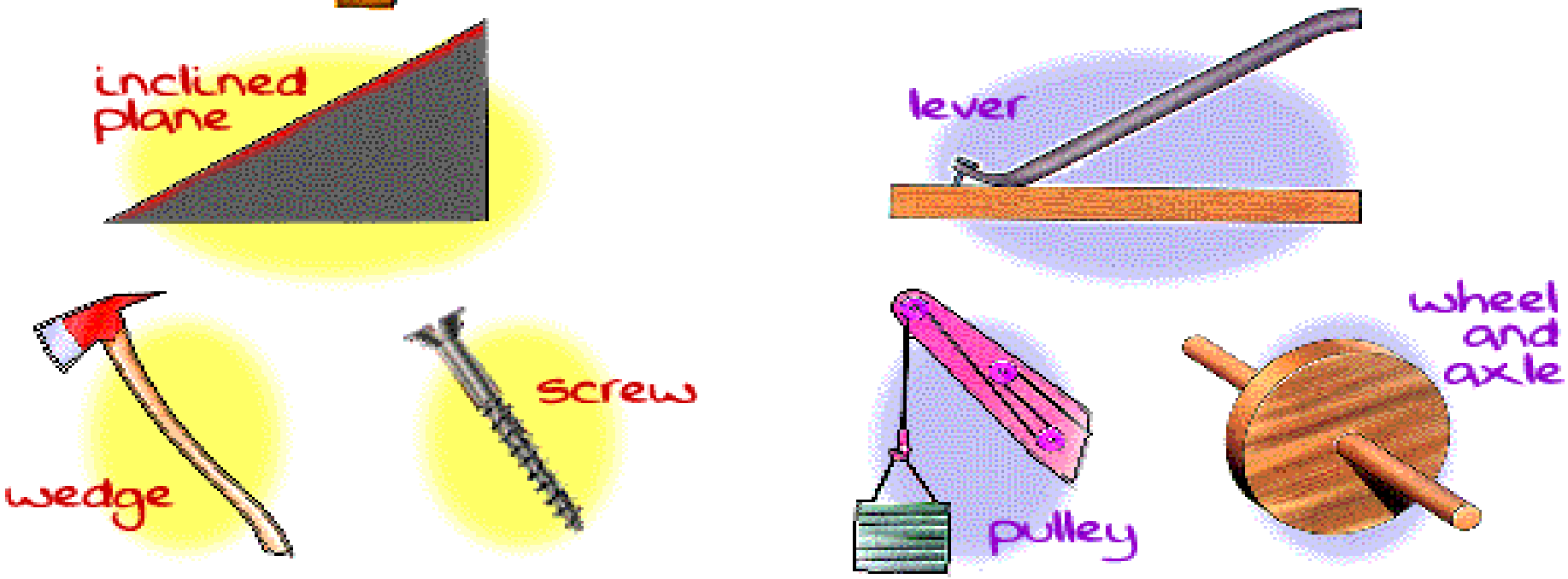
Simple Machines



I can identify six types of simple machines.

Whiteboard activity

TRUE OR FALSE

Place a T next to statements that are true and an F next to statements that are false.

1. ___ A rake is a simple type of machine.

2. ___ Every machine needs force to make it work.

3. ___ A see saw is an example of an inclined plane.

4. ___ Almost all cutting machines, like saws and knives, use wedges.

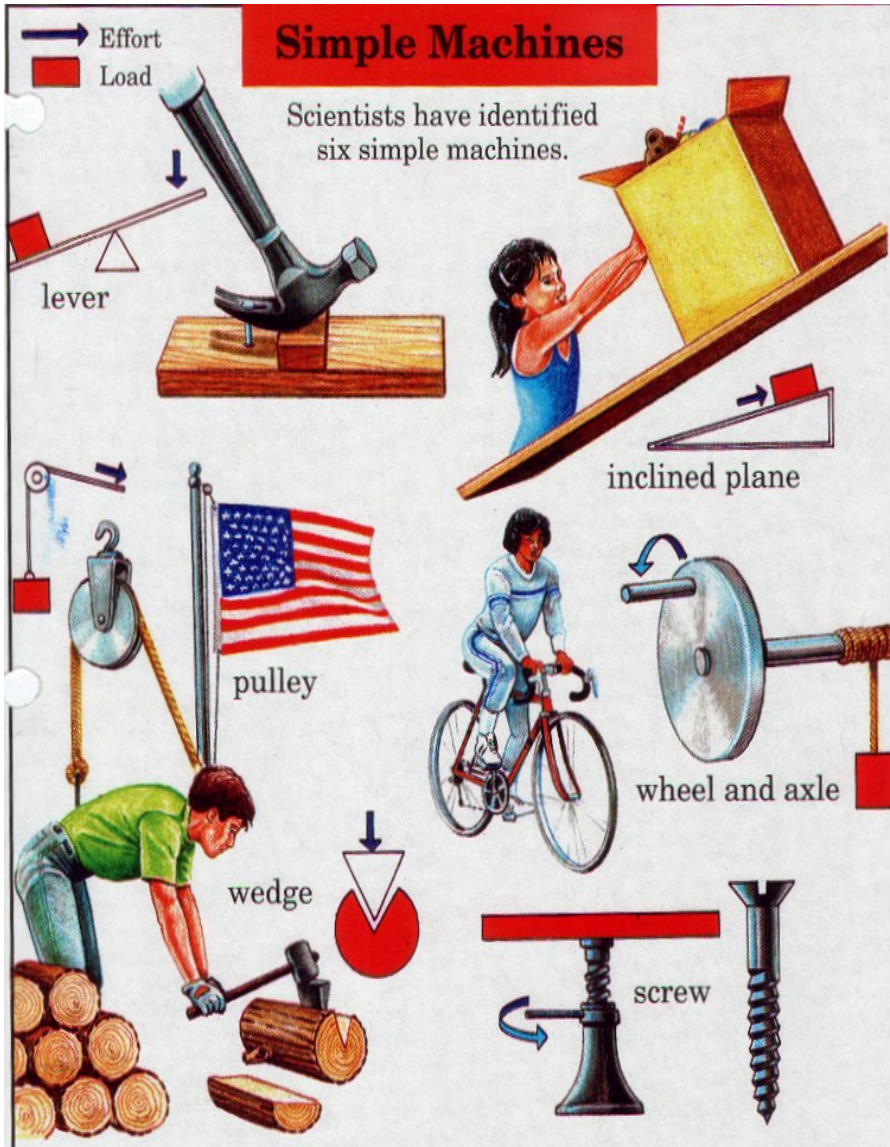
5. ___ A lever pivots on a point known as a fulcrum.

I. What is a simple machine?

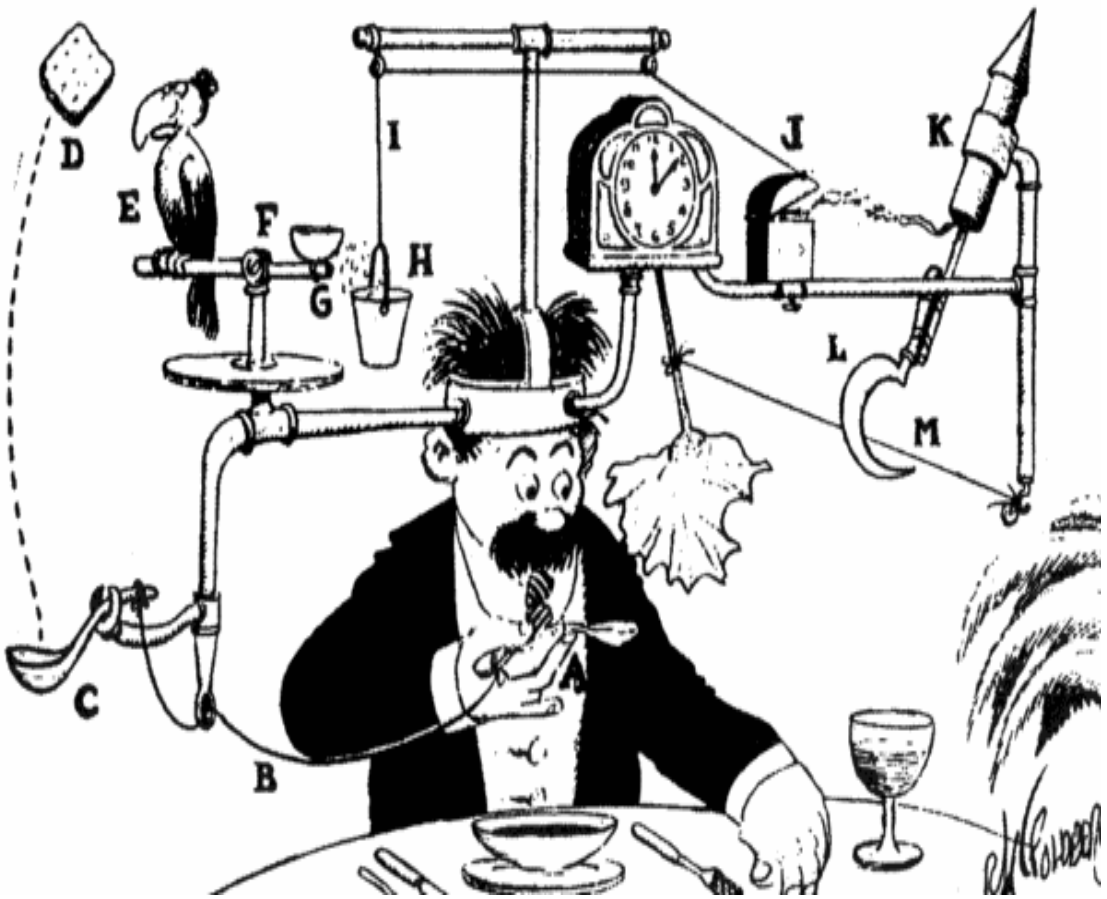
- a machine that does work with only one movement
- Six simple machines: plane, lever, wheel/axle, screw, wedge, pulley

- https://www.youtube.com/watch?v=HEsH1iA20GM

- What new information did you learn from the video?



- A <u>compound machine</u> is a combination of 2 or more simple machines working together to accomplish a task.



Can you think of examples of compound machines?

II. INCLINED PLANE

- Flat, sloped surface
- Helps with work by allowing less force to move an object from one height to another
  - ramp
- The longer the inclined plane, the smaller the force needed to move an object

A. Using inclined plan -

- A. Using an inclined plan
  - Lifting an object uses more force than exerting force along a ramp over a greater distance.
    - Force = work/distance
    - Mechanical advantage of an inclined plane = length of inclined plane divided by its height

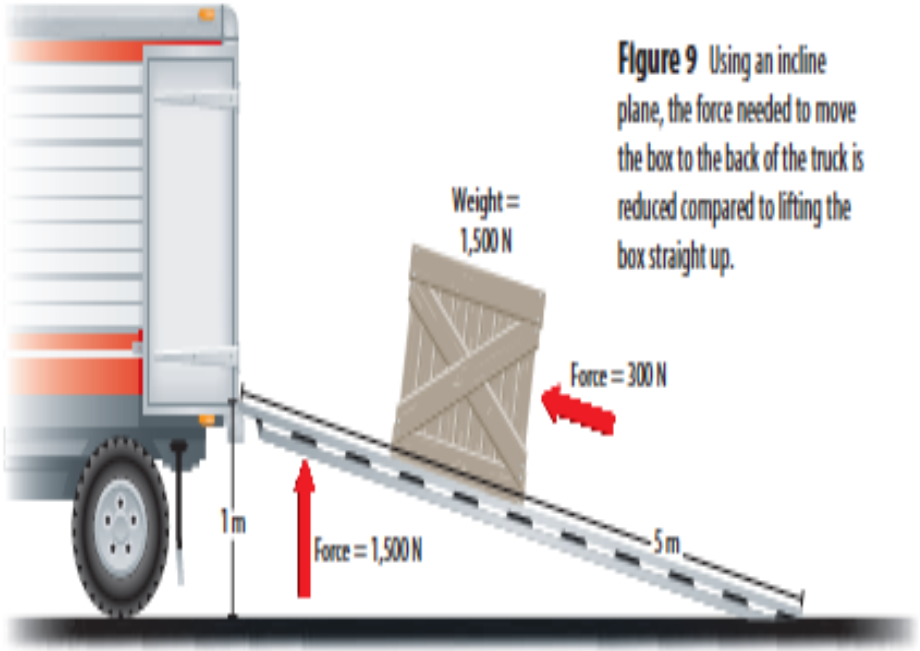


Figure 9 Using an incline plane, the force needed to move the box to the back of the truck is reduced compared to lifting the box straight up.

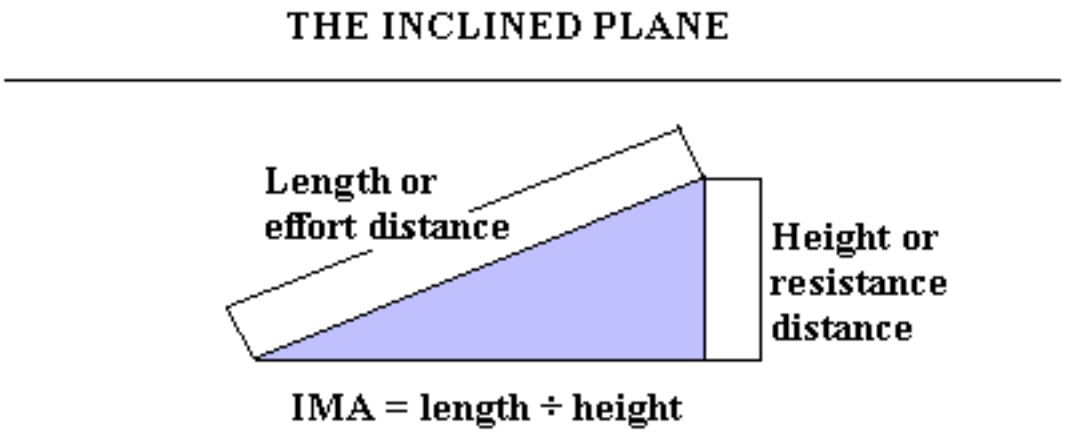
- https://www.youtube.com/watch?v=AZbPj0pwl0k

Think Pair Share

- How does an incline plane help to make work easier?

- Name some everyday uses for incline planes your group.

Exit Slip



What is the mechanical advantage of a ramp with a length of 35 feet and a height of 5 feet?