



Class: 4

Subject: Science

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Lesson-9: Force, Work and Energy

I. Key words:

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|---------------|--------------------|
| 1. Orbit | 7. Elastic |
| 2. Hoist | 8. Muscular |
| 3. Motion | 9. Resistance |
| 4. Gravity | 10. Wedge |
| 5. Friction | 11. Screws |
| 6. Mechanical | 12. Inclined Plane |

II. Pre activity: List any 5 simple machines you use in daily life.

III. Name the following.

Q.1. Name any two examples of inclined planes.

Ans- Slides and Ramps.

Q.2. Name any two forms of energy.

Ans. Geothermal and Solar energy.

Q.3. Name any two natural sources of energy.

Ans- Sun and Water.

Q.4. Name the two naturally occurring forces on Earth.

Ans- Gravitational force and Frictional force.

IV. Short answers questions.

Q. 1. How is gravity differ from friction?

Ans-

Gravity	Friction
Gravity is a type of force which pulls and pushes objects to the ground.	When the surfaces of two objects come into contact with one another, they exert some force on each other. This is called the force of friction

All objects must come back to the ground or to the Earth.

The force exerted by these objects is in opposite directions of each other.

Q. 2. Define work. When is work is said to be done ?

Ans: Any mental or physical activity is called work. When the force we apply on an object causes it to move a certain distance or change its shape, work is said to be done on that object.

Q. 3. What are simple machines? Name three types of simple machines.

Ans: Tools that make our work easier and faster are called simple machines.

There are six types of simple machines they are :

a) Wheel and Axel b) Lever c) Inclined Plane d) Wedge e) Screws f) Pulley

Q. 4. What are fuels ? How do we get energy from fuels?

Ans: Fuels are natural substances which have energy stored within them. This energy is released when the fuels are burnt.

V. Long answers questions.

Q.1. What is energy? Describe three sources of energy.

Ans- The ability to do work is called energy.

a) Sun: i] Sun is the biggest source of energy. This is called solar energy.
ii] Plants use energy from the Sun to prepare food.
iii] Solar energy is useful for producing heat, electricity and light.
iv] Solar energy is considered a cleaner form of energy.

b) Water: i] Moving water produces a lot of energy. This energy is called hydropower.
ii] We use this energy for the production of electricity.

c) Air: i] Moving air also produces a lot of energy. This is called wind energy.
ii] It is used to generate electricity by windmills.
iii] It is also used to draw out underground water.

Q.2. Describe four types of simple machines

Ans- a) Wheel and Axle: i] This machine is made up of a wheel. A rod called axle passes through this wheel.

ii] Such a machine is used in cars and doorknobs to move or change the direction of objects.

b) A lever : i] It is used to lift, cut or move things that are heavy.

ii] Bottle openers, hammers and scissors are some examples of levers.

c) Pulley: i] A pulley is made of a wheel and a rope.

ii} Pulleys are used to easily lift things that are heavy.

d) Inclined Plane: i)An inclined plane is used to move things at a height.

ii}It has a slope which makes upward and downward movements of heavy things easier.

iii} Ramps, slanted roads, uphill roads and slides are examples of inclined planes.

Q.3. How is frictional force helpful? Explain with an example.

Ans-When friction is applied, it slows down the movement of an object. Without friction, an object in motion would always stay in motion. It would not be possible to stop its movement.

Q.4.Explain why solar energy is the most important type of energy?

Ans- i)The Sun is the biggest source of energy. This is called solar energy.

ii)Solar energy is used to produce heat, electricity, and light

iii)Plants use energy from the Sun to prepare food.

iv)Solar energy is considered a cleaner form of energy, in comparison to the energy acquired from fuels.

VI. Hots:

1.What would have happened if there was no Sun? Where would we have got the energy from?

Ans- Life wouldn't be possible without the Sun. All living things, particularly plants, are dependent on Sun for survival

2.The desert area of Rajasthan gets lots of sunlight daily. Would windmills be the best option for that area as a source of energy?

Ans- Ways to produce solar energy would be the best option for an area like this.

VII. Post-activity-

Draw the flow chart to represent Force.

Subject Teacher

H.O.D.

Coordinator

Principal