SIMPLE MACHINES

Topic: Simple Machines

Goal: I will be able to observe how machines transfer energy from one object to another.

Do Now: Give the definition of one of the simple machines and an example from this room.

DO NOT TOUCH ANYTHING ON YOUR TABLE
Take out the simple machines packet&group contracts

What is mechanical advantage?

- **Input force:** force you put into the machine
- **Output force**: the force the machines puts in
- **Mechanical Advantage:** Some machines reduce the force humans need to do work. Ratio of input to output force
- **More mechanical advantage, more efficient.**
- **Less friction, more efficiency**

Station Work

- How to use spring scales
- How to fix the pulleys
- How to rotate
- Rules

Topic: Simple Machines

Goal: I will be able to understand the connection between efficiency, mechanical advantage, and use of energy.

HW: Study flashcards on website

Do Now: What is mechanical advantage? Why is mechanical advantage important when choosing a machine to use?

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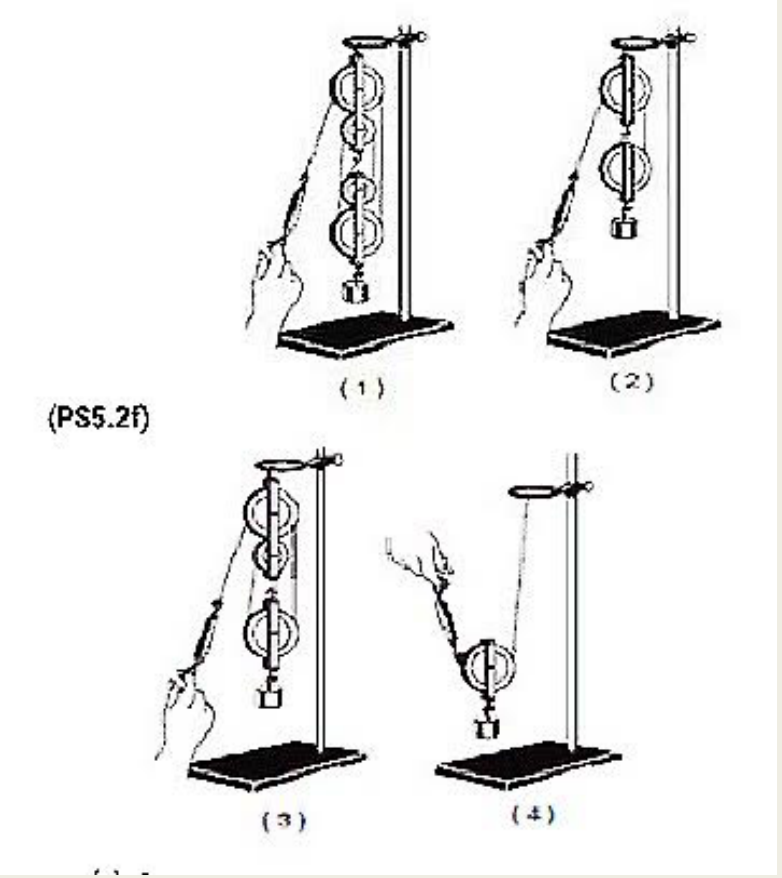
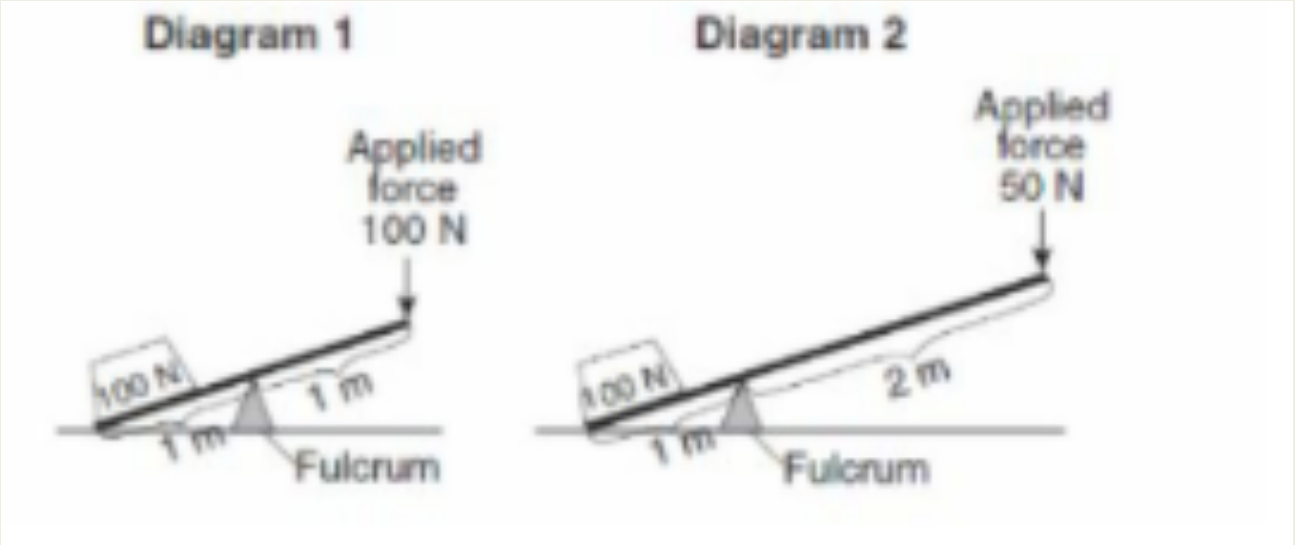
Pulley

- More strings, more mechanical advantage- more efficient
- Which setup below would require the least force to lift a 100-gram mass a distance of 10 centimeters?



Levers

- Longer the lever, less energy required to do work (more efficient)



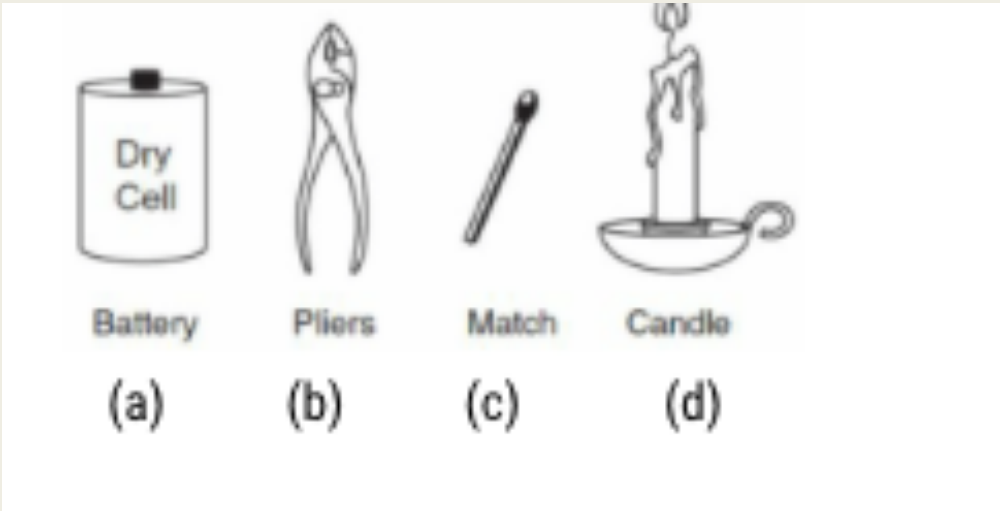
- Turn and talk: Which lever requires less input force?

Inclined Planes & Wedges

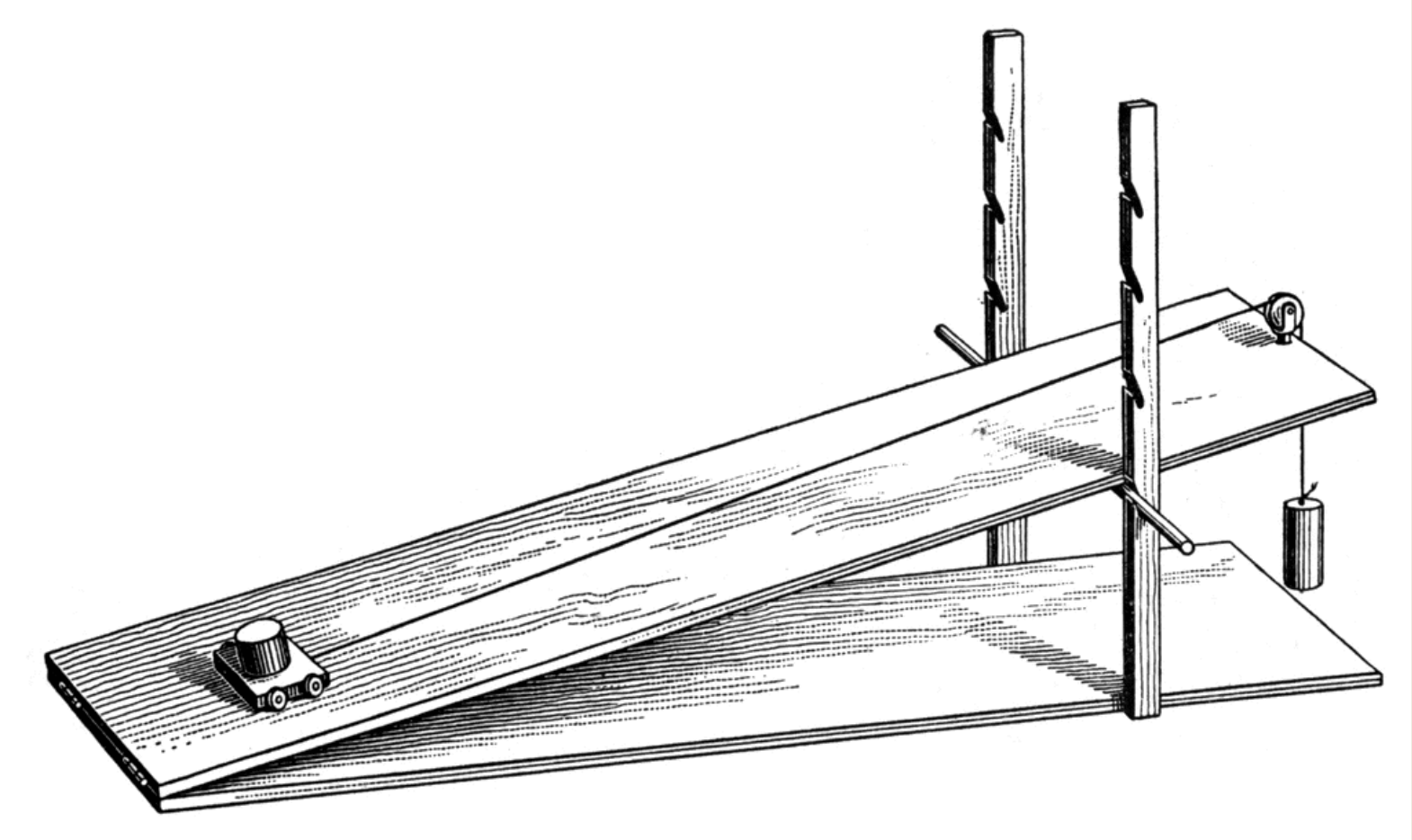
- Longer the inclined plane or wedge, less energy input
- But why….
- Work = Force x Distance
- If you increase the distance, you can decrease the force needed to move an object.

Compound machines

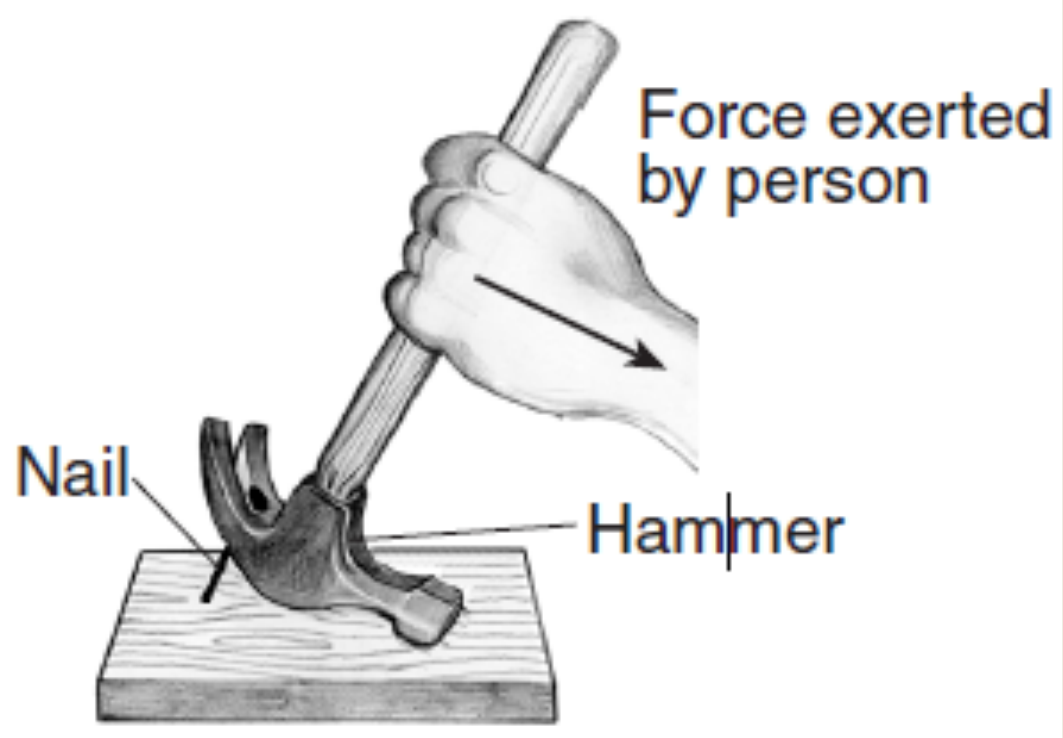
- Compound Machine: Machine made up of two or more simple machines



Name that machine



Name that machine



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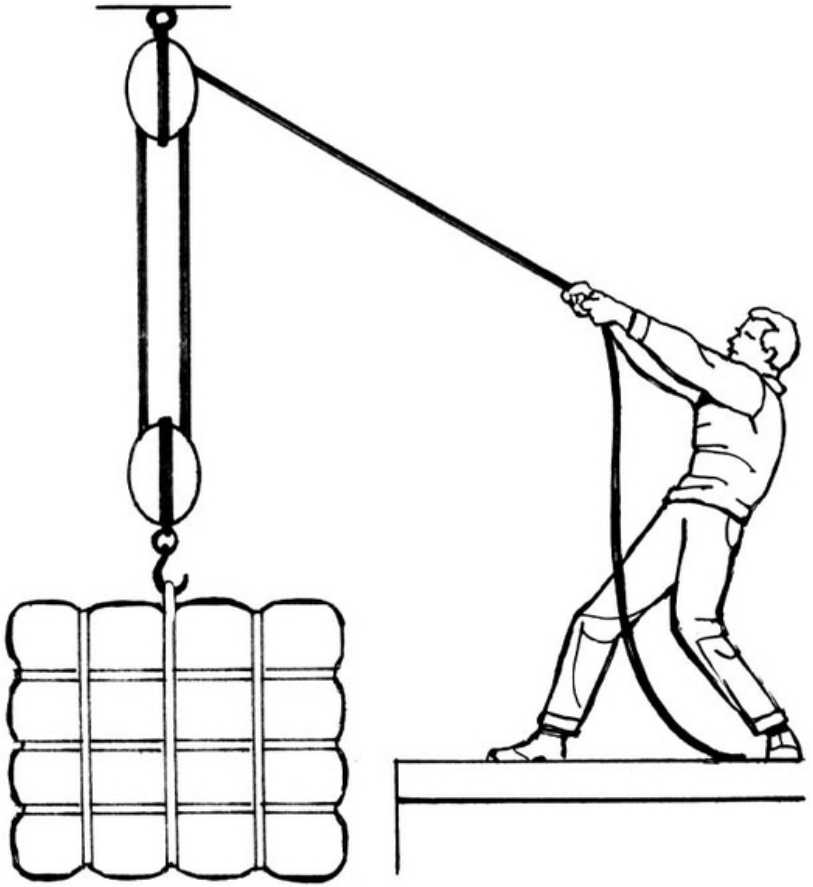
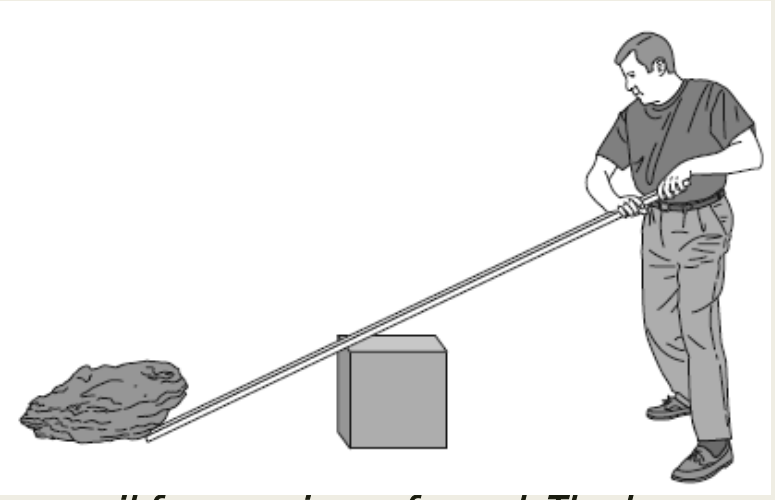


Name that machine

1. Which type of energy is transferred from one object to another by simple machines (5.2c)

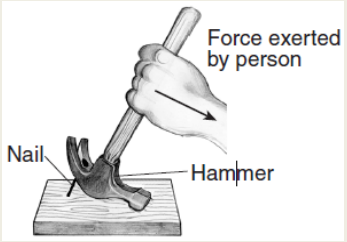
a) *Mechanical*
b) *Nuclear*
c) *Chemical*
d) *Electrical*



2. Which simple machine is this person using (5.2g

a) *Pulley*
b) ***Wheel and axle***
c) ***Inclined Plane***
d) ***Lever***

3. The hammer is being used by a person to remove a nail from a piece of wood. The hammer is being used as which type of simple machine? (5.2g)



a) Wheel and Axle
b) Inclined Plane
c) Lever
d) Pulley