

Volcanic Journey

Curriculum Connections - Visualization in Science

Say, “Imagine that you are a member of a Volcanic Scientific Expedition Team...The volcano you are about to enter is ready to erupt. Step inside the specially designed Extreme Heat Protection Capsule (EHPC), and prepare to explore the depths of the earth...Sit back in the comfortable seat, and fasten your seat belt...Your feet should rest solidly on the floor in front of your chair... Your arms should be relaxed in your lap...Close your eyes, and listen to the countdown...Ten...Nine...Eight...Seven...Six...Five...Four...Three...Two...One...You feel the engine ignite, and the EHPC begins to move forward...It travels smoothly and easily...You look out of the windows that give you a panoramic view of the landscape...You are traveling up a steep slope...You notice that the sides of this volcanic mountain are covered with hardened lava flows from previous eruptions...You close your eyes, and imagine the lava flowing over the land like water seeking the path of least resistance...You know that rocks mixed with different metals form magma that has different properties and that the lava from these different magmas looks and acts very differently once they are outside of the volcano...Some of the flows you see look like rivers of smooth glass meandering down the river...Others contain chunks of ashy rock with holes where gasses have exploded from the molten lava...The surface formed by these flows is rough and sharp creating a treacherous, unwelcoming terrain...It reminds you of pictures of the surface of the moon...As you ascend, you notice that you are approaching a rim that circles the top of the volcano...It is covered with snow...Your vehicle comes to rest on the rim to give you the opportunity to look down into the crater...Steam is coming out of a vent at the center...You see a faint fiery orange glow coming from inside...Your volcanic expedition guide signals that you are about to enter the vent...You will travel to a reservoir deep inside the earth where the molten magma is stored...You move down, down a long tube straight into the underground. At intervals, you see other tunnels branch off and ascend diagonally to the surface...These branching tunnels are evidence of weaker areas of the earth’s crust that give way to the molten rock as it makes its way out of the volcano...Deeper, deeper you move until your vehicle splashes down into the reservoir of steaming hot magma...This particular reservoir is miles long...As your vehicle travels the perimeter of the magma chamber, you are mesmerized by the different colors of the minerals that swirl around your vehicle in the molten magma...You remember that a volcano is the vent through which molten rock, gases, and solid objects are expelled from the earth and that if the pressure deep inside a volcano is strong enough, an eruption will occur...Some eruptions are mild...During a mild eruption, only ash and smoke might exit the volcano...Other eruptions are violent...They send large boulders and rocks crashing down the side of the volcano along with extremely heated ash and gases and other debris that can extend high into the atmosphere and spread over hundreds of miles away...As you reflect on the images that come to mind, the vessel begins to bob around and move closer and closer to the opening of the vent...You are lifted higher

and higher through the tube that leads to the opening in the vent...You feel the force of the magma beneath you...Hang on!...This is going to be a rough ride...You feel yourself rising at a dizzying speed to the surface...Suddenly you explode out of the vent and are lifted higher and higher into the atmosphere...Hunks of fiery liquid rock pass the vehicle, and you see them glowing eerily in the sky...Abruptly, your ascent slows, and you begin to descend...The rock around you begins to cool, and the colors dim until you can only see the light of the liquid rock through cracks and fissures of their darkened crust...Your attention is drawn to the scene below...Rivers of lava are descending the volcano...They are beautiful until you think of the destruction they can cause...Flares of flaming trees light up the landscape...The earth below is on fire...Your vehicle lands in a river of lava...You are carried like a feather to the ocean shore...As the lava stream carries you into the water, you see the gigantic bursts of steam as the water is superheated by the molten lava...You can hear the explosive sounds all around you...You are glad to be protected from nature's violence and are ready to return home to safety. As I count backwards to one, review the images you have seen in your mind... Ten... Nine... Eight... Seven... Six... Five... Four... Three... Two... One.”



Extension Activity:

Have the students recreate and share their volcanic explorations in a creative way. Place students into groups of four or five. Have them recreate their volcanic journey in a frieze or wall hanging. Scenes from the visualization script could be depicted as the students saw them on the movie screens of their minds. Ask them to label their drawings with appropriate volcanic vocabulary.