Name: _____ **Date:** _____

Lesson 6: Splish, Splash, I was Takin' a Bath – PCBs Worksheet – Extension Activity

Directions

Read the following information on PCBs and answer the questions at the end of the reading.

What are PCBs?

"PCBs" is the abbreviation for a group of chemicals called *polychlorinated biphenyls.* Before 1979, PCBs were used by the paper industry to make paper. The electrical industry also used them. In the past, factories disposed of used PCBs by dumping them into rivers.

The Problem of PCBs

The problem, however, is that PCBs are suspected of having harmful effects on those who come in contact with them. Thought to cause cancer, liver damage and nerve problems, PCBs do not, unfortunately, break down into harmless substances. In fact, when released into the environment, PCBs stay there for many years. When animals take them in, PCBs collect in body tissues — meaning: when a big fish eats a little fish, all the PCBs in the little fish's body collect in the body of the larger fish. And, when a person eats that large fish, then she or he has those same PCBs in her or his body.

No Easy Solution

The good news is that PCBs have been banned in the United States since 1977. The bad news is that we need to clean up the PCBs that have collected in riverbeds. There are three ways to clean up PCBs, but none of the methods is perfect.

The first way is to dig up the dirt contaminated by PCBs and put it into a landfill. However, PCBs in a landfill are still a threat because they can be washed into the groundwater. The second method for cleanup involves burning the dirt poisoned by PCBs. Burned PCBs turn into dioxin, one of the most poisonous substances on Earth, and most people do not want to risk releasing dioxin into the atmosphere. The third way to clean up the chemical is to release PCB-eating bacteria into the riverbed. This seems like an ideal solution; however, there are two problems associated with this method. First, the bacteria need oxygen and other nutrients to survive and, therefore, these must be pumped down to them. The second problem is that the bacteria do not roam around the water, searching for PCBs; it must be delivered directly to each PCB deposit.

Adapted from: Glencoe Science: An Introduction to the Life, Earth and Physical Sciences, Student Edition, Blacklick, Ohio: Glencoe/McGraw-Hill, 2002.

Name: _____ **Date:** _____

Questions

1. What is a PCB?

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2. Why are PCBs a threat to us?

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3. Why are they a threat to animals?

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4. If no new PCBs have entered the environment since 1977, why are they still a threat?

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5. What do you think is the best solution for cleaning up PCBs? Why?

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