Deep Sea Hydrothermal Vent Explorations

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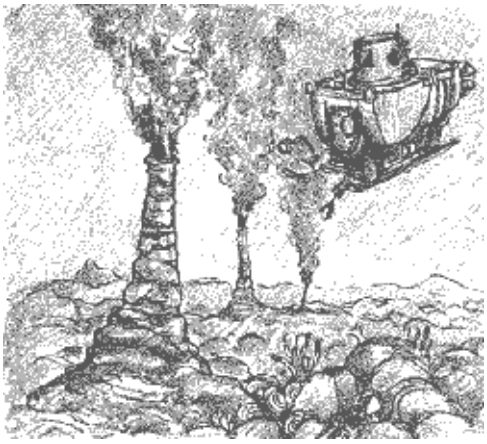

Students supersaturate a solution and observe the precipitate that forms, a process analogous to the formation of vent chimneys.

Alternative lab: **Hydrothermal Vent Formation**

The creation of hydrothermal vent chimneys is simulated by precipitation of salt from a saturated solution.

8. Hot Water – Hydrothermal Vent Plumes and Fluid Dynamics Analysis

This demonstration shows how the temperature gradient at a vent creates a plume that rises and disperses. Students apply this and previous lab work to an analysis of how fluids flow through a vent system.

Section Two: Navigation And Engineering- How Scientists Get To Hydrothermal Vents

9. Navigating Deep Sea Vents - Alvin Dive Log, Part 1

Students use map reading skills and calculations from transponder data to navigate on paper around a hydrothermal vent field.

10. Deep Sea Dive Simulation - Alvin Dive Log, Part 2

Students continue navigating around a hydrothermal vent field, but this time they simulate a dive in simple classroom models of ALVIN.

Section Three: Hydrothermal Vent Organisms

11. Hydrothermal Vent Biology

Students try their hand at the same process scientists are going through as they observe vent organisms and try to infer their identity and natural history.

12. Hydrothermal Vent Food Webs

Students use information about hydrothermal vent organisms and their own organizational and artistic skills to depict a hydrothermal vent food web.

13. Symbiosis in the Deep Sea – Three-Level Guide

This question guide leads students through a Scientific American article explaining the creation of hydrothermal vents and the chemosynthetic food webs that form around the vents.

14. The Mating Game

Students play game show contestants in this fun activity reviewing the adaptations of vent creatures.

Production Credits

Below, you'll find helpful resources for use with the above activities.

Activity 1 Reunite Pangaea

Tsunami article

Activity 2 Slippin' and Slidin' - Plate Tectonics

Make your own Earth and tectonic globes instructions
Make your own Earth globe
Great-Circle indicator
Make your own tectonic globe
Seafloor spreading model ds9u1res5
Seafloor spreading model animation ds9u1res6
Ocean trenches model ds9u1res7

Activity 3 The Ocean Floor

Construct a globe
Earth globe
Great Circle indicator

Activity 4 Ocean Floor Features

Ocean floor features diagrams
North Atlantic Bathymetric map
World Bathymetric map
Atlantic Bathymetric map
Island Bathymetric map
Volcano model

Activity 7 Hydrothermal Vent Formation

Deep sea research images
Vents and the Salty Sea article
Deep sea chimneys
Deep-sea drilling
Vent life

Activity 11 Hydrothermal Vent Biology

Tube worm and clam images
Sulfide worm and plume worm images
Spider crab and fish images
Sea spider and limpet images
Mussel and snail images
Mat bacteria and plume bacteria images
Fossil model

Activity 12 Hydrothermal Vent Food Webs

Deep-sea exploration
Vents article
Vent chimneys
Vent exploration
Sea floor exploration