

# St. Andrews Scots Sr. Sec. School

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Session: 2024-25

Class: IV      Subject: Science      Topic: Force, Work and Energy      Lesson No: 13

- Reading of the chapter
- Explanation (will be done in class)

## (Textbook exercise)

- A. Tick (✓) the right answer.

1. (a) frictional force
2. (b) pulley
3. (b) sun
4. (c) sound energy

- B. Fill in the blanks.

1. Work
2. Muscular
3. change
4. gravitational

- C. Write whether the following statements are (T) for True or (F) for false.

1. True
2. False
3. True

4. False

• **D. Circle the odd one and justify.**

1. Screw- It is not a lever.
2. Friction- It is not a type of energy.
3. Washing machine- It is not a simple machine.
4. Electric iron- It does not uses Solar Energy.

**(Notebook Work)**

• **New Words**

1. Applied
2. Direction
3. Gravitational force
4. Muscular force
5. Frictional
6. Screwdriver
7. Wedge
8. Inclined plane
9. Hydroenergy
10. Windmills

• **Defines**

1. **Friction** - Force that opposes motion.

2. **Simple machine** - Tool that makes our work easier and faster.
3. **Hydroelectricity** - Electricity generated using the energy of flowing water.

- **Fill in the blanks.**

1. **Work** is done when an object moves.
2. While riding a bicycle we use **muscular** energy.
3. Force can **change** the shape of an object.
4. An apple falls down from a tree because of **gravitational** force.

- **Short Question Answers**

**Q.1 Define work.**

**Ans.** Work is done when force is applied on an object and the object moves in the direction of force applied.

**Q.2 How does a machine help us?**

**Ans.** Machine makes our work easier and faster.

**Q.3 What is solar energy? Name two devices that work on solar energy.**

**Ans.** Energy obtained from sun is called solar energy.

Two devices that work on solar energy are Solar cell and Solar heater.

**Q.4 List the different sources of energy.**

**Ans.** Sun, water, wind.

- **Long Question Answers**

**Q.1. What is force? What are its effects?**

**Ans.** The push or pull applied on an object is called force. Its effects are:-

- (i) It can move or stop an object.
- (ii) It can change the speed.
- (iii) It can change the direction.
- (iv) It can change the shape.

**Q.2 Name the six types of simple machine.**

**Ans.** The six type of simple machine are:-

- i) Lever
- ii) Pulley
- iii) Wheel and axle
- iv) Inclined plane
- v) Screw
- vi) Wedge

**Q.3 Differentiate between gravitational force and frictional force.**

**Ans.**

<b>Gravitational force</b>	<b>Frictional force</b>
The force by which earth pulls the object towards itself.	The force that slows or stops a moving object.

**Q.4 Define energy. What are the different forms of energy?**

**Ans.** Energy is ability to do work. Its different forms are heat, light, electrical, sound and chemical energy.

**Q.5 Why is the sun considered as the ultimate source of energy?**

**Ans.** Sun is the ultimate source of energy because

- i) Plants use solar energy to make food for all living beings.
- ii) Sun gives energy in form of heat and light.
- iii) All forms of energy are derived from the sun.

**Give Reasons**

**Q.1 Why do our tears fall down when we weep?**

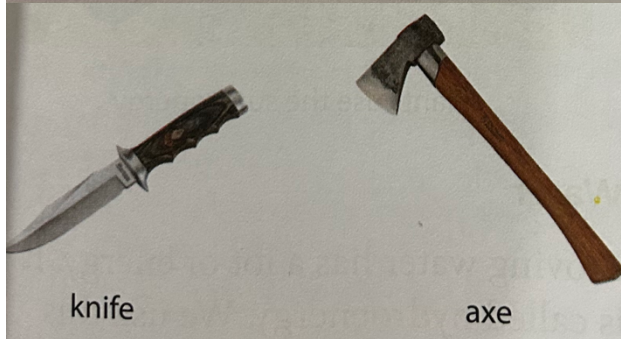
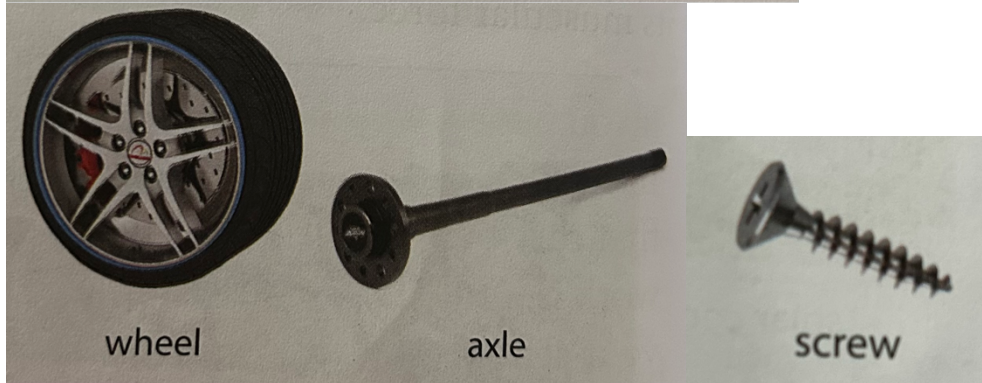
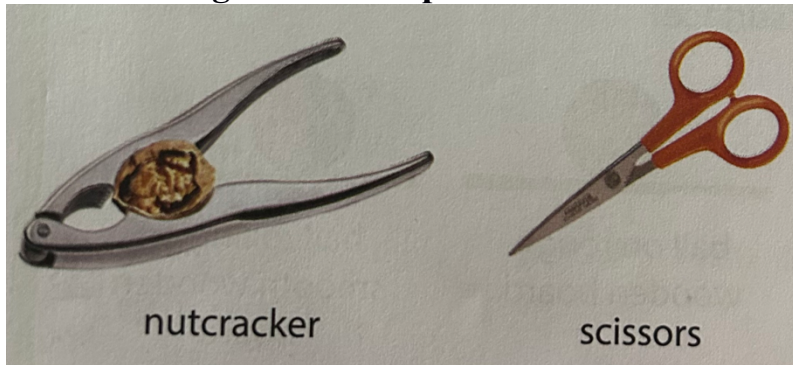
**Ans.** Our tears fall down when we weep due to gravitational force.

**Q.2 Why can't people walk in space, they just float in air?**

**Ans.** Because there is no gravity in space.

## Diagrams

Draw the diagrams of Simple Machines.



### • Dictation

Any 10 words

### • Activity

Collect pictures of different simple machines that we use in our daily life and paste them in your notebook.