Redesigning Inquiry Kits for Student Agency

Strategies for Redesigning for Student Agency

• Elicit students’ prior knowledge
• Involve sustained, student-directed, collaborative inquiry on complex problems
• Time for Telling
• Apply Challenge Cycle
  • Isopod Habitat Challenge (Environments): Shifted focus to one organism vs 10+ organisms
  • My Skokomish River Challenge (Landforms): Organized around an authentic design challenge

Challenge Cycle: My Skokomish River

In My Skokomish River Challenge, students determine if and where to build a proposed low-income house development in the Skokomish River Valley, the most frequently flooded area in Washington. To inform their decision-making, students document erosion and deposition in their neighborhoods, conduct stream table investigations, examine maps of the proposed building sites, and learn the perspectives of Skokomish stakeholders.

Erosion, Deposition, Maps, Models
Context (presented to students)

The Skokomish River area is in Mason County on the Olympic Peninsula (in western Washington State).

The Evergreen Development Company wants to build an apartment building in the Skokomish River area. The Evergreen Development Company has found 3 sites in the area where they could build the apartments. When completed, 25 families could live there. Affordable apartments are desperately needed in the area because so many people are out of work at this time. The apartments would allow people to stay in the valley even though times are tough.

A major problem in the Skokomish River area is flooding. The Skokomish River is the most frequently flooded river in Washington State. The flooding of the Skokomish River is partly due to ways that people have used the land in the past. People have clear-cut the trees and built a dam on one part of the Skokomish River. People’s use of the land has caused erosion of gravel, soil and sand. The gravel, soil and sand have washed into the Skokomish River and been deposited on the bottom of the river, making the flooding much, much worse.

Mason County does not want the apartments to make the flooding problems worse in the Skokomish River area. Before Evergreen Development Company can build in the Skokomish area, their plan must be looked at and approved by Mason County government.

Students’ Challenge

1. Prepare a presentation on the following questions for the Mason County government
2. Based on your research and investigations, what do you think is causing the flooding in the Skokomish River area?
3. Would you advise the Mason County government to approve the company’s plan to build apartments on any of the 3 sites? If so, which of the 3 sites would you recommend, and why? Provide evidence to support your thinking. In making your recommendation, think about the impact on the land and people in the area. Who might be affected by the decision to build and how might they be affected?
4. What recommendations do you have for how Evergreen Development Company could cause as little erosion as possible during and after construction?
Student Work Samples

Question:
What effect does soil type have on the amount of erosion?

Prediction:
I predict that compact granite, gravel, and stone will cause less erosion, because stronger soil stays together.

Use the space below for a labeled diagram to support your procedure.