

# Lesson Plan

Grade: Four

Subject: Science

Term: 2<sup>nd</sup>

Time: 40min

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

Week: 7

Day: 1

Chapter 6: Force and Motion

Topic: Simple Machines, Lever

## Objective(s):

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

- Recognize that simple machines (e.g., levers, pulleys, gears, ramps) help make motion easier (e.g., make lifting things easier, reduce the amount of force required, change the distance, or change the direction of force).

## Resource Materials:

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

## Warm-up Activities

5mins

- Before beginning the lesson, ask students to say "Tasmiya."
- Ask them: What do you know about advantages and disadvantages of friction? Wait for their responses.

## Teaching and Learning Activities:

25mins

- Write the topic name 'Simple machines' on the board.
- They reduce the amount of force required, change the distance or direction of the force.
- A simple machine is a tool used to make our work easier. For example, a hammer and a screwdriver make our jobs easy. The machines make our work easier by changing the amount and direction of force.
- Tell them, levers, inclined planes, wedges, screws, wheels and axles, and pulleys are simple machines. All the complex machines like cars, tractors, fans, etc. are made of several simple machines.
- Now write the topic name 'Lever' on the board. Ask the students: What is a lever? Wait for their responses.
- Take students to the playground. Ask them to find a simple machine that can help them to lift their friend up. Give them some time to think and find the answer.
- Make sure the students have identified the see-saw. Tell students see-saw is a lever. A lever is used to lift heavy objects. It is a bar which can turn on a fixed point called fulcrum. The force applied to move the load called effort.
- Explain the terms 'effort', 'load' and 'fulcrum' to the students.
- Tell students we use different types of levers in our daily life.
- Write the answer on the board: **'A lever is a simple machine used to lift heavy objects. It is like a bar which can turn about a fixed point.'**
- Tell students to write the answer in their notebooks. Check their work.
- Ask students to give examples of lever from daily life. Ask students to open their textbook and solve activity.

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

Explain the main points about simple machines and lever.

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

To check the understanding of students, ask them:

- What is simple machine?
- What is lever?
- Write some examples of simple machine and lever.

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

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

## Worksheet

**Q1. Define simple machines.**

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**Q2. How does a simple machine make our work easier?**

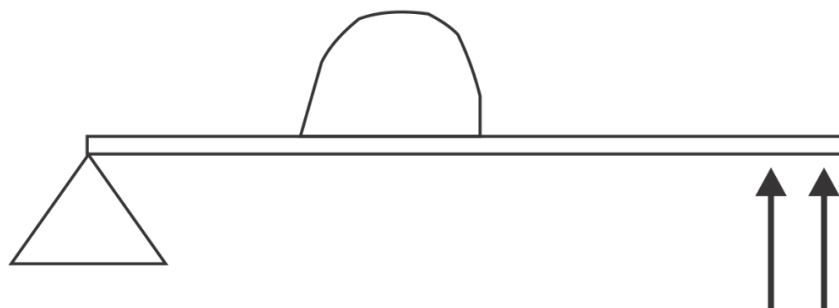
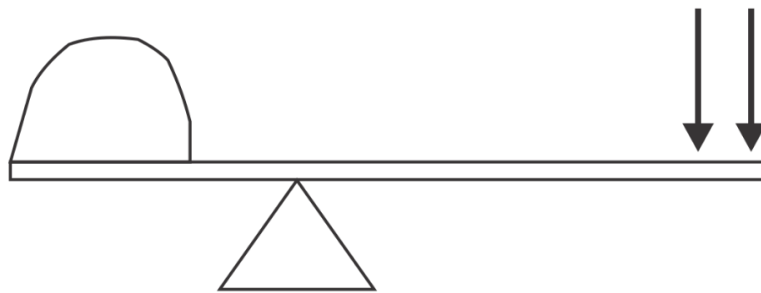
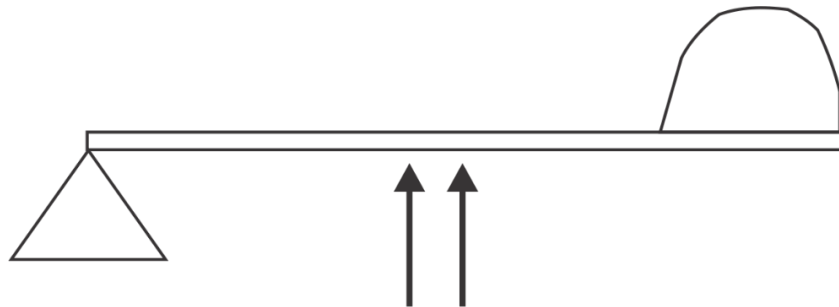
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**Q3. Label the parts of lever.**



# Lesson Plan

Grade: Four

Subject: Science

Term: 2<sup>nd</sup>

Time: 40min

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

Week: 7

Day: 2

Chapter 6: Force and Motion

Topic: Inclined Plane (Ramp)

## Objective(s):

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

- Recognize that simple machines (e.g., levers, pulleys, gears, ramps) help make motion easier (e.g., make lifting things easier, reduce the amount of force required, change the distance, or change the direction of force).

## 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 lever? Wait for their responses.

## Teaching and Learning Activities:

25mins

- Write the topic name 'Inclined Plane (Ramp)' on the board.
- Tell students today we will learn about another simple machine, i.e., Inclined Plane (Ramp).
- A ramp is a slanted surface.
- It is a simple machine that is used to move an object to higher level with ease.
- It is difficult to move an object over steeper surface. That's why people prefer less steep surface to move objects.
- Explain to students how more force is required for steeper surface.
- Now make two Inclined Plane (Ramp) by putting wooden boards slanting on a high and low pile of books with the help of students (making a less steep inclined plane and steeper one).
- Now place a rubber band around a book stack and tie a string to the rubber band to pull the books up the different Inclined Plane (Ramp).
- Now invite students in groups and allow them to move the books up the two Inclined Plane (Ramp). Ask them to pull the books straight up without using the Inclined Plane (Ramp).
- Ask them to compare the force they exerted in three situations.
- Conclude that it takes more work to move an object up a ramp with the steepest slope.
- Tell students we use Inclined Plane (Ramp) for different purposes.
- Tell them staircases, aircraft emergency evacuation slides, wheelchair Inclined Plane (Ramp), loading truck Inclined Plane (Ramp) are some common examples of ramps.

- Why are there Inclined Plane (Ramp) in hospitals? Ask students to answer this question. Wait for their responses.
- Write the answer on the board: **'A ramp is a form of an inclined plane. It is used as an aid in raising or lowering a load. In hospitals, patients need to move up and down so ramps are used for this purpose.'**
- Tell students to write the answer in their notebooks. Check their work.
- Ask students to open their textbook and do the activity

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

Explain the main points about ramps.

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

To check the understanding of students, ask them:

- What is a ramp?
- What is it used for?

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

Ask students to learn the topic and write the answer of Q4 (iii) of Exercise in their notebooks.

# Lesson Plan

Grade: Four

Subject: Science

Term: 2<sup>nd</sup>

Time: 40min

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

Week: 7

Day: 3

Chapter 6: Force and Motion

Topic: Pulley

## Objective(s):

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

- Recognize that simple machines (e.g., levers, pulleys, gears, ramps) help make motion easier (e.g., make lifting things easier, reduce the amount of force required, change the distance, or change the direction of force).

## 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 do you know about ramps? Wait for their responses.

## Teaching and Learning Activities:

25mins

- Write the topic name 'Pulley' on the board.
- Tell students today we will learn about another simple machine called a pulley.
- Pulley is made up of a wheel and rope. The rope fits on the groove of the wheel. One part of the rope is attached to the load. When you pull one side of the pulley, the wheel turns and the load will be moved.
- Tell them pulleys are used to move loads up, down or sideways.
- Pulleys are good for moving objects too hard-to-reach places.
- Pulleys also make work of moving heavy loads a lot easier.
- Examples of pulleys are crane, flagpoles, clotheslines, etc.
- Tie a rope on something heavy (e.g., a basket of books, a sack of flour). Ask a student to lift the object off the ground by pulling up on the rope. They may only be able to lift it six inches or so off the ground partially because it's heavy.
- Now string the rope up over the back of a chair or over a doorknob and ask student to pull down on it. Ask them to explain the difference. Let them respond. Appreciate them for good response.

## Review:

3mins

Explain the main points about pulleys.

## Evaluation:

5mins

To check the understanding of students, ask them:

- What is a pulley?
- How does a pulley work?

## Homework:

2mins

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

# Worksheet

Q1. Tick (✓) the pictures that show how people use a pulley in their daily life.



# Lesson Plan

Grade: Four

Subject: Science

Term: 2<sup>nd</sup>

Time: 40min

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

Week: 7

Day: 4

Chapter 6: Force and Motion

Topic: Gear

## Objective(s):

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

- Recognize that simple machines (e.g., levers, pulleys, gears, ramps) help make motion easier (e.g., make lifting things easier, reduce the amount of force required, change the distance, or change the direction of force).

## 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 do you know about pulleys? Wait for their responses.

## Teaching and Learning Activities:

25mins

- Write the topic name 'Gears' on the board.
- Tell students today we will learn about gears.
- A gear is a modification of a common wheel into toothed wheel. The teeth of one gear usually fit into the gaps of teeth of another gear.
- Gears are used to transmit power or force applied on one wheel to another to increase or decrease the speed. Gears of different sizes and different numbers are used in many machines, such as drill, bicycle, clocks, trucks, buses, engines, industrial machines and many other instruments.

## Review:

3mins

Explain the main points about gears.

## Evaluation:

5mins

To check the understanding of students, ask them:

- What are gears?
- How gears make work easier?

## Homework:

2mins

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



## Worksheet

**Answer the following questions.**

i) Define ramps.

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ii) Define gears.

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iii) Define pulleys.

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iv) Give examples of pulleys from daily life.

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v) Give examples of gears from daily life.

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vi) Give examples of ramps from daily life.

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# Lesson Plan

Grade: Four

Subject: Science

Term: 2<sup>nd</sup>

Time: 40min

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

Week: 7

Day: 5

Chapter 6: Force and Motion

Topic: Exercise

## Objective(s):

- Solve Exercise

## Resource Materials:

Chalk/marker, white/blackboard, Science Textbook

## Teaching and Learning Activities:

30mins

- Before beginning the lesson, ask students to say "Tasmiya."
- Tell students they are going to solve the exercise of chapter 6.
- Briefly explain all topics and ask questions related to them. Wait for their responses.
- Ask students to open their textbooks and solve MCQ's.
- Ask them to solve Q2 of exercise "Force and Motion" in their textbooks.
- Ask the students to open their textbooks and help the students to complete the given project. Help them if needed.

## Review:

0mins

N/A

## Evaluation:

5mins

To evaluate the understanding of students, check their work.

## Homework:

5mins

Ask students to revise the exercise of chapter 6.