

Dirty Water

Recycling Lesson (Part 1)

Estimated Time: 30 min.

Objective: The students will know what water pollution is and some of the ways it occurs.

Materials:

Picture of a mountain lake

Large transparent of water bowl

Paper or plastic cups each containing the following:

Dirt

Gum or candy wrappers

Water with red food coloring

Vegetable oil

Soy sauce

Water with blue food coloring

Vinegar (1/4) cup

Baking Soda

One drop liquid detergent in water

Labels for cups: DIRT, TRASH, PAINT, GAS AND OIL, SEWAGE, FERTILIZER, PESTICIDE, ASHES, CLEANSERS

Oil Spill! Read aloud book.

Activity:

The teacher will begin with writing the word "Pollution" on the board. The students will be asked to brainstorm words associated with "Pollution". As the words are said, the teacher will write them around the main word on the board. The teacher will make sure that all four types of pollution are mentioned in the brainstorm.

The teacher will then show a picture of a mountain lake. The teacher will explain that this is Bear Lake. Some hikers came and found the lake. They commented on how beautiful and peaceful it was. One had an idea to build a lodge, called the Bear Lodge, and a restaurant on the shoreline of the lake. The hikers knew that lots of people would pay lots of money to stay at such a good place.

First the bulldozers came to dig up and push the dirt around to clear the way for the road to the lodge, and for the lodge itself. A lot of the dirt ended up in the lake (pour the dirt into the bowl). Next, the construction company came to begin building. This meant their employees stayed all day and ate their lunches there. Some of the workers thought it was okay to throw the trash from their lunches into the lake (throw in the wrappers).

The construction company finished the lodge and the painters came to paint and decorate. Sometimes the painters would clean their tools in the lake (pour the PAINT cup in).

The Bear Lake Lodge was finished. People came to stay and enjoy the lake. Some people brought boats to fish and ski. (Pour the GAS AND OIL cup.) The hotel was built quickly and did not have a good septic tank. (At this point the teacher will make sure the students understand what a septic tank is.) The tank leaked occasionally. (Pour in SEWAGE.) The owner of the restaurant found out it was cheaper to grow his own fresh food for the restaurant than to have trucks bring it up. He used fertilizers for his farm. Also, when you have a garden/farm more bugs will show up to eat the plants and food. To save the gardens, the owner used pesticides to kill off the bugs. When it rained, both the fertilizer and the pesticide trickled down into the lake. (Pour the FERTILIZER and PESTICIDE.)

The lodge owners decided it was cheaper and easier to burn their garbage than to haul it all the way to the dump. The ashes were pushed into the lake. (Pour the ASHES.) The guests at the lodge that had boats soon found they had oil on their boat from the lake. The teacher will ask the students where did the oil come from? (The boats and swimmers.) The boat owners used cleaners to clean the boats before they went home. (Pour in the CLEANERS.)

The teacher will ask the students if the lake still looks beautiful. The teacher will ask if fish could live in there or if anyone needs a drink. The students will be asked what wildlife will be affected by the pollution in this lake: fish, plants, animals, humans, dirt, ground water, etc.

Now the teacher will ask the students if this damage can be reversed. Can the lake be fixed now? Write the word purification on the board. Tell the students it means to clean and restore. Ask the students to brainstorm how they can purify and restore the lake. The teacher will write the ideas down as they are said. The teacher will tell the students that when guests noticed how bad the lake looked, they stopped coming because it was not fun and enjoyable anymore. The lodge lost all of its money and was abandoned, along with the restaurant.

The teacher will then instruct the students that they work for the BLM (Bureau of Land Management) and have just found out what has been happening at the lake. You came to look for yourself. You must record your findings so that others will know what happened and not forget. On the top of this form you must describe what this water looks like to you. On the bottom half you need to write your recommendations for the lake. This means you need to describe how you think the lake can be cleaned and fixed. (The teacher will pass out the worksheet.)

The teacher will remind the students they must find a way to replace the life that was in the lake, not just clean it. When finished, the students will hand in.

Assessment:

The students will know what pollution is and how it occurs in a lake. They will demonstrate this by describing Bear Lake, what happened and how it looks. Next, they will try brainstorm ways to counteract all that has polluted the lake.

Reflection:

This lesson turned out very well. One thing that I would do differently is I would bring plastic wrap to cover the bowl. The bowl was messy and smelled a little when it was all done. My teacher was not that pleased when it started to smell in her room (let alone it looked terrible). She ended up hiding it in a box in the teacher's workroom next door. I should have had a covered pitcher ready to pour the liquid in to save for the second lesson.