

Lesson Plan

Grade: Four

Subject: Science

Term: 2nd

Time: 40min

Teacher's Name: _____

Week: 6

Day: 1

Chapter 6: Force and Motion

Topic: Force

Objective(s):

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

- Describe force and motion with examples from daily life.

Resource Materials:

Chalk/marker, white/blackboard, Science Textbook

Warm-up Activities

5mins

- Before beginning the lesson, ask students to say "Tasmiya."
- Ask them: Name two things you can pull. Can you name some machines used in our daily lives? Wait for their responses. Appreciate them for good response.

Teaching and Learning Activities:

25mins

- Write the topic name 'Force' on the board.
- Tell students you have seen many things moving around yourself.
- Ask students how things move. Let them respond.
- Tell them things move with force. A force is a push or pull on an object.
- Objects can experience single or multiple forces. Force can stop or move objects. Let's study different effects of force. Force can change motion and speed of an object. It can stop a moving object. It can start motion of an object. It can also increase or decrease speed of moving object.
- Let's take an example: In a football game, a player passes the football to the other player by pushing (Kicking) the ball in a specific direction. The other player kicks (pushes) the football to some other direction.
- Similarly, force can change the shape of objects. For example, when force is applied on an empty plastic bottle or when you press an inflated balloon, both plastic bottle and balloon are deformed.
- Ask students to list daily life examples of push and pull in your notebooks. Check their work.

Review:

3mins

Explain the main points about force.

Evaluation:

5mins

To check the understanding of students, ask them:

- What is force?
- How force can change motion? Give an example.
- What are effects of force?

Homework:

2mins

Ask students to learn the topic.

Lesson Plan

Grade: Four	Subject: Science	Term: 2 nd	Time: 40min
Teacher's Name: _____		Week: 6	Day: 2
Chapter 6: Force and Motion		Topic: Motion	

Objective(s):

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

- Describe force and motion with examples from daily life.

Resource Materials:

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

Warm-up Activities

5mins

- Before beginning the lesson, ask students to say "Tasmiya."
- Ask them: What is force? Wait for their responses.

Teaching and Learning Activities:

25mins

- Write the topic name 'Motion' on the board.
- Tell students you have read in previous class that force can change speed and motion of an object. Today we will learn what motion is?
- Ask students have you ever saw a football match? In football match, one player passes football to other. Player passes the ball by hitting it in a specific direction. He pushes it in a specific direction of another player.
- When force is applied on football, it moves. This movement is called motion. So, "Motion" is the action of changing position of a body.
- For example, riding your bicycle from your house to your friend's house or pushing a box from one room to the other are due to motion caused by applying force.
- Tell them similarly, you have observed the swings in the park. Some swings move up and down, some move in a circle and some swings move back and forth. All moving swings change their position by applying force on them.
- Tell them boys running on a track, car moving on a road, etc. are some examples of motion.
- Ask students to open their textbooks and do the activities. Tell them to write examples of the given terms from everyday life. Check their work.

Review:

3mins

Explain the main points about motion.

Evaluation:

5mins

To check the understanding of students, ask them:

- What is motion?
- Give some examples of motion.

Homework:

2mins

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

Worksheet

Q1. Answer the following questions.

i) Define force.

ii) Define motion. Give examples.

iii) Explain the effects of force with examples.

Q2. Fill in the blanks.

Move	Stop	Force	Pushing	Pulling
Pushes Move	Door	Chair	Ball	Force

We can _____ an object or _____ a moving object by applying _____ on them. _____ and _____ is a _____ of our daily life. A hawker _____ his cart to _____ it from one place to other. Similarly, opening and closing of _____ pushing or pulling a _____ hitting a _____ and lifting something is done by applying _____.

Lesson Plan

Grade: Four

Subject: Science

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Time: 40min

Teacher's Name: _____

Week: 6

Day: 3

Chapter 6: Force and Motion

Topic: Gravity

Objective(s):

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

- Identify gravity as a force that draws objects to the earth.

Resource Materials:

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

Warm-up Activities

5mins

- Before beginning the lesson, ask students to say "Tasmiya."
- Ask them: How are force and motion related? Appreciate them for their good response.

Teaching and Learning Activities:

25mins

- Write the topic name 'Gravity' on the board.
- Tell students today we will learn about types of forces.
- Tell them the two common forces are friction and gravity.
- We stand on Earth due to gravity.
- We walk on ground due to friction.
- Ask the students have you noticed that anything thrown up, returns to the ground after going up a certain height? Leaves and twigs from trees always fall down on the ground. A ball hit by a player, goes up and it comes down to earth.
- Ask the students: Why does everything fall down? Wait for their response.
- Now tell them, our earth is really a huge magnet that pulls bodies towards its center with a specific force. This force of attraction is called gravitational force or gravity of the earth. So, gravity of earth is a pulling force. Its magnitude or value depends on the mass of the object.
- Tell them that greater the mass the, greater will be the force of gravity.
- Tell them that a ball falls down due to pull of Earth. This pull is called gravity.
- Tell students that gravitational force is not only present on Earth but all other heavenly bodies have also force of gravity.
- Gravitational force of the Sun makes all objects move in their orbits.
- Moon revolves around planets due to the same reason.
- Gravitational force decreases with the decrease in distance among objects. We can stand on Earth due to gravity. Ask students: Define gravity. Wait for their responses.

- Write the answer on the board: **‘Gravity is a force that acts on everything and pulls them downwards.’**
- Tell students to write the answer in their notebooks. Check their work.
- Ask students to open their textbook and solve activity.

Review:**3mins**

Explain the main points about gravity.

Evaluation:**5mins**

To check the understanding of students, ask them:

- What is gravity?
- Is gravity pushing or pulling force?
- Is gravity helpful?
- What are advantages of gravity?

Homework:**2mins**

Ask students to learn the topic and write the answer of Q3 (iii) and Q4 (ii) of Exercise in their notebooks.

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Grade: Four

Subject: Science

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Time: 40min

Teacher's Name: _____

Week: 6

Day: 4

Chapter 6: Force and Motion

Topic: Friction

Objective(s):

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

- Investigate that the frictional force works against the direction of motion.

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 gravity? Wait for their responses.

Teaching and Learning Activities:

25mins

- Write the topic name 'Friction' on the board.
- Tell them today we will learn about friction.
- Tell students friction is a force that is produced when two surfaces rub against each other.
- Friction is an opposing force that stops or tends to stop moving objects.
- Tell them, you have often experienced that on a plane surface of the road when you stop pedaling bicycle, it slows down and finally stops.
- Ask students to rub your hands and ask them what they feel. Let them respond.
- Tell them heat is produced as a result of friction.
- Tell them an object will continue to move until friction acts on it. But the question is how is friction caused?
- Tell students every surface has tiny pores. Smooth surface has less pores while larger pores are present on rough surfaces. These pores rub on surface and produce friction. Larger the surface, the more friction is caused.
- Now take an example of a ball rolling on a ground. When ball starts to roll, a force pushes the ball forward. The pores of the ball interact with the pores of the ground and cause friction. The friction acts in opposite direction.
- As a result, ball slows down and eventually stops. Liquids and gases also cause friction. What would happen if there was no force of friction? Ask students to answer this question. Wait for their responses.
- Write the answer on the board: **'If there is no force of friction, we would be unable to stop moving things. We would be unable to write anything.'**
- Tell students to write the answer in their notebooks. Check their work. Ask students to open their textbooks and do the activity.

Review:**3mins**

Explain the main points about friction.

Evaluation:**5mins**

To check the understanding of students, ask them:

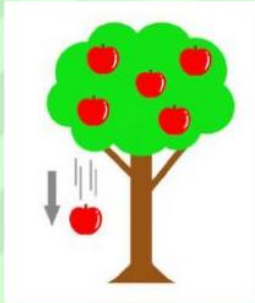
- Define friction.
- How is friction caused?

Homework:**2mins**

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

Worksheet

Q1. Forces, Gravity and Friction.



- a) Gravity
- b) Friction



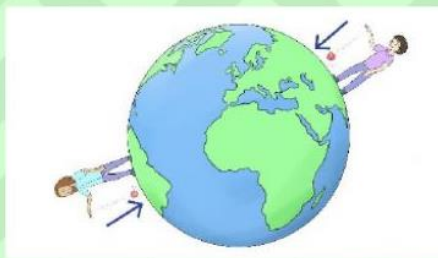
- a) Gravity
- b) Friction



- a) Gravity
- b) Friction



- a) Gravity
- b) Friction



- a) Gravity
- b) Friction



- a) Gravity
- b) Friction

Q2. Tick (✓) the correct answer.

Opposing force that stops or tends to stop moving objects:

- a) Force
- b) Friction
- c) Factor
- d) Gravity

Lesson Plan

Grade: Four

Subject: Science

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Time: 40min

Teacher's Name: _____

Week: 6

Day: 5

Chapter 6: Force and Motion

Topic: Advantages of Friction, Disadvantages of Friction

Objective(s):

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

- Provide reasoning with evidence that friction can be either detrimental or useful under different circumstances.

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 friction? Wait for their responses.
- Appreciate them for good response.

Teaching and Learning Activities:

25mins

- Write the topic name 'Advantages of friction' on the board.
- Tell students friction is a blessing of Allah (SWT).
- Tell them it helps us in many ways.
- Friction has many important roles in our daily lives. We cannot walk or hold objects without friction. We even cannot stop moving objects without friction.
- Ask students have you ever observed your shoe sole pattern/design? Why uneven pattern does you see on it? Let them respond.
- Tell them if patterns are not present on shoe soles and they are smooth, there are more chances to be slipped away. Uneven patterns provide more friction and help in walking.
- Ask students have you ever wondered how you are able to hold objects? Wait for their responses.
- Tell them it is because of friction that you are able to hold objects. You are able to write because of friction.
- Ask students to imagine what would happen if a car is moving with speed on a slippery road and its brakes are not working. Wait for their responses.
- Tell them an accident might happen. It's because of friction we become able to stop or slow down a moving vehicle. It prevents vehicle from slipping on the road. But how does it happen?
- When we apply brakes, the brake pads rub against the rim and produce friction.
- The friction makes the vehicle stops after slowing down its movement.

- Now write the topic name 'Disadvantages of friction' on the board.
- Tell students although friction is helpful in many ways, sometimes it causes problems.
- Ask students what happens when you erase some words on your paper. Let them respond. The eraser wears away when you rub it against paper. This is because of friction.
- Friction causes wear and tear of moving objects. It is because of friction the tires of vehicles get flat after some time. Friction causes wear and tear of tires. Same thing happens with soles of shoes.
- Friction also slows down moving objects and produces heat. That's why we need to apply more force to overcome friction.
- Discuss with students about advantages of friction and consequences we will face if friction is not present. Appreciate them to participate in discussion.
- Ask students to open their textbook and do activity.

Review: **3mins**

Explain the main points about advantages and disadvantages of friction.

Evaluation: **5mins**

To check the understanding of students, ask them:

- How friction is helpful in daily life?
- How does friction help us in walking?
- How is friction disadvantageous? Give examples.

Homework: **2mins**

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

Worksheet

Q1. What is friction?

Q2. How friction is produced?

1.

2.

3.

Q3. Explain the advantages and disadvantages of friction with examples.

1.

2.

3.
