

## Endeavour Hydrothermal Vents: Canada's First MPA

### Activity III – A Product of My Environment

#### Visualization #2.

**Home** is where you are safe from weather, harm, have food to eat, water to drink, and air or water to breathe. (or could that be something else? )

**Listen** to the following, then draw, describe with words, or create with clay the creature you would think best suited to survive, and survive well, in this place. If you finish early, you can then draw or describe with words what the environment looked like in your mind.

#### Visualization #2 (Thermal Vent habitat)

It is a long journey to get to this place. Going from the brightness of the surface waters of the ocean, gradually dimming to absolute darkness, there are vast expanses of virtual nothingness except the snow-like continuous shower of organic debris from the upper reaches of the ocean. And then you arrive.

It is totally dark, there is no light that reaches this place. The pressure of the surrounding water is extreme, enough to crush your body if you were a human, or to squash metal.

Is there sound? In the distance there is the call of a whale, the sputter of a boat propeller or the rumble of a far-off earthquake. Finn whales are known to use this area.

There are tall forms that rise up out of the ocean floor, with black smoke coming out of them. They are jagged and volcanic looking, and there are things living on and around them. Many things.

Masses of straw shaped objects, called tubeworms, sway in the water currents and amongst those tubeworms many smaller beings, small snails, worms, elongated white fish, and long legged crabs.

This place is located at a join in the earth's crust, where tectonic plates on the ocean floor are spreading by 6 centimeters each year.

It's hot, a hot place in a sea of cold. This heat is caused by the superheating of water that has been drawn down through cracks in the earth and taken close to the molten magma where it is near the earth's crust. This hot water is then spewed out, but not before it has taken on a load of minerals and sulfides.

Things that live here have adapted to living on the edge of the cold – in the zone where the heat of the hydrothermal vents drives out the freezing cold. Very specific adaptations, since the cold settles in a short distance away from the super-heated vents.

Create your own creature that you feel would be well adapted to survive here. Think about what features would ensure good survival and incorporate them into this creature.

Present your creature to the rest of the class.

If time allows, the colouring sheet can be handed out, and students can look at some of the creatures that live by the hydrothermal vents. Are there any similarities with the creatures the students have created?

Take a look at the real habitat!

Link for live feed of video camera within the Grotto complex, Main Endeavour Field, in the MPA.

It can be dark because some of the species are sensitive to light.

<http://www.oceannetworks.ca/sights-sounds/video/live-video/tempo-mini-vent-camera>