



Article Guide: Turned up for toxins: Interview with toxicologist and communicator Dr. Emily Monosson

<http://scienceovereverything.com/2018/10/23/toxins-emily-monosson/>

Part 1:

Directions:

- Read the entire article “Turned up for toxins: Interview with toxicologist and communicator Dr. Emily Monosson” to yourself
 - Box vocabulary words or words that you have not seen before
 - Underline in the text where the focus questions are addressed
- Answer each focus question

Focus questions

1. What are the evolutionary origins of toxins?

2. What are “legacy” chemicals and how do they damage the ecosystem?

3. What is one way you can reduce the amount of toxins released into the environment?

Part 2:

Directions:

- Read each understanding question
 - Think about what you would need to know to answer that question
- Read the article a second time with a partner.
 - Answer each understanding questions together

Understanding questions

1. Snakes and platypi are an example of convergent evolution. They have similar venom, even though their common ancestor lived hundreds of millions of years of evolution. What sort of environmental conditions and pressures do you think might have selected for venom in these two species?

2. Some species have evolved a resistance to the chemicals put into the environment by humans, most of whom have relatively short generation times. Explain why these species would develop a resistance to these chemicals while other living things, perhaps those with longer generation times, have not.

Part 3:

Directions:

- Read the article a final time as a class.
- Discuss as a large group how you would address the extension question
 - Write a response to the extension question

Extension Question

PCB is a chemical that was used for many years in the electrical industry. While the chemical was banned in the 1970's due to its damaging effects on animals and humans, it is still found in the ecosystem. How can industries become better stewards of the environment? Pretend you are the director of a large manufacturing plant and develop a business-wide policy that would keep chemicals from leaking into the local ecosystem, but would not significantly cut back on your profits.
