Cardinal Directions

Grade Level: 3-4
Classroom Time: 45 minutes

Materials:
- CDs
- Markers
- Cardstock
- Globe

Objectives:
1. Students will demonstrate an understanding of the 4 cardinal directions by identifying the cardinal directions in reference to a map.
2. Students will use longitude and latitude on a globe to locate 2 waypoints and then determine the cardinal direction between the 2 waypoints.

Teacher's introduction to the activity:
There is an easy way to remember the 4 “cardinal” directions. The first letter of every word in the next sentence will give you the clues you need. Never Eat Soggy Waffles. Another way to find directions is to remember that the sun rises in the East, and sets in the West. Facing West, North will be toward the right hand, and South will be toward the left hand. Waypoints are sets of coordinates that identify a point on the surface of the earth, as longitude and latitude.

Instructions:
1. Read Cardinal Directions and make a compass rose
2. On a piece of cardstock, trace around a CD to make a circle.
3. Cut out the circle.
4. Fold the circle in half, and then in half again.
5. With a pencil trace the fold lines on the circle.
6. At the top of your circle place an ‘N’ for North, at the right an ‘E’ for East, at the bottom an ‘S’ for South, and at the left a ‘W’ for West.
7. Draw the intercardinal diagonal lines and label them NE, SE, SW, NW.
8. Find your state on the United States map. Mark it with an X.
9. Orient north on the compass with north on the map.
10. Name another state and ask the students which direction it is from their home state.
11. Using a globe complete the longitude/latitude exercise.

Skills: Map reading, Orientation

Vocabulary: Cardinal directions, Compass rose, Intercardinal, Ordinal

Variations: Using a wall map expand the exercise beyond the United States. Teach the students Northeast, Northwest, Southeast and Southwest.

Cardinal Directions

In geography, the four principal directions are called cardinal directions, they are north, east, south and west. The **cardinal directions** are marked as points on a traditional magnetic **compass rose**. North and south are oriented toward the respective poles of the Earth. The Earth's rotation defines the orientation of east and west. For navigation the directional names are associated with the degrees of a circle. The four cardinal directions correspond to the following degrees of a compass:

- **North (N):** 0° = 360°
- **East (E):** 90°
- **South (S):** 180°
- **West (W):** 270°

An **ordinal**, or **intercardinal**, direction is one of the four intermediate compass directions located halfway between the cardinal directions.

- **Northeast (NE),** 45°, halfway between north and east, is the opposite of southwest.
- **Southeast (SE),** 135°, halfway between south and east, is the opposite of northwest.
- **Southwest (SW),** 225°, halfway between south and west, is the opposite of northeast.
- **Northwest (NW),** 315°, halfway between north and west, is the opposite of southeast.

**Make a Compass Rose**

**Instructions:**
1. On a piece of cardstock, trace around a CD to make a circle.
2. Cut out the circle.
3. Fold the circle in half, and then in half again.
4. With a pencil trace the fold lines on the circle.
5. At the top of your circle place an ‘N’ for North, at the right an ‘E’ for East, at the bottom an ‘S’ for South, and at the left a ‘W’ for West.
6. Draw the intercardinal diagonal lines and label them NE, SE, SW, NW.
Longitude/Latitude Exercise

You are Here: 45° N 120° E
What country are you in?
Your Treasure is Here: 40° S 150° E
What cardinal direction must you travel to get to your treasure?
What country are you in now?

You are Here: 30° N 90° E
What country are you in?
Your Treasure is Here: 60° N 90° W
What cardinal direction must you travel to get to your treasure?
What country are you in now?

You are Here: 30° S 120° E
What country are you in?
Your Treasure is Here: 40° N 140° E
What cardinal direction must you travel to get to your treasure?
What country are you in now?

You are Here: 20° N 80° E
What country are you in?
Your Treasure is Here: 60° N 30° E
What cardinal direction must you travel to get to your treasure?
What country are you in now?
You are Here: 15º N 120º E
What country are you in?
Your Treasure is Here: 20º N 45º E
What cardinal direction must you travel to get to your treasure?
What country are you in now?

You are Here: 45º N 60º E
What country are you in?
Your Treasure is Here: 15º S 40º E
What cardinal direction must you travel to get to your treasure?
What country are you in now?

You are Here: 30º N 30º E
What country are you in?
Your Treasure is Here: 75º N 60º W
What cardinal direction must you travel to get to your treasure?
What country are you in now?

You are Here: 1º S 60º W
What country are you in?
Your Treasure is Here: 45º S 170º E
What cardinal direction must you travel to get to your treasure?
What country are you in now?
Longitude/Latitude Exercise Key

This activity can be completed using a globe or a world map.

You are Here: 45° N 120° E
What country are you in? China
Your Treasure is Here: 40° S 150° E
What country are you in? Australia
What cardinal direction must you travel to get to your treasure? SE

You are Here: 30° N 90° E
What country are you in? China
Your Treasure is Here: 60° N 90° W
What country are you in? Canada
What cardinal direction must you travel to get to your treasure? NW

You are Here: 30° S 120° E
What country are you in? Australia
Your Treasure is Here: 40° N 140° E
What country are you in? Japan
What cardinal direction must you travel to get to your treasure? NE

You are Here: 20° N 80° E
What country are you in? India
Your Treasure is Here: 60° N 30° E
What country are you in? Russia
What cardinal direction must you travel to get to your treasure? NW

You are Here: 15° N 120° E
What country are you in? Philippines
Your Treasure is Here: 20° N 45° E
What country are you in? Saudi Arabia
What cardinal direction must you travel to get to your treasure? NW

You are Here: 45° N 60° E
What country are you in? Aral Sea
Your Treasure is Here: 15° S 40° E
What country are you in? Sudan
What cardinal direction must you travel to get to your treasure? SW
You are Here: 30º N 30º E
What country are you in? Egypt
Your Treasure is Here: 75º N 60º W
What country are you in? Greenland
What cardinal direction must you travel to get to your treasure? NW

You are Here: 1º S 60º W
What country are you in? Brazil
Your Treasure is Here: 45º S 170º E
What country are you in? New Zealand
What cardinal direction must you travel to get to your treasure? SW

Longitude/Latitude KEY
15º N 30º E Sudan
15º N 120º E Philippines
20º N 45º E Saudi Arabia
20º N 80º E India
30º N 30º E Egypt
30º N 90º E China
40º N 140º E Japan
45º N 60º Aral Sea
45º N 120º E China
60º N 30º E Russia
60º N 90º W Canada
75º N 60º W Greenland
1º S 60º W Brazil
15º S 40º Sudan
30º S 120º E Australia
40º S 150º E Australia
45º S 170º E New Zealand