Name: _____ Date: _____

Gears Quiz

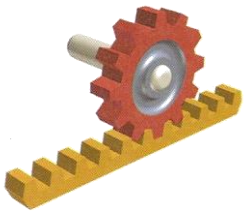
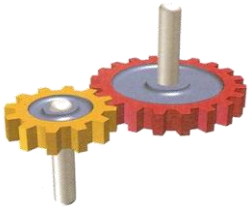
1. What are gears used for (there are four things you should mention)?

Gears can be used to **transfer forces** and **motion** from one object to another.

Some gear systems can also be used to **change** the **speed** and **direction** of the motion.

/4

2. Fill in the table below by naming the type of gear shown.

Picture	Type of Gear	Picture	Type of Gear
	Rack and Pinion		Worm Gear
	Spur Gear		Bevel Gear /4

3. What do you call it when three or more gears are combined?

Gear Train /1

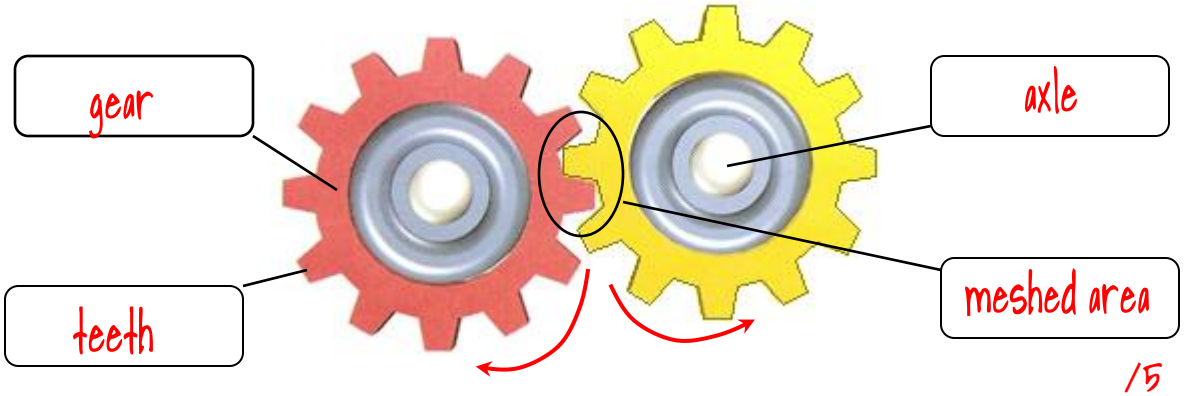
4. Name three examples of things that use gears.

Clocks, Eggbeaters, Bicycles, Engines,

Drills, Microscopes, Transmissions, etc

/3

5. Please label the diagram, including direction of rotation.



/5

6. If you turn a gear with 6 teeth 3 times and it is meshed with a second gear having 18 teeth, what will happen?

When you turn a 6 tooth gear 3 times there will be 18 total teeth that move through the meshed area. This means that 18 teeth from the second gear also move through the meshed area. If the second gear has 18 teeth, then it only has to rotate once because 18x1=18. Also, the second gear will be turning slower than the first because it is larger, and larger gears turn slower than smaller gears because they have more teeth. /3

7. Below you will find a picture that I found on the internet. There is something scientifically wrong with it. Please explain what is wrong, relating to gears, about this picture.

In this picture there are three gears that are meshed. When gears are meshed they change direction. In this picture if gear 1 moves clockwise, then gear 2 moves counter clockwise. This would mean gear 3 would move clockwise. The next gear is supposed to move counter clockwise, however, gear 4 is also gear 1, which is moving clockwise. The gear could not turn if they were set up like this. /4