

SECTION 3: THE MAGNETIC POLES AND THE COMPASS

LAB

INTRODUCTION

Each magnet has a north and a south pole. When two north or two south poles are put together the magnets repel. When a north and a south pole of two magnets are put together, they attract. Ring magnets can be stacked on a pencil to make the magnetic forces between the rings visible.

The compass needle is a magnet and is attracted to the poles of the Earth. (North and south poles). The magnetic North pole is near the Prince of Wales Island in northern Canada, 1,200 miles from the geographic North Pole. Compasses point to this spot and not the true north.

ASSESSMENT ANCHORS ADDRESSED

- S4.A.2.1** Apply skills necessary to conduct an experiment or design a solution to solve a problem.
- S4.A.2.2** Identify appropriate instruments for a specific task and describe the information the instrument can provide.
- S4.C.1.1** Describe observable physical properties of matter.
- S4.C.3.1** Identify and describe different types of force and motion, or the effect of the interaction between force and motion.

PURPOSE

Students use ring magnets to student the strength of magnetic fields. Then students will apply what they know about magnetic fields while experimenting with a compass. To further understand how a compass works, the students will use a cup of water, alnico magnet, and a magnet boat to make a compass of their own.

MATERIALS

For Each Pair of Students	For the Teacher:
2 ring magnets	pencil*
1 alnico magnet	colored dot stickers
1 ferrite magnet	8 ring magnets
	2 bar magnets (N-S poles)

*Teacher provides items marked with **