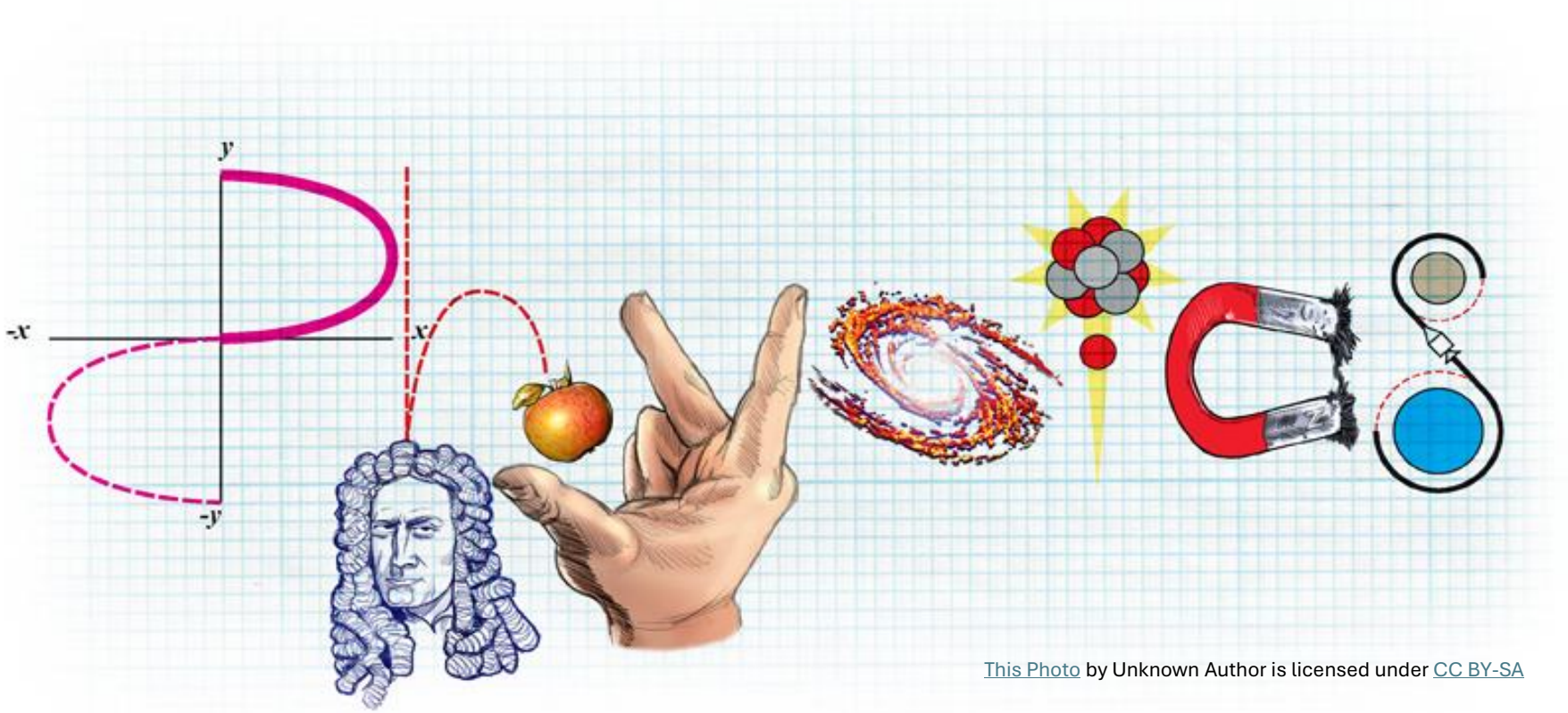


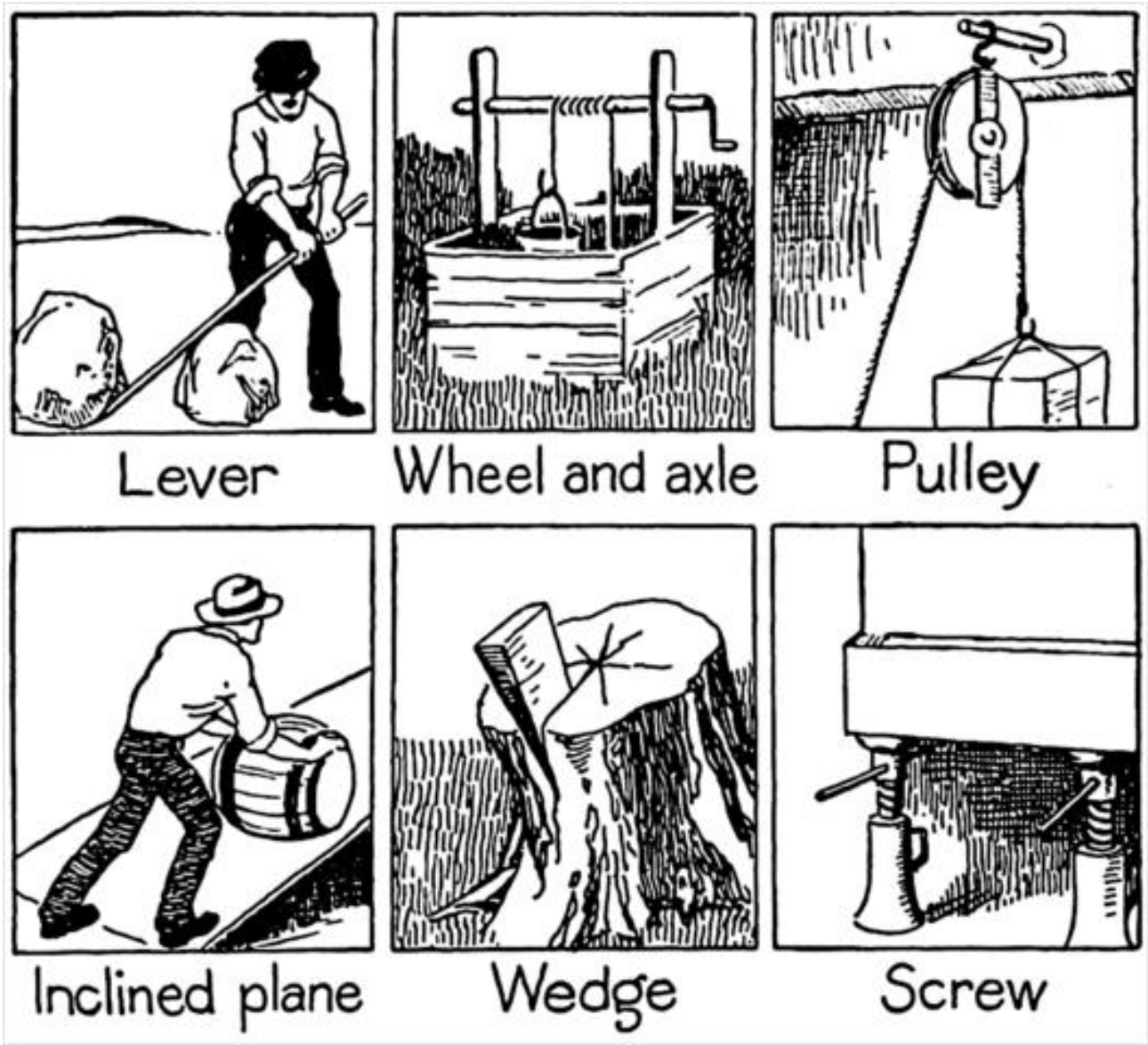
SCENIC SCIENCE
VOL 1/LESSON 1B

SIMPLE TOOLS & MACHINES

TO DO WORK

TOOL:

A mechanical device that changes the direction or magnitude of a force



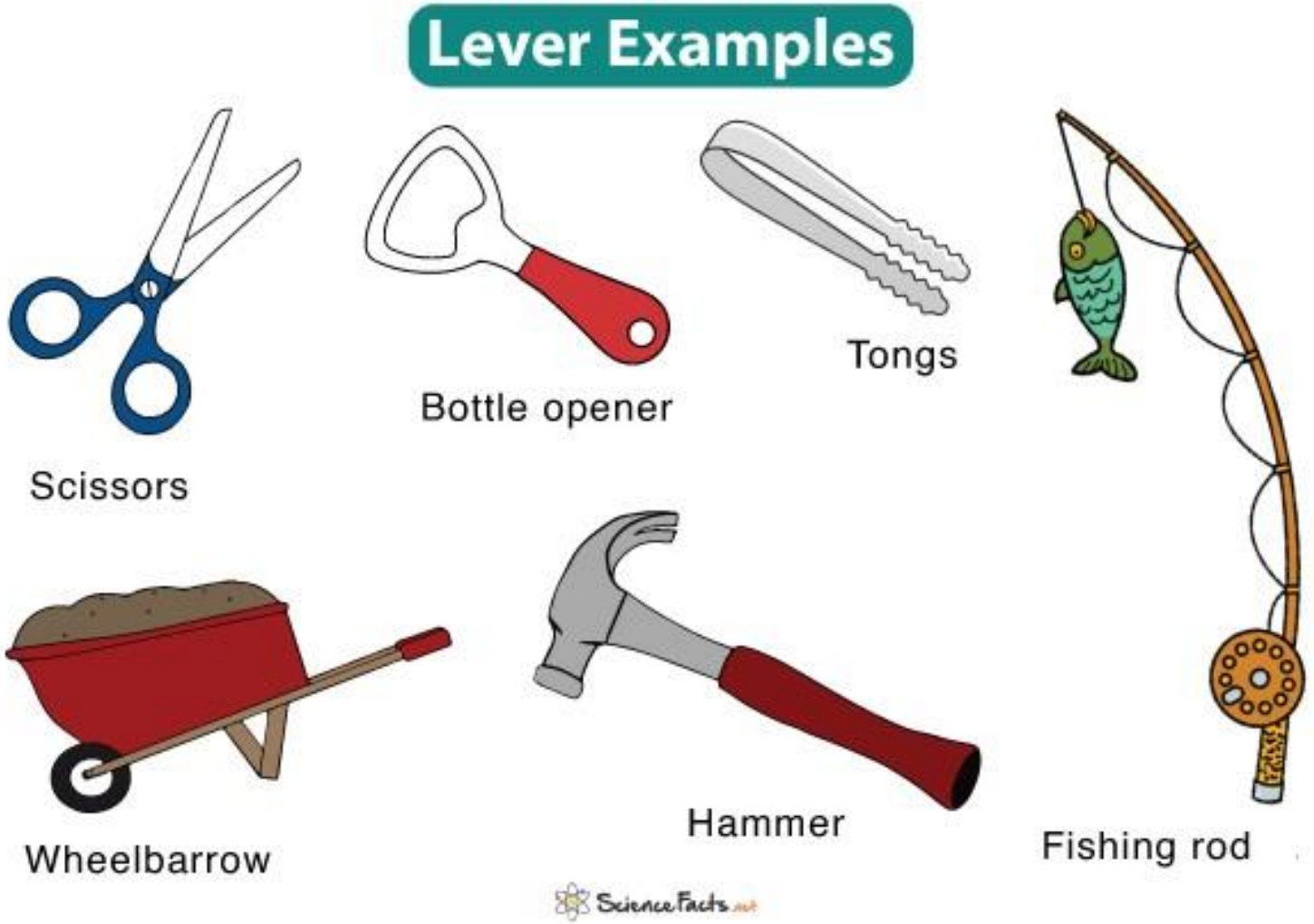
LEVERS HELP US “LEVERAGE” our WORK

LEVERAGE – using some to gain an advantage

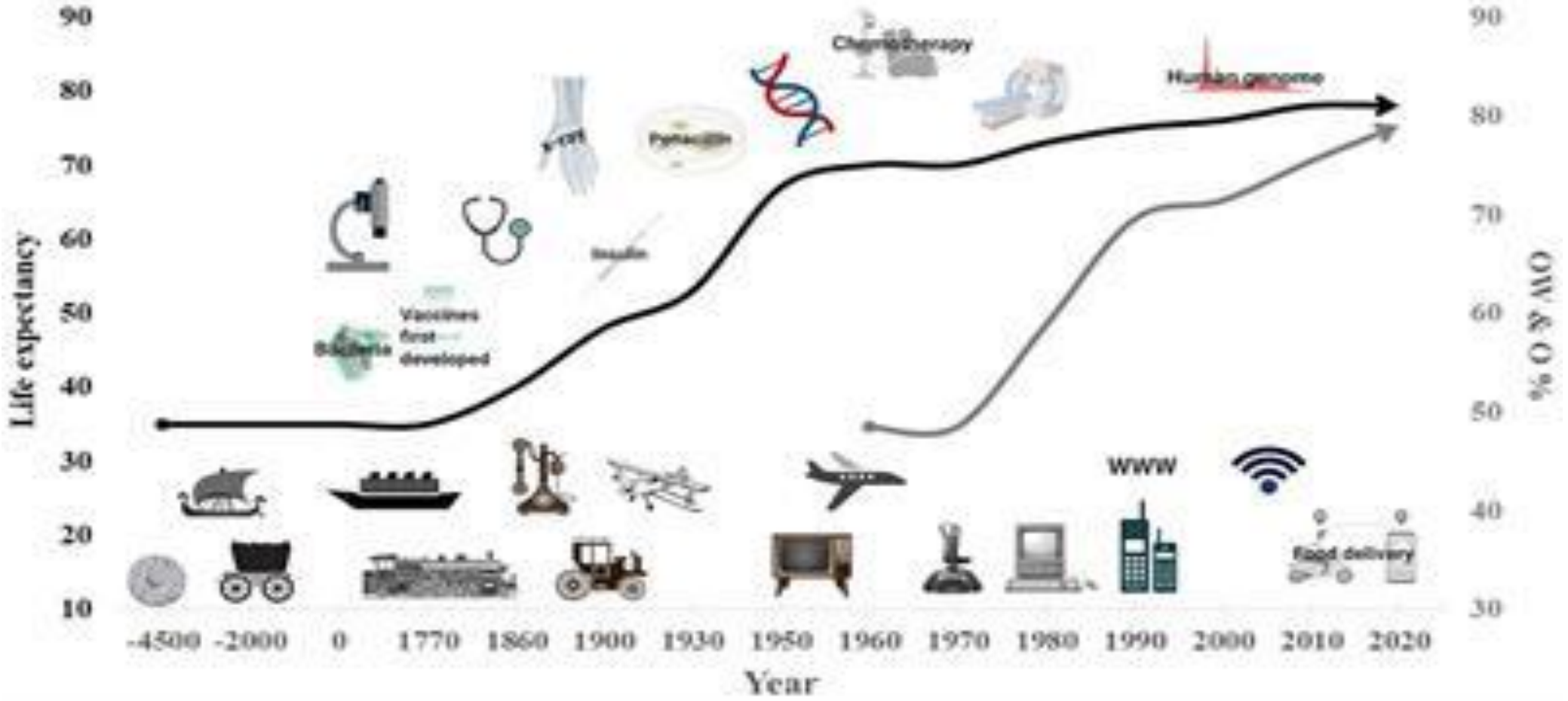
Psalms 90:17 Let the favor of the Lord our God be upon us and establish the work of our hands upon us; yes, establish the work of our hands!

Basic Tools have handles/levers

SIMPLE TOOL EXAMPLES



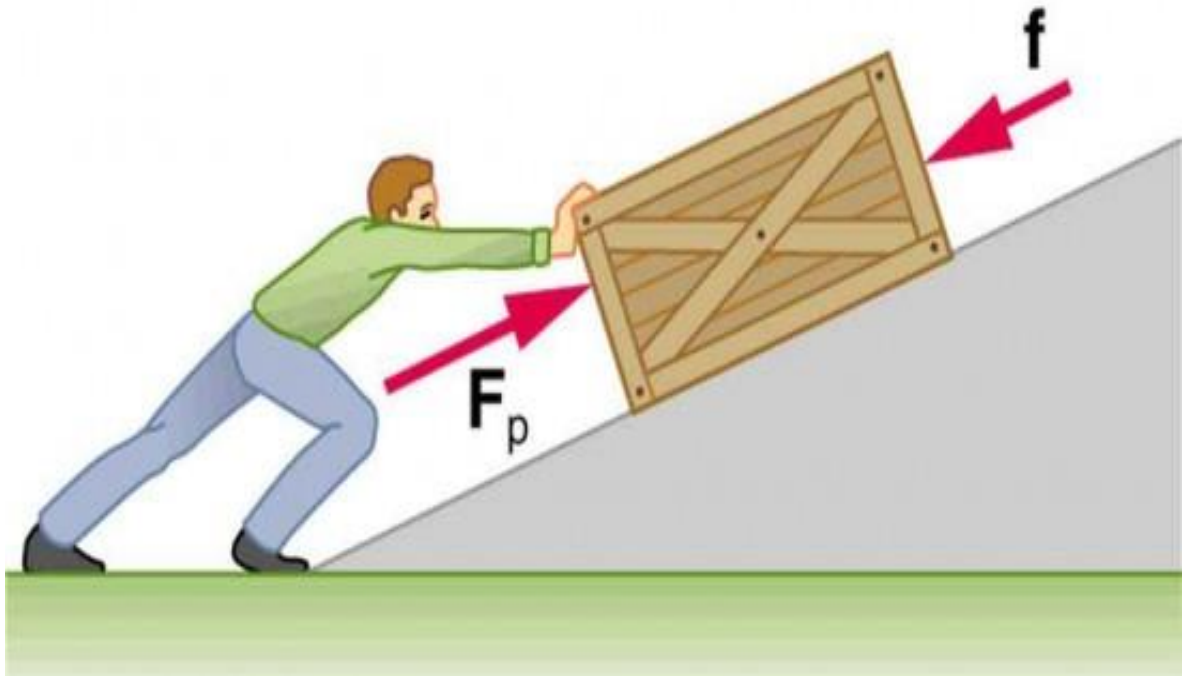
TOOLS AND INVENTIONS = EASIER WORK



MOTION

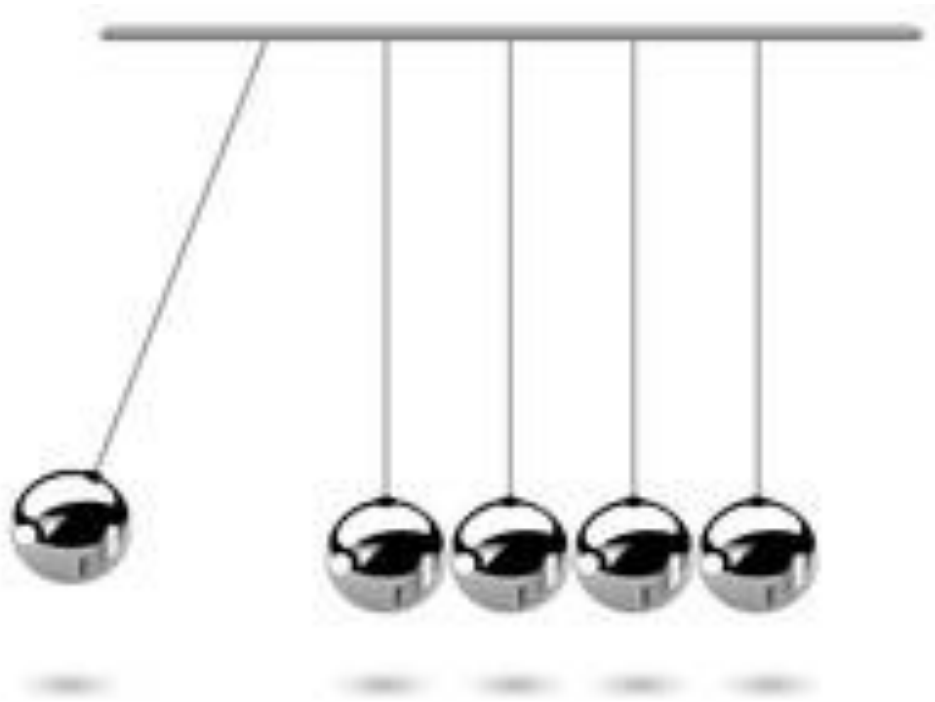
MOTION CAN BE TOUGH WORK

- **MASS –** inertia or resistance to motion, an amount of matter with weight.
- **ACCELERATION –** a change in motion, **positive, negative**, or a change in direction. To drive a car, you first have to accelerate it.



Let’s Experiment

1. AT REST VS IN MOTION
2. FORCE APPLIED
3. CAUSE/REACTION
4. EXPERIMENT WITH FORCES
5. EQUAL AND OPPOSITE



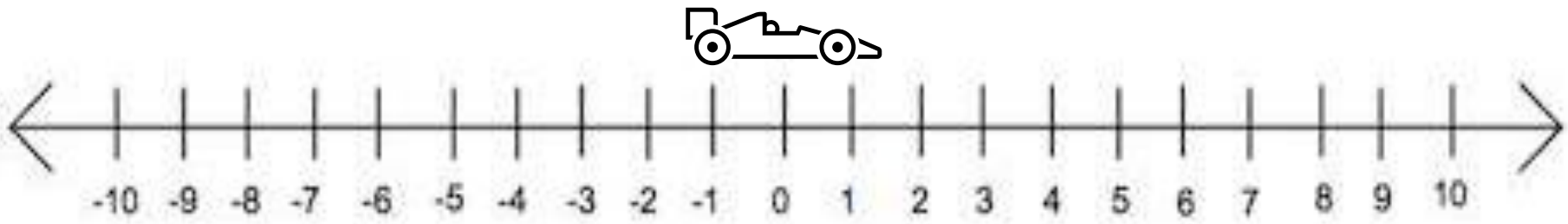
NEWTONIAN CRADLE

Two kinds of MOTION in Physics

- **SPEED –** the rate of change in position in any direction. **s = d/t**

  s = speed, d = distance, and t = time.

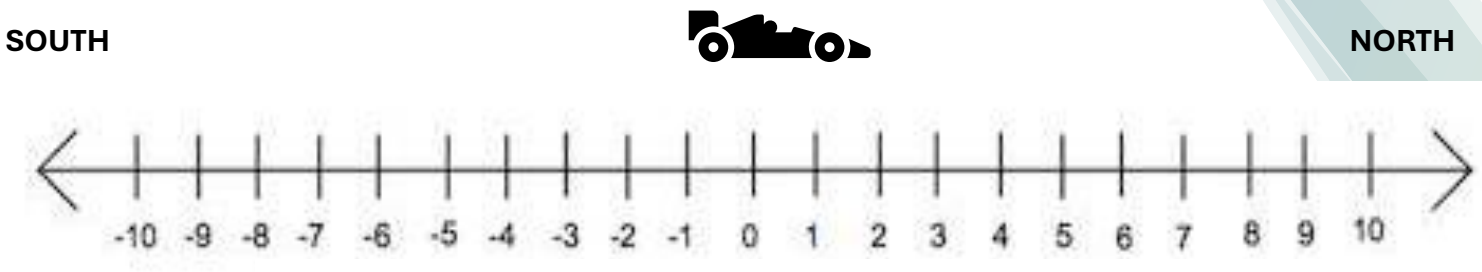
- **VELOCITY –** the speed of something in a **given direction** (N,S,E,W and anything in between). Therefore, velocity is a vector quantity, like wind speeds in specific directions.



Practice using a number line or mathematical equations to solve this problem.

PROBLEM: Your car is moving at a constant speed of 10 mph. It travels 5 hours north, then 3 hour south. What is its speed and velocity?

Speed: 10 mph The car maintained the same speed throughout.
Velocity: 2 ½ mph 20 miles in 8 hours = 50 mi + (-30 mi) = 20 mi
Distance/Direction →: 5 hrs x 10 mi/hr + -3 hrs x 10 mi/hr
Vectors: → can be any direction. In this case they were opposite.



LAWS VS THEORIES

We're learning about science laws this semester. Laws are:

Testable
Repeatable
Observable

Theories are not laws. A theory ATTEMPTS TO EXPLAIN unseen actions or causes.

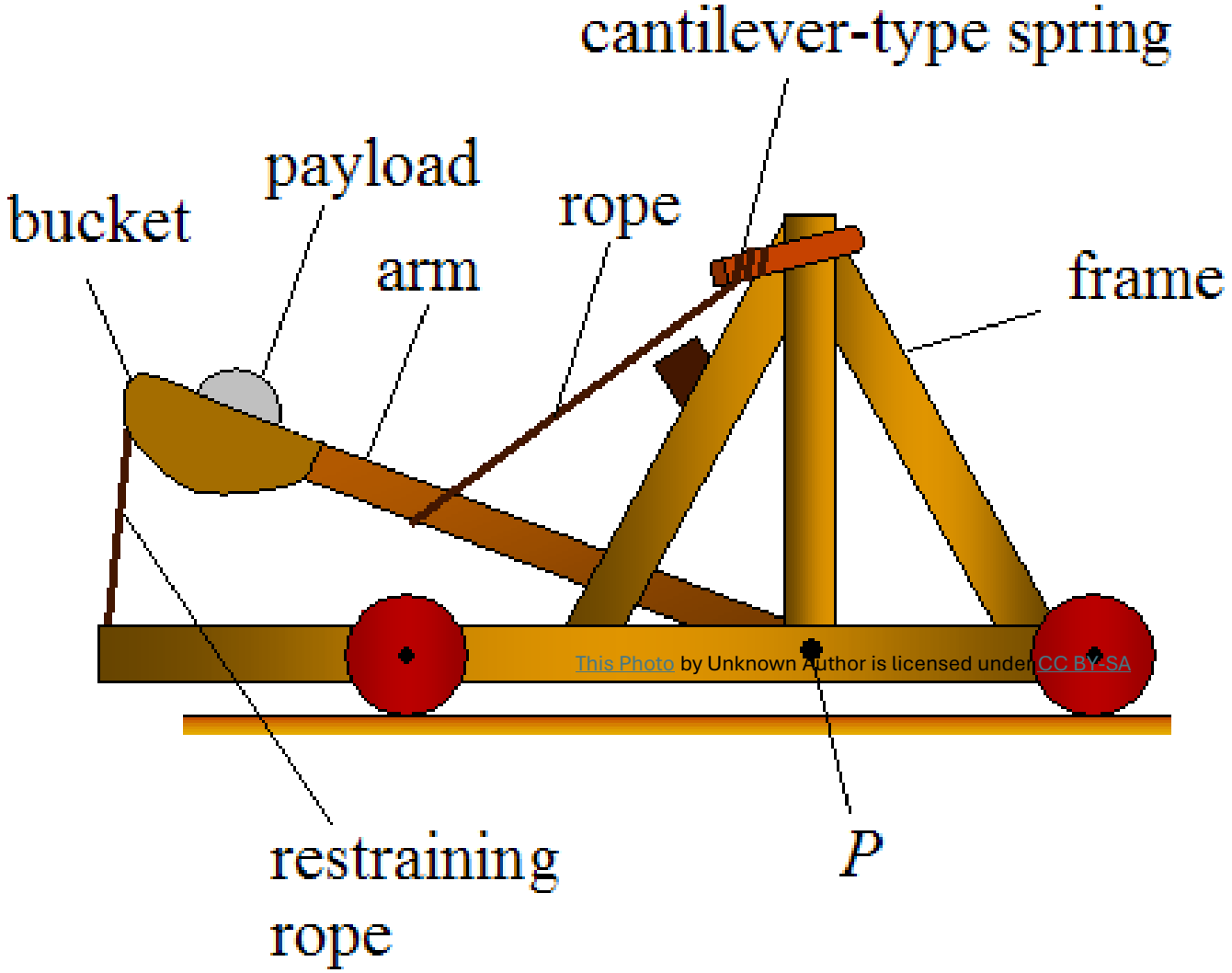
Look, Kid, ***I*** don't know why. Ask ***him*** to explain it!

REMEMBER THESE THINGS

LEVERAGE (a lever/hammer):
PHIL 4:13 I can do all things through Christ who strengthens me.
Christ is our source of strength; the force enabling us to do good works. If we choose not to leverage our gifts and talents by seeking His will for us, we cheat ourselves and others.
Learn to lean on Him for strength.

A Machine/Tool Lever You Can Make

- Make your own catapult
  - Rubberbands, glue/cap, & sticks



to make, form, or repair (something) with what is conveniently on hand

Ingenuity…
MacGyvered
MacGyvering…