

Task: Basic Compass

Task Description

Students develop basic skills in using a compass.

Background

A compass is a tool used to locate magnetic north (located near the northern Islands of Canada) and to determine direction, which is measured in degrees. The two basic parts of the compass include the housing (360-degree dial) and base plate. The base plate is used to hold onto while turning the housing; it also contains the direction of travel arrows, which point away from the user. For an accurate reading, the compass should be held flat in the palm of the hand. The housing contains the four cardinal directions and degrees, which are laid out in two-degree intervals. The magnetic needle's red half points to magnetic north, and the index line serves as a point to get the direction of your travel.

Additional Information and Resources

Learning Orienteering Step by Step, Gunnar Hasselstand

Be Expert with Map and Compass, Bjorn Kjellstrom

Video: *Directions* (JCPS AV #2104)

Materials

Student's reproducible page

Compass for individual or partners

Discussion Questions

How can the compass be useful in your life?

Organization of Tasks (how to implement this lesson)

1. Have students locate each part of the labeled compass (student's reproducible page) on the real compass.
2. Demonstrate how to hold the compass properly (flat on upturned palm with direction of travel arrows pointing away from the compass holder).
3. Align compass to north:
 - a. While holding compass correctly, turn 360-degree dial so that $N(0$ degrees) is aligned precisely over the index line.
 - b. Turn your body slowly until the red end of the magnetic needle is pointing to $N(0$ degrees) on the 360-degree dial. You are now facing magnetic north.
4. Set a bearing (a direction to travel), e.g., "We want to travel east."
 - a. Turn 360-degree dial so that $E(90$ degrees) is aligned precisely over the index line.
 - b. Holding compass correctly, turn your body until the red end of the magnetic needle points to N on the 360-degree dial. Follow direction-of-travel arrows to go east.
5. Have students determine in groups or individually which shapes are represented for each set of bearings on student's reproducible page.

Knowledge-Work Planner: Basic Compass

Core Content:

- Geometry
- Measurement

Blackacre:

- Basic Compass

School:

- Students develop their own shape and corresponding set of bearings. Have students trade bearings and figure out what shape is represented (blacktop works well with chalk).

Classroom:

- Students predict and then determine which classroom walls are N, E, S, or W. Students become familiar with parts of a compass and how to hold it properly.

Community:

- Students make lists of places or objects in the community found N, S, E, and W of their classroom.
- Students examine careers that use compasses as tools of the trade.
- Students research how compasses changed the world of navigation.

Student Learning

Assessment and Student Products

Core Content:

Science

Social Studies

Reading

Writing

Mathematics

Arts and Humanities

Practical Living

What's Next?

Thinking Beyond . . .

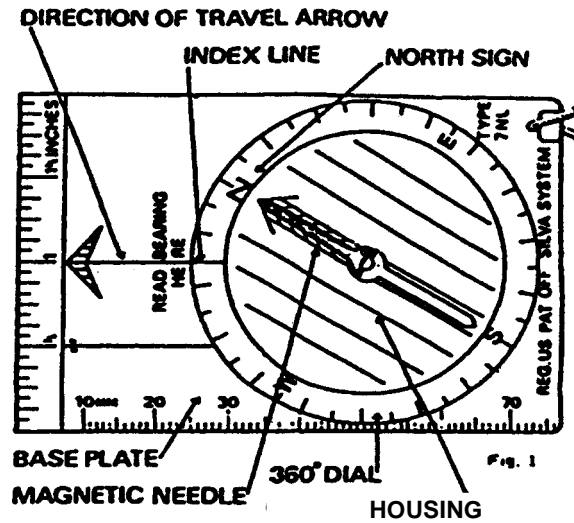
Basic Compass

Name three (3) parts of a compass and explain how they work together to help a person get from point A to point B.

Literature

Land Navigation Handbook—The Sierra Club Guide to Map and Compass, W. S. Kals

Basic Compass



Using the materials provided, determine the shape each set of bearings produces.

- 360—two steps
- 120—four steps
- 360—two steps
- 240—four steps

- 340—two units
- 90—three units
- 200—two units
- 270—one unit

- 270—two steps
- 330—two steps
- 30—two steps
- 90—two steps
- 150—two steps
- 210—two steps

- 360—two steps
- 90—two steps
- 180—two steps
- 270—two steps

- 360—three steps
- 120—three steps
- 270—three steps

Now create one of your own!