

Answers

Theme 8: How Does Technology Work?

Lesson-12: Force, Work and Energy

Main Coursebook

Kinaesthetic:

Accept all relevant responses

Auditory:

1. The two machines used in the story are motorbike and a well pulley.
2. A well pulley is a machine that helps in drawing water from the well.

Pictorial



Interacting better:

Accept all relevant responses

Understanding better (Page 84)

1. False
2. True

Understanding better (Page 85)

1. Yes
2. No

Understanding better (Page 86)

1. Energy
2. Sun

Learning better

- A. 1. b 2. c 3. a 4. c 5. c
 B. 1. True 2. False 3. False
 4. True 5. True

- C. 1. Work is done when force is applied on an object and it moves in the direction of the applied force.
 2. Muscular force and frictional force.
 3. Energy is the capacity to do work.

- D. 1. There are different kinds of energies which are as following:

Heat energy

Heat energy is the energy that make things hot or warm. When two bodies are present at different temperatures, heat flows from the higher to the lower temperature. For example, Sun, fire, etc.

Sound energy

The energy generated due to vibration of matter is known as sound energy. This is the energy that we hear. For example, Honking of horn, playing flute, etc.

Electrical energy

Electrical energy is the energy that comes from electricity. For example, charging a mobile or watching a TV, lights, etc.

Chemical energy

The energy stored in things like food, batteries, fuel, etc. is known as chemical energy. This energy helps us work. For example, fuel helps vehicles run.

2. The different kinds of simple machines are as following:

Lever

It is a bar-like simple machine used to cut things, open lids and lift weights. The point that helps turn or balance a lever is called fulcrum. Nail-cutters, scissors, tongs and pliers are some examples of levers used in our everyday lives.

Pulley

We can lift heavy objects with the help of a pulley. It consists of a wheel with a groove that carries a rope. Pulleys are used to fetch water from wells, lift cars with cranes, move lifts, etc. well (pulley) pliers (lever).

Wheel and axle

This machine comprises a wheel attached to an axle. An axle is a rod that passes through the centre of the wheel. Examples of wheel and axle include car and bicycle wheels.

Inclined plane

It is a type of surface that has one of its ends at a higher position than the other one. Inclined planes help load or raise any heavy object. Some common types of inclined planes are ramps, slides, ladders, etc.

Wedge

It is a triangular machine with at least one inclined surface. A wedge has a sharp edge towards its end. For example, knife, blade and axe.

Creating better:

Accept all relevant responses

Thinking better:

I would choose light energy to power a toy robot because it can use sunlight with a solar panel. This way, the robot can work without needing batteries and it is good for the environment.

Choosing better:

1. Setting a time limit to avoid spending too much time on video games.

Students' Worksheets

Worksheet 1

- A. 1. force 2. shape; direction
3. stop 4. move 5. direction
- B. 1. ELECTRIC 2. FRICTIONAL
3. MUSCULAR 4. GRAVITATIONAL
5. MECHANICAL
- C. 1. Mechanical 2. Frictional
3. Frictional 4. Mechanical
5. Gravitational

Worksheet 2

- A. 1. Work 2. Simple 3. reduces
4. lever 5. fulcrum
- B. 1. LEVER 2. PULLEY 3. AXLE
4. INCLINED PLANE 5. WEDGE
- C. 1. Wedge 2. Pulley
3. Inclined plane 4. Lever
5. Wheel and axle

Worksheet 3

- A. 1. Sun 2. solar 3. Plants
4. Wind; water 5. electricity
- B. 1. HEAT 2. SOUND 3. CHEMICAL
4. ATOMIC 5. GEOTHERMAL
- C. 1. I 2. I 3. C 4. C 5. I

Book of Holistic Teaching

Developing better

A. English:

1. on
2. inside

B. Maths:

Perimeter = 100 m

Area = 625 m²

C. Social Studies:

Conveyor Belt

Lathe Machine

Milling Machine

Book of Project Ideas

Making better

Accept all relevant responses.