

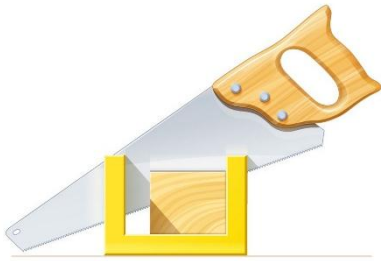


### Tools:

A tool is an instrument used by hand to make or fix something.

Tools make our work much easier.

### Students' Learning Outcomes

Define tool as an instrument to make people's work easier.

Examples of Tools		
		
Saw	Hammer	Knife

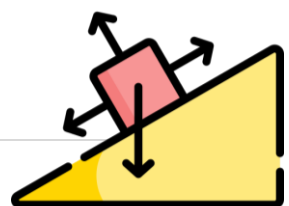


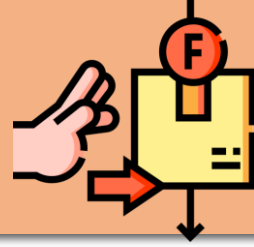
### Tools used in Past

Tools have been used by humans for centuries to help us survive and thrive. The types of tools that have been used have changed over time.

Tools used in the past are:

- Stone Tool
- Bone Tool
- Wood Tool





## Machines:

A machine is the thing that can be used to apply force.

## Simple Machines

Simple machines are tools that change the force and make our work easier. Such as, lever, inclined plane, pulley, wedge, screw, wheel and axle.

### Students' Learning Outcomes

Name and identify different forms of simple machines (inclined plane; lever; pulley; wedge; screw; wheel and axle).

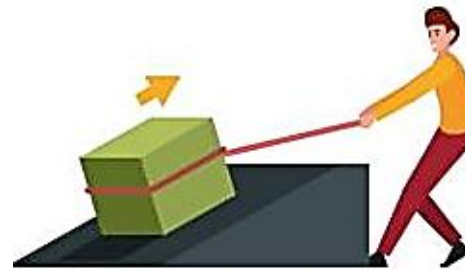
### Lever

A lever is a simple machine consisting of a rigid rod pivoted at a fixed point.



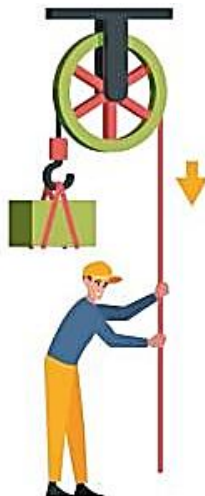
### Inclined Plane

An inclined plane is a simple machine that consists of a flat surface tilted at an angle from the horizontal.



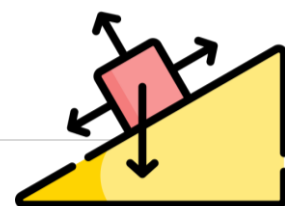
### Pulley

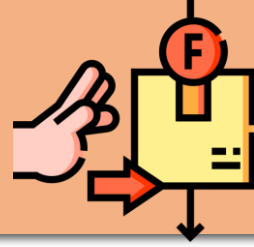
A pulley is a simple machine that consists of a wheel with a rim, around which a rope is passed.



### Wedge

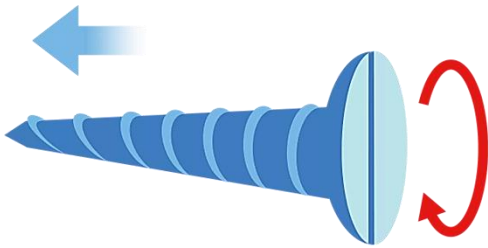
A wedge is a simple machine that consists of two inclined planes joined together to form a sharp edge.





### Screw

A screw is a simple machine that is used to hold things together.



### Wheel and Axle

A wheel and axle is a simple machine consisting of a wheel attached to a smaller axle.



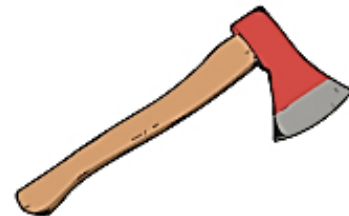
## Simple Machine Examples



Lever - Scissors



Inclined Plane - Slide



Wedge - Axe



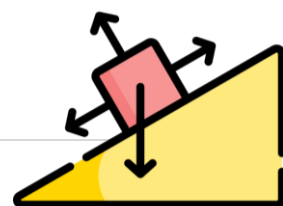
Wheel and Axle - Bicycle

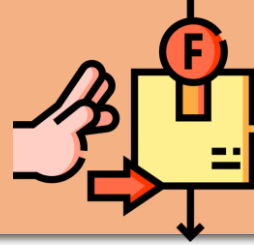


Pulley - Water Well



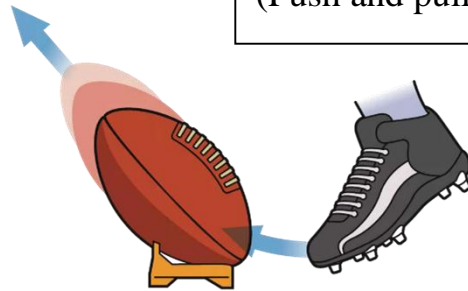
Screw - Corkscrew





## Force:

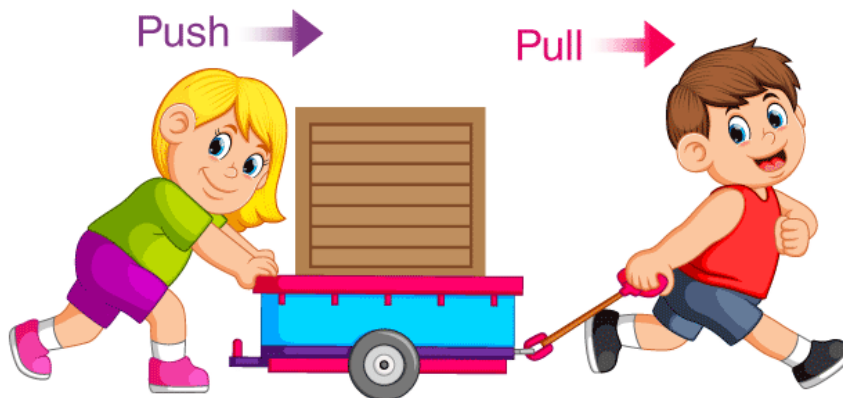
A push or pull that may move or stop something is a force.



### Students' Learning Outcomes

Recognize that push and pull moves things fast or slow. (Push and pull as a force).

- ✚ A **push** is a force that moves an object away from something.
- ✚ A **pull** is a force that moves an object towards something.



## Force of Moving Objects:

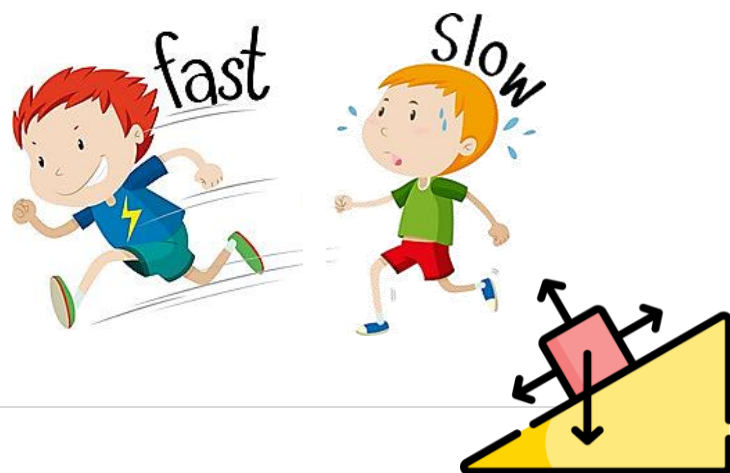
Motion of objects depends upon the magnitude of force.

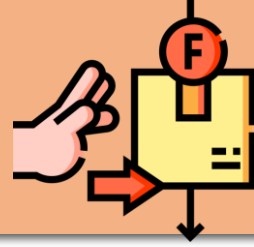
- ❖ Greater the force, faster the motion.
- ❖ Smaller the force, slower the motion.

Force can also stops the motion of an object.

### Students' Learning Outcomes

Recognize that greater the force, the greater the change in the motion of an object.





### Past and Present Transportation:





The vehicles used now-a-days are more developed than the vehicles used in early times for the transportation.

- ❖ Vehicles in past were slow.
- ❖ While vehicles in present day are more fast and efficient.





#### Students' Learning Outcomes

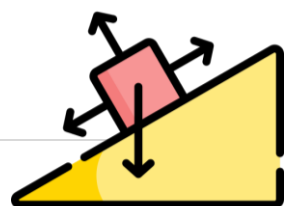
Recognize from the pictures of the past that force applied by humans and animals moved vehicles (Tonga, bullock cart, cycle, pushcart) while today vehicles are moved by machines (bus, motorcycle and car etc.)

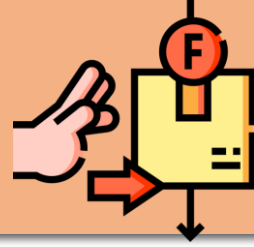
#### Earlier Vehicles

			
Tonga	Bullock Cart	Cycle	Pushcart

#### Recent Vehicles

			
Bus	Motorcycle	Car	Aero plane





### Uses of forces:

Force can cause objects to change speed, shape, size and direction of things. For example,

- Speeding up a car.
- Crushing a tin can.
- Squeezing a sponge.
- Pot making.

Force can make things move. For example, a toy car need force to move it.

Force can produce *motion* in an object.

*Motion is the change in position of an object.*

Force can change the motion of an object by moving it faster (speeding up) or slower. For example, a bicycle needs force on pedals.

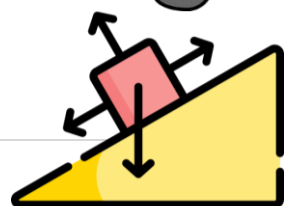
**Greater force = Higher speed**

**Smaller force = Slower speed**



Force can also *stop* moving things. For example, brakes applied on a car.

Force can also change the *direction* of a moving thing. Such as turning a moving car.



### Students' Learning Outcomes

Observe and describe how motion of vehicles can be changed by applying force (speed up, slow down, stop, change direction etc.)