

Station Instruction Sheet

Station 1: Ring Magnets

Put two ring magnets on the pencil so that the magnets repel each other. Hold the bottom ring and move it up and down along the pencil. What happens?

Next, hold one ring between your thumb and forefinger. Hang the second ring on the first ring edge to edge. Can you make the second ring travel round the first ring in a circle?

Station 2: Magnetic Separation

Use a magnet to remove iron filings from the mixtures in the beakers.

How does this work? Why can you separate the mixtures using a magnet?

Station 3: Magnetic Pole Identification

Use the small magnet or a compass to determine which pole of the large magnet is the N pole and which is the S pole.

Which is the N pole of the large magnet, pole 1 or 2?

Station 4: Magnetic Loops

Put a magnet under the Petri dish or Plexiglas. Sprinkle some iron filings on the plastic surface. What shapes do the iron filings make?

Try this with magnets of different shapes and sizes. Do they make different shapes?

Draw a picture showing the shape of the magnetic fields for two different magnets.

Station 5: Magnetic Prediction

Which objects do you think will be attracted to the magnet?

Before you test the objects, list them in the worksheet table, and predict which you think will be attracted to the magnet.

Then, test each object by touching the magnet to it. Which objects stick to the magnet? Which do not? Record your results in the worksheet table.

What do the objects that are attracted to the magnet have in common?

Station 6: Make Your Own Magnet

Pick up the nail, knock it against the table top and touch its point to a paper clip. Does the nail behave like a magnet, or not?

Next, rub the magnet against the nail to magnetize the nail. Make sure to rub it in only one direction (not back and forth). Now, how many paper clips can you pick up with the nail?

Demagnetize the nail by knocking it against the table top. How do you know it is demagnetized?

Now magnetize the nail again. How can you make the nail a stronger magnet using only the materials at the station? How can you test your idea?

Remember to demagnetize the nail before you move to the next station.