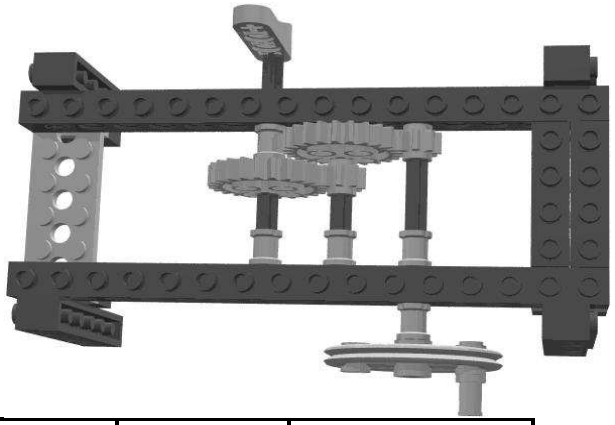
Team: ____ Name: _____
Name: _____ Name: _____

More Gears Ratios

Last time you figured out gear ratios of two gear combinations by slowly counting the number of times you had to turn the input axle to make the output axle turn a whole number of rotations. As many of you noticed, the ratio of the number of teeth on the two gears was the same as the gear ratio except the numbers were reversed. For example, when we tested the 8-tooth to 24-tooth combination, we found that the ratio was 3:1. If we reverse the numbers on the teeth ratio, we get 24:8, which can be simplified to 3:1! Look at the chart you filled in on the first day and simplify the ratio of teeth on the input axle to the output axle and verify that they are the same as the ratio that you got by counting rotations.

Compounding gear ratios

Now we are going to add one more axle to our experiments: an intermediate axle. Now the gear on the input axle will drive a gear on the intermediate axle and a gear on the intermediate axle will drive a gear on the output axle. Like this:



Using your Gear Test Bench, build the same arrangement as in the picture. Just like last time, count the number of turns you need to make on the input axle to make the output axle turn one time around. What is the input to output ratio

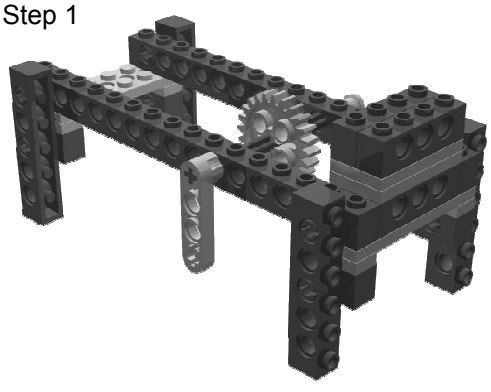
Try the different gear combinations in the table below and determine what the ratios are for each combination and what the final input to output ratio is.

Teeth on first gear combination (input & intermediate)		Teeth on second gear combination (intermediate & output)		First gear ratio	Second gear ratio	Final gear ratio *input* : *output*
8	24	8	24	3 : 1	3 : 1	:
8	24	8	40	:	:	:
8	24	24	40	:	:	:
24	8	40	8	:	:	:

Optional:
Worm Gear

Here is a way to test the worm gear using the Gear Test Bench. What is the gear ratio?

Step 1



Step 2