

Watershed Decisions - Appendix 1

Pennsylvania State Academic Standards Addressed (Environment & Ecology; Science & Technology)

Watershed Decisions

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4.2.7.A. Explain how water enters, moves through, and leaves a **watershed**.

- Explain the concept of **stream order**.
- Describe factors that affect the flow and water quality within a **watershed**.

4.2.8.A. Describe factors that affect the quality of ground and surface waters.

4.2.10.A. Examine the interactions between **abiotic** and **biotic** factors within a **watershed**.

- 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**.

4.2.12.A. Examine environmental laws related to land use management and its impact on the water quality and flow within a **watershed**.

4.2.7.C. Use appropriate tools and techniques to analyze a freshwater **environment**.

- Interpret physical, chemical, and biological data as a means of assessing the **environmental** quality of freshwater **environment**.

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.

4.2.7.D., 4.2.8.D., 4.2.10.D., 4.2.12.D. *Science as Inquiry*

4.3.10.A. Evaluate factors affecting the use of **natural resources**.

- Evaluate the effect of **consumer** demands on the use of **natural resources**.
- Analyze how technologies such as modern mining, harvesting, and transportation equipment affect the use of our **natural resources**.
- Describe how local and state agencies manage **natural resources**.

4.4.7.A. Describe how agricultural practices, the **environment**, and the availability of **natural resources** are related.

4.4.10.B. Analyze the effects of **agriculture** on a society's economy, **environment**, standard of living, and foreign trade.

4.4.12.A. Research and analyze the social, political, economic, and environmental factors that affect agricultural systems. Identify the positive and negative effects of **technology** used in **agriculture** and its effects on the **food and fiber system** and the **environment** over time. Analyze research and development initiatives as they relate to **agriculture**. Explain how **Best Management Practices (BMP)** can be used to mitigate environmental problems. Explain how public policy encourages or discourages the sustainable use of **natural resources**.

- Research laws and policies that address the **sustainable** use of **natural resources** (e.g., solid and liquid **waste management**, industry, **agriculture** and enterprise).

4.5.12.A. Research how **technology** influences the sustainable use of **natural resources**.

- Analyze how **consumer** demands drive the development of **technology** enabling the sustainable use of **natural resources**.

4.5.7.C. Explain how human actions affect the health of the **environment**.

- Identify residential and industrial sources of pollution and their effects on **environmental** health.

4.5.8.C. Describe how humans can reduce pollution.

4.5.10.C. Analyze realworld data and explain how point and **non-point source pollution** can be detected and eliminated.

- Compare and contrast the **environmental** effects of different industrial strategies.

4.5.12.C. Analyze the costs and benefits of means to control pollution.

- Analyze the role of **technology** in the reduction of pollution.
- Research and analyze the local, state, and national laws that deal with point and **nonpoint source pollution**.
- Explain **mitigation** and its role in maintaining **environmental** health.

3.4.12.B1. Analyze ethical, social, economic, and cultural considerations as related to the development, election, and use of **technologies**.

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3.4.12.B2. Illustrate how, with the aid of **technology**, various aspects of the environment can be monitored to provide information for decision making.