



4-H Grab and Go: *Positive Planning Adds Up*

Concept:

Devise solutions to improve negative impacts on waterways and watersheds and reinforce positive impacts existing along waterways and surrounding watersheds.

Age Level:

Middle School: Grades 6-8

Education Standard:

NSES - 5-8.6 Earth and Space Sciences

SET Ability:

Draw/Design, Communicate, Invent/Implement Solutions, Interpret/Analyze/Reason, Compare

Life Skill:

Problem Solving

Success Indicator:

Youth will identify positive solutions to reduce or improve water quality for waterways and will communicate how land use decisions impact waterways.

National 4-H Curriculum:

Exploring Your Environment
(www.4-H.org/curriculum/environment)

PREPARATION

Time: 10 minutes

Space: Classroom

Materials:

- Paper
- Pencils
- Markers/Crayons
- Scissors
- Community Maps
- Butcher Block Paper

(NOTE: The butcher block paper will need to have a waterway drawn onto it and then cut into sections for teams.)

Background Information:

Have you ever heard of a **watershed**? Did you know that you live in one? A watershed is an area where all of the water within a certain geographical area drains together into bigger bodies of water. It is important to keep your watershed clean and pollution free.

There are two types of pollution that can affect your watershed; **point source** and **non-point source**. Point source pollution is pollution that you can identify where exactly it is coming from. Non-point source pollution is pollution that comes from places hard to identify as sources such as runoff and excess fertilizer application.

Since only about 2% of Earth's water is fresh and usable, it is important to be good stewards and keep our water clean. Let's do an activity that will help you realize the effects of water pollution and the importance of keeping our water clean!

Instructions:

1. Prepare Ahead: Using the butcher block paper, draw a fictitious waterway through the central section of the paper. Next, equally divide the paper into sections for the number of teams in the group and label each section with a number in numeric order (see diagram). Then, cut the sections using a scissors.
2. Divide youth into teams of 2-4 members, depending on group size.
3. Youth will investigate a potential source of pollution affecting the watershed and the water quality of the river/waterway. During the investigations, have youth brainstorm potential solutions to minimizing the impact on water quality. Youth should explore answers to the following questions during the investigations:
 - A. What is the impact?
 - B. What can be done to improve the water quality?
 - C. Explain solutions to minimizing negative impacts on the waterway.
4. Have youth design their ten-acre plot of land devising positive solutions for improving water quality using one section of the land/waterway and one given scenario. Use local issues, possible scenarios include: industrial discharge from a paper mill, vehicle oil on a parking lot, pesticide application in a residential housing area, soil erosion at a tree farm, construction company waste at a building site, waste run-off from a dairy farm, etc. Cost is no



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YOUTH DEVELOPMENT TIP

It is important to stress that this activity is not about creating a realistic/cost-effective plan but rather about engendering attitudes that solving problems through creative endeavors can lead to positive innovations.

Checkpoint:

Youth recognize that everyone can contribute to positive solutions to common problems faced by all .

Open Ended Question:

How can humans have a positive influence on their environment and community?

consideration here: the sky's the limit. (NOTE: Do not share with youth that waterway sections will be placed together later in the session.)

5. Allow youth time to design their space.
6. Bring youth together, ask each team to describe the plot and design intentions. What solutions and strategies were used?
7. Reflection Questions:
 - A. Tell us about your plot – what did you do the land?
 - B. Why did you design it the way you did?
 - C. What else would you have put on your land if you could have?
 - D. Do you see something that others have done that you would like to also do with your land? If so, what? If not, why not?
8. After all teams have shared, bring drawings/designs sections together by using the numbers to re-create/make the waterway flow (youth have not viewed the full mural until now).
9. Ask youth to examine the large waterway mural and discuss the impact of land designs as a whole and possibilities to make improvements in water quality.
10. The following questions can be used to prompt youth in the discussion:
 - A. How did you feel when you saw who your neighbors are and what they did with their land?
 - B. What potential problems do you see for you or for others?
 - C. Knowing what you know now, would you do something differently?
 - D. What value, if any would there be in planning land use together?

