Watershed Management and Community Involvement in Water Resource Protection

Introduction

Welcome to the Watershed Management and Community Involvement in Water Resource Protection worksheet! This activity is designed for 10-year-old students to learn about the importance of watershed management and community involvement in protecting water resources.

A watershed is an area of land that drains water into a common outlet, such as a river, lake, or ocean. Watersheds can be small, such as a local stream, or large, such as a river basin.

What is a Watershed?

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Activity 1: Watershed Model Creation

Create a model of a watershed using clay, paper, or other materials. Include the main components of a watershed, such as rivers, lakes, and wetlands.

1. What are the main components of a watershed?

2. How do human activities impact water quality in a watershed?

Importance of Community Involvement

Community involvement is critical in protecting and managing watersheds. Individuals can contribute to watershed management by making conscious choices about their daily activities, such as reducing their use of pesticides and fertilizers, disposing of waste properly, and conserving water.

Activity 2: Water Quality Testing

Conduct a water quality testing experiment using a local water sample. Test the water for pH, turbidity, and other factors.

1. What are the different parameters that affect water quality?

2. How can water quality be improved in a watershed?

Water Quality and Watershed Management

Water quality is a critical component of watershed management. Watersheds can be affected by many different pollutants, including sediment, nutrients, and bacteria. These pollutants can come from a variety of sources, including agricultural runoff, sewage, and industrial waste.

Activity 3: Community Involvement Discussion

Discuss the importance of community involvement in watershed management. Brainstorm ways that individuals can contribute to protecting local water resources.

1. Why is community involvement important in watershed management?

2. What are some ways that individuals can contribute to protecting local water resources?

Case Study: Local Watershed Management

A local watershed is facing pollution due to agricultural runoff. The community has come together to develop a plan to protect the watershed. The plan includes reducing the use of pesticides and fertilizers, implementing buffer strips, and creating a wetland restoration project.

Case Study Questions

Answer the following questions based on the case study:

1. What are the main causes of pollution in the watershed?

2. What are some strategies that the community can use to protect the watershed?

Conclusion

In conclusion, watershed management and community involvement are critical in protecting water resources. By understanding the importance of watersheds and the impact of human activities on water quality, individuals can make conscious choices to contribute to protecting local water resources.

Individual Reflection:

1. What was the most surprising thing you learned today?
2. How will this learning change your actions in the future?
3. What questions do you still have about environmental impact?

Glossary

* Watershed: An area of land that drains water into a common outlet, such as a river, lake, or ocean.

* Water quality: The physical, chemical, and biological characteristics of water that determine its suitability for various uses.

* Community involvement: The active participation of individuals and groups in protecting and preserving natural resources, including waterways.

References

National Geographic's Watershed Education Program

Environmental Protection Agency (EPA) Watershed Protection Page

Answer Key

1. Activity 1:

* Main components of a watershed: rivers, lakes, wetlands

* Human activities that impact water quality: agricultural runoff, sewage, industrial waste

2. Activity 2:

* Parameters that affect water quality: pH, turbidity, dissolved oxygen

* Ways to improve water quality: reducing pollutants, implementing buffer strips, creating wetland restoration projects

3. Activity 3:

* Importance of community involvement: community involvement is critical in protecting and managing watersheds

* Ways individuals can contribute: reducing use of pesticides and fertilizers, disposing of waste properly, conserving water

4. Case Study:

* Main causes of pollution: agricultural runoff

* Strategies to protect the watershed: reducing use of pesticides and fertilizers, implementing buffer strips, creating wetland restoration projects