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LESSON – 11. Lines and Shapes

Pre activity – Lets Begin from T.B. (Pg. No. 168)

Let's Begin

Today I went to the market by bus with my parents. I noticed a lot of different shapes in it.



Do you mean shapes inside the bus?



Think of a bus to answer the following questions.

- a Draw the shape of the steering wheel?
- b Colour the shape that looks like the seat of a bus.
- c Colour the shape that looks like a holding bar in a bus.
- d The shape of the windows in a bus is rectangular. (rectangular/circular)

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Concrete Stage

1 Use a ruler to draw the following.

a Horizontal Line



b Vertical line



c Slanting line



2 Draw a line segment and a ray. Also, name them.

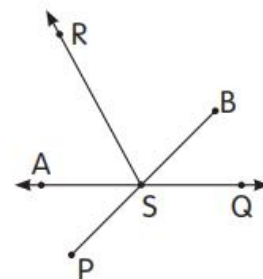
Pictorial Stage

- 1 Join the points with a curved line and name them.



- 2 Look at the figure and answer the following.

- a Name any 3 rays. RS, SA, SQ
- b Name a line. AQ
- c Name a line segment. PB



Abstract Stage

- 1 Write the differences between a line segment and a ray.

Answer: A line segment is a part of a line having two endpoints and its length is measurable. Whereas a ray has one fixed point (starting point), but it has no endpoint. So, its length cannot be measurable.

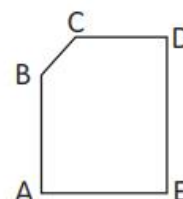
- 2 Write the similarities between a line segment and a ray.

Answer: Ray and line segment are similar in a way that they both have an endpoint.

- 3 The given figure has 5 line segments.

- 4 Look at the figure used in the above question, and write the name of the longest and the shortest line segments.

Answer: longest = DE shortest = BC



Concrete Stage

Create parallel and perpendicular lines using ice cream sticks. Use a ruler to cross-check the distance between parallel lines, and use a protractor to cross-check the angle at which the perpendicular lines intersect.

Maths Fact:

- We use the symbol ' \perp ' to represent perpendicular lines.
- We use the symbol ' \parallel ' to represent parallel lines.

Pictorial Stage

1 Identify the types of lines from the given picture.



Perpendicular



Parallel

2 Which geometrical term would you use to describe the electrical power cables shown here? Explain.

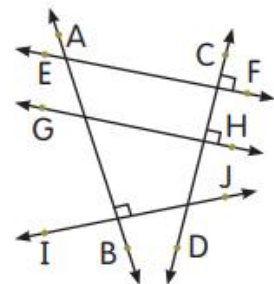
Answer: Cylindrical






Abstract Stage

1 Look at the figure and answer the following.

- a Name a pair of parallel lines. EF, GH
- b Name a pair of perpendicular lines. AB, CD



2 Look at the figure and match the following.

- a CD  i. is perpendicular to IJ
- b GH  ii. is perpendicular to EF
- c AB  iii. is parallel to EF

Concrete Stage

1 Use toothpicks and design the following 2D shapes. Write the number of toothpicks you used to make each of the shapes.

- a Square 4 b Rectangle 4 c Triangle 3





2 Use clay to model the following shapes. Tick (✓) the ones that you were able to model using clay.

- a Cube b Cuboid c Cone d Cylinder

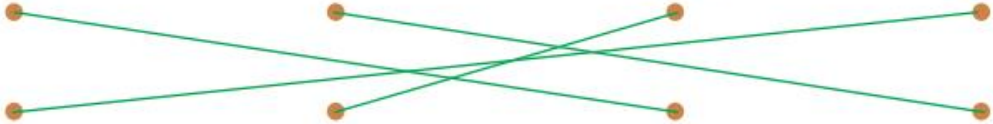
Answer: Answer may vary.

Pictorial Stage

1 Match the shapes to their correct names.

a  b  c  d 

i. Cylinder ii. Rectangle iii. Circle iv. Cone



2 Observe the pictures and write the name of the shapes they represent.

a  b  c  d  e 

Abstract Stage

1 Who am I?

- a I am a 3D shape with 6 identical faces. Cube
- b I am a 2D shape with no sides and no corners. Circle
- c I am a 3D shape with 2 faces and a vertex. Cone
- d I am a 2D shape with 3 sides and 3 vertices. Triangle

2 Draw a cylindrical and a spherical object and mention its name.

3 Draw any two 2D shapes and write their properties.



Linking Chain

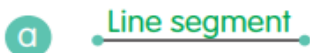
English

Use the English alphabet to answer the following.

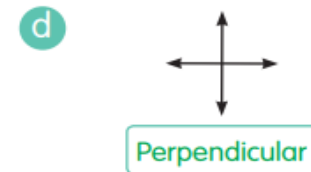
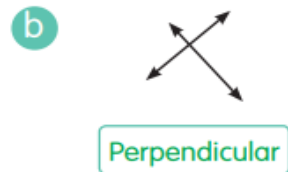
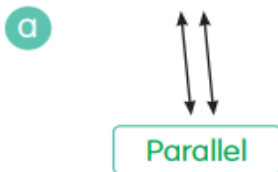
- a The letter that has perpendicular line segments in it.
- b The letter made up of a line segment and a curved line.
- c The letter that has three straight lines in it.
- d The letter that has two straight lines and one slanting line in it.
- e The letter that has 4 slanting lines in it.

Blooming Questions

1 Classify the type of lines and name them.

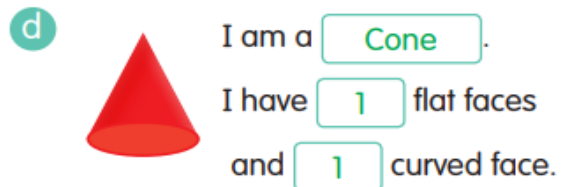
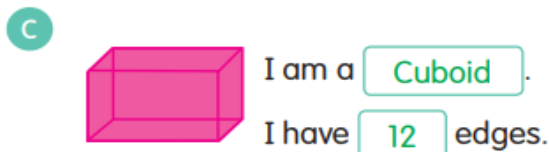
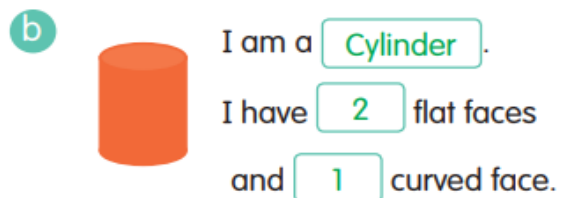
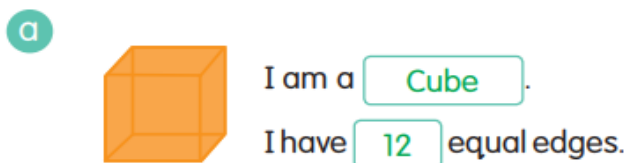


2 Label each pair of lines as parallel or perpendicular.



3 Draw two different 2D shapes that can be drawn using 4 straight lines. Also, write its properties.

4 Fill in the blanks.

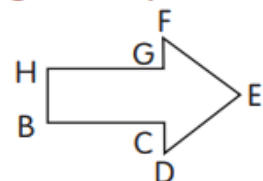


Mental Maths

Identify the pairs of parallel and perpendicular line segments in the given shape. Name them.

a Parallel line segments
 HG & BC

b Perpendicular line segments
 FG & CD



Post Activity:

Q1. Give the difference between line, ray and line segment. Also draw each one of them.

Q2. Name any 2 objects which look like

- a. cone
- b. cylinder
- c. sphere