

TOPIC 8.8

Bioaccumulation and Biomagnification

SUGGESTED SKILL

 *Scientific Experiments*

4.A

Identify a testable hypothesis or scientific question for an investigation.



Required Course Content

ENDURING UNDERSTANDING

STB-3

Human activities, including the use of resources, have physical, chemical, and biological consequences for ecosystems.

LEARNING OBJECTIVE

STB-3.I

Describe bioaccumulation and biomagnification.

STB-3.J

Describe the effects of bioaccumulation and biomagnification.

ESSENTIAL KNOWLEDGE

STB-3.I.1

Bioaccumulation is the selective absorption and concentration of elements or compounds by cells in a living organism, most commonly fat-soluble compounds.

STB-3.I.2

Biomagnification is the increase in concentration of substances per unit of body tissue that occurs in successively higher trophic levels of a food chain or in a food web.

STB-3.J.1

Some effects that can occur in an ecosystem when a persistent substance is biomagnified in a food chain include eggshell thinning and developmental deformities in top carnivores of the higher trophic levels.

STB-3.J.2

Humans also experience harmful effects from biomagnification, including issues with the reproductive, nervous, and circulatory systems.

STB-3.J.3

DDT, mercury, and PCBs are substances that bioaccumulate and have significant environmental impacts.

AVAILABLE RESOURCES

- Classroom Resource > [AP Environmental Science Teacher's Guide](#)
- External Resource > [Environmental Literacy Council's AP Environmental Science Course Material](#)
- The Exam > Chief Reader Report (2018, Q3, 2017, Q1)
- The Exam > Samples and Commentary (2018, Q3, 2017, Q1)
- Classroom Resource > [Quantitative Skills in the AP Sciences \(2018\)](#)