**Section 3** 

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**Understanding Matter and Energy** 



### **"Fly" a kite with a magnet!** Explore how magnetic force can move things.

A force can be a push or a pull and can also be direct or indirect. When you open a door, you apply a direct force by pulling the handle. When you hold a magnet close to a paper clip, the magnet exerts an indirect pulling force and draws the clip toward it. How are magnets able to move things without even touching them? Also, are magnets able to move all types of things? Try the experiment to find out how magnets work.

magnetic items

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non-magnetic

items

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# "Fly" a kite with a magnet!

Try this experiment to observe how a magnet works and how strong magnetic force can be.

#### **Materials:**

- a magnet
- thread
- a paper clip
  - tape
- a small piece of paper

#### **Steps:**

Attach the paper clip to a corner of the kite (the small piece of paper). Tape a piece of thread at the opposite corner of the kite and tape the other end of the thread to a table. Bring the magnet close to the paper clip but do not let the magnet touch it. Then lift the magnet up slowly to make the kite "fly". Also try moving the magnet away from the kite slowly until the kite falls. Try this a few times and observe.

When you brought the magnet close to the paper clip, the magnet attracted the paper clip because the paper clip entered the magnet's magnetic field. As the magnet was moved farther away from the paper clip, the paper clip was no longer in the magnetic field; no force was exerted to keep the kite flying and so it fell.

All magnets have a magnetic field - an area around a magnet where its magnetic force affects other objects.

If you don't have a horseshoe magnet like this one, a bar magnet works too. **Section 3** 

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## "Fly" a kite with a magnet!

The girl taped some objects on the paper fish. Circle the ones which the girl can catch with her magnet.



Only some metals, like iron and nickel, are attracted to magnets. Many materials, like cotton and wood, are non-magnetic, which means that they are not attracted to magnets.