

# Lesson Plan

Grade: Four

Subject: Science

Term: 2<sup>nd</sup>

Time: 40min

Teacher's Name: \_\_\_\_\_

Week: 3

Day: 1

Chapter 5: Forms of Energy and Energy Transfer

Topic: Energy, Sources of Energy

## Objective(s):

At the end of this period, the students will be able to:

- Identify sources of energy (e.g., the sun, flowing water, wind, coal, oil, gas).
- Recognize that energy is needed to do work (e.g., for moving objects, heating and lighting).

## Resource Materials:

Chalk/marker, white/blackboard, Science Textbook, Toy car

## Warm-up Activities

5mins

- Before beginning the lesson, ask students to say "Tasmiya."
- Ask them: What is a major source of energy? What are the different uses of energy in our daily lives? Wait for their responses and appreciate them for good responses.

## Teaching and Learning Activities:

25mins

- Write the topic name 'Energy' on the board.
- Bring a toy car in the class and put it on table. Ask students if it can move itself. Let them respond.
- Tell them car cannot move itself. Now push the button on the car, it will move forward.
- Tell students when you push the button, the energy is provided by the battery to the car and it started moving. Whenever we need to do work, we need energy. Energy is ability to do work. Here the question arises, from where we get this energy? We get energy from different sources. We cook food using heat energy.
- Plants make food using light energy. Vehicles move using energy from petrol. Energy is found in different forms such as heat, light, sound, chemical energy etc.
- Sources of Energy: The largest natural source of energy on earth is the sun. Flowing water, air, coal, oil, solar panels, compressed natural gas (CNG), liquified petroleum gas (LPG), electricity and wood are other sources of energy.
- Tell the students about the largest natural source of energy on earth is the "Sun." The energy we get from the sun is called solar energy. The heat and

light of the sun are used to operate many solar cells, which produce electricity.

- Ask students to recall their daily activities and list those activities in which they need energy. Check their work and appreciate them for good work.

**Review:**

**3mins**

Explain the main points about the energy and sources of energy.

**Evaluation:**

**5mins**

To check the understanding of students, ask them:

- Define energy.
- What are different sources of energy?
- What is solar energy?

**Homework:**

**2mins**

Revise the classwork.

# Lesson Plan

Grade: Four

Subject: Science

Term: 2<sup>nd</sup>

Time: 40min

Teacher's Name: \_\_\_\_\_

Week: 3

Day: 2

Chapter 5: Forms of Energy and Energy Transfer

Topic: Sources of Energy

## Objective(s):

At the end of this period, the students will be able to:

- Identify sources of energy (e.g., the sun, flowing water, wind, coal, oil, gas).
- Recognize that energy is needed to do work (e.g., for moving objects, heating and lighting).

## Resource Materials:

Chalk/marker, white/blackboard, Science Textbook, Construction paper, Scissor and glue sticks, Worksheet

## Warm-up Activities

5mins

- Before beginning the lesson, ask students to say "Tasmiya."
- Ask them: What is energy? What are the different sources of energy? Wait for their responses. Appreciate them for good responses.

## Teaching and Learning Activities:

25mins

- Write down the topic name "Wind" and "Flowing Water" on the board.
- Tell the students today we are going to learn about the other sources of energy.
- Now tell them about wind. Moving air is called wind. It has enormous energy. The energy obtained from the wind is called wind energy.
- Tell them about "Flowing Water." The energy in water falling from the height, stored in dams, is used to run huge turbines that generate electricity. This form of electricity is called hydropower.
- Make the pairs of the students. Ask them to work individually or in pairs to create a wind turbine model using construction paper, scissors, and glue sticks. They can draw and cut out the blades, rotor, generate and assemble them into a working model.

## Review:

3mins

Explain the main points about the wind and flowing water.

## Evaluation:

5mins

To check the students grip, ask them:

- What is solar energy?
- What is wind energy?
- Define hydropower.

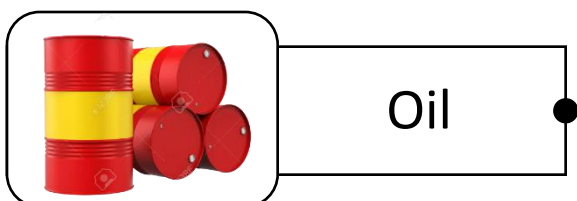
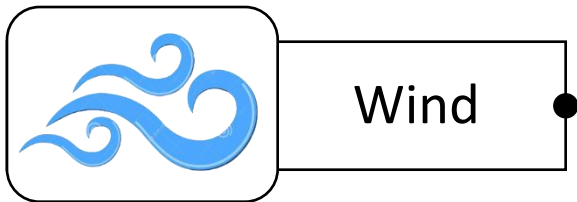
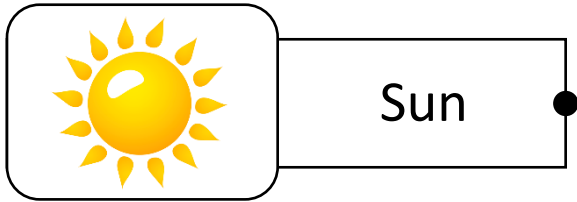
## Homework:

2mins

Ask students to write Q3 (ii) of Exercise in their notebooks and solve the given worksheet.

# Worksheet

Q1. Match each energy source to the way we use it.



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Teacher's Name: \_\_\_\_\_

Week: 3

Day: 3

Chapter 5: Forms of Energy and Energy Transfer

Topic: Sources of Energy

## Objective(s):

At the end of this period, the students will be able to:

- Identify sources of energy (e.g., the sun, flowing water, wind, coal, oil, gas).
- Recognize that energy is needed to do work (e.g., for moving objects, heating and lighting).

## Resource Materials:

Chalk/marker, white/blackboard, Science Textbook, Worksheet

## Warm-up Activities

5mins

- Before beginning the lesson, ask students to say "Tasmiya."
- Ask them: What is energy? What are the different sources of energy? Wait for their responses. Appreciate them for good responses.

## Teaching and Learning Activities:

25mins

- Tell the students today we are going to learn about the other sources of energy.
- Tell them about "Coal", "Crude Oil" and "Natural Gas." Tell them first about coal. Coal is a mineral formed by the remains of trees and plants that lived millions of years ago. Coal is dug out from coal mines. It is the cheapest source of energy.
- Now tell them about "Crude Oil." Crude oil is a thick black liquid, also called petroleum. It is also a mineral. Petrol, diesel, kerosene and LPG are its main products.
- Tell the students about "Natural Gas." It is also a mineral found along with crude oil, underground natural reservoirs. It is used to cook food.
- Ask the students to open their textbooks and read all the sources of energy.

## Review:

3mins

Explain the main points about the sources of energy.

## Evaluation:

5mins

To check the students grip, ask them:

- Define coal.
- Define crude oil.
- What are the main products of crude oil?

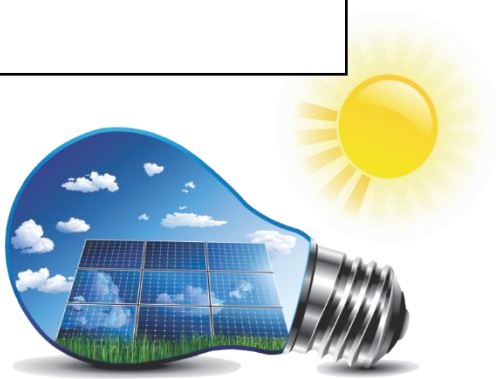
## Homework:

2mins

Ask the students to learn the topic and solve the given worksheet.

# Worksheet

Q1. Write the name of the sources of energy.



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Grade: Four

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Teacher's Name: \_\_\_\_\_

Week: 3

Day: 4

Chapter 5: Forms of Energy and Energy Transfer

Topic: Transformation of Energy

## Objective(s):

At the end of this period, the students will be able to:

- Describe and demonstrate the transformation of energy.

## Resource Materials:

Chalk/marker, white/blackboard, Science Textbook, Torch, Batteries

## Warm-up Activities

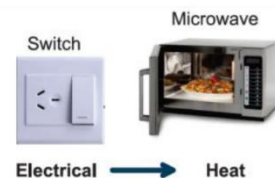
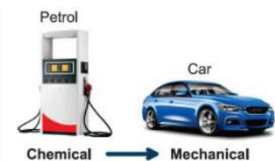
5mins

- Before beginning the lesson, ask students to say "Tasmiya."
- Ask them: What do you know about energy sources? What is wind energy? Wait for their responses.

## Teaching and Learning Activities:

25mins

- Write the topic name 'Transformation of Energy' on the board.
- Bring a torch and batteries to the class. Put batteries in torch and switch it on. Explain to students how chemical energy of the batteries transforms into light energy.
- Tell students energy changes its forms. The energy from batteries changes into light energy. When we switch on electric heater, electricity is changed into heat energy. This change of energy from one form to another is called transformation of energy.
- Now draw few examples of energy transformation on the board and explain them to students. When a car runs, chemical energy of petrol changes into mechanical energy.
- Similarly, when we switch on a microwave, electrical energy is converted into heat energy.
- In hydro-power plants, potential energy, possessed by stored water of dams is first converted into kinetic energy and then into an electric energy. During photosynthesis in plants, solar energy is converted into chemical energy by reacting with chlorophyll and then into food energy.
- Tell the students energy can neither be created nor destroyed, it can only be transformed from one form to other form.
- Ask students to open their textbooks and solve activity. Tell them to write how energy is converted from one form to another. Check their notebooks.



## Review:

3mins

Explain the main points about transformation of energy.

**Evaluation:****5mins**

To check the understanding of students, ask them:

- What is transformation of energy?
- Give an example of energy transformation from daily life.

**Homework:****2mins**

Ask the students to learn the topic. Write the answer of Q3 (iv) of Exercise in their notebooks.



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Day: 5

Chapter 5: Forms of Energy and Energy Transfer

Topic: Conservation of Energy

## Objective(s):

**At the end of this period, the students will be able to:**

- Understand the importance of energy conservation.
- Recognize the role and responsibilities of humans in conserving energy resources.

## Resource Materials:

Chalk/marker, white/blackboard, Science Textbook

## Warm-up Activities

5mins

- Before beginning the lesson, ask students to say "Tasmiya."
- Ask them: What do you know about energy transformation? Wait for their responses.

## Teaching and Learning Activities:

25mins

- Write the topic name 'Conservation of energy' on the board.
- Tell students you have read energy is transformed from one form to another. It means energy cannot be created. It only changes its forms. We even cannot destroy. Let's look at some examples of energy conservation.
- When we rub hands, the mechanical energy of hands is converted into heat energy and give us warmth. When a car runs, the chemical energy of petrol is converted into mechanical energy to run car or other vehicles. When we cook food, the chemical energy from natural gas is converted into heat energy and it is used to cook food. When we switch on light, the electrical energy is converted to light and we see objects.
- All these energies play vital role in our daily life. We should use them wisely. If these are not conserved, we won't be able to perform our tasks.
- Ask students what would happen if energy is not converted from one form to another? Let them respond.
- Tell them we won't be able to do anything if energy is not converted. Life would be static because we depend on energy for different tasks.
- Energy is of great importance so we should not waste it. We should conserve it for future generations. Let's see how can we conserve energy.
- Buy energy-efficient appliances.
- Switch off extra lights.
- Use LED bulbs to save electricity.
- Switch off appliances when not in use.
- Use renewable sources more as compared to non-renewable sources.

- Use public transport instead of own vehicles. Prefer to walk over short distances.
- Ask students to give some examples of energy conversions and tell their importance in our daily life.

**Review:****3mins**

Explain the main points about the energy conservation.

**Evaluation:****5mins**

To check the understanding of students, ask them:

- Why is conversion of energy important?
- What is the importance of energy conservation?
- List some ways of energy conservation.

**Homework:****2mins**

Ask the students to learn the topic. Write the answer of Q4 (i) of Exercise in their notebooks.