Oreos image Source: https://miningmatters.ca/resources/gems---diy-activities

STEM Resource: Using Oreos to demonstrate Plate Tectonics

Christina Kalinic and Katerina Stojanovski, Stella Maris College

Make learning about plate tectonics exciting by introducing food to demonstrate the different types of plate boundaries. To begin with, provide students with an overview of the earth's layers and introduce the concepts of plate tectonics, convergent, divergent, transform boundaries and subduction zones. Use Oreo cookies to demonstrate, convergent, divergent and transform boundaries and subduction zones.

Sliding Plate Over Asthenosphere

a. Divergent Plate Boundary

b. Convergent Plate Boundary

c. TransformPlate Boundary

Access this link for a short YouTube explanation on how to conduct the Oreo Plate Tectonics activity – https://www.youtube.com/watch?v=3p5RW-t--QA. Issue the worksheet "Using Oreos to demonstrate plate tectonics" to students. Working in pairs, students can demonstrate each type of plate boundary to their partner. When they have finished, they can eat their Oreo biscuit.

Mining Matters https://miningmatters.ca/resources/gems---diy-activities has additional practical STEM resources to support the teaching of Stage 4 Landscapes and Landforms. Two other relevant and engaging activities that could be integrated in Landscapes and Landforms are *Edible Earth Layers and Folding* and *Faulting.*

Image Source: http://dusk.geo.orst.edu/oceans/Oreo-Cookie.pd

OREO STUDENT WORKSHEET

Using Oreos to demonstrate plate tectonics

AIM: To demonstrate how tectonic plates shift and interact.

MATERIALS: 1x Oreo cookie per student

METHOD:

1. **Label the layers of an Oreo cookie –** *lithosphere (crust), asthenosphere (mantle), core*

2. **Remove the crust** (top Oreo cookie) – *try to keep the filling intact.*
   [Hint: twist the Oreo cookie to remove it in one piece]

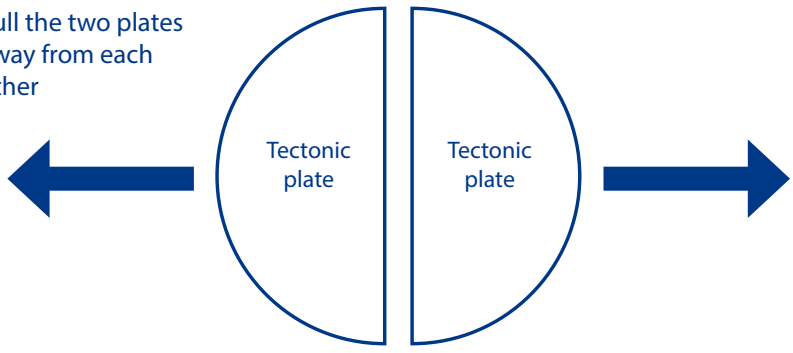
3. **Break the crust into two even pieces.**

Complete these sentence stems:

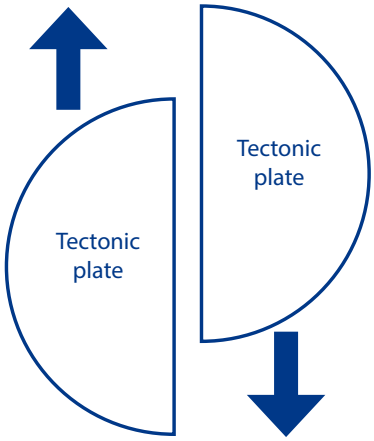
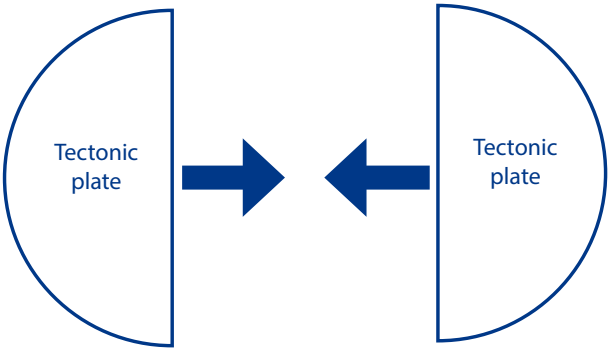
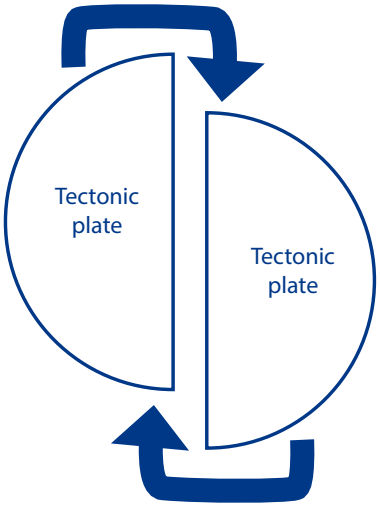
The two pieces of the crust represent… _____

The gap between the two pieces is a … _____

4. **Work in pairs.** Demonstrate the following plate boundaries to your partner, using your Oreo:

PLATE BOUNDARIES	DEMONSTRATION
Divergent Boundary	Pull the two plates away from each other 

OREO STUDENT WORKSHEET

Transform Boundary	Slide the two plates against each other (this can create earthquakes!) 
Convergent Boundary	Push the two plates together. Push the two plates gently into the icing to create a mountain range. 
Subduction	 Push one of the two plates into the icing below the other piece.

5. Enjoy eating your Oreo cookie!

References

Lillie, R., 2021. *Fun with Food! Plate Tectonics and our National Parks.* [online] Dusk.geo.orst.edu. Available at: http://dusk.geo.orst.edu/oceans/Oreo-Cookie.pdf [Accessed 13 April 2021].

Mining Matters. 2021. *GEMS – DIY Activities.* [online] Available at: https://miningmatters.ca/resources/gems---diy-activities [Accessed 13 April 2021].

Youtube.com. 2021. *Oreo Cookie Plate Tectonics – Savage Science At Home Week 4 DEMO.* [online] Available at: https://www.youtube.com/watch?v=3p5RW-t--QA [Accessed 13 April 2021].