

5 E Inquiry UDL Lesson Plan Framework

Lesson Plan Components

Teacher: Lauren Jones

Lesson Topic: Science

Grade level: 6

Unit: Plate Tectonics

Lesson Objectives: Students will recognize the different types of plate boundaries and demonstrate this knowledge by creating models of different boundaries and completing some comprehension questions.

Science Standards:

MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

ELA: WHST.6–8.2.a–f Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. (MS-ESS3-1)

ELD: ELD.PI.6.10.Em: Write short literary and informational texts (e.g., an argument for protecting the rainforests) collaboratively (e.g., with peers) and independently.

Math: N/A

Evidence of Mastery – Assessment (Expression):

Students will answer some questions (either on lined paper or on a computer document) pertaining to plate tectonics. They will answer these questions by using their findings from the experiment, their knowledge from the teacher's lecture, and the passage in their textbook.

Materials, Equipment:

- Graham crackers
- Whipped cream
- Paper plates
- Printed worksheets

Vocabulary:

- Plate boundaries (transform, convergent, divergent)
- Subduction zone
- Asthenosphere

Engage	Potential Barriers to Student learning	Ways to ensure access
Anticipatory Set(Engagement), Questions/Essential Questions _5__min. - Students will be asked questions about their personal experiences with earthquakes. - Have you ever felt an earthquake? - What happened? - What did it feel like? - Why do you think earthquakes happen?	Students who haven't experienced an earthquake/not from an area with earthquakes/ELLs may not know enough to contribute their experiences to the discussion	Explain terminology before teaching begins. Offer other related topics to discuss (e.g. ask students why they think earthquakes happen)
Explore	Potential Barriers to Student learning	Ways to ensure access
Activity to ignite curiosity based on questions _15__min. - Students will be given graham crackers, whipped cream, and paper plates. - Tell students to envision the graham crackers as the earth's crust. Allow students to move them around and form theories as to how plate movement causes earthquakes. - After a while of students exploring on their own, display a graphic with the three types of plate boundaries. Students will use it to create each type of boundary with their graham crackers.	Students might not have grasped the prior knowledge needed to understand the experiment (understanding of plates + the earth's layers).	Offer a one-on-one review of previous concepts with those who need it.
Explain	Potential Barriers to Student learning	Ways to ensure access
What information do students need after exploring?: _10__min. - Call class to the rug/common area to learn about types of boundaries. Information is taken from here - Transform boundary - forms when plates slide past one another without causing any damage. - convergent plate boundary - occurs when two plates move toward each other. - divergent plate boundary - occurs when two plates move away from each other (mostly on sea floor). - when one plate moves underneath another plate, it creates a subduction zone.	HoH students might have trouble hearing the lecture EL students/struggling readers may not understand terminology	Place them strategically close to the teacher Use accompanying images on the screen to assist in developing understanding

● Explain how earthquakes are made (stolen from here) ○ “Plate tectonics is based on two things: structure and motion. The earth is made up of many unique layers. At the top is the crust. Beneath the crust is the mantle. ○ The middle layer of the mantle is where the motion comes in. This layer is hot and semi-liquid. Its heat pushes to the surface and causes motion, the layer above it can slide across it. ○ Collisions happen slowly, but with tremendous force. This force results in mountains and earthquakes.”		
Elaborate	Potential Barriers to Student learning	Ways to ensure access
What Extensions/Applications will students do? _10_ min. ● Students will read a passage (page 2 of this pdf) that gives more information about plate tectonics, plate boundaries, and earthquakes.	Struggling readers might have trouble with this part EL students may have trouble with this too	Allow them to read with a partner Allow them to use a translator/read with a partner
Evaluate	Potential Barriers to Student learning	Ways to ensure access
How will you and your students assess their understanding? _20_ min. ● Students will complete the accompanying worksheet (page 3 of this pdf)	Struggling writers/students with LDs/etc. may have trouble writing their answers	Allow students to present answers verbally rather than written
Closure		
Wrap-up & Next Steps - What did students discover and what will they do next? _2_ min. “Today, we talked about the types of plate boundaries and how they create earthquakes and mountains. Next time, we’ll learn more about different natural phenomena and how they are created.”		
Gear Up - If students need enrichment what will you do? Students can be given more challenging text.		

Students can be asked to recite the types of plate boundaries from memory, or state what they do in their own words.

Gear Down - If students need additional support how will you adapt?
Students can be permitted to give answers verbally.
Students can work in groups.

Connections to other Content Areas:

ELA/Writing: students are asked to write answers in complete sentences and use proper grammar.

Reading: students are given a passage to read.

Professional Reflection: Reflect on & Refine your practice:

1. What went well & what will I do differently next time?)
2. Did I provide multiple means of representation, engagement, student action & expression?
3. Did students learn what I wanted them to learn? What evidence supports this?
4. Was the learning process engaging and accessible for all learners?