

Science and Technology
LAB ST 3.3 Gears Activity

Name _____

1. Look for the pair of gears that has the smallest gear, and place a black mark (with a grease pencil or marker) on one of the large teeth of the larger gear.
2. Place a black mark (with a grease pencil or marker) on one of the large teeth of the smaller gear.
3. While turning the larger gear (if there's too much resistance, rotate it in the opposite direction), count how many turns the smaller gear makes for every three turns made by the largest gear. Record your result below.

Turns made by largest gear	
Turns made by smallest gear	

4. On the assembly with three gears, Place a black mark on one of the large teeth of the largest gear.
5. Place a black mark (with a grease pencil or marker) on one of the large teeth of the smallest gear.
6. While turning the largest gear, count how many turns the smallest gear makes for every one turn made by the largest gear. Record your result below.

Turns made by largest gear	
Turns made by smallest gear	

7. Place a black mark (with a grease pencil or marker) on one of the large teeth of the largest gear.
8. Place a black mark (with a grease pencil or marker) on one of the large teeth of the smaller gear.
9. While turning the largest gear, count how many turns the smallest gear makes for every one turn made by the largest gear. Record your result below.

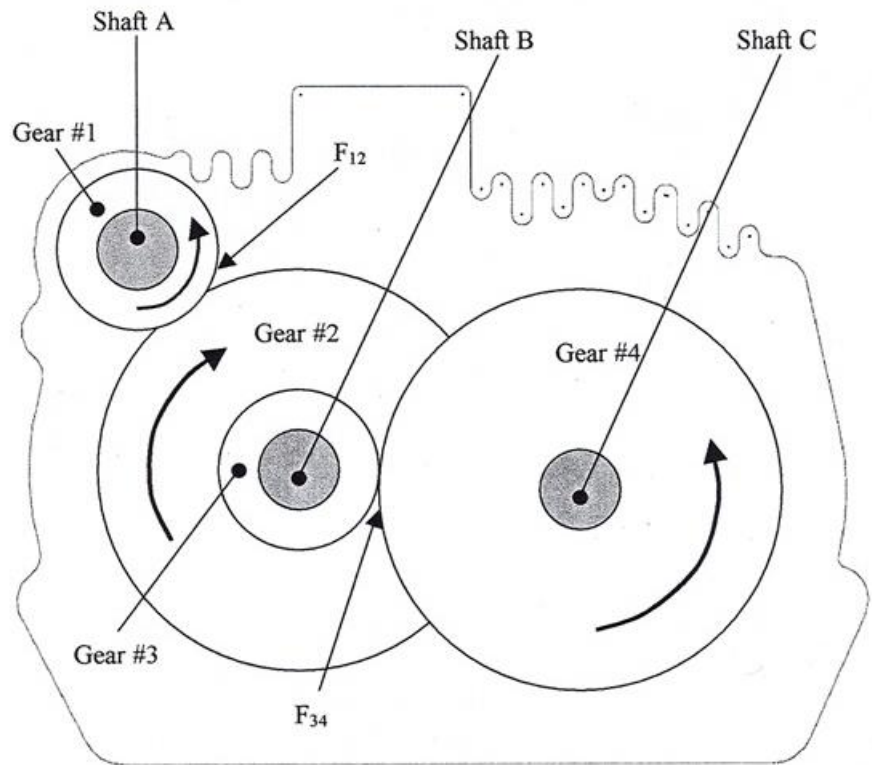
Turns made by largest gear	
Turns made by smallest gear	

10. A) Was there a difference in the result in #6 with that of #9? _____
B) Was there a difference in the direction of the smallest wheel in #6 with that of the smaller wheel in #9?
Specify. _____

11. Draw the three gear assemblies and complete the table.

Drawings (Use circles and spokes. Number of spokes does not have to match exactly)	# of turns of small gear/ # of turns of large	# of teeth of large/# of teeth of small (count them both!)	Gear ratio = velocity ratio	Mechanical advantage

12. Gear #2 and gear #4 share an axle. Measure the diameter of each friction gear, and find the velocity or gear ratio for this gear box. Gear #1 is the input.



13. Which of the 7 key ideas about gears (from the stencil) did this lab reinforce? Write out the relevant ones. Don't include number 12.