

Types of Symmetry

Spoken Tutorial Project

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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10 June 2018



Learning Objectives



Learning Objectives

We will learn about various types of symmetry like:



Learning Objectives

We will learn about various types of symmetry like:

- **Line**



Learning Objectives

We will learn about various types of symmetry like:

- **Line**
- **Point**



Learning Objectives

We will learn about various types of symmetry like:

- **Line**
- **Point**
- **Rotation**



Learning Objectives

We will learn about various types of symmetry like:

- **Line**
- **Point**
- **Rotation**
- **Translational**



Learning Objectives

We will learn about various types of symmetry like:

- **Line**
- **Point**
- **Rotation**
- **Translational**
- **Scale**



System Requirement



System Requirement

- **Ubuntu Linux OS v 14.04**



System Requirement

- **Ubuntu Linux OS v 14.04**
- **GeoGebra v 5.0.438.0-d**



Pre-requisites



Pre-requisites

- **GeoGebra interface**



Pre-requisites

- **GeoGebra** interface
- If not, for relevant GeoGebra tutorials, please visit our website www.spoken-tutorial.org



Symmetry



Symmetry

A geometric figure is **symmetric**, if



Symmetry

A geometric figure is **symmetric**, if

- it can be divided into two or more identical parts



Symmetry

A geometric figure is **symmetric**, if

- it can be divided into two or more identical parts
- and its parts can be arranged in an organized manner



Line Symmetry



Line Symmetry

A figure has **line symmetry**,



Line Symmetry

A figure has **line symmetry**,

- if one half of the object is the mirror image of the other half



Line Symmetry

A figure has **line symmetry**,

- if one half of the object is the mirror image of the other half
- The line over which the figure is reflected is called the **Line of Symmetry**



Rotational Symmetry



Rotational Symmetry

An object has **rotational symmetry**, if



Rotational Symmetry

An object has **rotational symmetry**, if

- it can be rotated about a fixed point



Rotational Symmetry

An object has **rotational symmetry**, if

- it can be rotated about a fixed point
- **without changing the overall shape**



Assignment



Assignment

- 1 Draw a hexagon and show its rotation symmetry



Translational Symmetry



Translational Symmetry

An object has **translational symmetry**, if



Translational Symmetry

An object has **translational symmetry**, if

- it can be moved without changing its overall shape



Assignment



Assignment

1 Draw a vector



Assignment

- 1 Draw a vector
- 2 Translate a point using Translate by Vector tool



Assignment

- 1 Draw a vector
- 2 Translate a point using **Translate by Vector** tool
- 3 Measure the distance between the original point and the translated point



Scale Symmetry



Scale Symmetry

An object has **scale symmetry**, if



Scale Symmetry

An object has **scale symmetry**, if

- it does not change shape when it is expanded or contracted



Assignment



Assignment

- 1 Draw a pentagon and a hexagon on the same window



Assignment

- 1 Draw a pentagon and a hexagon on the same window
- 2 Dilate the pentagon by a factor of 0.5



Assignment

- 1 Draw a pentagon and a hexagon on the same window
- 2 Dilate the pentagon by a factor of 0.5
- 3 Dilate the hexagon by a factor of 3



Summary



Summary

Symmetry and various types of symmetry

- Line
- Point
- Rotation
- Translational
- Scale



About the Spoken Tutorial Project

- Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- It summarises the Spoken Tutorial project
- If you do not have good bandwidth, you can download and watch it



Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- Conducts workshops using spoken tutorials
- Gives certificates to those who pass an online test
- For more details, please write to contact@spoken-tutorial.org



Forum for specific questions

- Do you have questions in THIS Spoken Tutorial?
- Please visit <http://forums.spoken-tutorial.org>
- Choose the minute and second where you have the question
- Explain your question briefly
- Someone from our team will answer them



Acknowledgements

- Spoken Tutorial Project is a part of the Talk to a Teacher project
- It is supported by the National Mission on Education through ICT, MHRD, Government of India
- More information on this Mission is available at

<http://spoken-tutorial.org /NMEICT-Intro>

