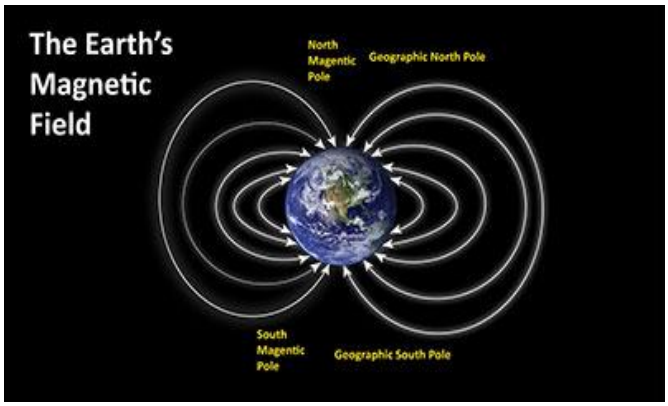
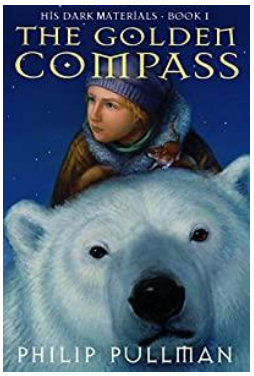
MAGNETISM: Making a Water Compass (6-8)

KEY CONCEPTS:



- A **magnet** is a piece of iron (or an alloy) which has its atoms lined up to exhibit magnetism (attracting and repelling other metal objects).
- **Magnetic fields** are created by rotating electrical charges. Earth produces a magnetic field and has a north and south magnetic pole.
- A **compass** uses a magnet to align itself with the earth's poles, indicating direction.



LITERACY CONNECTION:

Think of books like *Northern Lights* by Philip Pullman (also known as *The Golden Compass, Book 1)* or the *Pirates of the Caribbean* movies and Jack Sparrow's compass. How do you suppose these are different from a traditional compass?
Don't have the book? Click on the titles above for free online access.

ACTIVITY: WATER COMPASS

Materials: small bar magnet / refrigerator magnet, cork / foam, water, bowl, paperclip/needle

TIP: Use a needle and cork OR a paperclip and foam (shown here)

1. Rub a paperclip (or needle) in the same direction across the magnet 50 times
2. Slide the paper clip on to one end of the foam shape OR carefully push the needle through the cork so it sticks out of both ends (you might have to cut the cork shorter)
3. Float the "fish" in a bowl of water and watch it line up north to south all by itself!

What is happening? Your compass can align itself with the earth's magnetic fields because the water allows it to rotate freely.

EXPLORE: visit the Nationals Park Service or Scientific American for more activities to try with your water compass.

For step-by-step instructions, watch the video at: Water Compass STEM Activity

This at-home educational activity is from the Literacy Coalition of Palm Beach County's literacy-based Stories & STEM program.

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Having fun? Send pictures or video links of you and your Stories & STEM projects to csharkey@literacypbc.org