



Creation Lens

Exploring the World, Discovering God

Grade Level: Grade 7

Title:

Proper Conditions for Plant Growth & Proper Conditions for Faith Growth

Denomination: Catholic

Lesson ID: LS-G7-02-CA

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

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LIFE SCIENCE – GRADE 7 - CATHOLIC

LESSON TITLE: Proper Conditions for Plant Growth & Proper Conditions for Faith Growth

GENERAL CONCEPT: Conditions for growth.

SCIENCE LESSON CONCEPT

- Proper conditions for plant growth

GOAL OF SCIENCE LESSON

- Students will learn that all forms of plant life share specific characteristics.
- Students will observe that different soils will produce different plant growth results.

OUTCOME EXPECTED

- Students will observe how specific soil conditions affect plant growth.
- Students will observe that all plants need a source of energy, food, water, and an appropriate foundation to grow.

RELIGION LESSON CONCEPT

- Proper conditions for faith growth

GOAL OF RELIGION LESSON

- Students will learn the Parable of the Sower (Luke 8: 4-15).
- Students will learn that faith can grow or wither, become stronger or weaker depending upon how fertile our hearts are.

OUTCOME EXPECTED

- Students will be more aware that their faith is like soil.
- Students will be more aware of the conditions that lead to a deep, rich faith life.

MATERIALS NEEDED

- Science Journal page: Soils and Plant Growth
- Pen or pencil
- 4 to 7 various soils (potting soil, potting soil with fertilizer, clay, fine sand, rocky sand, compost and local soil)
- Bean seeds
- Planting containers
- Plastic plant saucers
- Water
- Labels for containers
- Sunny location
- Digital camera (teacher use)
- Measuring cup for each group – Option # 1
- An equal number of slips of paper with SUN or SHADE written on them (one slip per group) – Option # 2
- Ruler (option #2)

MATERIALS NEEDED

- Bible – Luke 8: 4-15
- Religion Notebook
- Pen or pencil

SCIENCE METHODOLOGY

NOTE: Once the beans have been planted, the teacher should take a digital photo of the containers about twice a week. The students can use these pictures for their poster report.

- **SAY:** You will notice 4 - 7 empty containers. (based on how many different types of soil used)
- **SHOW** the containers to the students.
- **SAY:** We have various containers because we're going to fill them with different types of soil. Each container is in a different location. You will work by one of the containers.
- **TELL** the students the names of the types of soil they will be using.

OPTION # 1: THE BASIC EXPERIMENT

- **HAVE** the students draw each container on the Science Journal page: Soils and Plant Growth and then label each container with a soil name.
- **SAY:** Observe that we also have 4 - 7 beans.
- **SAY:** I am going to assign you to a group. Each group is going to fill a container with the assigned type of soil.
- **ASSIGN** students to groups and allow them to fill the container with soil.

RELIGION METHODOLOGY

- **ASK:** Why do we like stories?
- **ASK:** What makes a good story?
- **SAY:** A story has the following elements:
 - ~ A story has a main character and other characters.
 - ~ A story has a setting.
 - ~ A story has a plot, including rising action.
 - ~ The action involves some kind of tension or struggle.
 - ~ A story reveals details about what a character is like.
 - ~ Some stories have twists and surprise endings.
 - ~ Some stories mirror our lives and experiences.
 - ~ Some stories make us think and teach us a lesson.
- **SAY:** Jesus was a storyteller. He told stories using everyday things and people, for example: fishermen and nets, farmers and seeds, yeast and bread, shepherds and sheep, fathers and sons, and good and evil. Jesus often told specific kinds of stories called PARABLES. The Parables taught about the Kingdom, heaven and faith. Parables usually have an unexpected twist and teach a lesson or truth.
- **ASK:** Would someone read Luke 8: 4-8?
- **ASK:** What do you think the seed represents?
- **ASK:** What kind of soils did we hear about?
- **LIST** the kinds of soil on the board.

- **SAY:** Write the type of soil on the label and put it on the front of the container.
- **SAY:** Make a furrow (a row) about ½ inch deep with your finger.
- **SAY:** Place the seed in the row and cover it up with the soil you removed when you made the furrow.
- **SAY:** Decide where your group is going to place its container and put it there.
- **SAY:** One person should add some water to the plant. The soil should be damp but no water should be leaking from the container and standing in the plant saucer.
- **SAY:** You are going to observe your container and record your findings for 2-3 weeks. Each day your group will decide if the plant needs water. Each day you will write any changes you observe on your Science Journal page. If you see changes, you can draw a picture of the changes on your Science Journal page.
- **AFTER 2 OR 3 WEEKS,** have each group write a report and create a poster of their plant's growth or lack of growth. They can use the drawings from the Science Journal page and/or the pictures the teacher has taken.

OPTION # 2 – EXTENDING THE EXPERIMENT

- **SAY:** Now that our bean plants are growing, we are going to extend the experiment by adding another variable. A variable is a particular thing which has the

- **SAY:** In our science class we planted seeds using different kinds of soil. Jesus used different kinds of soil and soil conditions in this parable.
- **HAVE** the students write the list of soils in their Religion Notebook.
- **ASK:** What would the path soil be like? (compacted, hard)
- **RECORD** on board and in notebooks.
- **ASK:** What would the rocky soil be like? (gravel, stony, more rock than dirt)
- **RECORD** on the board and in notebooks.
- **ASK:** What would the thorny soil be like? (weedy, overgrown, no room for the seeds to grow into healthy plants)
- **RECORD** on board and in notebooks.
- **ASK:** What would the good soil be like? (loose, small fine pieces of dirt, full of minerals, enough moisture)
- **RECORD** on board and in notebooks.
- **SAY:** The seed is the word of God, the teachings of Jesus.
- **ASK:** What happened to the seeds that fell on the path soil? (trampled on, broken up, eaten by birds)

potential for changing the results of the experiment. In the original experiment, the variables were the kind of soil, the amount of water, and the location. We are going to keep two variables the same – water and soil. Keep watering your plant as usual. The different variable we are going to use will be placing the plant in the sun for most or all of the day or keeping the plant in a shaded or darkened spot most of the day.

- **HAVE** a student from each group draw one of the Sun or Shade slips and place the plant in the sun or shade as indicated on the slip.
- **SAY:** Your job will be to continue to water your plant as usual and to observe whether being in the sunlight or the shade is affecting its growth. You will need to measure your plant and check it for any signs of its not being in the best health.
- **ASK:** What is your hypothesis about the plants being in the sunshine? (grow faster/slower, be healthier, die off)
- **HAVE** the students record their hypothesis about sunlight on the Science Journal page.
- **ASK:** What is your hypothesis for the shaded plants? (grow faster/slower, be healthier, die off)
- **HAVE** the students record their hypothesis on the Science Journal page.
- **AFTER** 2 more weeks, have the students report on whether their hypothesis was proven or not.

- **ASK:** If a person had a path soil type of soul, what would he or she be like? (hard, nothing could get to them, they would be deaf to the word of God)
- **SAY:** The seeds on the path soil do not produce any roots, so there is no faith in the person.
- **ASK:** What happened to the seeds that fell on the rocky soil? (withered and died, no moisture)
- **ASK:** If a person had a rocky soil type of soul, what would he or she be like? (hears the word, word planted but never watered, so it died)
- **SAY:** The difference between the path and the rocky soil is that for those who are like rocky soil, there is initial faith and joy, but there are no good roots and faith dies.
- **ASK:** What happened to the seeds that fell in the thorny soil? (rooted, started to grow, choked out by the thorns)
- **ASK:** If a person had a thorny type of soul, what would he or she be like? (seed takes root, grows, and is choked out by sin and evil)
- **SAY:** In this thorny soil, the world's concerns threaten our focus on God and on our spiritual life. There is faith, but it is not a mature, healthy faith. We give in to the desire to fit in with the evil around us.
- **ASK:** What is the final kind of soil that Jesus mentions? (good soil)

- **POSIT:** The beans in the _____ soil grew the best. The beans in the _____ soil grew the least. The beans in the _____, _____, and _____ soil did about the same. Create a statement which fits your results.

- **ASK:** What is the result of the seeds that fall on good soil? (grow, mature, bear much fruit)
- **ASK:** If a person has the good soil type of soul, what is he or she like? (willing to practice the faith, strong enough not to give in to peer pressure, prays, does what is right no matter what, goes to Mass, receives the sacraments, really loves Jesus, has a good relationship with Jesus)
- **ASK:** Would someone read Luke: 8: 9?
- **ASK:** What did the disciples ask of Jesus? (Explain this story to us. We want to get it right.)
- **SAY:** Jesus does explain the story to the disciples and to us. He wants us to get it right.
- **ASK:** Would someone read Luke 8: 10-15?
- **ASK:** What did Jesus say the meaning of the Parable is?
- **ASK:** We have heard Jesus' explanation. We tried to answer what each soul would be like if it had a particular type of soil. How did our answers compare with Jesus' explanation?
- **DISCUSS** the class explanation and Jesus' explanation.
- **ASK:** What are ways that you can show that you have embraced (accepted whole-heartedly) Jesus' message? (act more like Jesus)
- **ASK:** Describe how to identify a disciple of Christ. What

does the person's life look like?

- **HAVE** the students write an essay on "Identifying the Disciple of Jesus."
- **SAY:** A key word in verse 15 is the word "perseverance." What does perseverance mean? (sticking with something even when it is not easy) We need to not only hear the word of God, but act on it.
- **IF POSSIBLE**, enter the student essays in a contest.
- **POSIT:** The Sower (Jesus) sows the seeds of faith in everyone. The seeds have to fall on good soil in order to grow and bear fruit. The early Christians were identified by their non-Christian neighbors by the saying, "See how those Christians love one another."

SCIENCE LINKS

www.superteacherideas.com/science2-plantlife.html

Students discover mystery seeds from fruits and vegetables. Grow grass-hair on styrofoam tiki. Dissect a plant. Build a giant flower and lots more. While this lesson is designed for younger children, it could be an interesting opening activity for this lesson.

Home.howstuffworks.com/lawn-garden/professional

Soil types often play a role in determining plant growth. Learn more about soil types and plant growth at HowStuffWorks. Good description of various types of soils.

RELIGION LINKS

www.ministry-to-children.com/parable-of-the-sower

The Parable of the Sower: Children's Sunday School Lesson
Print out this free lesson plan for kids Sunday School. It is based on the Bible story where Jesus teaches the parable of the sower. Learning activities included. Uses various student life situations to demonstrate the parable's meaning.

www.biblewise.com/

Jesus told the parable about the farmer who sowed the seed. Discover what happened to seed that fell by the wayside, on stony ground, among the thorns, and in good soil.

KEY WORDS

- STIMULUS
- RESPONSE
- VARIABLE
- PHOTOSYNTHESIS
- FURROW
- NUTRITION
- FERTILIZER

KEY WORDS

- SOWER
- FAITH
- PARABLE
- WITHERED
- MYSTERIES OF THE KINGDOM OF GOD
- WORD OF GOD
- PERSEVERANCE