

Tic-Tac-Toe for Layers of the Earth

General Information

Class: Bill Brown
Subject: Science
Lesson Title: Tic-Tac-Toe for Layers of the Earth
Grade Level: 8th
Lesson Length: 3 Blocks

Purpose

The purpose of this lesson is: Understand the layers of the earth and how each layer effects how the earth is constantly changing. The student will be able to describe the layers of the earth and detail how plate tectonics cause earthquakes, volcanoes and changes in current landforms.

Objectives

Content Objectives

Given a tic-tac-toe board the students will chose 3 activities that will allow the student to choose the activities that suit their learning style. All students will be able to identify the layers of the earth and explain the Theory of Plate Tectonics.

1. ELLs will become familiar with: vocabulary terms needed to explain and demonstrate understanding of the Theory of Plate Tectonics. Vocabulary terms include: Aesthenosphere, Lithosphere, Mantle, Inner Core, Outer Core, Crust, Tectonic Plate, Divergent Boundary, Mid-Ocean Ridge, Continental Rift Valley, Convergent Boundary, Subduction Zone, Continental Collision, Transform Boundary, Pangea, and Fault Line.
2. ELLs will investigate: How the tectonic plates float on the liquid mantle and how the plates interact with each other at the different types of boundaries.
3. ELLs will create: a model, picture, or written description of the earths layers, ELLs will also create a story, cartoon, or poster describing what life may have been like if we lived in the time of Pangea. ELLs will also create a research project on earthquakes, volcanoes or tsunamis.

Language Objectives

Given a Tic-Tac-Toe lesson plan all students will be able to:

1. ELLs will read: chapter 1 in the science textbook, and chapters 3-4 in "Earth the Changing Planet"
2. ELLs will discuss/list the main points: in outline format or bubble map style from chapter 1.
3. ELLs will rewrite the main points: in bulleted format including all vocabulary words and other main points.
4. ELLs will practice vocabulary using quizlet.com to gain fluency in the definitions for chapter 1.

Culture Objectives

Given a class discussion on a concept:

1. ELLs will pair with a native English speaking student to differentiate between countries, cultures, regions, etc. ELLs will investigate where fault lines are and how they can affect the lives of people in other countries. ELLs will also look at how people from other cultures respond to earthquakes and volcanoes.

State Standards

Interpret ways in which rocks, fossils, and ice cores record Earth's geologic history and the evolution of life including: Geologic Time Scale and Catastrophic events.

5.01 Correlate evolutionary theories and processes: Geological

5.02 Examine evidence that the geologic evolution has had significant global impact including: Major geological events.

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Teacher Materials

Maps, paper, large drawing paper, pencils, colored pencils, internet access, computers, clay, and textbooks.

Activity 1 – Whole class activity:

Students will read chapter 1 in cooperative learning groups. ELLs will be partnered with a native English speaking student. The cooperative learning groups will work together to outline or bubble map the main ideas of the chapter, including all vocabulary words and definitions.

Activity 2 – Individual activities:

Student will choose 3 activities from the Tic-Tac-Toe board using the template from Carolyn Coil's "Pieces of Learning". Students pick 3 in a line will give the students a differentiated lesson plan. They will have a choice of the activities based on the learning style. The Tic-Tac-Toe board is laid out so that the students who are linguistic learners can choose 3 activities that require writing, visual learners can choose 3 activities that involve art or pictures. Social learners will be able to work in cooperative learning groups and ELL students will be paired

Activity 3 – Conclusion:

Student will present their projects to the class and have an opportunity to reflect on what they have learned and which activities they enjoyed and helped them learn the most and which activities were the hardest for them and what could have been done differently.

Activity 4 – Assessment:

Student will be assessed using cooperative learning group evaluations, personal reflection and completion of the three individual activities.

Instructional Technology Used for Teaching

Student will use quizlet.com to practice vocabulary terms. Quizlet.com will allow students to play interactive vocabulary games that will start by matching and move to typing the word that goes with each definition. The program puts more emphasis on words they miss. Level 6.

Student will create a bubble map of the main ideas from the chapter, using bubbl.us or mindomo.com. Student will organize the main ideas and design the map in a way they will understand. Level 9.

Student will type a paper using a word processor. They will use a word processor for activities 4,5and 6. Level 7.

Student will research different cultures that live near volcanoes. They will use the internet to complete their research. Level 5.

Student will create a PowerPoint or movie maker project to show the layers of the earth and how they affect different cultures. Level 9.

Student will use publisher or glogster.com to create a poster. Level 8.

**Purpose for Technology Point Use of Technology Purpose of Technology
Instructional Technology for Teaching**

1 Teacher -use Only	(Electronic Equipment)	Technology as a Tool
2 Teacher-use Only	(Virtual Learning Environments)	Managing
3 Teacher Helper	(Presentation Tools)	Instructing
4 Teacher-made Resources for Students	(Exercise and webpage builders)	Instructional Technology for Learning
5 Student Use Only	(Internet research)	
6 Student Helper	(Online quizzes, games, exercises)	Facilitating
7 Student Helper	(Listening and writing tools)	Practicing
8 Student Helper	(Webpage building, portfolio building)	Generating
9 Student-made Resources	(Audio and video podcasting, blogging, moviemaking)	Creating

Author Identification

Lesson Author: Bill Brown
 School: East Iredell Middle School
 Signature: _____
 Permission to Publish: Yes No

Tic-Tac-Toe for Student Choice Activities

Whole Class Activities:

- Students will read chapter 1 in the textbook in cooperative learning groups assigned by the teacher.
- Students will outline the chapter or use a bubble map (bubbl.us or mindomo.com) to organize the chapter.
- Students will define given vocabulary terms from chapter 1 and practice vocabulary using quizlet.com.

<p>1. Student will create a poster that warns of the eminent danger of the natural disasters that are caused by the movement of tectonic plates. Posters may be created using publisher or glogster.com</p>	<p>2. Student will present a PowerPoint or moviemaker project that describes how the layers affect each other and how they affect the lives of people of different cultures.</p>	<p>3. Student will create a drawing of the layers of the earth using an accurate description of each layer. The student will include a key showing a thickness and composition of each layer.</p>
<p>4. Student will research a culture that lives near a fault line such as “The Ring of Fire” and explains how the culture has adapted to the threats that go along with living near a fault line.</p>	<p>5. Student will write a detailed paper, using paragraph to explain the composition of each layer of the earth and explain the important role the layers play in changing the landscape thru plate tectonics.</p>	<p>6. Student will write a story about a natural disaster caused by plate tectonics, such as tsunami, earthquake or volcano. The story will be written from a 1st person perspective.</p>
<p>7. Student will create a model of the earth using clay to show the different layers. The model will be made to scale showing an accurate representation of the thickness of each layer.</p>	<p>8. Student will draw a cartoon depicting what life might be like living in a region that is affected by earthquakes or live under the threat of a volcano.</p>	<p>9. Student will perform a rap or song that they will write. The rap or song should use at least 10 vocabulary words from chapter 1 in the textbook.</p>

Name _____ **I chose activities #** _____, **#** _____, **#** _____.

Date _____ **Due date** _____

