



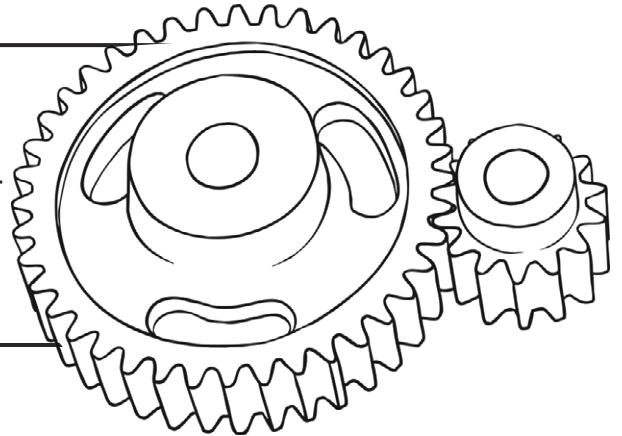
STEM:

Making Moving Gears

Aim: To transfer motion by designing and creating working gears.

You Will Need:

- Corrugated cardboard
- 3 split pins or drawing pins
- Glue
- Template page
- a pair of scissors or craft knife

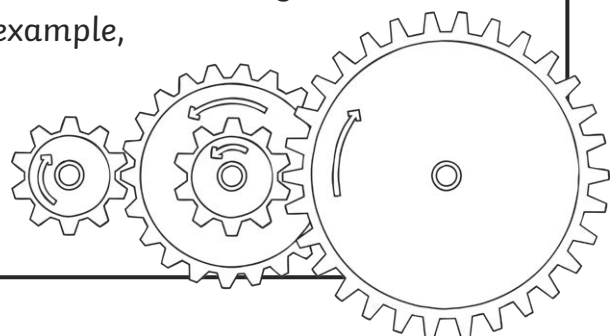


Instructions:

1. Cut out the three gear templates.
2. Glue the gear templates to the thicker cardboard so the cogs will catch on each other. Then, cut the cardboard around the gears to make three thick gears or 'cogwheels'. Ask an adult for help if you are using a craft knife.
3. Place all three gears onto another sheet of cardboard; position them so that their teeth interlock.
4. Push the pins through the centre of each gear and the cardboard below to secure them in place - make sure each gear turns freely.
5. Turn one gear by moving the teeth to watch the other gears turn!

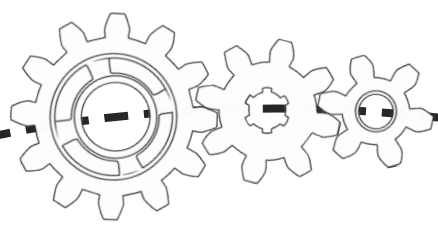
Think about the speed and direction of each gear as you turn them. What do you notice? What happens to a small gear connected to a big gear turning slowly? How could this be useful, for example, in cycling a bike uphill?

Now, try experimenting with placing the gears in different orders or different positions.





Stem: Making Moving Gears



What Is a Gear?

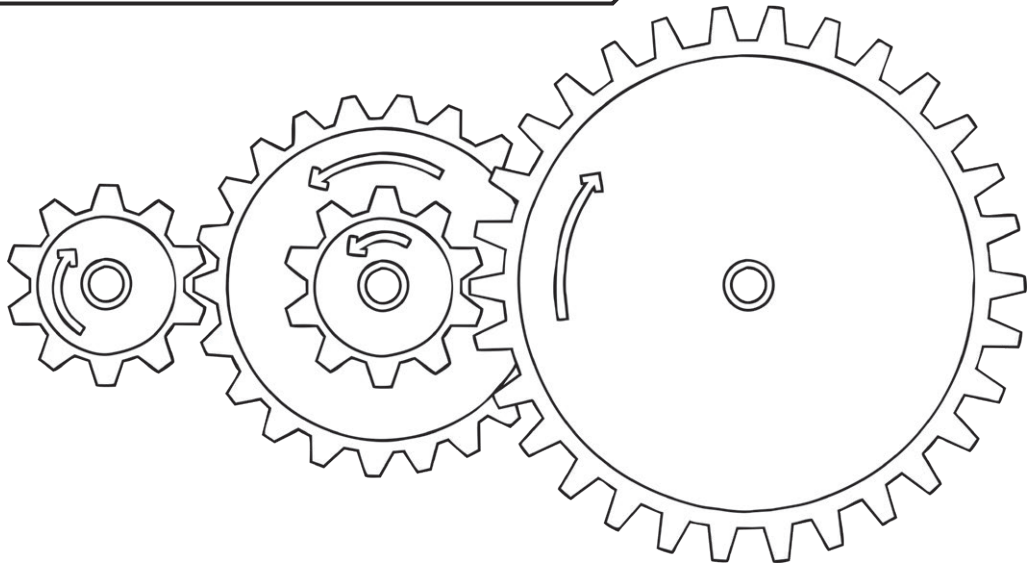
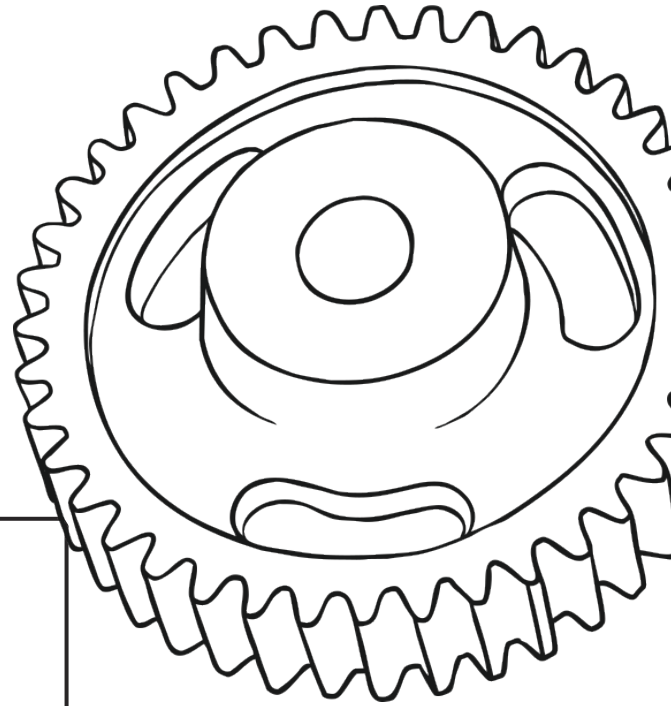
A gear is a wheel with teeth, or cogs, around the edges. Gears are used in cars, watches, carousels, tin openers and more! Sometimes, gears are called 'cogs'.

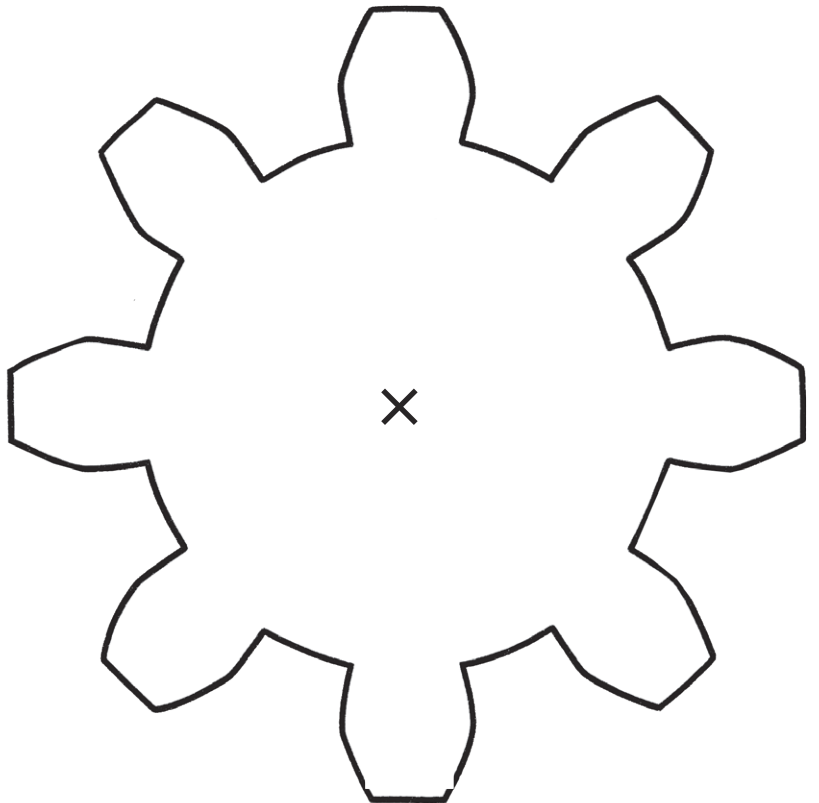
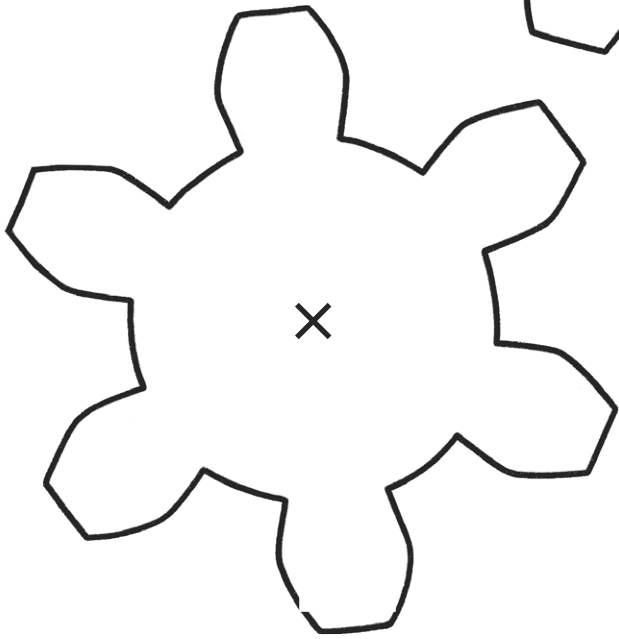
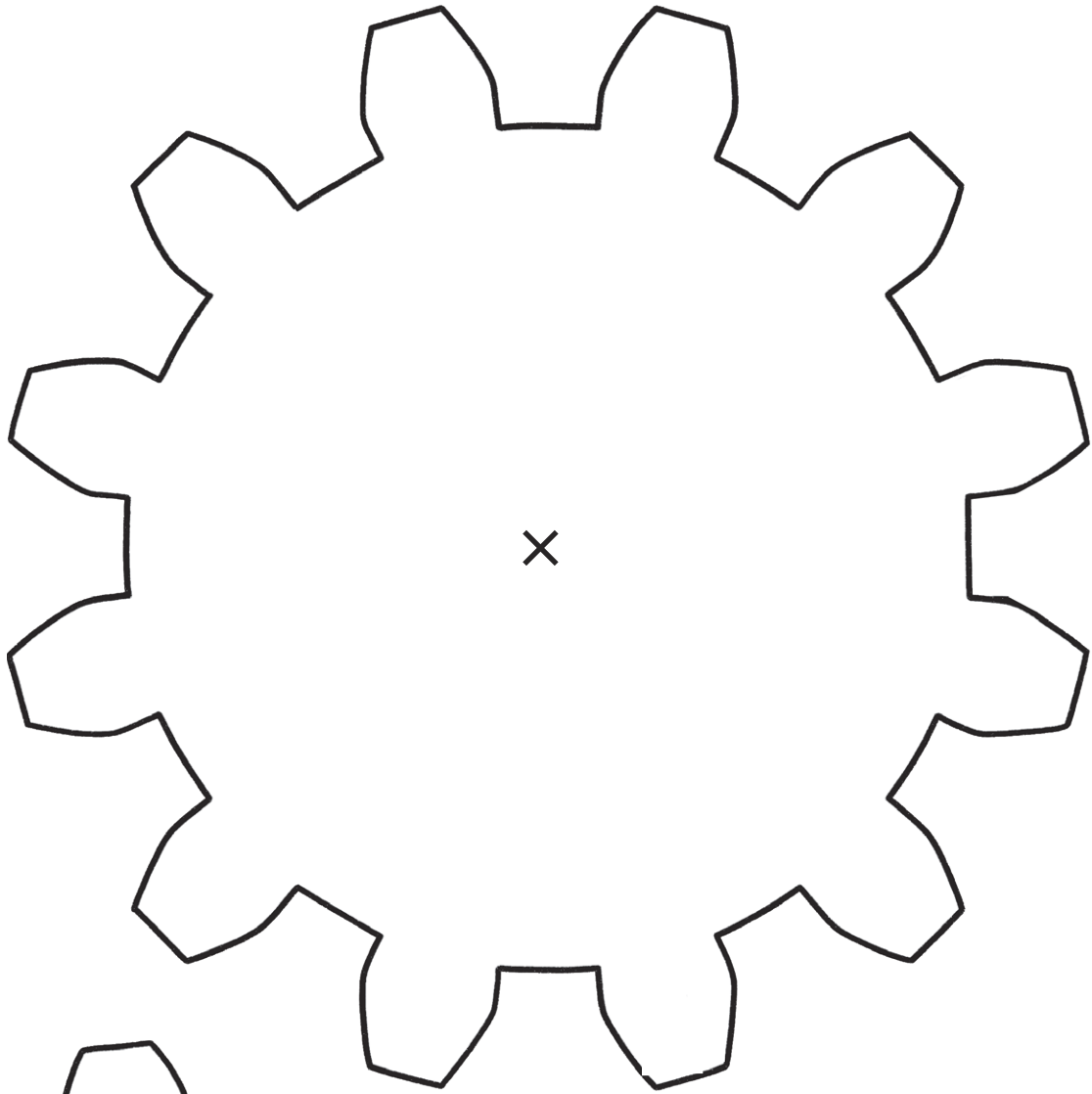
How Do Gears Work?

As gears turn, energy is transferred. Gears are useful for changing speed or force.

Did You Know...?

When one gear turns, the next one always turns in an opposite direction.





What would happen if...

What would happen if...



REGENT STUDIES
Focused education on life's walk!
www.regentstudies.com

**The gears
were bigger?**

**The gears
were smaller?**

What would happen if...

What would happen if...

**The teeth
were bigger?**

**The teeth
were smaller?**

What would happen if...

**More gears
were added?**