Arvind Gupta
Toys from Trash
www.arvindguptatoys.com/toys.html

- Step-by-Step Photo Guide
- Detailed Worksheet

See 1 minute video at:
http://www.youtube.com/watch?v=ap3Ko35ELy4
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MATERIALS

- Aluminium Can
- Neodymium Magnets
- Thread
- Rubber Piece
- Press Button
- Cycle Spoke

Tools:
- Scissors
- Needle
- Glue
- Bottle Cap

Stand
DIVIDE ALUMINUM CAN IN THREE PARTS WITH 2 RUBBER BANDS

CUT ALUMINUM CAN IN THREE EQUAL PARTS
TAKE THE BACK OF AN OLD PEN

PLACE CUT PIECES IN BASE TO THICKEN WALL OF CAN

BACK OF PEN
STICK SMALL WASHER
INSERT BACK OF PEN IN CAN HOLE

BACK OF PEN INSERTED IN CAN HOLE
PERCH CAN
WITH CAP
ON NEEDLE

LONG
NEEDLE

BOTTLE
LID

RUBBER SLIPPER

PERCH ALUMINUM
CAN ON
NEEDLE TIP

THE CAN
MUST
SPIN
SMOOTHLY
Top-View

Press Button

Stick two neodymium magnets on a piece of soft rubber.
HANG THE MAGNETS BY A PIECE OF THREAD

TWIST THREAD AND PLACE SPINNING MAGNETS IN ALUMINUM CAN

SPINNING MAGNETS MUST NOT TOUCH THE CAN

SPINNING MAGNETIC FIELD WILL PRODUCE EDDY CURRENTS & THE CAN WILL SPIN FAST!
THE CAN SPINS BECAUSE OF EDDY CURRENTS PRODUCED BY SPINNING MAGNETS
ANOTHER VARIATION

APPLY RUBBER ADHESIVE ON ALUMINUM CAN

STICK PRESS BUTTON WITH TROUGH DOWN
PRESS BUTTON STUCK ON ALUMINUM CAN

PRESS FIT 2-CM BALL PEN REFILL IN BASE OF CAN
**Step-by-Step Photo Guide**

1. Place the spoke in the button and spin the magnets.

**Diagram:**
- **Cycle Spoke:**
  - Piece of rubber
  - Two neodymium magnets
  - Round tip
SPINNING MAGNETS WILL INDUCE EDDY CURRENTS & THE CAN WILL START SPINNING!!
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Step-by-Step Photo Guide

Detailed Worksheet

1. Remove the top of the aluminium can and cut it in three parts.

2. Cut the two top hoops. Press and place them in the base. This will make the wall of the base can thicker.

3. Make a hole in the can base and fix a pen lid with a small washer.

4. Place the aluminium can on the tip of a sharp bamboo stick so that it can spin freely. The pen lid and washer will make a good bearing.

5. Fix two strong cylindrical magnets on a piece of rubber. Tie a thin thread to the rubber. The magnets must spin freely on the thread.
6. Twist the thread and spin the strong magnets inside the aluminium can. The spinning magnets will create eddy currents in the aluminium can. This will make the can spin too.

7. Make a small hole in the base of an aluminium can and fix the pip of a press button. This will make a very smooth bearing.

8. Fix another press button in the rubber base of the stand. This depression will enable you to spin the magnets close to the can.

9. Perch the aluminium can on the pointed bamboo stick as before. Pierce a cycle spoke through the rubber between the two magnets.

10. Place the tip of the spoke in the press button and spin it near the can. The magnets must not touch the aluminium can. The spinning magnetic field will produce eddy currents in the aluminium can and it will spin too!

Spinning magnets produce Eddy currents in the aluminum cans. These current produces a magnetic force which interacts with the strong neodymium magnets making the aluminum cans spin.