shows a place at a given time in history. Instruct students to use the maps to list all of the similarities and differences that they can find between the maps. Distribute maps, paper, and pencils. Students can work in groups with one student recording the information.
5. After several minutes, have students tell the similarities and differences that they found and engage other students to look for the items on their maps.
6. Collect maps.
7. Introduce a Boston subway map and describe its purpose.
8. Distribute subway maps. Identify several places on the maps and have students put their finger on the place. Then have students trace different routes with their finger and count the number of stops between places. Give different scenarios.

Map Skills Lesson 3

Students will be able to:

- Locate the seven continents and five major oceans.
- Identify the hemisphere in which a country is located.
- Locate a place on a map or globe using latitude and longitude.

Vocabulary: Eastern Hemisphere, Western Hemisphere, Northern Hemisphere, Southern Hemisphere, continent, ocean, equator, prime meridian, latitude, longitude

Materials: globes, blank world maps, crayons, pencils

Procedure:

1. Distribute maps, crayons, and pencils.
2. Tell students that a continent is a large mass of land surrounded by oceans and that an ocean is a large body of water that separates continents.
3. Have students locate and label the oceans on their maps.
4. Using a different color for each continent, have students label and shade Africa, Antarctica, Asia, Australia, Europe, North America, and South America.
5. Tell students that the equator is a line on a map or globe that is halfway between the North and South Poles. This line divides the world into the Northern and Southern Hemispheres. Tell students that the prime meridian is a line that runs from the North Pole to the South Pole through Greenwich, England and divides the world into the Eastern and Western Hemispheres. Students should locate the equator, prime meridian, and each hemisphere. Label the hemispheres on the maps.
6. Remind students that a grid system is often used on a map to identify locations. Define latitude and longitude. Latitude is a measure of the distance from the equator. The equator measures 0 degrees. The North Pole is 90

degrees latitude north and the South Pole is 90 degrees latitude south.

Longitude is a measure of the distance from the prime meridian. The prime meridian is 0 degrees with lines running 180 degrees east and west from it.

7. Have students locate the latitude and longitude lines on their worksheets.
8. Locate the tropic of Cancer and tropic of Capricorn. The tropic of Cancer is a line of latitude that is located at 23 degrees 30 minutes north of the equator. On the summer solstice, June 21, the sun is directly overhead at this line. The tropic of Capricorn is line of longitude located at 23 degrees 30 minutes south of the equator. During the winter solstice, December 21, the sun is directly overhead at this line. Give some coordinates and have students locate the place on their maps.
9. Distribute globes. Ask students to locate the following on their globes.
Arctic Ocean, Atlantic Ocean, Indian Ocean, Pacific Ocean, Southern Ocean
Africa, Antarctica, Asia, Australia, Europe, North America, South America
Prime Meridian, Tropic of Cancer, Tropic of Capricorn

Map Skills Lesson 4

Student will be able to:

- Read a topographic map.
- Create a model of a hill and draw a topographic map of the hill.

Vocabulary: topographic map, contour lines

Materials: topographic map, activity sheet, play dough or clay, paper, pencils, thread

Procedure:

1. Show students a topographic map. Tell students that a topographic map shows the natural and man-made landforms of an area usually with the use of contour lines to show elevation. Tell students that contour lines connect points with the same elevations.
2. Distribute activity sheets and pencils. Complete the activity sheet together.
3. Draw several diagrams on the board showing side views and contour lines. Challenge students to match the corresponding diagrams.
4. Show students a clay model of a hill and a drawing of the side view of the hill. Use a pencil to create a hole through the model that will serve as a guide for making a contour map. Using the thread, slice through the model horizontally to create sections. Using the hole to align each piece, show students how to trace each section on a piece of paper to create a topographic map of the hill. It is helpful to already have the model made, sliced, and reassembled before class. Distribute clay and paper to the class and instruct them to follow the steps you just showed them to create their own model and topographic map, including a side-view diagram.

Map Skills Lesson 5

Student will be able to:

- Interpret a weather map.
- Create a weather map.

Vocabulary: high pressure, low pressure, warm front, cold front, stationary front, trough, dry line, squall line

Materials: weather maps, weather map symbols sheets, blank USA map, pencils, red and blue pencils or crayons

Procedure:

1. Distribute weather maps and symbols sheets. Explain that weather stations report weather using symbols. Have students look at their weather maps to locate the symbols. Tell students to look at the symbols sheet. Tell students that they will learn only some of the symbols. Review the symbols for cloud cover and fronts. Draw the front symbols on the board using red and blue as appropriate. Then draw other common weather map symbols and have students find the symbols on their sheet to identify what you have drawn.
2. Show students a weather map in color. Explain that areas of high pressure are shown with a blue H and low pressure with a red L. Point out some of the other features shown on the map that are different than the maps the students have. Explain that weather maps shown on news reports are more similar to the color map.
3. Distribute red and blue crayons, blank maps, and pencils. Tell students that they should create their own weather maps using weather map symbols. Point out that they should use the correct colors for air pressure and fronts. Encourage students to use many symbols.
4. If time permits, ask students to show the class their weather maps and describe the weather shown.

Map Skills Lesson 6

Student will be able to:

- Identify each state in the USA and name its abbreviation.
- Answer questions based on all six map skills lessons.

Materials: blank maps of USA, review cards

Procedure:

1. Show students a USA map. Explain that each state has its own two-letter abbreviation.
2. Distribute blank maps and pencils.
3. Working together as a class, have students locate each state and label it with its postal abbreviation.
4. When the maps are labeled, students can set them aside.
5. Have students work in groups. Distribute a set of review cards to each group. Explain that each group will spend a few minutes studying the cards. Suggest that each group member be responsible for remembering specific cards.
6. After several minutes, collect the review cards. Explain that the class will now play a quiz game. The teacher will ask a question. If a group knows the answer, then a group member should raise their hand. The person who raises their hand first gets to answer first. If the answer is correct, the team earns a point. If the answer is incorrect, then another team can answer and possibly earn a point. The game continues as time allows or until all questions are answered. The team with the most points wins.