

Mathematics Lesson Plan

Title: Transformation and reflection

KS3 Yr 8

Lesson objectives

The objectives of this lesson are:

- to understand and use language and notation relating to reflections, translations and rotations
- to recognise and visualise transformational symmetry of a two-dimensional shape
- to recognise and visualise reflection and line symmetry.

Learning outcomes

Pupils will be able to:

- complete an investigation on reflections, translations and rotations using interactive mathematical software
- predict and complete a transformation
- predict and complete a reflection.

Vocabulary

Point, reflection, line segment, mirror line, transformation

Resources

Hardware

- laptops
- interactive whiteboard
- internet connection
- wireless network

Software

- geometry software
- word processing software
- internet browser

Other

- key vocabulary help sheet
- using the geometry software help sheet

Lesson preparation

Book the laptops and set up the room. Create help resources for required key vocabulary and using the geometry software, ensure pupils can access these.

Lesson activities

Starter - 5 minutes - whole class

Identify the line of symmetry of letters in the alphabet. Display alphabet, lines of symmetry activity whilst register is being taken to settle the group.

Main activities - 45 minutes - paired work

Using the geometry software pupils investigate the process of reflection completing reflections in given vertical and horizontal mirror lines. Pupils complete initial activities.

Mini plenary

Refocus class with a mini plenary, revising the properties of reflections. Pupils share their findings; access pupils' files from shared network and display their findings to ensure everyone is on the right track.

Revisit how to create a reflection – ensuring they must reflect lines *and* the interior shape.

Pupils continue with their investigations and complete labelling of their reflections to describe what has taken place.

Plenary - 10 minutes - whole class

One or two groups share their findings with the rest of the class. The class are asked to offer advice on other potential reflections the groups could have investigated. Interactive golf activity to reinforce learning and terminology.

Assessment

Starter

Check the prior knowledge pupils have and ensure all pupils are starting from the same knowledge base. Address any misconceptions using teaching and peer interaction.

Main activity

Circulate and listen to groups as they are working, spend time discussing the concepts with pupils and clearing any misconceptions as they arise. View pupils' work via the shared network and quickly assess the learning.

Plenary

Peer assessment through discussion and critique.

Progression

This lesson is one of a series of lessons on Shape, Space and Measure from the Year 8 scheme of work. Pupils have had one lesson on translation. This lesson will be followed by one more lesson on reflection and move onto rotation.

In previous lessons, pupils have had the opportunity to see teacher demonstrations of the software and may have used it themselves. The interactive activities used in the starter and plenary will build upon the pupils' ICT knowledge as the teacher is confident that, following discrete ICT lessons, pupils have the ICT capability to use given software, such as spreadsheets and simulations. Pupils will use keyboard and mouse skills to manipulate a file in the geometry software, using generic capabilities such as click, drag and drop, copy and paste, etc.