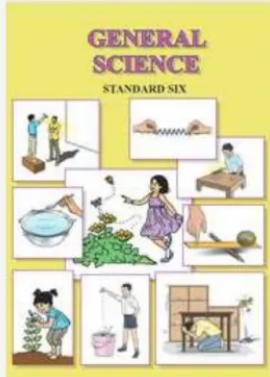


Maharashtra Board Solutions Class

6-Science: Chapter 9- Motion and Types of Motion

BOOK SOLUTIONS
CLASS 6
GENERAL SCIENCE

CHAPTER 9
Motion and Types of Motion



Maharashtra Board Solutions→

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Postal Address

IndCareer.com, 52, Shilpa Nagar, Somalwada Nagpur - 440015
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Maharashtra Board Solutions Class

6-Science: Chapter 9- Motion and Types of Motion

Class 6: Science Chapter 9 solutions. Complete Class 6 Science Chapter 9 Notes.

Maharashtra Board Solutions Class 6-Science: Chapter 9- Motion and Types of Motion

Maharashtra Board 6th Science Chapter 9, Class 6 Science Chapter 9 solutions

Questions and Answers

1. Identify the types of motion.

Question a.

Movement of the earth around the sun:

Answer:

periodic, circular

Question b.

Movement of ceiling fan:

Answer:

circular

Question c.

A rocket launched from the ground:

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Answer:

linear

Question d.

A fish swimming in water:

Answer:

random

Question e.

The plucked string of a sitar:..... .

Answer:

oscillatory motion

2. Fill in the blanks.

(linear, non-linear, uniform linear, non-uniform linear, uniform circular, random, circular, non-uniform circular)

Question a.

If a ball is released from the terrace of a building, it comes down in motion. On the other hand, it reaches the ground in motion if it is thrown with a force away from the terrace in a direction parallel to the terrace.

Answer:

uniform linear, non-uniform linear

Question b.

The motion of an aeroplane on the runway before take off is

Answer:

linear

Question c.

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The kite looking for its prey flies with motion in the sky.

Answer:

circular

Question d.

Children sitting in a rotating giant wheel have motion, while those sitting in a merry-go-round have a motion.

Answer:

uniform circular, non-uniform circular

3. How are we different?.

Question a.

Oscillatory motion and Linear motion.

Answer:

Oscillatory motion

Linear motion

1. In oscillatory motion, body swings back and forth.
e.g. Motion of a swing, motion of pendulum of a clock.

1. In linear motion, an object shows displacement in a straight line, e.g. A train in motion, motion of marching soldiers.

Question b.

Linear motion and Random motion

Answer:

Linear motion

Random motion

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1. Motion in a straight line is called linear motion.
e.g. Motion of a train

1. The motion that changes its direction and speed continuously is called random motion, e.g. Motion of a bird.

Question c.

Random motion and Oscillatory motion

Answer:

Random motion

Oscillatory motion

1 The motion that changes its direction and speed continuously is called random motion, e.g. Motion of a butterfly

1. The motion of a body that is swinging back and forth is called oscillatory motion, e.g. Pendulum of a clock, the wing of a bird.

4. Explain in your own words, giving one example each.

Question a.

Linear motion

Answer:

An object that shows displacement along a straight line is called linear motion, e.g. A vehicle moving on a road.

Question b.

Oscillatory motion

Answer:

The motion of a body swinging back and forth is called oscillatory motion, e.g. Motion of a pendulum of a clock.

Question c.

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Circular motion**Answer:**

The motion of an object along a circular path is called circular motion, e.g. Motion of a ceiling fan.

Question d.**Random motion****Answer:**

The motion that changes its direction and speed continuously is called random motion, e.g. Motion of a butterfly.

Question e.**Periodic motion****Answer:**

The repetitive motion in which the moving object passes through a certain point again and again after a fixed period is called as periodic motion, e.g. The minute hand of a clock.

5. Answer the following questions in your own words.**Question a.**

Which types of motion are seen in birds flying in the sky?

Answer:

1. The birds flying in the sky exhibit random motion.
2. The wings of the birds show oscillatory motion.

Question b.

Write in detail about your experience of various types of motion while riding a bicycle on a road.

Answer:

1. The cycle itself shows linear motion.

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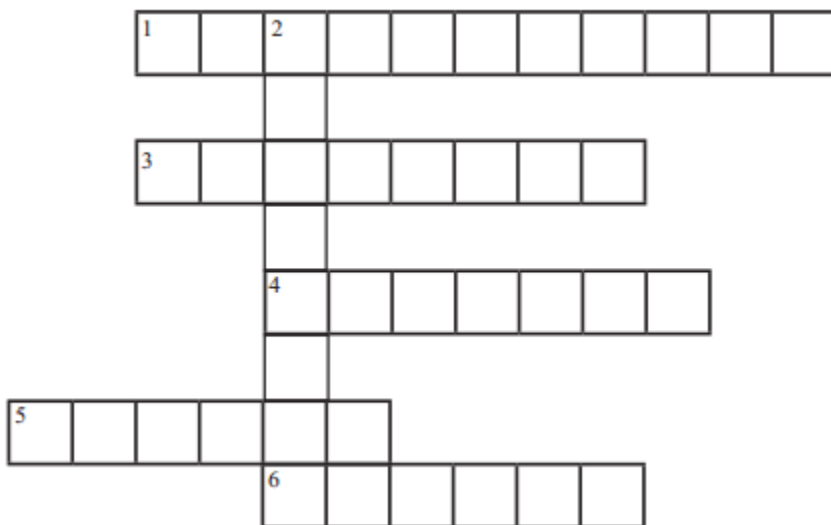
2. The wheels of the cycle show circular motion.
3. The cycle chain shows periodic motion, if the speed is uniform.
4. The handle bar shows random motion.

6. Complete the puzzle using words for types of motion:

Question a.

Complete the puzzle using the words for types of motion.

1. A spring is stretched and one end is released.
2. A minute hand.
3. A see-saw.
- 4-5. Children in a march past.
6. A stone rolling down a hillside.



Answer:

1. Oscillatory
2. Circular
3. Periodic
4. Uniform
5. Linear

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6. Random

Activity:

Question 1.

Make a list of various moving objects in the environment, and discuss the types of motion seen in them.

Important Questions and Answers

Identify the types of motion.

Question 1.

The movement of a see-saw.

Answer:

oscillatory motion

Question 2.

The motion of a moving ant.

Answer:

random

Question 3.

The marching army soldiers.

Answer:

linear

Question 4.

A train approaching a station.

Answer:

non-uniform linear

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Question 5.

A meteor falling from the sky.

Answer:

linear

Fill in the blanks with suitable words from those given in the bracket:

(linear, non-linear, uniform linear, non-uniform linear, uniform circular, random, circular, non-uniform circular)

Question 1.

The motion that changes its speed and direction continuously is called

Answer:

random

Choose the correct alternative:

Question 1.

A baby is crawling. The motion is said to be

- (a) linear
- (b) periodic
- (c) circular
- (d) random

Answer:

- (d) random

Question 2.

The children are having a 50m running race. The motion exhibited is motion.

- (a) linear

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- (b) periodic
- (c) random
- (d) circular

Answer:

- (a) linear

Question 3.

The motions of the hands of a clock are and

- (a) periodic, linear
- (b) periodic, circular
- (c) non-linear, non-uniform
- (d) circular, non-uniform

Answer:

- (b) periodic, circular

Question 4.

The motion of a pendulum of a clock is

- (a) linear
- (b) oscillatory
- (c) circular
- (d) random

Answer:

- (b) oscillatory

Question 5.

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The motion of a butterfly from one flower to another flower is an example of motion.

- (a) circular
- (b) periodic
- (c) linear
- (d) random

Answer:

- (d) random

Question 6.

The distance traversed by an object in a unit time is called of that object.

- (a) length
- (b) motion
- (c) speed
- (d) displacement

Answer:

- (c) speed

Explain it in your own words, giving one example of each.

Question 1.

Uniform linear motion

Answer:

When the distance traversed by an object along a straight line in unit time is the same, the motion is called as uniform linear motion, e.g. Motion of soldiers on parade.

Question 2.

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Non-uniform linear motion**Answer:**

When the distance traversed by an object along a straight line in unit time keeps on changing, the motion is called non-uniform linear motion.

e.g. A girl coming down a slide.

Question 3.**Non-linear motion****Answer:**

The motion of an object that does not move in a straight line is called non-linear motion.

e.g. Motion of a swing,

Question 4.**Speed****Answer:**

The distance traversed by an object in unit time is called the speed of that object.

e.g. A boy riding on a bicycle covers a distance of 15 kilometres in 3 hours.

Hence Speed = $\frac{15}{3} = 5$ kilometres/hour

Answer the following:**Question 1.**

In which musical instruments can you see oscillatory motion?

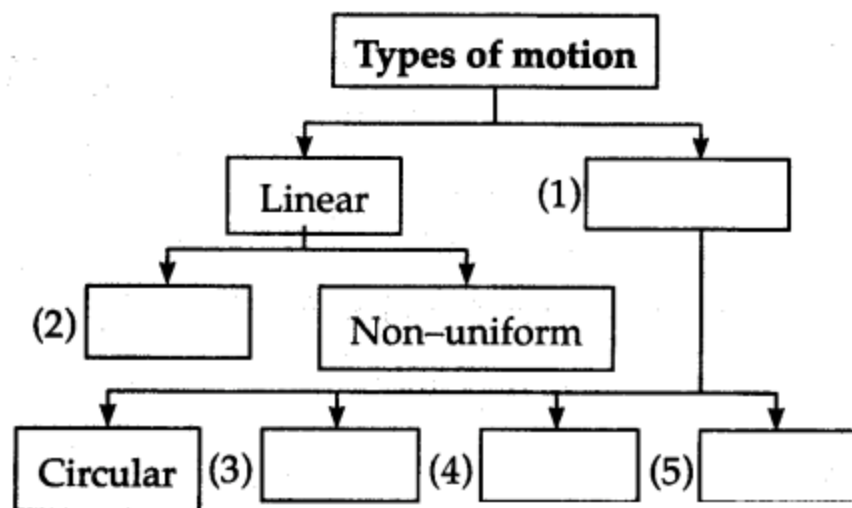
Answer:

Vibrating diaphragm of tabla, drum, dhol and strings of sitar, guitar show oscillatory motions.

Question 2.

With reference to types of motion, complete the table below.

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Answer:

1. Non-linear
2. Uniform
3. Oscillatory
4. Periodic
5. Random.

Read the following stories and answer the questions.

Rita and Geetha are friends travelling from Mumbai to Pune. Seetha had come to the station to see her friends off. After 15 minutes train starts moving. Rita and Geetha feel that Seetha and the vendors on platform are moving backwards. Whereas, Seetha feels that Rita and Geetha are moving forward. Rita feels Geetha is not in motion and Geetha also feels Rita is not in motion. Can you say why?

Question a.

Are Rita and Geetha in motion?

Answer:

Rita and Geetha are not in motion as far as each other are concerned, as no displacement takes place. Both are in a train. For Seetha, both of them are in motion.

Question b.

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Are the vendors and Seetha in motion?

Answer:

No, the vendors and Seetha are not in motion. But Rita and Geetha feel as if they are moving backwards.

Question c.

What can you conclude from this passage?

Answer:

An object which is in motion for one person may not be in motion for another. This shows that motion is relative.

Observe and discuss:

Question 1.

Observe the figure and classify the type of motion.



(1)



(2)



(3)



(4)

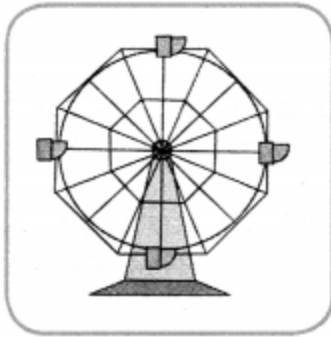


(5)



(6)

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(7)



(8)



(9)



(10)



(11)

Answer:

1. Circular motion
2. Linear motion
3. Circular motion
4. Linear motion
5. Oscillatory motion
6. Oscillatory motion
7. Circular motion

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8. Circular motion
9. Bird – Random; Wings – Oscillatory motion
10. Circular motion
11. Linear, circular

Can you tell?

Question 1.

While chasing a butterfly in a garden, do you run along a definite path or in the same direction all the time?

Answer:

No, we move in random motion.



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Class 6 Science

- Chapter 1- Natural Resources - Air, Water and Land
- Chapter 2- The Living World
- Chapter 3- Diversity in Living Things and their Classification
- Chapter 4- Disaster Management
- Chapter 5- Substances in the Surroundings - Their States and Properties
- Chapter 6- Substances in Daily Use
- Chapter 7- Nutrition and Diet
- Chapter 8- Our Skeletal System and the Skin
- Chapter 9- Motion and Types of Motion
- Chapter 10- Force and Types of Force
- Chapter 11- Work and Energy
- Chapter 12- Simple Machines
- Chapter 13- Sound
- Chapter 14- Light and the Formation of Shadows
- Chapter 15- Fun with Magnets
- Chapter 16- The Universe

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The Maharashtra State Board of Secondary and Higher Secondary Education or MSBSHSE (Marathi: महाराष्ट्र राज्य माध्यमिक आणि उच्च माध्यमिक शिक्षण मंडळ), is an **autonomous and statutory body established in 1965**. The board was amended in the year 1977 under the provisions of the Maharashtra Act No. 41 of 1965.

The Maharashtra State Board of Secondary & Higher Secondary Education (MSBSHSE), Pune is an independent body of the Maharashtra Government. There are more than 1.4 million students that appear in the examination every year. The Maha State Board conducts the board examination twice a year. This board conducts the examination for SSC and HSC.

The Maharashtra government established the Maharashtra State Bureau of Textbook Production and Curriculum Research, also commonly referred to as Ebalbharati, in 1967 to take up the responsibility of providing quality textbooks to students from all classes studying under the Maharashtra State Board. MSBHSE prepares and updates the curriculum to provide holistic development for students. It is designed to tackle the difficulty in understanding the concepts with simple language with simple illustrations. Every year around 10 lakh students are enrolled in schools that are affiliated with the Maharashtra State Board.

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