

LESSON PLAN 3: WATERSHED EXPLORATION

MIDDLE SCHOOL STANDARDS ADDRESSED:

Pennsylvania	<p>4.1.7.A.: Describe the relationships between biotic and abiotic components of an ecosystem.</p> <ul style="list-style-type: none">• Compare and contrast different biomes and their characteristics.• Describe symbiotic and predator/ prey relationships. <p>4.5.6.D.: Identify reasons why organisms become threatened, endangered, and extinct.</p> <p>4.2.7.A: Explain how water enters, moves through, and leaves a watershed.</p> <ul style="list-style-type: none">• Explain the concept of stream order.• Describe factors that affect the flow and water quality within a watershed. <p>4.2.6.C.: Identify natural and human- made factors that affect water quality.</p> <p>4.2.7.C.: Use appropriate tools and techniques to analyze a freshwater environment.</p> <ul style="list-style-type: none">• Interpret physical, chemical, and biological data as a means of assessing the environmental quality of a freshwater environment. <p>4.2.8.C.: Describe how a diversity index is used to assess water quality.</p>
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HIGH SCHOOL STANDARDS ADDRESSED:

Pennsylvania	<p>4.1.12.E.: Research solutions addressing human impacts on ecosystems over time.</p> <p>4.2.10.A.: Examine the interactions between abiotic and biotic factors within a watershed.</p> <ul style="list-style-type: none">• Describe how topography influences the flow of water in a watershed.• Describe how vegetation affects water runoff.• Investigate and analyze the effects of land use on the quality of water in a watershed. <p>4.2.12.A.: Examine environmental laws related to land use management and its impact on the water quality and flow within a watershed.</p> <p>4.2.10.C.: Explain the relationship between water quality and the diversity of life in a freshwater ecosystem.</p> <ul style="list-style-type: none">• Explain how limiting factors affect the growth and reproduction of freshwater organisms.
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4.2.12.C.: Analyze the effects of policies and regulations at various governmental levels on water quality.

- Assess the intended and unintended effects of public policies and regulations relating to water quality.