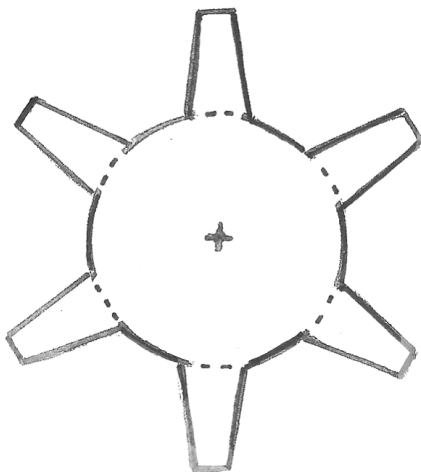
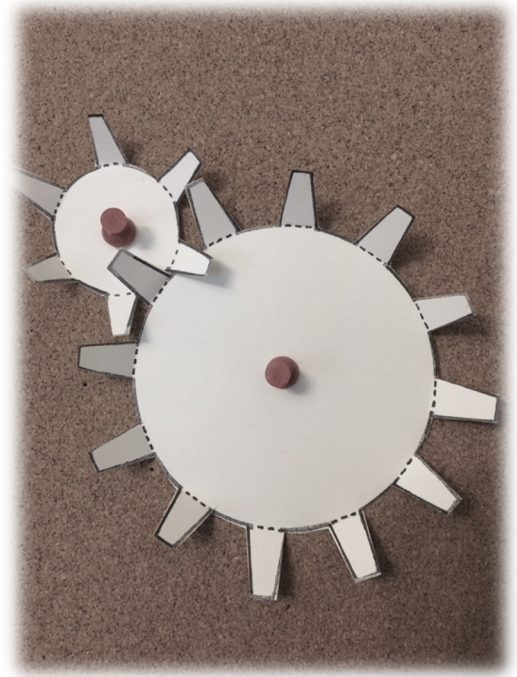


# PAPER GEARS

*Make gears out of cardstock, then attach them to a corkboard with push pins.*

## Materials

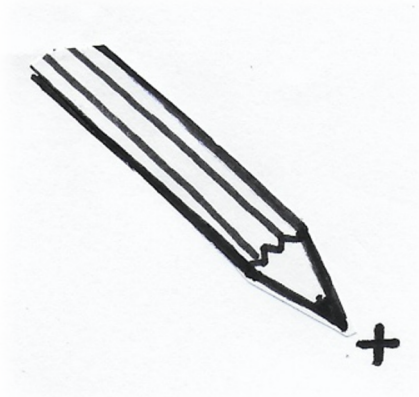
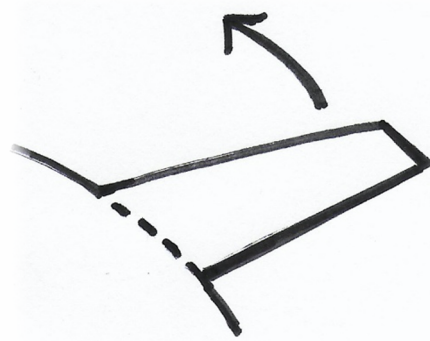
Gears printed on cardstock (see below)  
Scissors  
Toothpicks or sharp pencils  
Pushpins  
Cork board  
Crayons or markers (optional)



## Directions

- 1) Print gears on cardstock—see template below.
- 2) Carefully cut out both gears.

3) Bend up each of the gears' teeth on the dotted line as shown.



4) Use a toothpick or sharp pencil to poke a hole in the center of each gear.

5) Decorate gears with crayons or markers if you'd like.

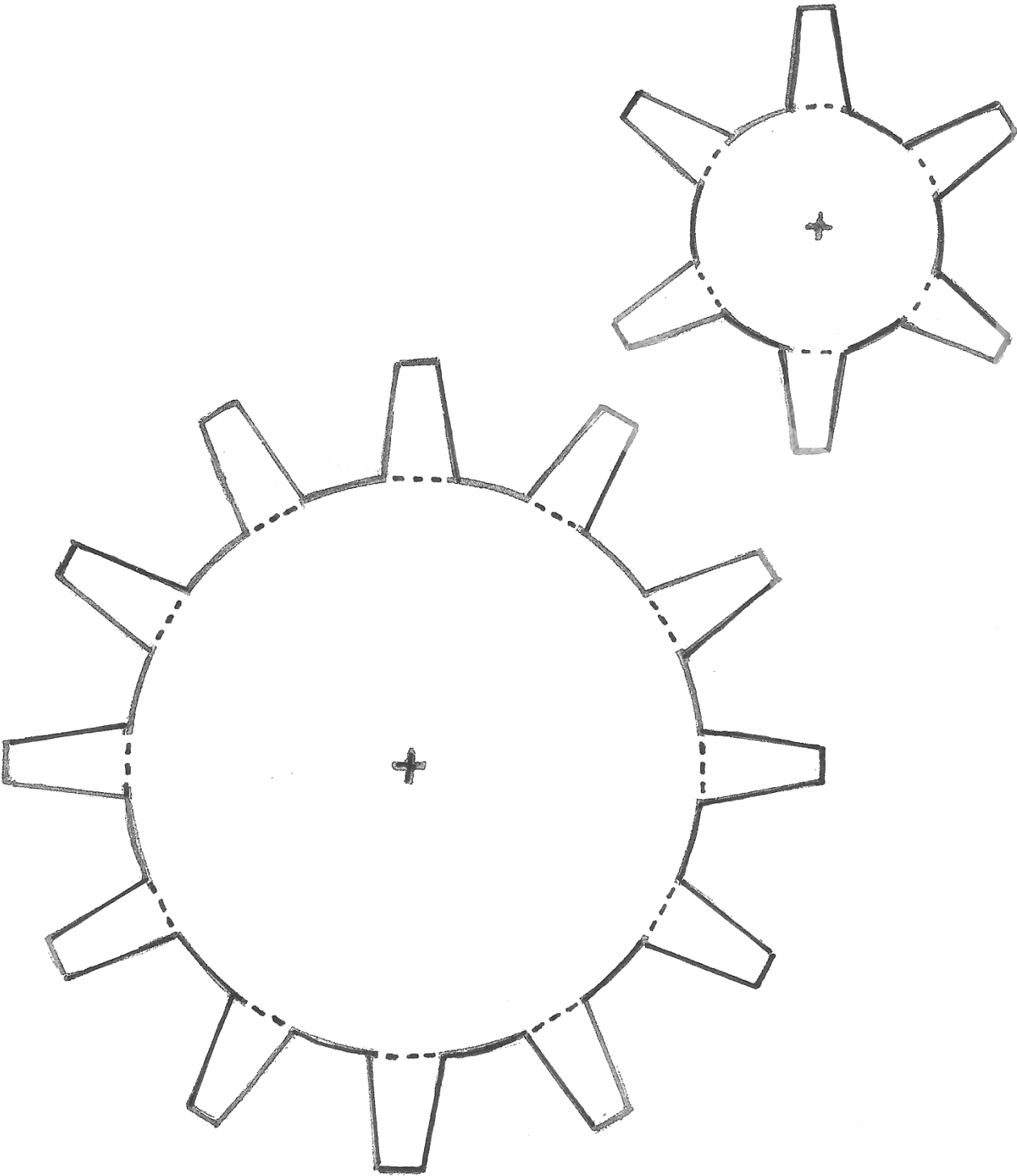
6) Attach gears to a cork board with push pins. You can also try to connect multiple gears.

7) Experiment a bit to get your gears turning smoothly together.

8) Complete the gear worksheet—see below.

# Gears to Cut Out

Carefully cut out each gear, then fold up teeth on dotted lines.



Name \_\_\_\_\_

## Paper Gear Worksheet

- 1) Turn the big gear clockwise. Which way does the small gear turn?

**Clockwise**

**Counterclockwise**

- 2) Mark the tooth that is now at the top of each gear.

Turn the small gear until the mark is back on top.

Where is the mark on the big gear?

\_\_\_\_\_

- 3) How many times does the small gear turn before the big gear turns all the way around?

\_\_\_\_\_

- 4) How many teeth are on the small gear? \_\_\_\_\_

- 5) How many teeth are on the big gear? \_\_\_\_\_

- 6) **Bonus question!**

Divide the number of teeth on big gear by the number on small gear.

Write your answer here: \_\_\_\_\_

**Go back to question 3.**

**Why do you think the big gear takes longer to turn?**