

Situation

Experiment with magnetism!

Problem & Career Focus

Have you ever wondered how some boats can find their way in large bodies of water? In ancient times, navigators used science and nature to determine where they were! Your task is to research what compasses are used for and create one that can float in water with your team of surveyors, cartographers, and aeronautical engineers. How is navigation difficult without a compass? What are ways we use compasses to help us get around today with the help of technology?

Things to Consider

1. How does a compass use magnets to determine direction?
2. Who uses compasses for navigation?



STEM Ahoy! DIY Compass Challenge

Criteria:

Create a compass with homemade materials!

Materials:

Suggested Items:

- * Scissors
- * Cork or styrofoam
- * Sewing needle
- * Magnets
- * Container for water
- * Adult supervision!

Educational Standards Correlations

Language Arts, Engineering, Science, Physics, Mathematics

Constraints:

- * Use materials as directed
- * Work as a family engineering team!
- * Create your own criteria!

Investigating Questions:

What parts of your compass help determine north?

Why does the compass eventually stop working?

What steps of the engineering design process did you use?