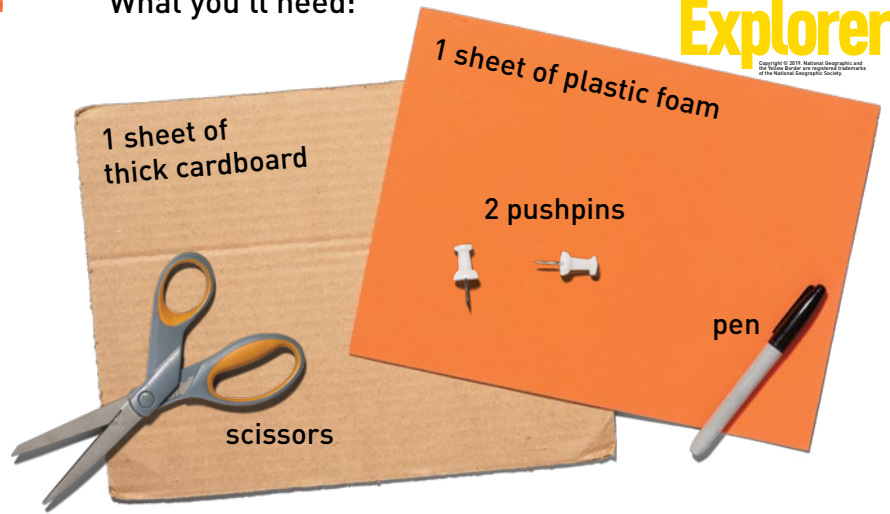


# Getting in Gear

Gears change the force, speed, or direction of motion within a machine. Help these robots make gears for their inventions. See how the gears work together.



What you'll need:



**1.** Cut out the gear templates printed on the next sheet.

**2.** Now trace the gears onto the foam sheet. Cut the gears out.

**3.** Place the gears on the cardboard so that a tooth of one fits between two teeth of the other. Connect each gear to the cardboard by placing a pin in the center. The gears should be free to spin around.

**4.** Color one tooth on each gear.

**5.** Turn the large gear. Which way does the small gear turn? Turn the large gear again, but slowly. Does the small gear turn slower, faster, or the same speed as the large gear?

**6.** Position the gears so that the teeth you colored are both at the top. Turn the big gear round once and see how many times the small gear goes around.



**7.** What happens if you add a third or fourth gear to your "gear train?" Try it. Make the gears different sizes by reducing or enlarging the copies on the photocopier.

