SN EDUCATOR GUIDE

August 28, 2021

Sea Level Dips Spur Volcanic Eruptions

Student Discussion Worksheet

Directions: Answer the first set of questions as directed by your teacher, then read the online *Science News* article "Greece's Santorini volcano erupts more often when sea level drops." Answer the last two sets of questions on your own. A version of the article, "Sea level dips spur volcanic eruptions," appears in the August 28, 2021 issue of *Science News*.

Defining simulations

1. What is a computer simulation and what is it used for in science? Name one example of a system that scientists study with computer simulations.

2. What are the benefits of using a computer simulation? When might it be necessary?

3. What might be some challenges or limitations of using a computer simulation?

4. What is a visualization? How do visualizations differ from simulations?

The Santorini simulation

1. What complex problem did the scientists investigate with a computer simulation? List some basic components of the system that scientists simulated.

2. Why do you think the scientists used a computer simulation? What scientific relationships or principles might scientists have used to create the simulation?

3. What variables did scientists alter to get relevant predictions, or output, from the simulation? How did scientists test the accuracy of the simulation?

Create your own simulation

1. Brainstorm a complex, real-world issue that affects your life and that could be investigated with a computer simulation.

2. What background knowledge would you need to create the simulation?

3. Define the system that the computer simulation would model. What basic components of the system would the simulation include? List your simulation's variables and describe the scientific relationships or principles that you would incorporate in your simulation.

4. What variables would you test, and what is the simulation's output? How would you test the effectiveness of your simulation?