In this activity,

You’ll investigate the magnetic compass and how simple they can be. You will also understand the basic directions: North, East, South, West.

Idea to Explore

Amelia Earhart was a skilled and trailblazing pilot. She was the first woman to fly a plane across the Atlantic Ocean, along with many other accomplishments. She was and still is considered a superhero to many people today, inspiring generations of pilots, including women aviators in the WASPs during World War II. Part of being a superhero pilot is having to read flight instruments in order to fly safely, navigate and know what your plane is doing. You’ll explore navigation using one of the most basic flight instruments available to a pilot, a compass.

Words to Know:

**Navigation** – finding your way from your starting point to your ending point.

**Flight instruments** – tools that help pilots know the position of their plane.

**Compass** – an instrument that shows what direction you are heading.

**Magnet** – a rock or metal that can pull certain types of metal toward itself. Magnetism is a force of nature, like gravity.

**Cardinal directions** – The basic directions of a compass: North, South, East, West
Stuff You’ll Need:

- Small bowl
- Leaf
- Needle
- Magnet
- Water

Possible Supply Substitutions

The small bowl or cup can be glass or plastic, and any size, as long as it is wide enough to fit the needle. Instead of the leaf, you can use a plastic straw that is cut to the size of the needle or a piece of parchment paper. Anything will work to hold the needle, as long as it is waterproof and can float. Instead of a needle, you can use a small nail or paperclip.

Make It!

Step One
Take your small bowl and fill 2/3 with water

Step Two
Hold the needle on one end then hold the other end against the magnet.

Watch the video above. Move the needle across the magnet from one end to the other. Repeat about 20 times.
Step Three
Place leaf in the water and place the needle on the leaf. Make sure the magnet is not near the needle!

Step Four
Watch what happens. What is the needle doing? What happens when you place the magnet next to the needle? Try moving the magnet around the cup next to the needle.

Make it Connect!
In your neighborhood, or your yard if you’re more comfortable, try finding landmarks for each direction. For example, my neighbor’s home is to the north. I live across the street from a library, that’s to the west. There is a big tree to the south.

Try planning a route within your home or outside, just like Amelia did before she crossed the Atlantic. For example, imagine you are walking from your bedroom to the kitchen. Which direction do you have to walk? At some point, do you have to make a turn, and walk in a new direction? Walk the route with your compass to find out!
Want More?

During your next visit to The Museum of Flight, check out the Lockheed Electra, the same model of plane flown by Amelia Earhart!

Middle schoolers! Interested in learning more about navigation? Plot Your Course - Navigation

Modern Navigation – GPS

Interested in learning more about Amelia Earhart? Visit The Museum of Flight Store to find some books for all ages! Museumofflightstore.org

Share it!

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