

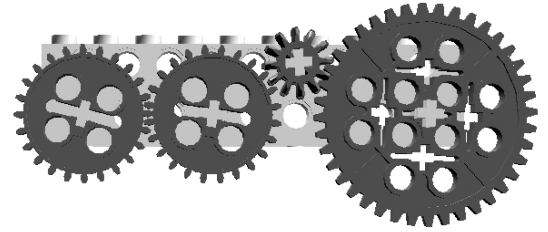
Name: \_\_\_\_\_

## Day 1: Gears & Transmissions

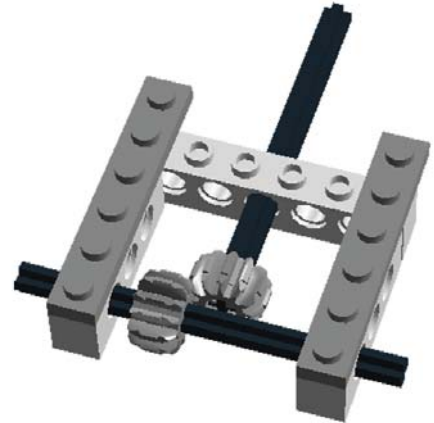
**What is a gear?** - A gear is simply a wheel with teeth. When gears are used together they can control the speed or power of a machine. This is also known as a transmission. There are many types of gears, and these are the ones that we will be using.



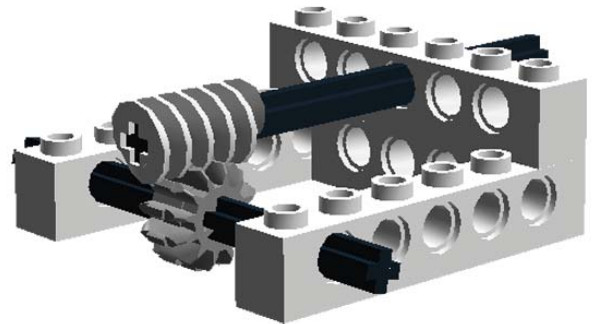
**Spur Gear** - This is the most common type. It is also known as a straight cut gear as its teeth are "cut straight" across. They can be used with a lot of different sized gears.



**Double Bevel Gear** - The teeth in this gear are rounded at the corners. This allows the gear to be used at right angles.



**Worm Gear** - This gear is very unique. It can be used to spin other gears, but other gears can not spin a worm gear. Worm gears are also used to reduce the speed of a machine greatly!

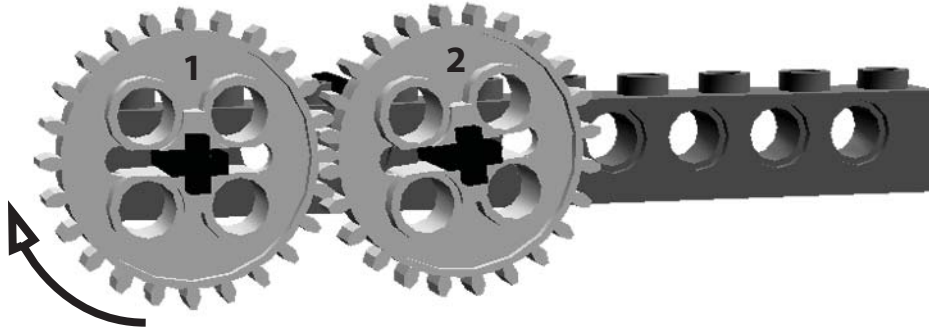


Now that you know a little more about gears, flip this page over and see if you can complete the challenges!

## Day 1: Gears & Transmissions

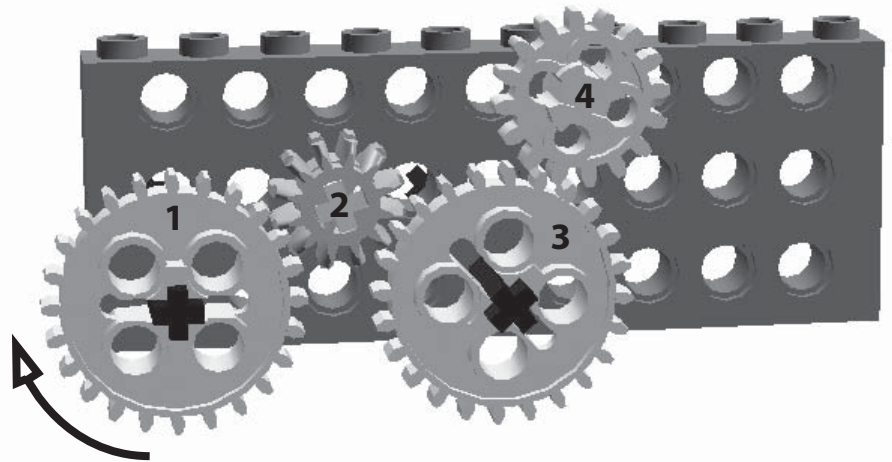
### Challenge 1 : 2 Gear Transmission

Build a 2 gear transmission and observe which direction the gears turn. Rotate gear 1 in the direction of the arrow. Which way does gear 2 rotate? Draw an arrow on the picture to tell which way it is rotating.



### Challenge 2 : 4 Gear Transmission

Build a 4 gear transmission and rotate gear 1. Observe which way gears 2, 3, and 4 turn. Draw arrows on the picture to tell which way they are rotating.



What do you notice about the direction the gears are turning?

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### Challenge 3 : See if you can build Snappy!

"I'm Snappy the Alligator. Move my tail, and I'll snap at you!"

