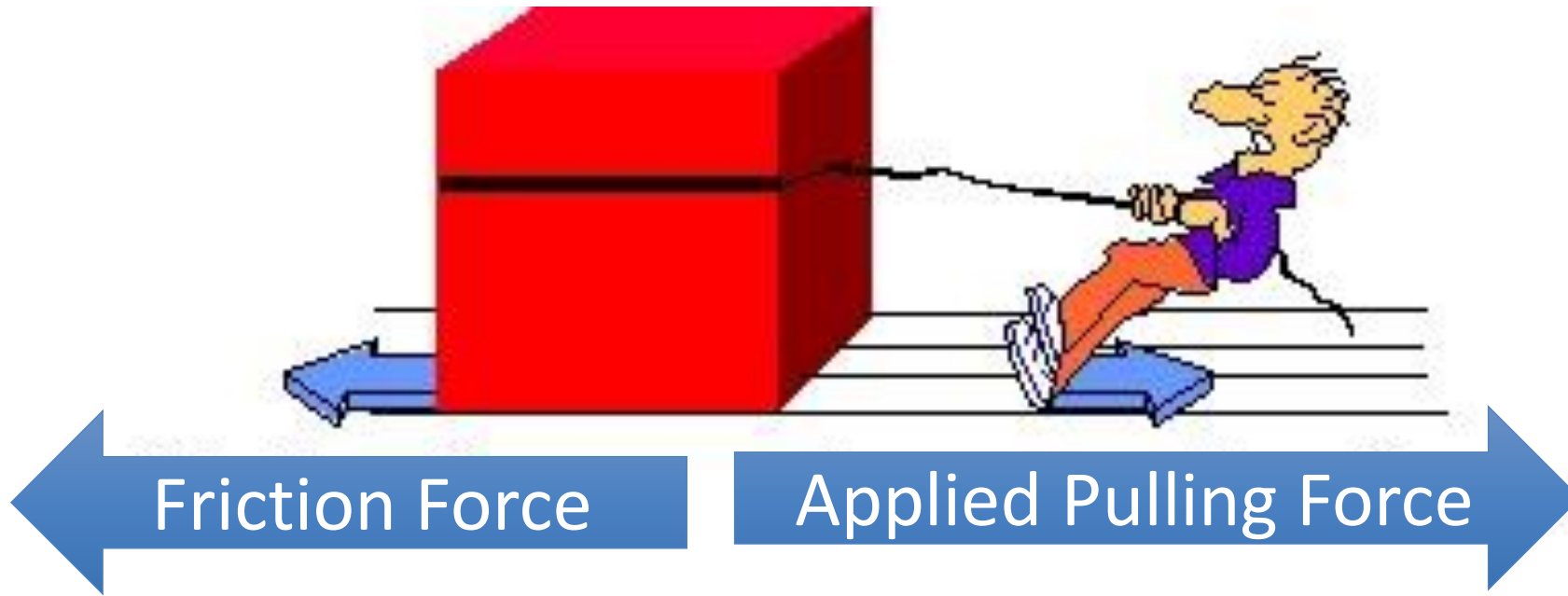


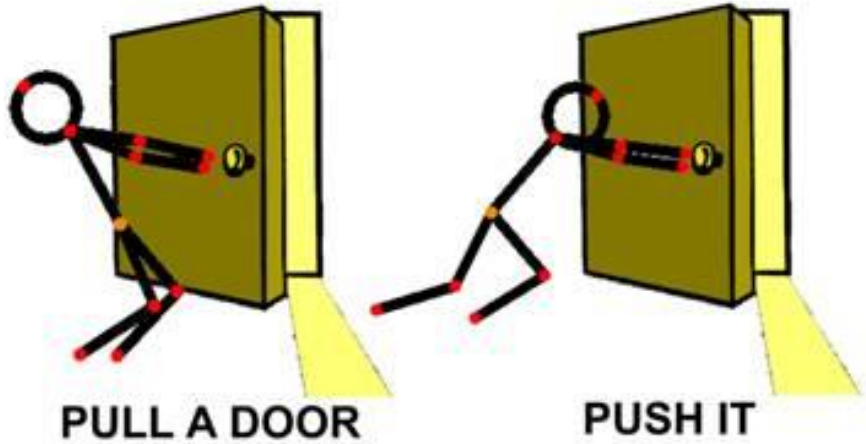
Daily Review

Draw this diagram and label with the two forces acting upon the box



Daily Review

Draw this diagram and label with the two forces acting upon the box



In your books write down the following definitions

1. What is a force?

- A push, pull or a twist.

2. What can a force do?

- It can change the direction of movement of an object.
- It can start or stop an object from moving.
- It can speed up or slow down the movement of an object.

Daily Review

# Introduction to Simple Machines

Year 7 Physics

## Learning Objective

We will be able to describe a simple machine and how they make our life easier.

### CFU

What are we going to learn?

Tell a partner

## Success Criteria

We will use our knowledge of simple machines to describe how simple machines makes our life easier.



# Activate Prior Knowledge



# Concept Development

A simple machine is any mechanical device that changes the size or the direction of a force.



## CFU 1

What is a simple machine?

## CFU 2

How does the bottle opener make removing a bottle cap from a bottle easier.

## Vocabulary

Effort – the force applied to complete a job.

Work – the amount of energy required to do a job.



# Concept Development

Simple machines make work easier to do in one of the following ways

1. FORCE MULTIPLIER - Changing the size of the force
2. SPEED MULTIPLIER - Speeding up an object
3. CHANGE DIRECTION a force acts an object



## CFU 1

What is one way that a simple machine can make a job easier?

## Vocabulary

Effort – the force applied to complete a job.

Work – the amount of energy required to do a job.



# Concept Development

Simple machines make work easier to do in one of the following ways

1. **FORCE MULTIPLIER** - Changing the size of the force
2. **SPEED MULTIPLIER** - Speeding up
3. **CHANGE DIRECTION** a force acts



## CFU 1

How does the claw end of a hammer make pulling a nail out of wood easier?

## Vocabulary

Effort – the force applied to complete a job.

Work – the amount of energy required to do a job.

# Concept Development

Simple machines make work easier to do in one of the following ways

1. **FORCE MULTIPLIER** - Changing the size of the force
2. **SPEED MULTIPLIER** - Speeding up an object
3. **CHANGE DIRECTION** a force acts an object



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## CFU 1

What is the affect of using a tennis racquet to hit a tennis ball?

## CFU 2

Both hitting a tennis ball and a golf ball increases the speed of the ball.

There is one difference?

- a. Only the tennis ball changes direction.
- b. Only the golf ball changes direction.
- c. The golf ball changes speed the least.

## Vocabulary

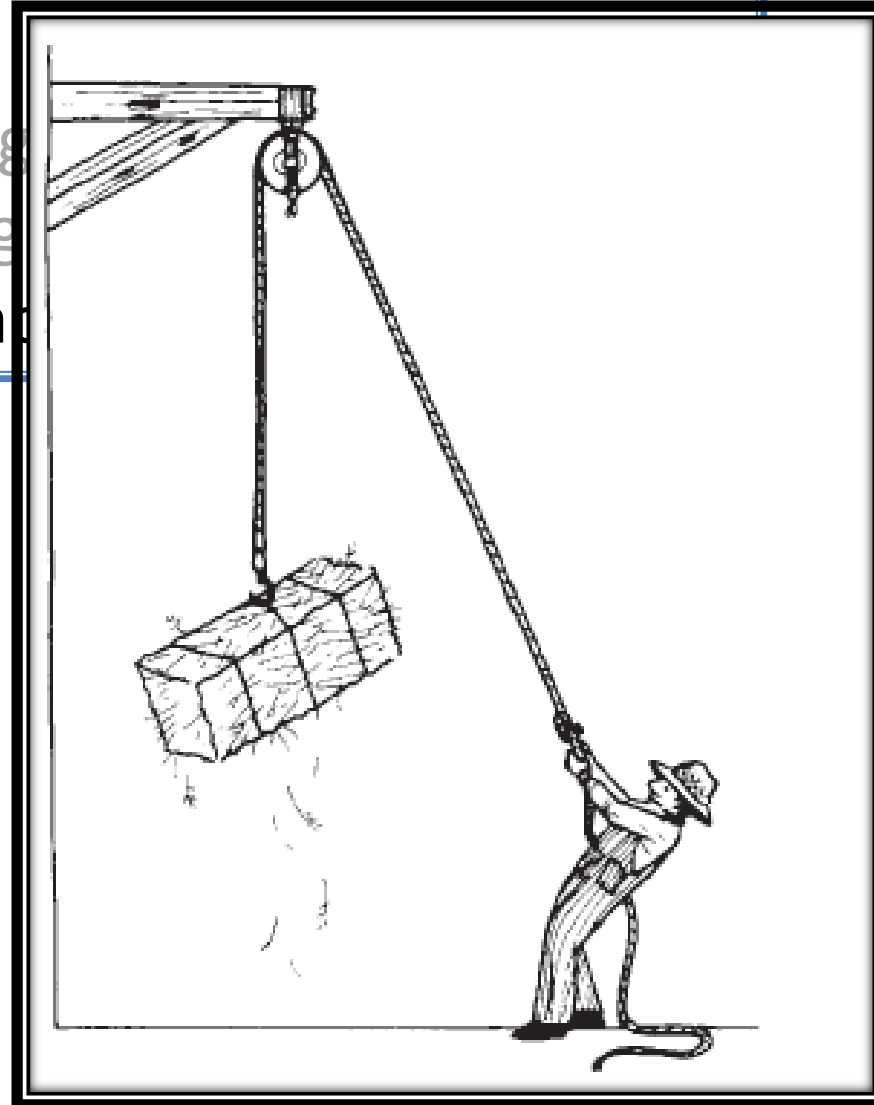
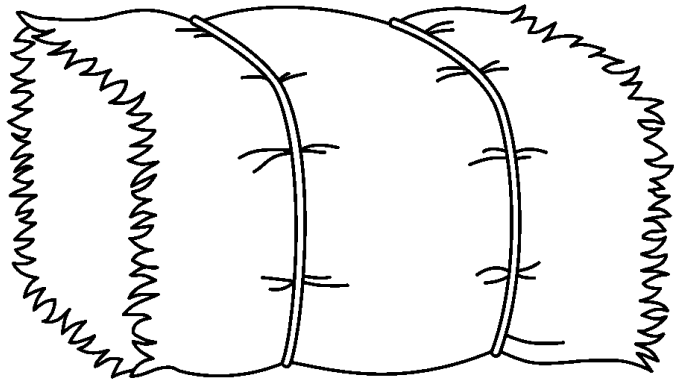
Effort – the force applied to complete a job.

Work – the amount of energy required to do a job.

# Concept Development

Simple machines make work easier to do in one of the following ways

1. FORCE MULTIPLIER - Changing
2. SPEED MULTIPLIER - Speeding
3. CHANGE DIRECTION a force and



CFU 1

How does a pulley make moving a stack of straw bales easier?

## Vocabulary

Effort – the force applied to complete a job.

Work – the amount of energy required to do a job.

# Concept Development

There are six types of simple machines.



1) Lever



2) Inclined plane

is



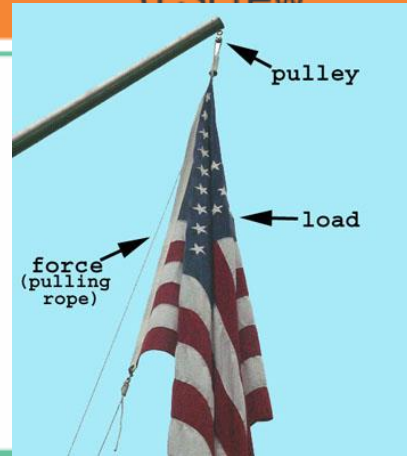
3) Screw



4) Wheel and axle



5) Wedge



6) Pulley

## CFU 1

Name one type of simple machine?

Give me an example of a simple machine.

## Vocabulary

Effort – the force applied to complete a job.

Work – the amount of energy required to do a job.



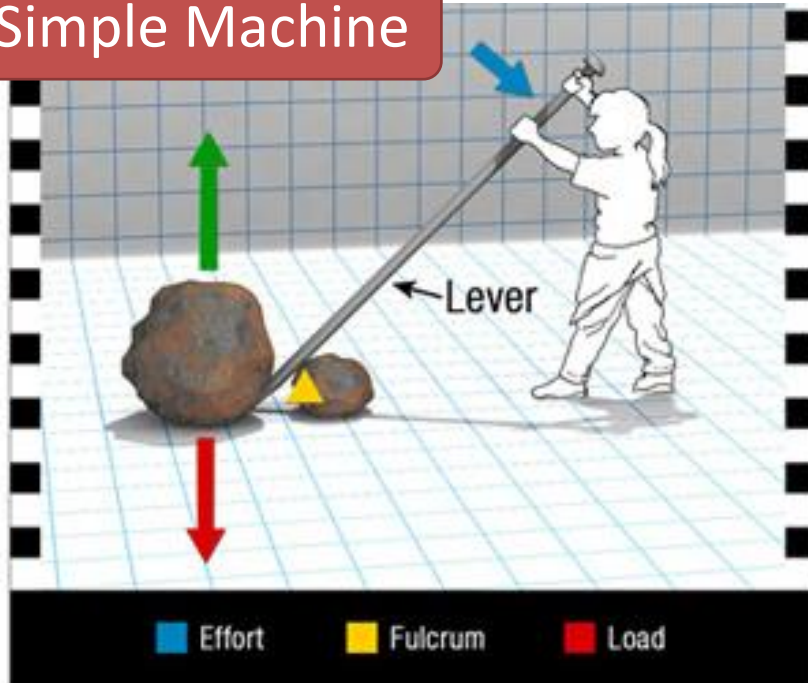
# Concept Development

A machine can be either a simple or a complex machine

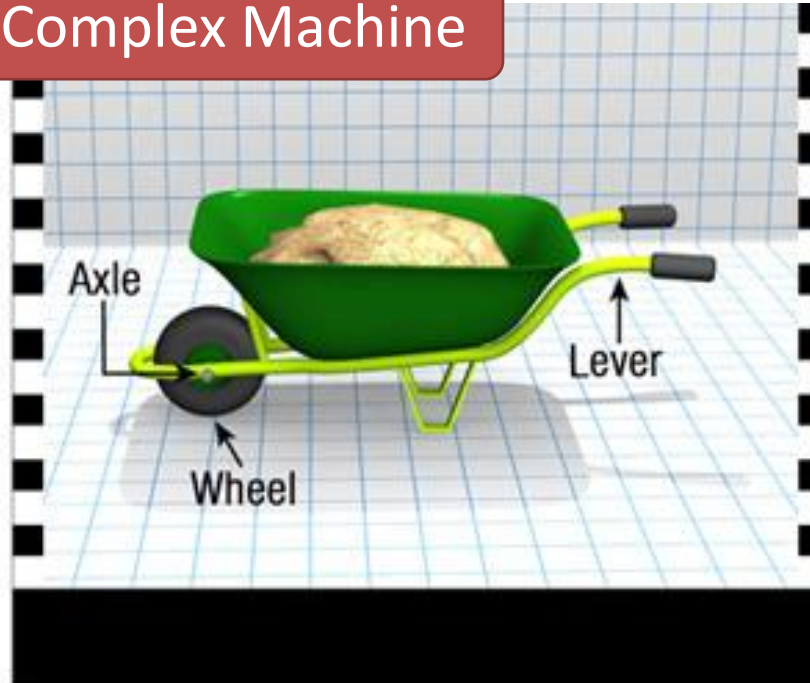
**Simple Machine** - one moving part

**Complex Machine** – two or more moving parts

Simple Machine



Complex Machine



## CFU 1

How many parts does a simple machine have?

How many parts does a complex machine have?

## CFU 2

Which of the following are not a simple machine?

- a) A ramp for a dog
- b) A pencil sharpener
- c) An axe
- d) A car

## Vocabulary

Effort – the force applied to complete a job.

Work – the amount of energy required to do a job.

# Skill Development/Guided Practice

CFU 1

What are the steps used to identify a simple machine?

Identify if the machine is the following

1. Simple or Complex Machine
2. The type of Simple Machine/s involved
3. How does the Simple Machine make the job easier?



1. Simple Machine

2. Levers

3. Increases Size of a Force



# Skill Development/Guided Practice

Identify if the machine is the following

1. Simple or Complex Machine
2. The type of Simple Machine/s involved
3. How does the Simple Machine make the job easier?



1. Complex Machine

2. Levers, Wheels and Axle

3. Increases Speed,  
Changes Size of a Force

# Skill Development/Guided Practice

Identify if the machine is the following

1. Simple or Complex Machine
2. The type of Simple Machine/s involved
3. How does the Simple Machine make the job easier?



1. Simple Machine

2. Lever

3. Increases Size of a Force

# Skill Development/Guided Practice

Identify if the machine is the following

1. Simple or Complex Machine
2. The type of Simple Machine/s involved
3. How does the Simple Machine make the job easier?



1. Simple Machine

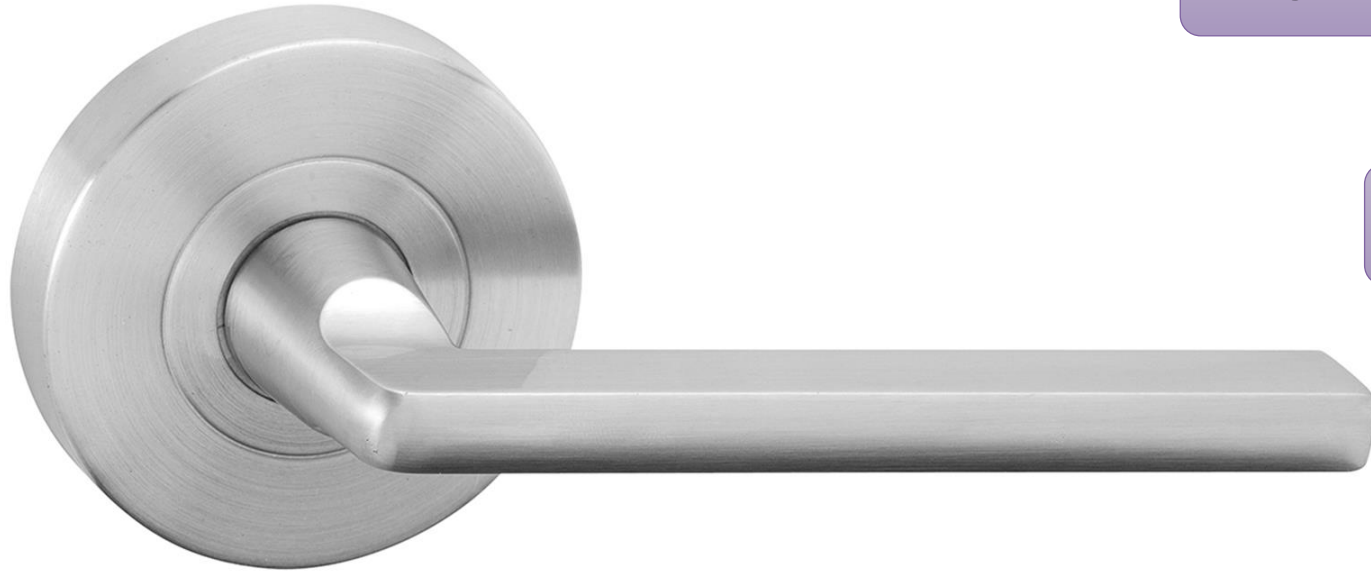
2. Wedge

3. Changes Direction  
of a Force

# Skill Development/Guided Practice

Identify if the machine is the following

1. Simple or Complex Machine
2. The type of Simple Machine/s involved
3. How does the Simple Machine make the job easier?



1. Simple Machine

2. Levers

3. Changes Direction  
of a Force

# Skill Development/Guided Practice

Identify if the machine is the following

1. Simple or Complex Machine
2. The type of Simple Machine/s involved
3. How does the Simple Machine make the job easier?



1. Complex Machine

2. Levers, Wheels and Axle

3. Increases Speed, Changes Direction of a Force

There are simple machines all around us in the world that make our lives easier. By understanding how simple machine help us, we can use them most effectively.

1. Simple Machines have a single moving part, whilst Complex Machines have more than one moving part
2. There are six types of simple machines; levers, inclined planes, screws, pulleys, wheel and axle, and wedge.
3. A simple machine makes a job easier by changing the size or the direction of a force.

## Reminder:

Identify if the machine is the following

1. Simple or Complex Machine
2. The type of Simple Machine/s involved
3. How does the Simple Machine make the job easier?





Using your knowledge of Simple Machines, how does using a spoon make opening the Milo tin easier?

1. Simple Machine

2. Lever

3. Increases the Size of the Force

## Reminder:

Identify if the machine is the following

1. Simple or Complex Machine
2. The type of Simple Machine/s involved
3. How does the Simple Machine make the job easier?

# Independent Practice

Inspect the examples of Simple Machines around the classroom

1. Draw the Simple Machine
2. Identify if it is a Simple or Complex Machine
3. Identify the type of machine
4. Identify if the machines change the size or the direction of the force. Describe how the simple machine changes the force.



**Reminder:**

These are the steps....