

Coral Bleaching

A Play by Matthew Limtiaco, Navigating Change

Teacher's instructions: Have three students from your class come to the front of the room to play the parts of the Sun, Zooxanthellae, and Coral. You (or a student), will read the play while your three actors and the audience participate in the telling of the story. When the character hears their part come up in the story, its time to play that part! When the reader says "the Sun," that character will open their arms up to the sky while students sing out "aaaaaahhhhhhh." When the reader says "the Zooxanthellae," that character will rub their tummy and lick their lips while the audience says "yum, yum, yum." When the reader says "the Coral," that character will make a strong arm pose while the audience gives a loud "grunt."

In the cool blue waters of the ocean, live communities of creatures that have been the foundation of life in our oceans for thousands of years. They provide food and shelter for reef fish, and even convert carbon dioxide into oxygen, just like the green forests on land. These life forms build colorful, elaborate undersea cities, known as coral (strong arms and grunt) reefs. The coral (strong arms and grunt) live in harmony with a plant called zooxanthellae (yum, yum, yum), which uses a process called photosynthesis, to produce food from the rays of the sun (aaaahhh!). The zooxanthellae (yum, yum, yum) shares this energy from the sun (aaaahhh!) with the coral (strong arms and grunt), and a healthy reef grows and sculpts wonderful underwater structures of life.

Normally, the rays of the sun (aaaahhh!) warm shallow waters where the coral (strong arms and grunt) lives. These warm ray heat the ocean just enough to provide the needed food for the zooxanthellae (yum, yum, yum). Sometimes, however, the sun (aaaahhh!) provides too much energy and temperatures rise in the ocean and the zooxanthellae (yum, yum, yum) gorge their appetites on the food of the sun.

This is not all that different from a human eating too much candy or pepperoni pizza, or donuts, or soda or ice cream or hamburgers with extra cheese

and special sauce or all of the above as fast as you can until your belly is about to... well you get the picture.

When the ocean gets too warm, the zooxanthellae (yum, yum, yum) can become toxic and the coral (strong arms and grunt) will kick them out (have the zooxanthellae student stand off to the side). This is called bleaching because the vibrant color that once covered this reef turns snow white. This means the coral (strong arms and grunt) will have to go hungry until the temperatures return to normal. When the heat from the sun (aaaahhhh!) returns to normal, the coral (strong arms and grunt) will welcome the zooxanthellae (yum, yum, yum) back into its home, and hopefully, with a little help from humans, these corals (strong arms and grunt) can live happily ever after!