



Grade Level: Grade 4

Title:

Water Conditions and Plants & Environmental Stewardship

Denomination: Catholic

Lesson ID: LS-G4-05-CA

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Note: Web sites referenced in this lesson were valid at time of publication.

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LIFE SCIENCE MODULE – GRADE FOUR - CATHOLIC

LESSON 5: Water Conditions Affect Plants and Good Stewardship of the Environment

GENERAL CONCEPT: Water Conditions affect Plant Survival and Environmental Good Stewardship

SCIENCE LESSON CONCEPT

Changes in the environment of plants can affect their survival. Water is a major factor in the survival of plants.

GOAL OF SCIENCE LESSON

- Student will be able to identify sources of polluted water in the environment.
- Student will be able to name the effects of polluted water on the environment.

OUTCOME EXPECTED

Student will begin to explore ways to stop pollution.

MATERIALS NEEDED

- Large glass containers filled with pond water

RELIGION LESSON CONCEPT

Good stewardship of the environment aids the survival of plants and animals.

GOAL OF RELIGION LESSON

- Student will become more aware of individual responsibility to be a good steward.
- Student will begin to encourage community involvement in cleaning up polluted waters.

OUTCOME EXPECTED

Student should begin to practice good stewardship and become a more pro-active advocate for good stewardship.

MATERIALS NEEDED

- Trash bags

- Liquid fertilizer
- Water plants
- Science Journal Page: WATER POLLUTION & PLANTS
- Pen/pencil
- Stick to stir in the fertilizer
- Detailed instructions on experiment – See Links Section

SCIENCE METHODOLOGY

- **GIVE** each student the Science Journal Page: WATER POLLUTION & PLANTS
- **DEFINE** the following terms: clean water, pond water, fertilizers, liquid fertilizers
- **SAY AND EXPLAIN:** Plants are very sensitive to the condition of the water. Adding just a little fertilizer that seeps in from fields, dairy and pig farms, our gardens will change the quality of the water for the plants. The chemical fertilizers run off from rain or from irrigation systems into our ponds, streams, and rivers. The water carries soil and chemicals which will have an effect on the plant life in and around the pond. How much effect? Let's see.

- Plastic gloves
- Poster paper
- Scissors
- Glue
- Magazines
- CD Player
- CD of songs which encourage good stewardship
- Area for a clean-up walk

RELIGION METHODOLOGY

- **DISCUSS** with the student how littering of trash spoils our environment: plastic doesn't disintegrate fast enough to become soil; a trashy environment makes us feel badly; it doesn't encourage pride in our neighborhood, etc.
- **ASK:** Where should the litter be?
- **ASK:** Who puts the litter there?
- **ASK:** What is our responsibility when we see litter?
- **ASK:** Why is it our responsibility when we didn't put the litter there?
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- **DO** the experiment. Have two containers of pond water. Stir in double the dose of liquid fertilizer recommended in one container of pond water.
- **HAVE** the student draw the two containers of pond water on the Science Journal Page as they are now.
- **ASK:** Does the water look the same or different?
- **ADD** the water plants to the containers.
- **EXPLAIN** that water plants live their entire lives in the water and draw food from the water.
- **HAVE** the student predict the health and growth of the water plants in each container. Record the predictions by each drawn container on the Science Journal Page.
- **STUDENT** should observe and record observations for a few days. Both containers should be a spot where they can get light but not direct sunlight.
- **AFTER** a few days, have the student evaluate the condition of the plants in both containers.
- **ASK:** Is there a difference in the plants? Why? Why not?
- **POSIT:** Plants respond to the condition of the water they are in. Too much fertilizer inhibits the growth of plants.

- **SAY:** We are the steward's of the earth. God put people in charge. We are the people. We need to take charge and clean up our environment. Let's do it now.
- **TAKE** the class on a pick-up walk.
- **GIVE** each student plastic gloves. Have 3-4 students for each plastic trash bag. Assign areas to pick up the trash on the ground. Keep the students in sight or have parent-helpers with each group.
- **DISPOSE** of the trash correctly. Come back inside. Wash hands thoroughly.
- **MAKE** signs to put around the school and neighborhood to encourage others to be good stewards.
- **SEE** if you can interest a local newspaper to cover your project or write it up and submit it to the local newspaper. Good publicity for your school, your class, and you.
- **ASK:** Could you keep watching and see when we need to do this again? Could we invite another class to help us?
- **WRITE** a paragraph in the Religion Notebook about what the student did and how the student felt doing it.
- **POSIT:** We are the people of the earth. We must be good stewards of the environment. God asks it.

RESOURCES, LINKS AND COMPUTER LESSONS.

Science Links

(Teacher) Good pictures for teach to copy and enlarge to show to the class. Good information and statistics.

<http://www.adamsswcd.org/streams.2.htm>

(Teacher and Parent) Science Fair Project Ideas and Instructions

<http://www.super-science-fair-projects.com/water-science-fair-projects.html>

(Teacher) Article on making kids water-wise

http://findarticles.com/p/articles/mi_m0STR/is_n9_v103/ai_15411499

(Teacher) Lesson on Cleaning up Water Pollution

http://www.cleanup.org.au/kidskit2007/activity_8.htm

(Teacher) Pond Water Experiment Lesson

<http://www.sciencenetlinks.com/lessons.cfm?DocID=378>

(Teacher) Plants and different kinds of water experiment

<http://mgonline.com/experimentsforkids.html>

Religious Links

(Teacher) Environmental justice

www.kabtoolbox.org

(Teacher and Parent) The child and the environment

<http://www.usccb.org/sdwp/ejp/case/index.shtml>

(Teacher and Parent) Article on Catholic environmental stewardship

<http://www.ncrlc.com/crl-magazine-articles/vol45no2/Gorman.pdf>

Computer Lesson

Using a publishing program, make community awareness signs such as “Be Good Stewards of God’s creation” or “Keep God’s Handiwork Beautiful” etc.

KEY WORDS
LIFE SCIENCE – GRADE FOUR - LESSON 5 - CA

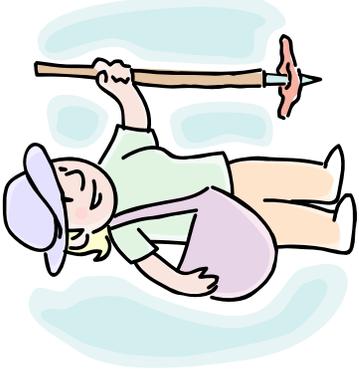


WATER CONDITIONS
ENVIRONMENT
SURVIVAL
SOURCES
POLLUTED
CLEAN WATER
POND WATER
FERTILIZER
RUN OFF WATER
INHIBIT



STEWARDSHIP
INDIVIDUAL
RESPONSIBILITY
GOOD STEWARD
COMMUNITY
INVOLVEMENT
PRO-ACTIVE
ADVOCATE
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