

Unit 3 Handout 27

Lesson 11: Investigating Lava and New Landforms

Purpose: Model the movement of molten rock through fractures in the lithosphere, over the earth's surface, and under water.

Guiding Questions: - How does molten rock cause and affect landforms?
- How does molten rock respond to environmental factors?

LAB SAFETY
<p>You must wear goggles and an apron during this activity. Follow all procedures as listed on this sheet and as cited in the textbook procedure. Do not touch the hot wax at any time nor handle the materials in or around the hot water baths.</p>

Procedure.

1. Divide and conquer for getting your lab materials:
 - a. Goggles for each person
 - b. An apron for each person
 - c. Material kit from the back prep table
2. Check the materials in your kit and let Mr. Ower know if you are missing any of these items: index card, wax paper, hand lenses, block of wax, plastic container, and a 250mL beaker. **Please wait before moving on.**
3. Follow step 1 on page 146. Write your answer in the space below and share your response with your group. *Why and how do you think rock melts?*

4. Follow step 2 on page 146 by answering the questions. Write your observations in the data table provided.
5. Follow step 5 on page 147 by answering the questions. Write your observations in the data table provided. Then, answer the question below the data table.

Properties of solid wax	Properties of liquid wax

How are the solid and liquid wax similar? How are they different?

6. With your group follow steps 7 and 8 on page 147. (Tuck the wax paper; don't use tape.) Use the data table below to record your predictions.
7. Follow step 9 on page 148. Take your time as you do this. Do not do all of A-D at once. Take it step by step and record your observations in the data table. If your wax solidifies in the container, swap it out with Mr. Ower.

	Prediction	Observations (text/images)
Wax poured on flat surface		
Wax poured on sloped surface		

8. Follow steps 10, 11, and 12 in order. Record answers and data in the table below. Follow the clean-up procedure, step 13, when you are finished.

Wax and Cold Water Prediction	Observations (text/drawings)

ANALYSIS

Instructions. Answer the following questions. Use your observations from the previous handout to assist you.

1. Describe the movement of the melted wax on the slope. How did that movement differ from the movement on the flat part of the waxed paper?
2. Describe the texture of the cooled wax. Compare this to the wax block.
3. How did the behavior of the cooling wax on the waxed paper compare with its behavior in the water?
4. How do you think lava forms rock?
5. How do you think volcanic mountains (such as Mt. St. Helens) and volcanic islands (such as Hawaii and Iceland) form?
6. Under what circumstances do you think lava flows into the ocean?

Name

Period

Date

7. What happens to lava when it flows into the ocean or erupts onto the ocean floor?

8. Look at figure 11.11 on page 153. Read the caption. Describe what is happening in the figure and connect it to what you did in this activity.

9. Look at figure 11.12 on page 153. Read the caption and describe what is happening in the figure. Connect it to what you did in this activity.