Marine Navigation Using a Compass Rose
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Grade 4
Time: Approximately 70 min.

Sources Consulted/References


Teaching and Learning Objectives

1. Students will become familiar with using cardinal and intermediate directions to describe relative locations of significant places in the U.S. by viewing and listening to information on the compass rose, practicing with a compass on locating objects/reference points inside/outside the classroom, and using directional skills to guide a fictional ship through U.S. water bodies.

2. Students will be able to give answers to a reasonable degree of precision in the context of a given problem by recording and dictating the approximate cardinal and intermediate directions of specific locations.

Michigan Grade Level Content Expectations

Social Studies

Geography: The World in Spatial Terms 4-G1.0.2: Use cardinal and intermediate directions to describe the relative location of significant places in the U.S.

Mathematics

Measurement: Measure using common tools and appropriate units M.PS.04.02: Give answers to a reasonable degree of precision in the context of a given problem.

Materials

Overhead Projector
Overhead Transparency of Compass Rose (Figure 2-16 in sources)
Approx. 20 Hand-Bearing Compasses (1/student)
Large Map of United States, including vivid, labeled outline of Great Lakes & Mississippi River
Notebooks
Pencils
Popsicle Sticks w/Labeled Students’ Names for Partner Selection

**Learning Plan**

1. Teacher explains learning objectives and checks for prior knowledge by asking students who’s familiar with cardinal directions, such as N, S, E, & W, and who has used a compass or a map to locate anything.
2. Show overhead transparency of compass rose.
3. Ask students to stand and face the 4 cardinal directions, as directed by teacher.
4. Explain hand-bearing compasses.
5. Teacher gives compass to each student and assigns approx. 5 students to each of the 4 walls of the classroom (N, S, E, W).
6. Students practice using compass by facing all 4 cardinal (plus intermediate if able) in assigned section of classroom.
7. Students use notebooks to record 1 object from their section of classroom and 1 reference point outside the classroom, such as a playground or city, far or near, facing the same direction as classroom wall.
8. Return to seats and share findings
9. Students refer to U.S. map in front of classroom. The teacher explains they will be working together to navigate a fictional ship through U.S. water bodies.
10. Teacher selects 2 student names from a cup of popsicle sticks and dictates them to locate the Atlantic Ocean on the U.S. map. She points to the St. Lawrence Seaway and asks one of the pair to drag a finger from the Seaway to Lake Ontario, with the other student guiding on location, and reciting the cardinal and intermediate directions traveled (pretending finger is navigating ship).
11. 2 more student names selected to do same task from L. Ontario to L. Erie.
12. …from L. Erie to L. Huron
13. …from L. Huron to L. Michigan
14. …from L. Michigan to L. Superior
15. … Beginning at tip of Mississippi River in Minnesota to Wisconsin
16. ….from Mississippi R. in Wisconsin to Iowa
17. …from River in Iowa to Illinois
18. …from River in Illinois to Missouri
19. …from River in Missouri to Tennessee, Arkansas, Mississippi, Louisiana, and Gulf of Mexico.
20. Wrap-up discussion/questions of objectives met.

**Lesson Assessment**

1. Teacher checks prior knowledge of directional skills/compasses/mapping by hand raising and discussion.
2. Classroom participation check. 3. Notes on objects/reference points-10 points.