EXPERIMENT MANUAL

MAGNETIC SCIENCE

THAMES & KOSMOS

What's in your experiment kit:

Checklist: Find – Inspect – Check off

✔	No.	Description	Qty.	Item No.
☐	1	Ring magnets (4) with stand	1	704 443
☐	2	Block magnet	1	704 444
☐	3	Ball magnets (set of 3)	1	709 255
☐	4	Plastic chips (approx. 25)	1	704 446
☐	5	Horseshoe and bar magnet set	1	704 447
☐	6	Compass	1	000 276
☐	7	Iron powder in plastic box	1	704 449
☐	8	Iron rod	1	011 297
☐	9	Wire	1	000 064
☐	10	Polystyrene disk	1	702 235
☐	11	Multicolored cardboard strip	1	709 280

Before doing anything else, please check all the parts against the list to make sure that nothing is missing. If you are missing any parts, please contact Thames & Kosmos customer service.

Additional things you will need:

1.5-volt AA battery, scissors, adhesive tape, glue stick, paper, cardboard, permanent marker, string, ruler, bowl, saucer, needle, spoon, water, stopwatch, thick paper, various magnetic and nonmagnetic objects from around the house

Any materials not contained in the kit are marked in *italic script* in the "You will need" boxes.

CONTENTS

CHECK IT OUT

You will find supplemental information on pages 18, 19, 25, 35, 36, 42, and 43.

EXPERIMENT 12

Hovering magnets

YOU WILL NEED

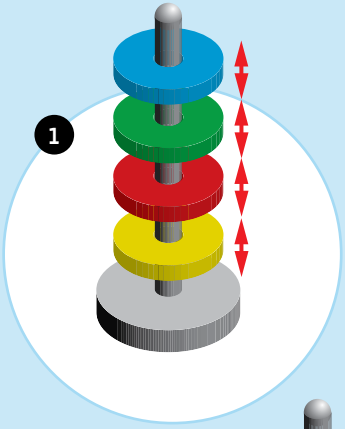
→ all the ring magnets
→ ring magnet stand

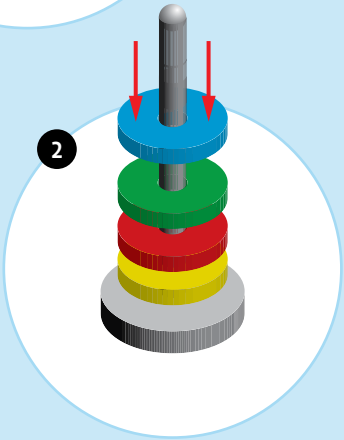
HERE'S HOW

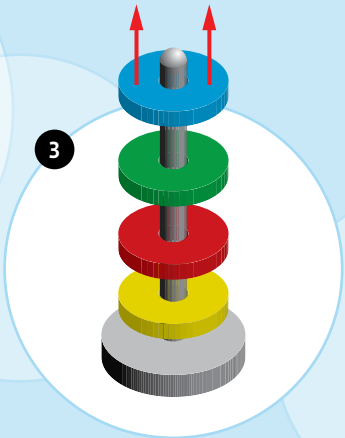
1. Stack the ring magnets one on top of one another on the stand. Be sure that all the repelling sides are facing each other, so all the magnets end up hovering in the air.

2. Push down on the top magnet a little.
   What do you observe?

3. Now carefully remove the top ring magnet.
   What happens now?







→ WHAT'S HAPPENING?

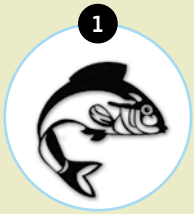
Even the very first ring magnet will hover freely a few centimeters up in the air. All of them will end up hovering above one another, as if held up by an invisible hand.

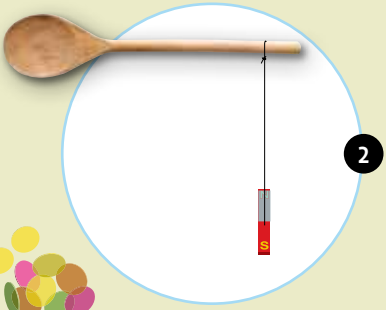
When you push down on the top ring, the lower ones will also shift down a little, even though there's no direct contact. Conversely, the lower ones will rise up a little when you remove the top ring magnet.

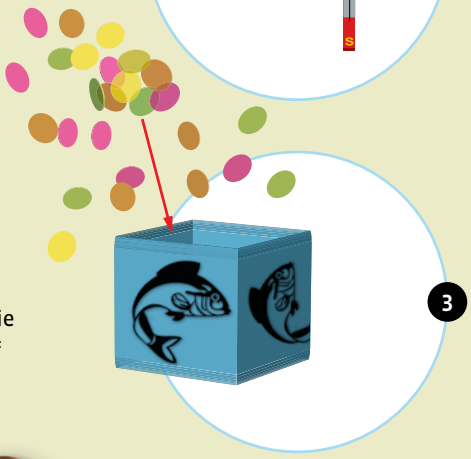
Magnetic fishing

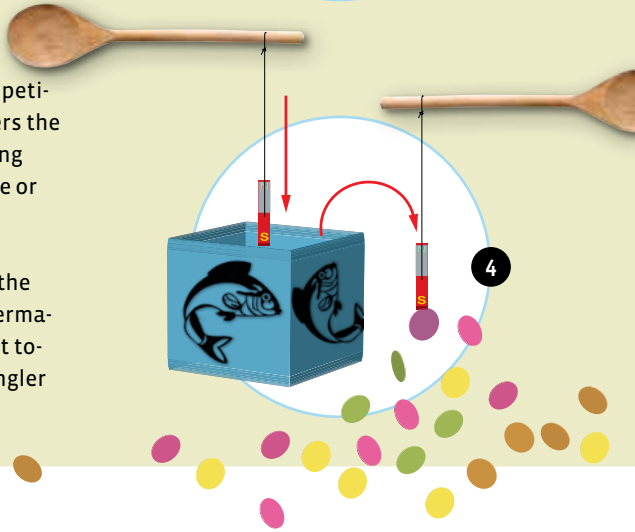
YOU WILL NEED

- bar magnet or horseshoe magnet
- plastic chips
- *tape*
- *string*
- *wooden cooking spoon*
- *colored felt-tip pens*
- *tall box*
- *paper*
- *glue stick*
- *permanent marker*









HERE'S HOW

1. Decorate the box with sheets of paper with pictures of fish drawn on them.

2. Tape the bar magnet to the string and tie the other end of the string to the end of the cooking spoon.

3. Spread the plastic chips across the bottom of the box.

4. Now you can start your fishing competition. Taking turns, each player lowers the magnet into the box (without looking into it, of course), and fishes out one or more chips.

   The winner is the one who catches the most chips. Or, you could use the permanent marker to write different point totals on each of the chips, and the angler with the highest point total wins.