

Student Experience LESSON: **Facies Modeling Using Video**

When

In the classroom, prior to the expedition

Disciplines

Earth Systems Science

Description

Students learn about the Facies Model of Hot Springs through the use of a quick-time video and photographs.

Learner outcomes

The student will:

- Learn to identify the facies of a hot spring in video or still photographs
- Understand the location, shapes, and types of organisms present in the different facies

Materials

- Background on the Facies Model (for the teacher)
- Photographs (Figures 1-5)
- Facies Video developed by Mary Keffer
- Computer-aided projection system with speakers
- Facies Model Student Sheets
- Facies cartoon drawing from Facies Background document - optional

Background

Being able to visually identify the parts of the facies within the hot spring system allows for easier communication. Instead of using lots of descriptors and pointing, teachers and students who learn the morphology and terminology can use this language to enhance their observational and investigative experiences in the field.



Canary Spring at Mammoth Hot Springs. Photo extracted from Facies Video developed by Mary Keffer

Suggested Procedure

- 1.** Show students the QuickTime Facies Video, which includes information on the following:
 - A.** The names and locations of the five facies of a hot spring
 - B.** Information on characteristic appearance of each of the facies
 - C.** Information on the possible organisms present in each of the facies
- 2.** Choose one option below
 - A.** Students will label their facies drawing with the correct names.
 - B.** Students will fill in the Facies Model Student Sheets table
- 3.** Students will look at the facies photographs in figures 1-5 and identify the facies shown in each of the photographs (some have more than one). These can be relabeled in a different order.

The photos are identified below:

- Figure 1A – Vent & Apron Channel
- Figure 1B – Vent (With no water present)
- Figure 2 - Apron Channel w/aquificales present
- Figure 3 – Apron Channel and Ponds
- Figure 4A – Proximal Slope & Distal Slope
- Figure 4B – Proximal Slope (This photo also shows some awesome microterraces)
- Figure 4C – Proximal Slope flowing into a stream (There is no Distal Slope here)
- Figure 5A – Distal Slope (You can also see Ponds and Proximal Slope in the background)
- Figure 5B – Distal Slope (You can also see the lip of the Ponds and the Proximal Slope -the whiter area- in this photo.)

Teacher's Note:

This can be used as a 'station' in a group of activities going on simultaneously or as an individual activity to be done as a preview or review of the Facies Model Using Drawing lesson. The same student sheets can be used for either or both lessons.

**Student Experience LESSON:
Facies Modeling Using Video**



Figure 1A – Narrow Gauge (Houseal photo)



Figure 1B - Canary (during a temporary dry spell) (Keffer photo)



Figure 2 - Apron Channel w/aquificales (Houseal photo)



Figure 3 – Apron Channel and Ponds (Houseal photo)



Figure 4A – Proximal Slope & Distal Slope (Houseal photo)



Figure 4B – Proximal Slope (this photo also shows some awesome microterraces) (Houseal photo)

Student Experience LESSON:
Facies Modeling Using Video



Figure 4C – Proximal Slope flowing into a stream (there is no Distal Slope here) (Houseal photo)



Figure 5A – Distal Slope (You can also see Ponds and Proximal Slope in the background) (Houseal photo)



Figure 5B – Distal Slope (You can also see the lip of the Ponds and the Proximal Slope (the whiter area) in this photo.) (Houseal photo)