Building Language Skills with The Seattle Times

September 10, 2015

Article: "Lower levels of oil pollution harm fish, researchers find"

Tuesday, September 8, 2015 in the e-Edition of The Seattle Times, pages B1 and B2

Pre-Reading:

Before reading the article, read the title. Knowing that pollution is harmful, what about this article do you think is news? Why is this important local news to Seattle and the Pacific Northwest?

Vocabulary:

As you read, look for the following vocabulary words that appear in today's article. Write down what you think the words mean based on the "context," or how the words are used in the sentence in which they appear. Next, look up the definitions in a dictionary and see how close your guess was for each word.

impairing

concentrations

implications

embryonic

succumb

predators

vulnerable

compounds

fossil-fuel

emissions

motorists

condense

runoff

replicated

Comprehension:

1. Scientists have found oil impairs what type of functions?
2. What types of fish have been found to experience heart defects?
3. How do these research findings relate to the 1989 Exxon Valdez oil spill?
4. Why do some fish look healthy in appearance when in fact they are not? What conditions can be masked by their healthy-looking appearance?
5. What forms of pollution other than oil spills can harm fish?
6. Where in the world is the effect of oil the greatest?
7. What notable action did Alaska take after the 1989 Exxon Valdez spill?
8. What is Alaska's water-pollution limit and at what lower levels could herring embryos still be affected?
9. Have herring stocks in the Prince William Sound recovered since the 1989 Exxon Valdez oil spill?
10. Why are there questions regarding whether the low level oil pollution is harming Puget Sound's herring stocks?

Post-Reading:

Read the following passage from the article and discuss the following questions in a group:

"'What this study shows is that in very, very low concentration of oil, embryonic fish ... get born with a mild heart defect,' said John Incardona, a National Oceanic and Atmospheric Administration toxicologist at a Seattle fisheries science center."

Embryonic fish are impacted by a very low concentration of oil. How are humans similarly impacted by low levels of harmful pollutants? What harmful substances for humans can be compared to harmful oil for embryonic fish? Why are even small amounts of these substances dangerous to humans? What do humans need to do to keep their hearts healthy?

Building Language Skills:

Read the following passage, and complete the activity below:

"The researchers found that oil's effects are greatest in cold-water environments, where fish embryos are less able to metabolize the pollutants. And herring, with much smaller eggs than the pink salmon, suffered the most severe effects from the polycyclic aromatics.

In the aftermath of the 1989 Exxon Valdez spill that dumped nearly 11 million gallons of crude in Prince William Sound, Alaska became the first — and so far only state — to create a water-pollution limit for the polycyclic aromatics, according to Incardona."

Research the 1989 Exxon Valdez spill. Where did it occur? Why was it so impactful? Study a world map. In what other "cold-water environments" in the world could an oil spill have the greatest impact? Research to determine if any oil spills have occurred in this region. If so, what were the effects?

Comprehension Question Answers:

1. Scientists have found that oil impairs heart functions.
2. Herring and salmon have been found to have experienced heart defects.
3. This research could explain why herring stocks in Prince William Sound collapsed after the 1989 spill.
4. The fish may look healthy but the heart defects make them less fit and thus they cannot swim as fast. They may also succumb to predators at higher rates than other fish and may be more vulnerable to infections.
5. Other forms of fossil-fuel pollution such as tailpipe emissions from motorists that condense and are carried into the water by runoff also harm the fish.
6. Oil's effects are greatest in cold-water environments, where fish embryos are less able to metabolize the pollutants.
7. Alaska became the first — and so far only state — to create a water-pollution limit for the polycyclic aromatics.
8. The Alaska state limit is 10 parts per billion, but the researchers found herring embryos could be affected at levels 10 to 50 times lower than that.
9. Prince William Sound herring stocks have failed to recover even as oil pollution has declined to levels unlikely to affect them.
10. The Puget Sound levels are not that far below those found to have effects in the aftermath of the Exxon Valdez, so these levels raise questions about whether this pollution is harming Puget Sound's struggling herring stocks.