

Our STEM Challenge: The students were asked by the [Tellus Science Museum](#) to create a new display explaining the physical attributes of minerals. As an individual the students needed to create a display for one mineral. Then as a team they created a larger array display. The display must be an equal array and they had to explain the minerals shape, color, texture, streak, and hardness. The display must have a minimum of 6 compartments and they had to create a multiplication sentence to match their display.

1. ***Ask/Engage: Day 1 : What is the problem you are being asked to solve?***
Developing the 4 C's (Critical Thinking and Problem Solving)



Diamond Del's Gem Mining Adventure

Mr. Orlando showed the class various types of minerals. He would pick up one piece and ask the class to describe it: What is its size? What shape is it? Is it hard or soft? Etc. He explained to the class that they just described the physical attributes of the minerals. These physical attributes make each type unique. He would then pick a different mineral and have the class describe it and compare it to the first piece. How are they alike? How are they different? Last he would show a handful of minerals. How are the minerals alike and different? How could we determine if it is hard or soft?

Demonstrate or review how to test for the Moh's

Scale: <https://www.youtube.com/watch?v=9r7C5SD14Hw>. For minerals another physical attribute is the streak color. This is a simple test where you streak or strike the mineral once on a streak plate to determine the color of the streak.



Diamond Del was a mobile Gem mining experience. The students had an opportunity to mine for their very own gem collection and learn about rock and mineral identifications and classification.



(Communication)

Our Mining Experience





Imagine/Brainstorm: Day 2 : What are some possible solutions to the problem that you are trying to solve? After you brainstorm, draw and label your ideas below.
(Collaboration)



PLAN/DESIGN: Share your ideas with your group and collaborate to decide on a final design plan. Draw your team's design below and make a list of the materials that you will need to complete your design.

CREATE/TEST: Use your Final Design Plan to create and build your solution. Test your design. Did it work? Why or Why not? (Creativity and Innovation)



EVAULATE/IMPROVE: How well did your design work? Did your solution solve the problem within the given constraints?

