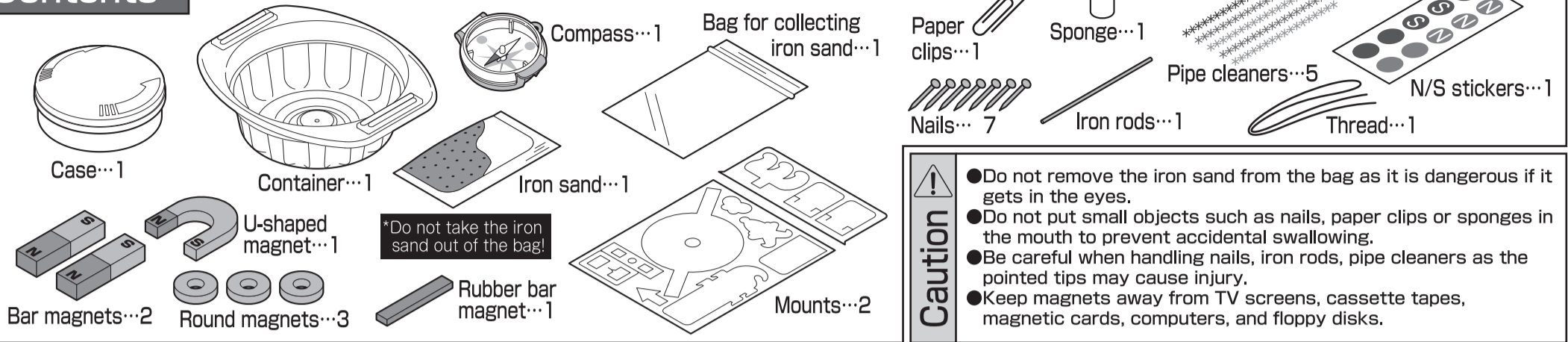


# Magnet [Type SB] Experiment Sheet

Name \_\_\_\_\_

## Contents

\*Before the experiment, make sure the contents are inside the kit.



**Caution!**

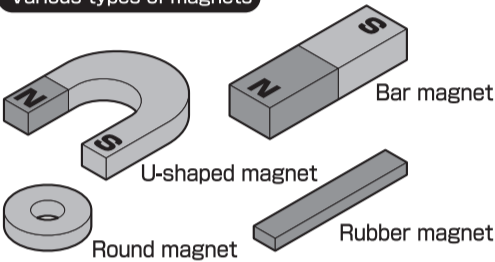
- Do not remove the iron sand from the bag as it is dangerous if it gets in the eyes.
- Do not put small objects such as nails, paper clips or sponges in the mouth to prevent accidental swallowing.
- Be careful when handling nails, iron rods, pipe cleaners as the pointed tips may cause injury.
- Keep magnets away from TV screens, cassette tapes, magnetic cards, computers, and floppy disks.

## Let's find out what can be attracted and cannot be attracted by a magnet.

### Experiment 1 What is attracted to magnets?

● Find out what can be attracted by magnets.

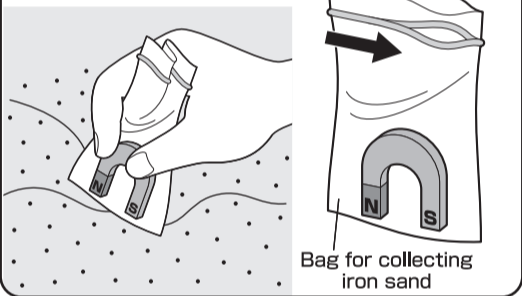
Various types of magnets



### Let's Try! Collect iron sand

● Let's put the magnets in the sandbox.

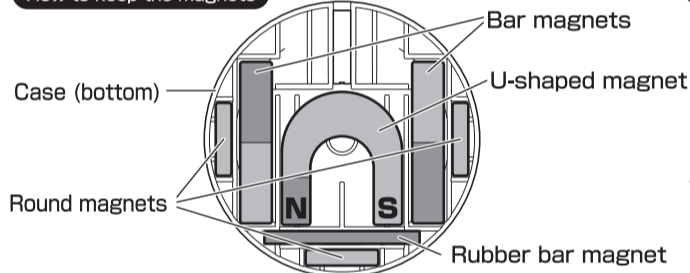
\*Place the magnet in the bag and zip it up tightly.



☆ Circle the items that are attracted to magnets and draw a cross for items that are not attracted to magnets.

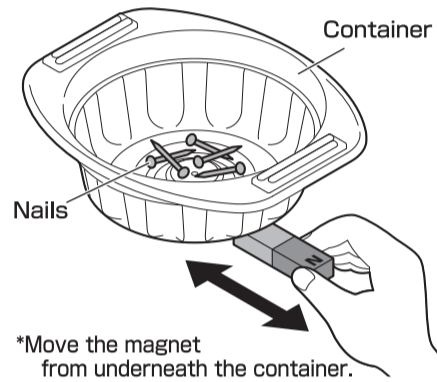
Item	Prediction	Result
Nail		
Paper clip		

How to keep the magnets



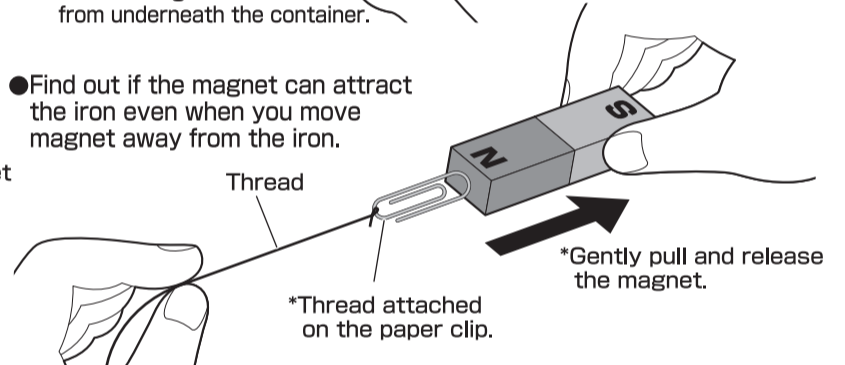
### Experiment 2 Strength of magnet

● Find out if the magnet can attract iron, even if there is non-magnetic material in-between.



\*Move the magnet from underneath the container.

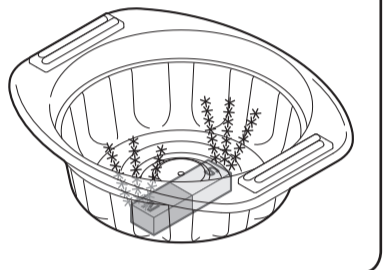
● Find out if the magnet can attract the iron even when you move magnet away from the iron.



\*Thread attached on the paper clip.

### Let's Try! Play with pipe cleaners

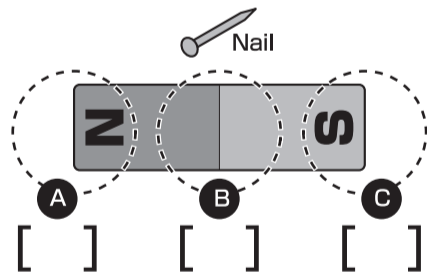
● Place a bar magnet under the container and let the pipe cleaners stand on it.



## What are the properties of the magnet?

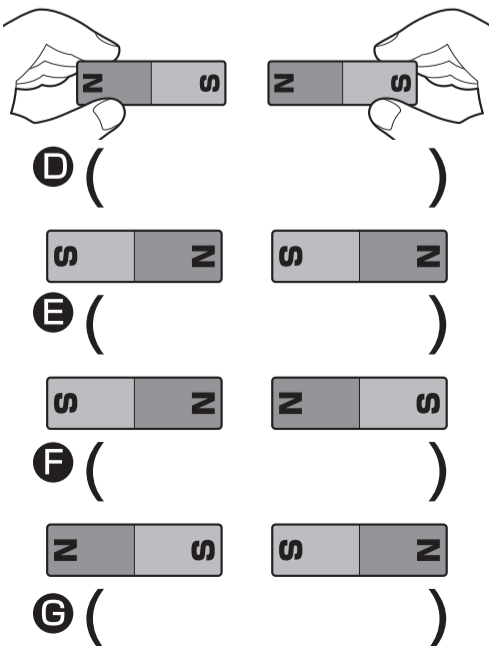
### Experiment 3 Poles of the magnet

● Find out which point (A, B, C) of the bar magnet is the nail attracted to the most.



☆ Tick in the box the point where the nail is most attracted to.

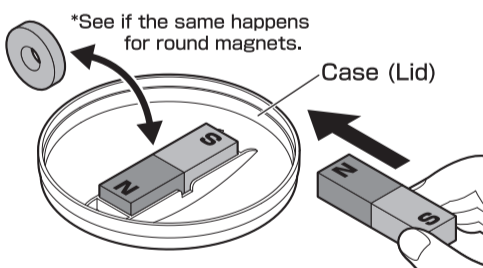
● Move the two bar magnets close to each other and check the response at points (D, E, F, G).



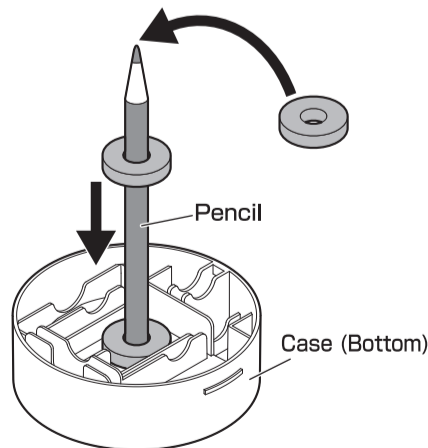
☆ Write down in the brackets what happened to the magnet.

### Various experiments with magnetic poles

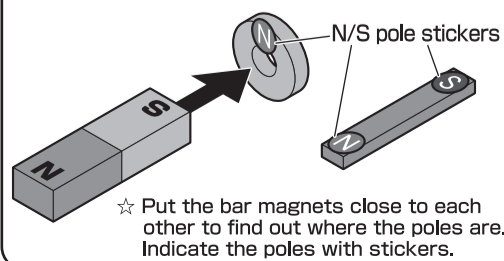
● Place a bar magnet on the lid of the case and bring another bar magnet close to it.



● Place the pencil at the bottom of the case and pass a round magnet through it.



If you do not know where are the magnetic poles



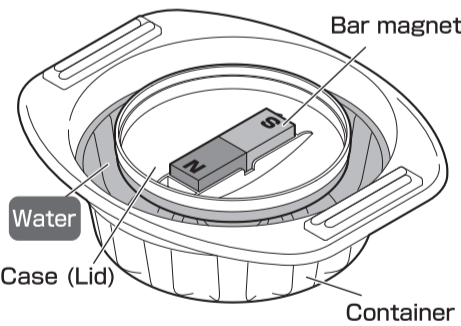
☆ Put the bar magnets close to each other to find out where the poles are. Indicate the poles with stickers.

### Experiment 4 Freely suspended magnet

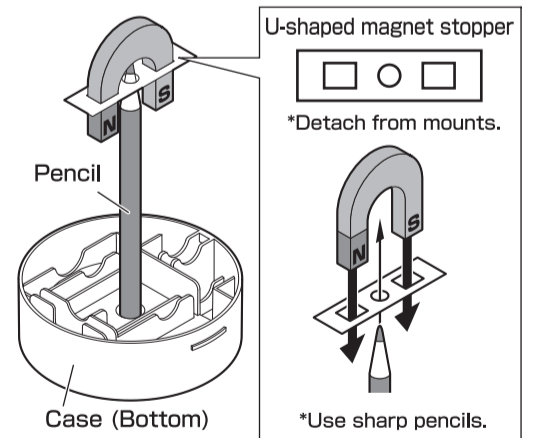
● Find out what happens to a magnet that is allowed to move freely, as shown in the diagram.

\*Make sure that no other magnets are nearby during the experiment.

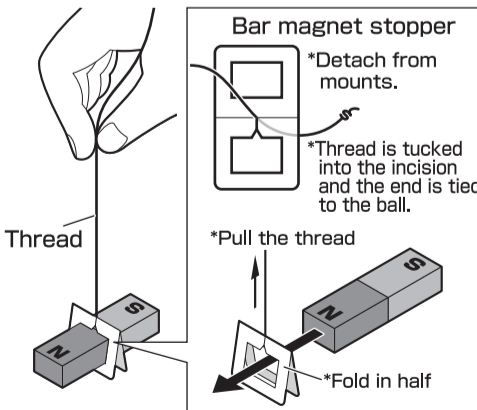
Floating on water



Placed on a pencil

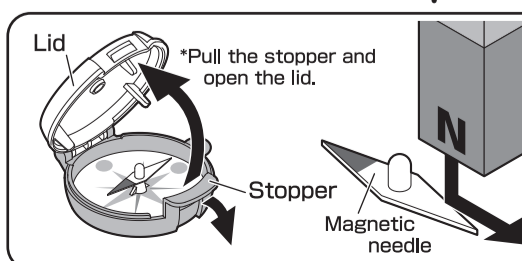


Suspended on a thread



● Compare with the compass needle to see if there are any differences in movement.

If the compass is not working

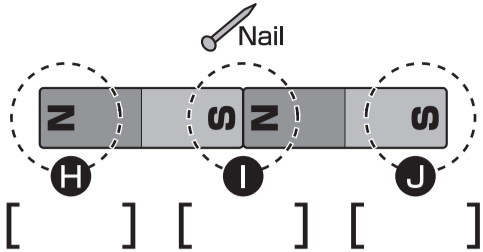


● Take the magnetic needle and rub the red side (S-pole) of the magnetic needle 2-3 times with the N-pole side of the bar magnet, as shown in the diagram.



## Let's Try! 2 Magnets

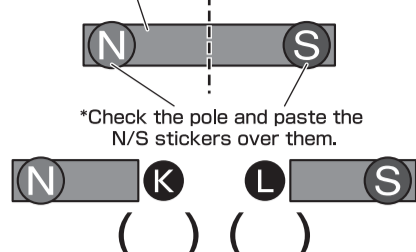
- Find out which point (H, I, J) of the bar magnet is the nail attracted to the most.



☆ Tick in the box the point where the nail is most attracted to.

- Find out what happens to the poles (K, L) when a rubber bar magnet is cut in half.

Rubber bar magnet \*Cut with scissors.

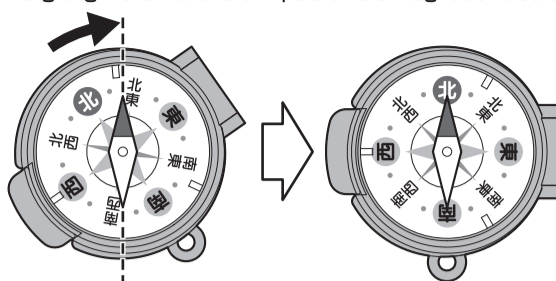


\*Check the pole and paste the N/S stickers over them.

☆ Write N or S in the brackets.

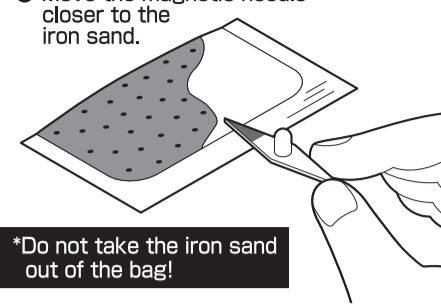
## How to use the compass

- The magnetic needle of the compass points north and south.
- Turn the compass, and find the direction by aligning 'north' with the N-pole of the magnetic needle.



## Let's Try! Is the compass a magnet?

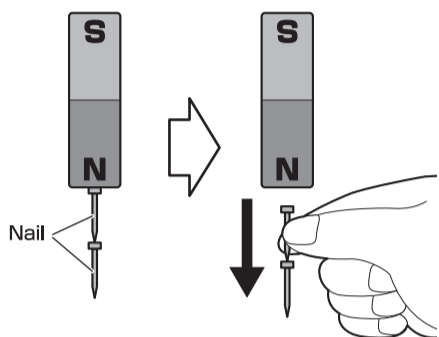
- Move the magnetic needle closer to the iron sand.



## Can iron become a magnet?

### Experiment 5 Iron attached to a magnet

- Find out what happens when a nail attached to a magnet is slowly removed, as shown in the diagram.

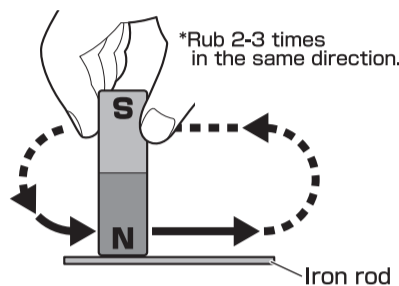


- Remove the nail from the magnet and hold it close to the iron sand or compass.

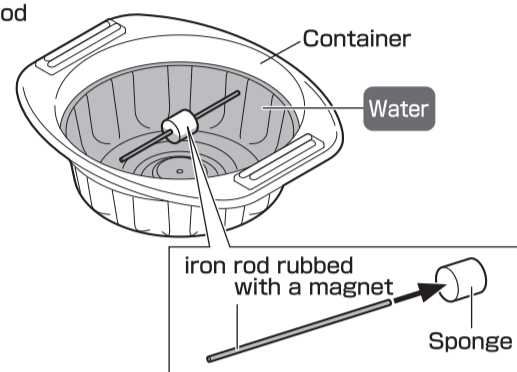


### Experiment 6 Create a magnet

- As shown in the diagram, rub the iron rod with a magnet and bring it close to the iron sand or compass.



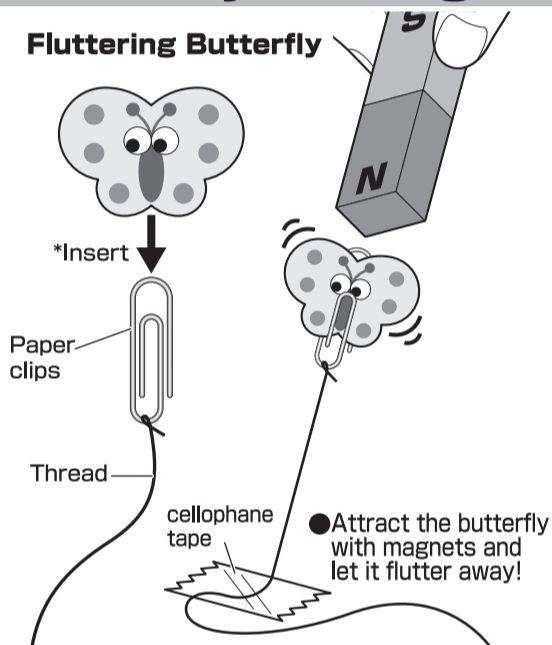
- Put the iron rod in the sponge and have it float on the water (similar to Experiment 4).



## Let's try creating a toy using magnets.

\*Create your favourite toy by cutting pictures from mounts.

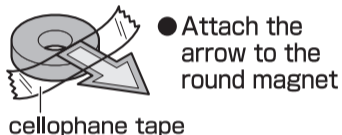
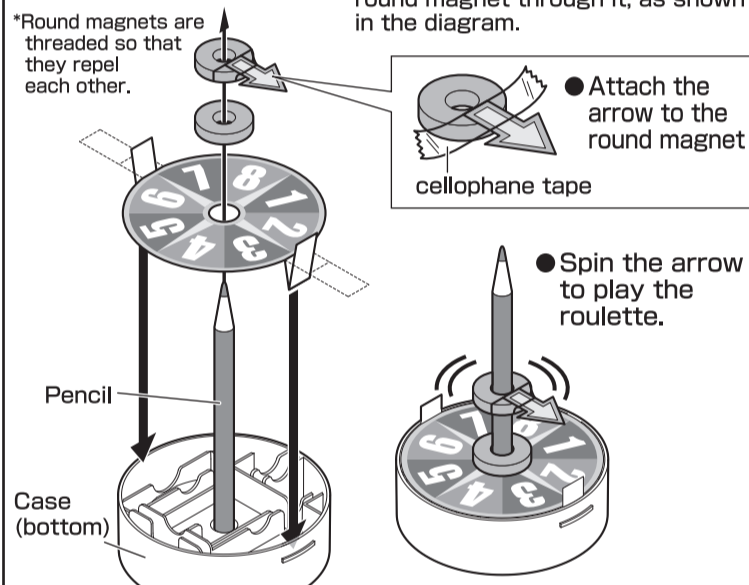
### Fluttering Butterfly



- Attract the butterfly with magnets and let it flutter away!

### Twirling Roulette

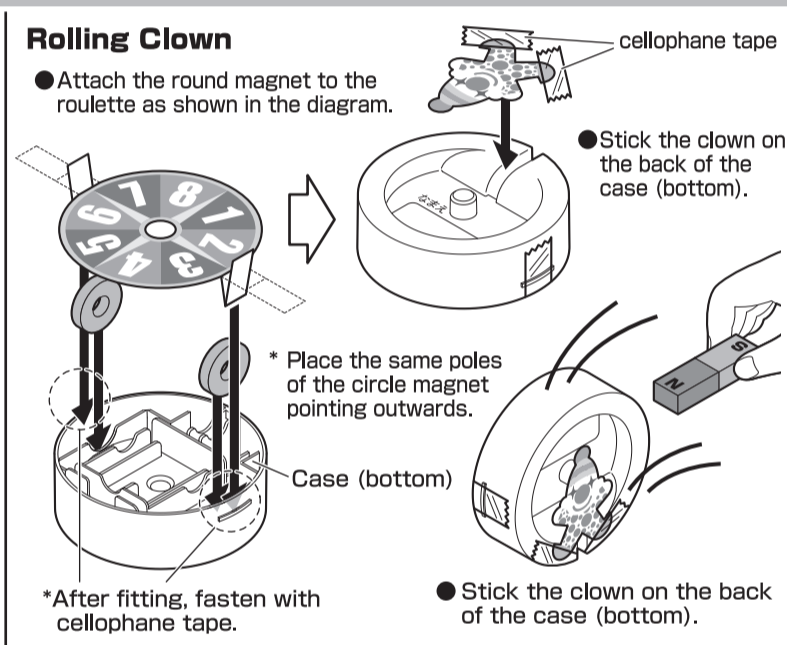
- Insert the roulette and pass the round magnet through it, as shown in the diagram.



- Spin the arrow to play the roulette.

### Rolling Clown

- Attach the round magnet to the roulette as shown in the diagram.

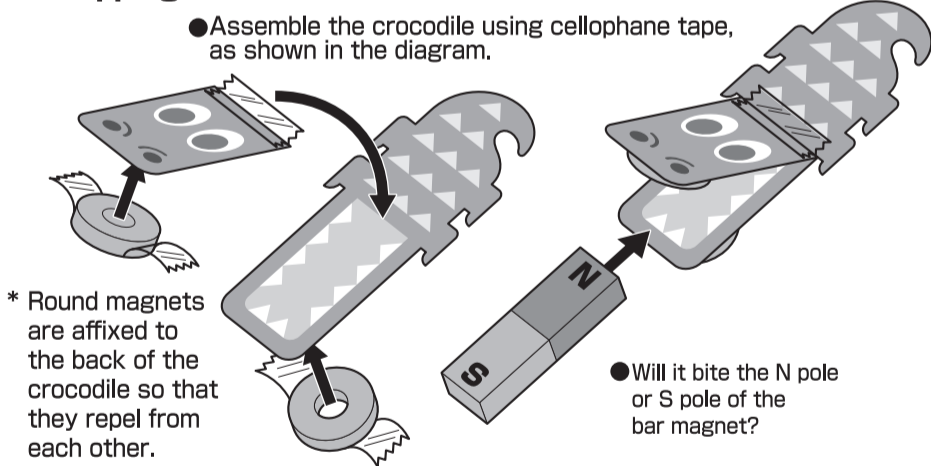


- Place the same poles of the circle magnet pointing outwards.

- Stick the clown on the back of the case (bottom).

### Snapping crocodile

- Assemble the crocodile using cellophane tape, as shown in the diagram.



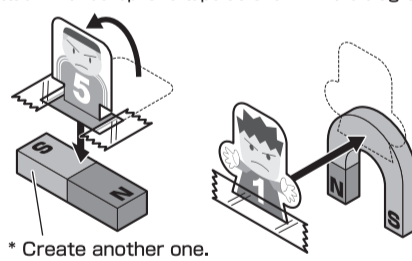
- Will it bite the N pole or S pole of the bar magnet?

### Free Kick Game

- Assemble as shown in the diagram. Be mindful of the N and S poles.

#### How to create the defender/goalkeeper

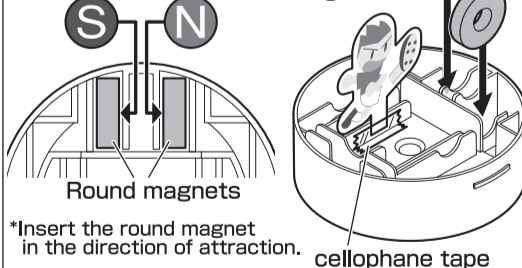
- Attach with cellophane tape as shown in the diagram.



\* Create another one.

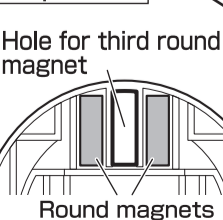
#### How to create the shooter

- Insert two round magnets as shown in the diagram.



- The third round magnet is placed in the hole in the direction of the retreating magnet and is flicked out.

#### Top View

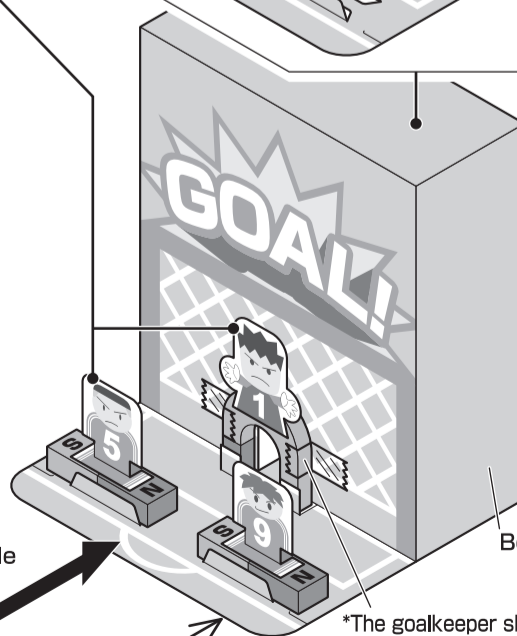
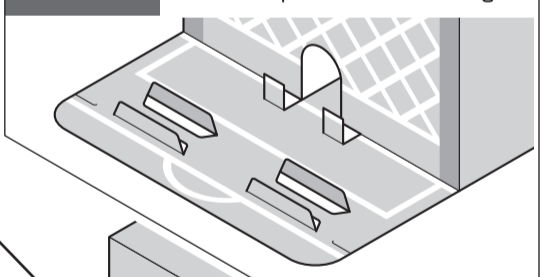


Hole for third round magnet

Round magnets

#### How to shoot a goal

- Fold the lid of the box and stand it up as shown in the diagram.



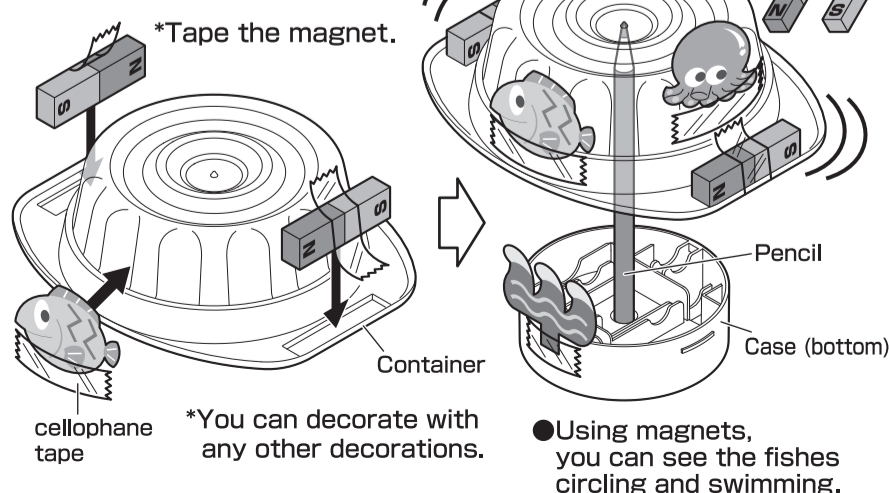
- The goalkeeper should be secured to the box with cellophane tape.

- Score a goal by shooting into the hole in the box! Adjust the distance to make your best shot!

### Swirling Aquarium

- Attach 2 magnets and the fish to the container as per illustrated.

- Put container on the tip of the pencil as per illustrated.



- You can decorate with any other decorations.

- Using magnets, you can see the fishes circling and swimming.