



CHALLENGE

Make a working compass that shows the four cardinal directions.

ES



GET
YOUR
GEAR



paper plate



play dough



horseshoe magnet



sharpened pencil



HINT:

Balance the magnet on the point of the pencil so it can spin freely.



Magnets are attracted to some metal, and to other magnets. What is the magnet in your compass attracted to?



Why does the pencil have to be sharpened? Is there a different tool that would work well in its place?



This compass is too big to take on a hike. Redesign it so that it is smaller and portable.



Look at compass designs. Create your own compass design on the paper plate.



The pencil needs to be perpendicular to, or at a right angle to, the paper to work correctly. How can you check the angle?

WHAT'S GOING ON?

Compasses have a magnetic needle that moves freely. It always points north, but why? Earth is magnetic. The North and South Poles are like the north and south poles of a magnet. They are strong enough to pull the light compass needle to the correct direction.

Earth's magnetic field reaches into space. The magnetic poles are close to the North and South Pole, but are not in exactly the same place.