EXPERIMENT MANUAL

little labs

MAGNETS

THAMES & KOSMOS

WARNING — Science Education Set. This set contains chemicals and parts that may be harmful if misused. Read cautions on individual containers and in manual carefully. Not to be used by children except under adult supervision.

DEAR PARENTS,

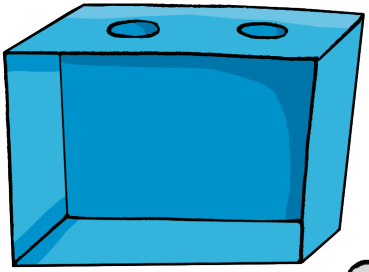
With this experiment kit, children as young as six years old will be able to perform their first exciting experiments.
Experiments, astonishment, and play are all closely related, so it's good to offer plenty of fun if you want kids to learn. But even though the experiments here are easy, they won't necessarily come off without some help. So please do help your little researchers, particularly since the curiosity and powers of comprehension of children are more advanced than their manual abilities. And please make sure to assist your children in getting any materials they may need in addition to the ones contained in the kit.
Because the experiment kit was designed with young researchers in mind, the read-aloud explanations have been kept as simple as possible.

Have fun with the experiments!

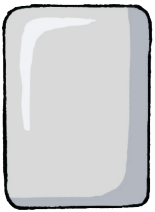
Store the experiment kit out of the reach of small children and pets. NOTE! Not suitable for children under 3 years of age. There is a risk of suffocation, due to small parts that might be swallowed or inhaled.

CAUTION! Do not bring the magnets near music cassettes, computer diskettes, or video tapes. The data stored in them might get damaged or lost.

CONTENTS



Experiment box



Box of iron filings

Magnetic rod

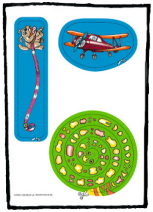
Metal washers

Magnetic ball

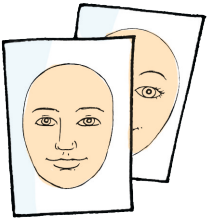
Game boards

Paper clips

Wand



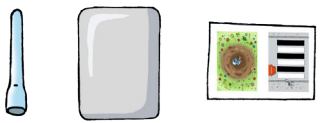
Cut-out sheet



Faces

Two-prong fasteners

EXPERIMENT 1



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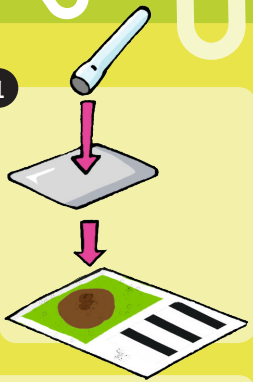

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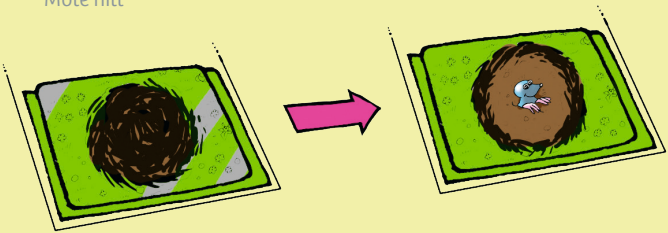
Mole hill



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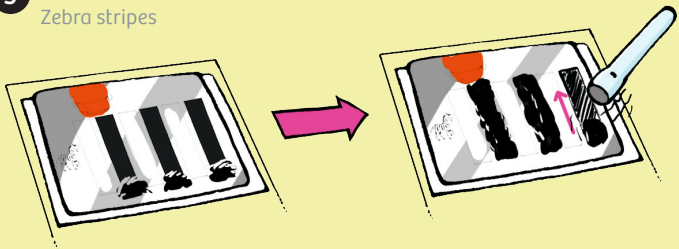
Zebra stripes



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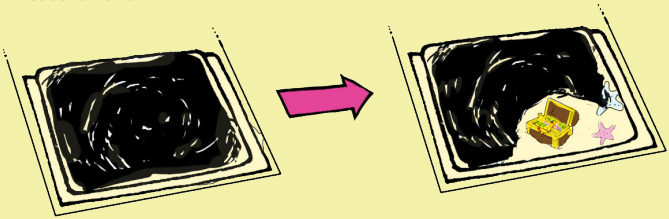
Treasure hunt



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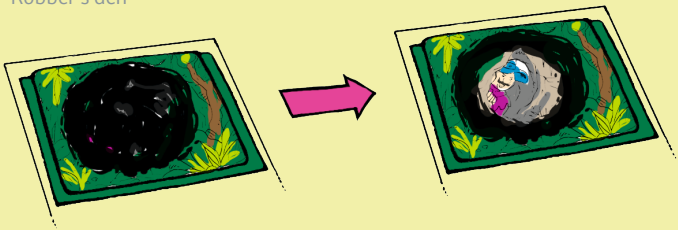
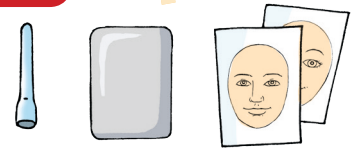
Robber's den



HERE'S HOW

Over 2500 years ago, people discovered chunks of rock and mineral with a strange property: They attracted pieces of iron. These became known as "magnets." Here, your magnetic rod is attracting the iron filings in the box.

EXPERIMENT 2



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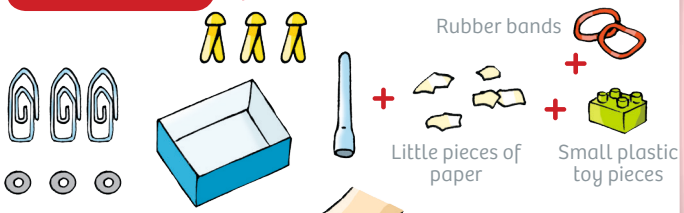
EXPERIMENT 3



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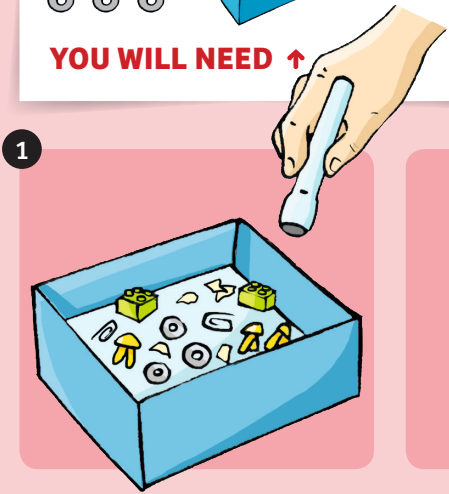
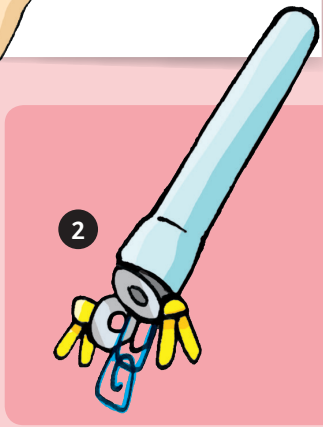
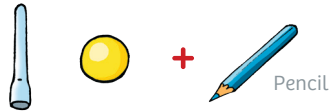




HERE'S HOW

The magnet only attracts pieces of iron — the other items aren't magnetic, so they get left behind. In trash separating facilities, powerful magnets are used to separate scrap iron from other materials.

EXPERIMENT 4



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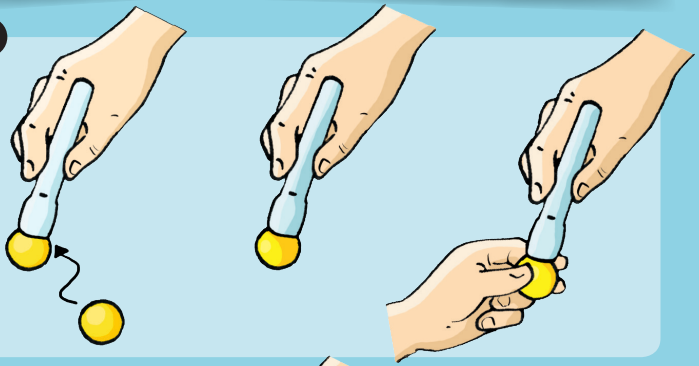

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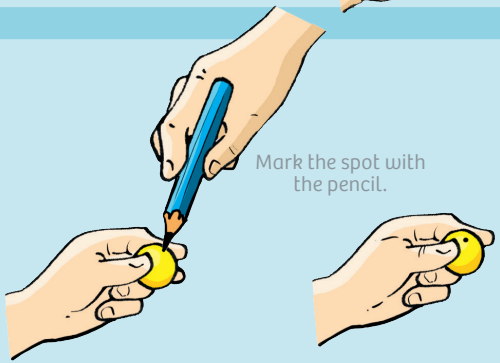

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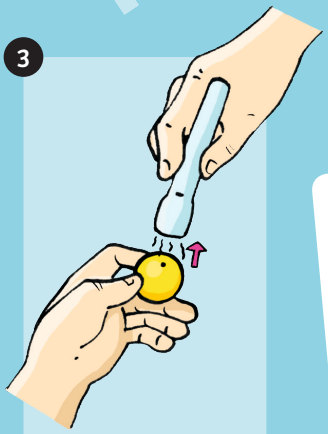
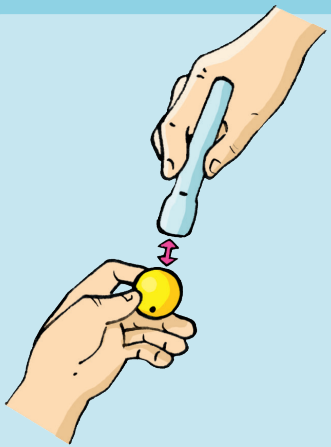


HERE'S HOW

All magnets have two different ends — the north pole and the south pole. Like poles repel each other, while unlike poles attract.



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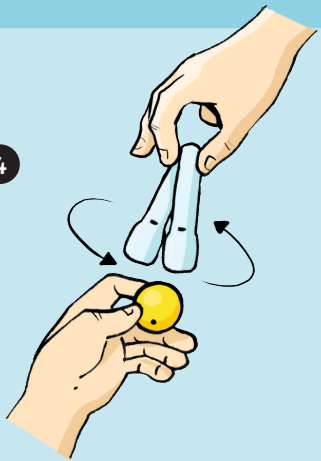
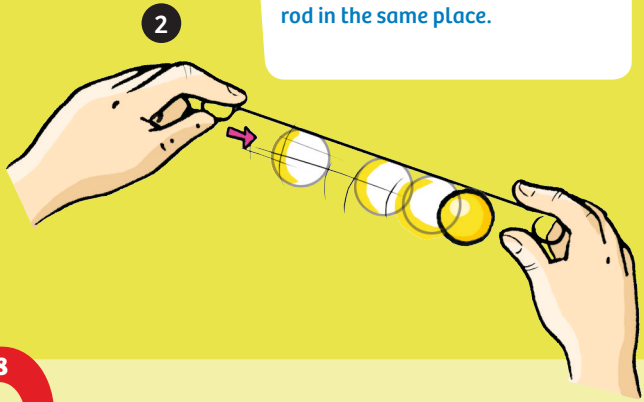


EXPERIMENT 5

YOU WILL NEED

HERE'S HOW

Because the magnetic ball is not the same all over (it has a north and a south pole), it won't roll along the bar. Look closely: It slides along, always touching the rod in the same place.



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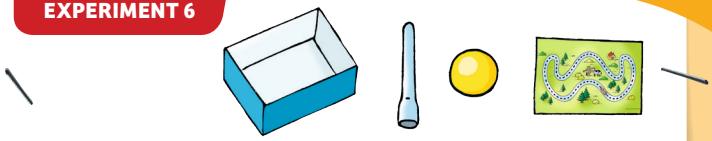

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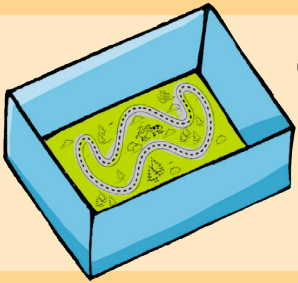

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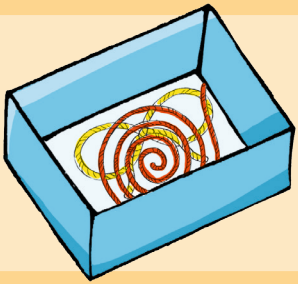

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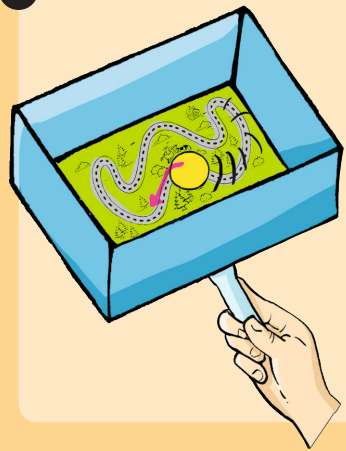
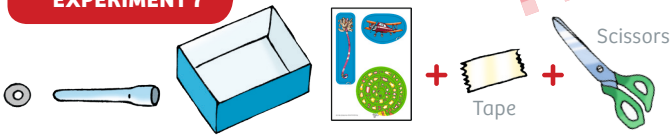


HERE'S HOW

The bottom of the game box is made of cardboard — and poses no barrier to the **magnetic force.** Try it with other materials, such as cloth, porcelain, or plastic!

EXPERIMENT 7



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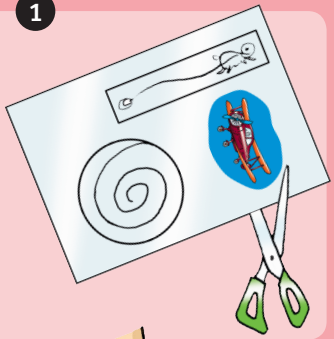

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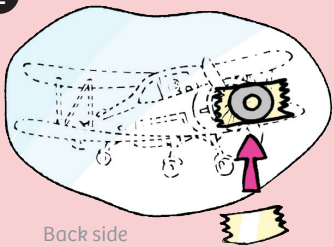

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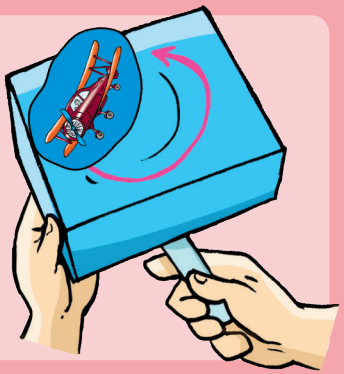

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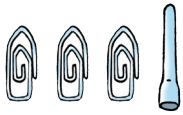

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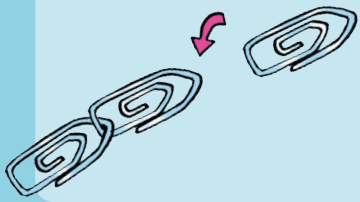
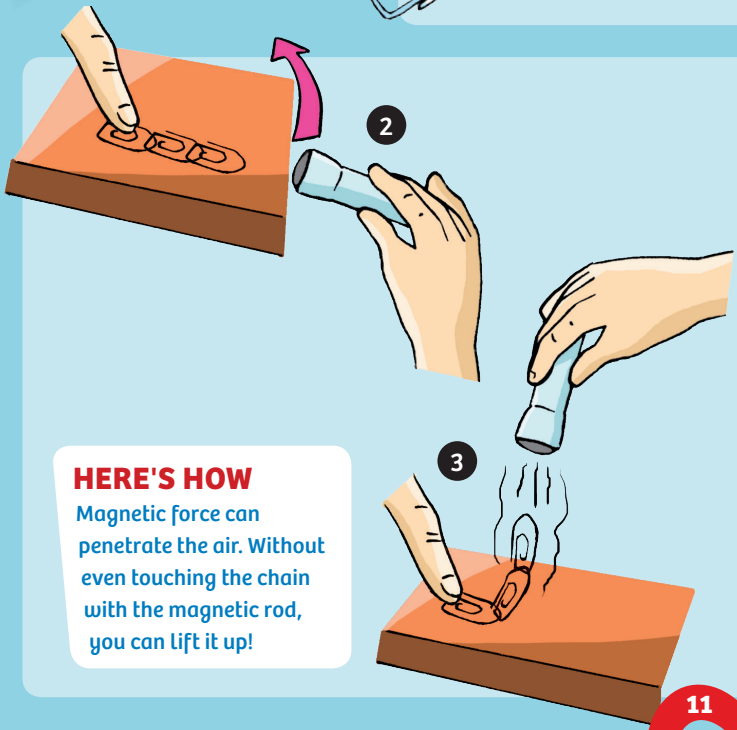
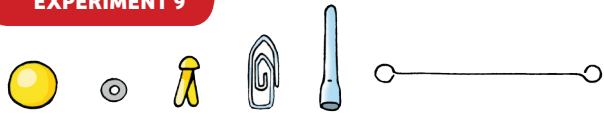




HERE'S HOW

Magnetic force can penetrate the air. Without even touching the chain with the magnetic rod, you can lift it up!

EXPERIMENT 9



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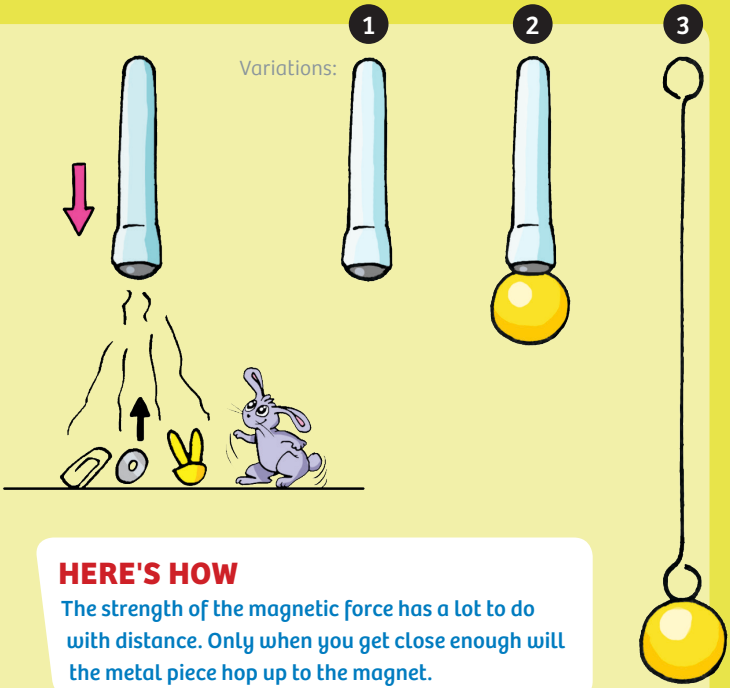
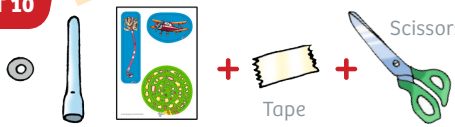


HERE'S HOW

The strength of the magnetic force has a lot to do with distance. Only when you get close enough will the metal piece hop up to the magnet.

EXPERIMENT 10



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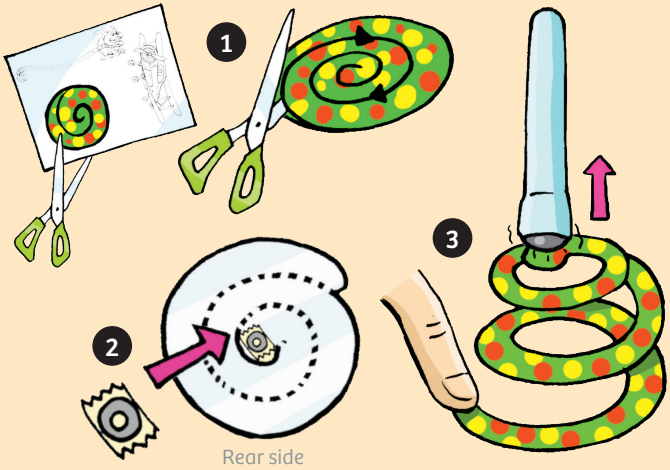
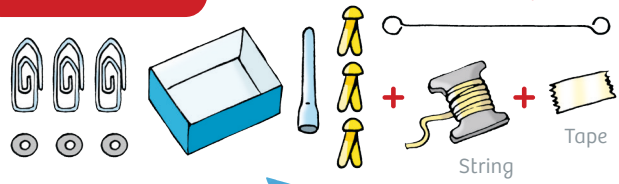


HERE'S HOW

Touch the snake's head with your magic wand — and it will rise up into the air! You are the only one who knows that magnetic forces are pulling it up...

EXPERIMENT 11



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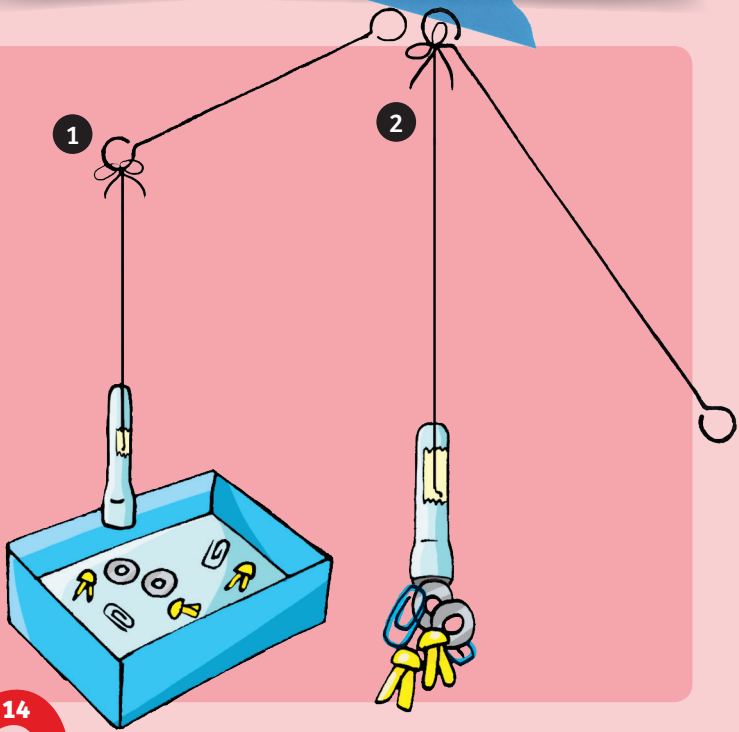
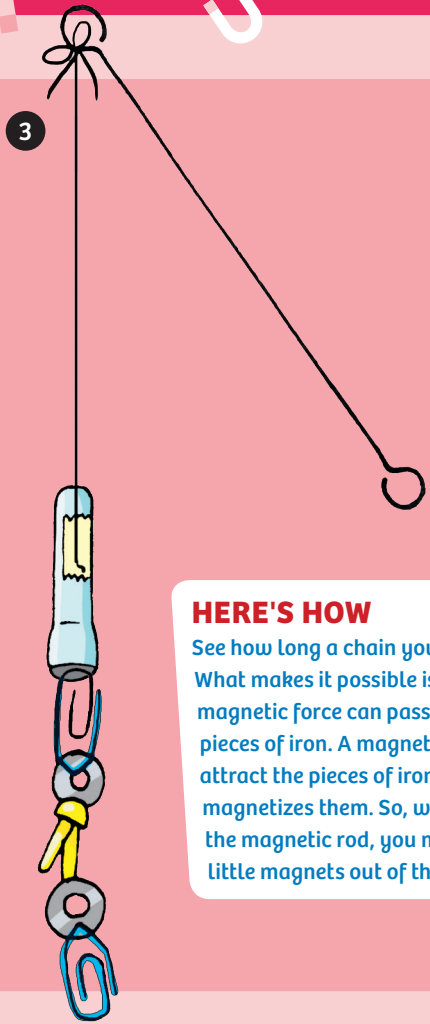
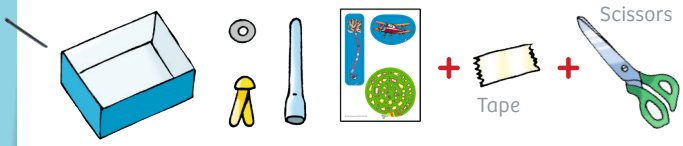




HERE'S HOW

See how long a chain you can catch! What makes it possible is the fact that magnetic force can pass through several pieces of iron. A magnet doesn't just attract the pieces of iron, it also magnetizes them. So, with the help of the magnetic rod, you make a lot of little magnets out of the iron items.

EXPERIMENT 12



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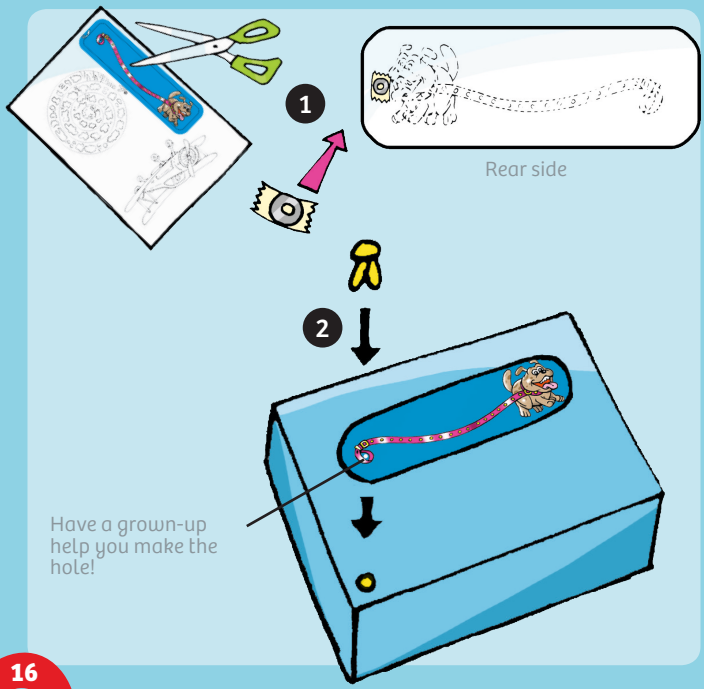
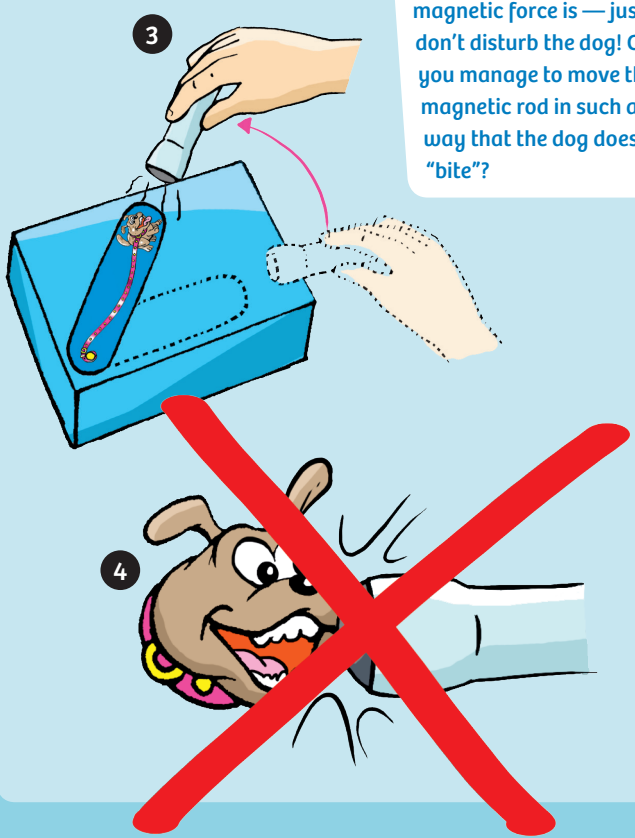


HERE'S HOW

Feel how strong the magnetic force is — just don't disturb the dog! Can you manage to move the magnetic rod in such a way that the dog doesn't "bite"?



2nd Edition 2012

Save the packaging and instructions, which contain important information.

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