

Symmetry

Class: Middle school/high school

Level: Upper-intermediate.

Time : 45 minutes

Aims:

- To learn about
- To learn about
- To learn vocabulary connected with
- To look for specific information on the internet
- To read for specific information
- To transfer the information.
- To use web pages

CLIL: Biology, Mathematics

Materials : included photocopies, access to the internet and personal computer, speakers.

STAGE	AIMS	PROCEDURE	CLASSROOM LANGUAGE	TIME	MATERIALS
Introduction	To start the lesson	Check the register /check homework		1 min/ 6 min	
Warm – up activity	To provide students with introduction to the topic	To start a class discussion/ brainstorming	What is symmetry? How would you define it? Can you give examples of symmetry in everyday life?	5 min	
The main part of the lesson	To learn about types and examples of symmetry	Put the students in three groups. Give a different task to each group and ask to prepare a short presentation. Monitor the time and students' work. Give time to present to the rest of the class.	There are three types of symmetry. In three groups go online and make a short presentation to the rest of the class about each type.	10 min	Worksheet 1 Internet
	To learn how symmetry is used	Ask the students to work individually, go online and look at kaleidoscopes and how they work.	We all played with a kaleidoscope when a child. Do you know that kaleidoscope uses symmetry to create images? Go to http://www.myeducationstuff.com/Symmetry/smartboard-activity2.htm to have a look and play a little.	10 min	

Symmetry

	To learn about symmetry in biology	Put the students into pairs. Ask the students to read the questions. Check the understanding of the task. Give time to watch a video and search for the answers. Check the answers as a class	Now go to http://ed.ted.com/lessons/the-science-of-symmetry-colm-kelleher#watch and watch an educational video about bilateral symmetry of our bodies. Answer these questions: <ul style="list-style-type: none"> ➤ What is the definition of symmetry? ➤ In biology, which organism are examples of bilateral symmetry? ➤ In biology, which organism are examples of rotational (radial) symmetry? ➤ How does symmetry help to understand evolution? 	10 min	
Wrap- up	To look at the examples of symmetry in nature	Ask the students to go online and watch the photographs of symmetry in real life.	Go online and have a look at these examples of symmetry in nature http://listverse.com/2013/04/21/10-beautiful-examples-of-symmetry-in-nature	10 min	

Sources:

<http://www.myeducationstuff.com/Symmetry/smartboard-activity2.htm>

<http://ed.ted.com/lessons/the-science-of-symmetry-colm-kelleher#watch>

<http://listverse.com/2013/04/21/10-beautiful-examples-of-symmetry-in-nature>

<http://ed.ted.com/lessons/the-science-of-symmetry-colm-kelleher>

<http://www.mathsisfun.com/geometry/symmetry.html>

<http://listverse.com/2013/04/21/10-beautiful-examples-of-symmetry-in-nature/>