



Rutgers University PUFINS at Sea Lesson

Title: Emoji Cores

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Estimated Instructional Hours: 1 class period

Overview: Students will use different emojis to represent their last couple of days activities. They will compare and contrast these with other students, discussing the concept of superposition.

Audience: Primary subject: Science

Standards Addressed NGSS:

4-ESS1-1 Earth's Place in the Universe Grade: 3-5

Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.

MS-ESS1-4 Earth's Place in the Universe Grade: Middle School (6-8)

Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.

MS-ESS2-3 Earth's Systems Grade: Middle School (6-8)

Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

HS-ESS2-1 Earth's Systems Grade: High School (9-12)

Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.

Instructional Plan

Set up

1. Print out (and possibly laminate) the [emojis](#). Cut up and separate the emojis and place them into envelopes or separate containers. You will need one set per student. Label the back of each emoji set (this will be helpful so that students do not mix up their emoji sets).
2. Print out the [student worksheet](#) - one per student. I wouldn't print this back to back since students will need to look at their core to answer the questions on the back.

Procedure

1. Give each student a set of emojis and the student worksheet. (Modification - you can use less emoji options if you want to limit student choice).
2. Use the [Intro to Geologic Cores slideshow](#) and work your way through slide 13, discussing cores with the class.
3. Have students sort through the emojis, deciding which emojis they want to represent events that occurred in their life over the last 2 days. They should put the first event at the bottom and work their way to the top. They can use as many or as few emojis as they want.
4. Have students explain what each emoji represents to the right of the core and then answer the first conclusion question. Continue showing the slideshow slides 14-16.
5. Next, have students find a partner to compare and contrast their cores. Students should answer conclusion questions 2 and 3 at this time. Continue showing the slideshow slides 17-25.
6. Finally, have groups of students discuss their cores, comparing and contrasting them to see if several students used the same emojis. Students should answer conclusion question 4 at this time. Continue showing the rest of the slideshow (slides 26-39).

Guiding Questions

1. Why do we take core samples?
2. How are core samples similar or different?
3. What is a fossil? What do fossils tell us? How does a fossil compare to your emoji's?
4. What is an index fossil? What does an index fossil tell us? Why don't we use certain fossils as index fossils?

Resources

- [Intro to Geologic Cores slideshow](#)
- [Student worksheet - ANSWERS](#)
- [YouTube Video Ask a Geologist](#)
- [student worksheet](#)
- [emojis](#)

Additional Resources

- [Core Samples](#)
- [How Core Samples are Collected](#)
- [Ice Cores](#)
- [Tree Ring Core Activity](#)
- [Law of Superposition](#) - Encyclopedia Britannica
- [Law of Superposition](#) - YouTube video
- [Superposition Geology](#) - Geology Degree website
- [Index Fossils](#) - Encyclopedia Britannica
- [Index Fossils](#) - YouTube video