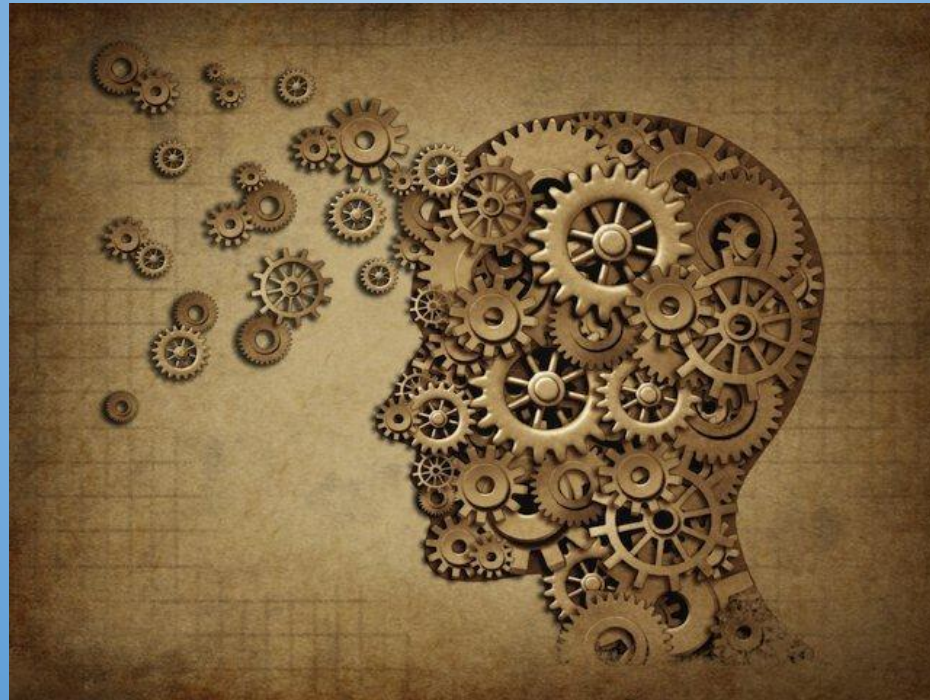


# Observing Mechanisms



# What is a mechanism?

- A mechanism is a device that transmits motion so that the motion is different than the input motion.
- It can be used to change the direction, speed, force, or type of movement.



# Important Definitions

- Mechanism - the part of a machine which contains two or more pieces arranged so that the motion of one compels the motion of the others
- Input - information fed into a system
- Force - A push or pull on an object
- Gear - a toothed wheel that works with others to alter the relation between the speed of an engine and the speed of the driven parts

# Gears!

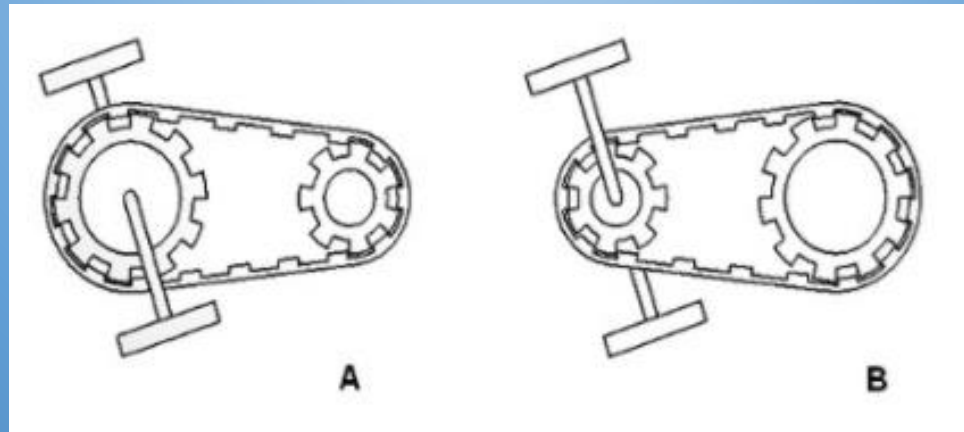
- A gear train is a mechanism used for transmitting rotary motion and torque.
- Gears transmit rotary motion through interlocking teeth. A **gear train** is made when two or more gears are meshed.
- Meshed gears always turn in opposite directions.





# Gear Ratios

- Gear ratios can be determined using the number of teeth on the gear or the diameter of the gear.
- Gears turn in a circular direction. There is an inverse relationship between torque and speed in gearing. A twenty seven-speed bicycle has 27 different gear selections. When you pedal up a hill, you use a gear train that provides **more torque** (turning force) but, in doing so, **less speed**.



# Torque

- What happens to speed when you increase torque?

There is LESS speed.

- What happens to torque when you increase speed?

There is LESS torque.



**TORQUE**