



*Grade Level: Grade 5*

*Title:*

## **Plant Growth & Growing in Faith**

*Denomination: Catholic*

*Lesson ID: LS-G5-01-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 5 – CATHOLIC**

### **LESSON TITLE: Plant Growth and Growing in Faith**

**GENERAL CONCEPT: Conditions for good growth**

#### **SCIENCE LESSON CONCEPT**

- Students will learn how plants grow
- Students will learn that the seed needs soil, water, and light for growth

#### **GOAL OF SCIENCE LESSON**

- Students will learn the parts of a plant.
- Students will understand the process of photosynthesis.

#### **RELIGION LESSON CONCEPT**

- Students will learn that we grow spiritually through prayer, Scripture, the sacraments, the teachings of our Church, and tradition

#### **GOAL OF RELIGION LESSON**

- Students will learn how prayer and scripture reading enables spiritual growth.
- Students will learn how reception of the Sacraments enables spiritual growth.
- Students will learn that the teachings of the Church enable spiritual growth.
- Students will learn how reading Catholic publications and viewing Catholic websites enables spiritual growth.

### **OUTCOME EXPECTED**

- Students will be able to describe the parts of the plant.
- Students will be able to explain the process of photosynthesis.
- Students will observe that seeds need water to germinate.
- Students will observe that plants need water, sunlight, and soil to continue growth.

### **MATERIALS NEEDED**

- Paper towels (6-8 sheets per student or group)
- Lima beans (2-4 beans per student or group)
- Small plastic bags (2 per student or group)
- Small containers (clean yogurt cups are good - 2 per student or group)
- Chart of parts of a plant (stem, leaves, roots)
- Chart of roots of carrot, radish, onion, and beet
- A carrot, radish, onion, and beet for each student or group
- Bags of soil to fill 2 cups per student or group

### **OUTCOME EXPECTED**

- Students will experience that we nourish our faith through prayer, Scripture, reception of the sacraments, and keeping current on Catholic teachings.
- Students will begin to better nourish their faith by praying more frequently, by daily reading of Scripture, by more frequent and more conscious reception of the sacraments, and by more frequent reading of Catholic publications/websites.

### **MATERIALS NEEDED**

- Bibles
- Prayer table
- Religion text or other source with lessons on the sacraments
- Pen or pencil
- Religion Notebook page: How to Grow Spiritually
- Catholic publications (Archdiocesan newspaper, other Catholic publications)
- Catholic websites
- Worksheet with these questions and space for answers (one sheet per group)

- Newspaper to cover each work area
- 4 identical plants
- Science Journal page: Parts of a Plant
- Science Journal page: Conditions for Plant Growth
- Science Journal page: Plant Experiment Observations
- Pen or pencil
- Scoop or spoon for soil
- Pitcher or container for watering
- Brown bag to cover plants for each student or group
- Graph paper

How did your faith begin?  
 How did you learn about God?  
 When did you learn about God?  
 From whom did you learn about God?

- Card with a topic: PRAYER, SACRAMENTS, SCRIPTURE, CATHOLIC NEWS
- 4 containers
- 4 kinds of soil:  
  
 PATH (mashed down/hardened),  
 ROCKY (pebbles and dirt),  
 THORNY (dirt with weeds/thorns),  
 GOOD SOIL (loose, watered soil)
- A small amount of rye grass seed for each container
- Water
- 3x5 cards – 4 for each student
- Large TREE OF SPIRITUAL GROWTH chart in the room with space to post the 3x5 cards for each student. The Tree should have 4 large limbs labeled: PRAYER, SCRIPTURE, SACRAMENTS, TEACHINGS
- Copy of Luke 8:4-8
- Copy of Luke 8: 9-15

## SCIENCE METHODOLOGY

- **LIST** the structure of plants. (roots, stem, leaves)
- **POST** the chart or sign of the basic structure of plants.
- **HAVE** each student draw and label the parts of a plant on the Science Journal page: Parts of a Plant.
- **DESCRIBE** the function of the stem, leaves, and roots.
- **HAVE** students record the function of each part of the plant on the Science Journal page: Parts of a Plant.
- **EXAMINE** the different kinds of roots of a carrot, radish, onion, and beet.
- **DRAW** and record each kind of root: carrot, radish, onion, and beet on the Science Journal page: Parts of a Plant.
- **ASK:** What do plants need to grow?
- **RECORD** the question on the Science Journal page: Conditions for Plant Growth.
- **SAY:** Let's experiment.
- **DIVIDE** class into groups or allow each student to work alone and assign each student or group a work place.
- **DISTRIBUTE** newspaper to cover work area.

## RELIGION METHODOLOGY

- **ASK:** How did you learn about God? When?
- **DIVIDE** the class into groups of 3-4 students.
- **GIVE** each group the worksheet with the four questions and have them discuss and record the answers on the worksheet.(allow about 5 minutes)
- **RECORD** student answers on the board.
- **SAY:** We all have faith in God that we received at Baptism, but just like our plants that did not receive water or did not receive enough sunlight we may not continue to grow spiritually if we do not receive the correct nutrition.
- **DIVIDE** the class into groups again.
- **GIVE** each group one topic card and tell them to discuss and record how that topic will help them grow spiritually like soil, water, and sunlight helped the plants to grow. (allow about 5 minutes)
- **HAVE** each group report and record findings.
- **READ** the Parable of the Sower and the Seed – Luke 8:4-8
- **ASK:** How could we change our Science experiment with seeds and plants to better fit the parable that Jesus told? (4 containers, 4 kinds of soil, watering)

- **DISTRIBUTE** the wet paper towels and Lima beans.
- **DO** the following steps:
  1. wrap the beans in wet paper towels and place in a plastic bag;
  2. observe and record what happens. (seed swells, roots, and leaf pushes out)
- **ASK:** What do plants need to grow?
- **SAY:** Let's experiment again.
- **TAKE** 2 identical plants and place them in some soil in a container. Continue with the following steps:
  1. water only one of the plants;
  2. observe what happens over 5-10 days.
- **TAKE** 2 more identical plants; place in some soil and water both of them. Continue with the following.
  1. place one plant in sunlight and cover the other with a brown bag and place in the dark;
  2. observe what happens over 5-10 days.
- **HAVE** the students record their observations on Science Journal page: Plant Experiment Observations.
- **DISCUSS** their observations during the 5-10 day period.
- **HAVE** students write a summary with illustrations of their observations and results.

- **DO** the Sower and the Seed Experiment by putting mashed down/hardened dirt in one container and sprinkling rye grass seed on top; by putting pebbles and dirt in one container and sprinkling rye grass seed on top; by putting thorny/weedy dirt in one container and sprinkling rye grass seed on top; by putting good, loose, damp soil in one container and sprinkling rye grass seeds on top.
- **PLACE** the four containers in a sunny location and water every other day for about 5 days.
- **OBSERVE** and record observations in Religion notebook.
- **ASK:** What can we learn about spiritual growth from the science and religion experiments and Jesus' parable?
- **RECORD** student responses then read Luke 8: 9-15.
- **ASK:** What signs of growth did we see in the science and religion experiments?
- **RECORD** student responses.
- **ASK:** What might you actually be willing to do under each topic to grow spiritually?
- **POST** the topics: PRAYER, SCRIPTURE, SACRAMENTS, CHURCH NEWS AND TEACHINGS
- **HAVE** the students suggest things they might be willing to do under each category:

- **POSIT:** Plants need water, soil, and sunlight for good plant growth.

~**PRAYER:** pray each night before they go to bed;

~**SCRIPTURE:** read the Sunday gospel a few times during the week; on Saturday read the next Sunday's gospel;

~**SACRAMENTS:** Go to communion in a more alert way; participate at Mass more fully; go to confession once a month;

~**NEWS AND CHURCH TEACHING:** read one article from the Archdiocesan (Diocesan) newspaper each week; watch one program on EWTN; look up a Catholic website once a month.

- **ASK** the students to pick one activity under each topic and record their choice in their Religion Notebook.
- **SHOW** the students the large TREE OF SPIRITUAL GROWTH chart and point out the 4 limbs.
- **ASK** the students to print their activity on a 3x5 card and put it on the Tree of Spiritual Growth chart.
- **TELL** the students that they are to chart their successes and failures on these four activities each month and hand in the graph paper on the first school day of each month until the end of school. This will be a long range Religion Project.
- **POSIT:** Spiritual Growth requires our attention, our activity and the desire to become closer to Jesus.

## SCIENCE LINKS

[www.internet4classrooms.com/skills\\_5th\\_science.htm](http://www.internet4classrooms.com/skills_5th_science.htm)

[Science Standards 5th Grade science resource for \*fifth grade\*](#)

Feb 27, 2009 ... Links to help *Fifth Grade* students meet state science standards. ... Introduction to *Photosynthesis* and Its Applications - from Arizona ...

[www.instructorweb.com/lesson/photosynthesis.asp](http://www.instructorweb.com/lesson/photosynthesis.asp)

[Photosynthesis Lesson Plan, Elementary Worksheets, Plants, Science ...](#)

*PHOTOSYNTHESIS*. A science lesson on the process known as *photosynthesis*. Includes printable teaching lesson worksheets. Suggested Grades: 5th *Grade* - 6th ...

## RELIGION LINKS

Luke 8: 4-8

When a great crowd gathered and people from town after town came to him, he said in a parable: "A sower went out to sow his seed; and as he sowed some fell on the path and was trampled on, and the birds of the air ate it up. Some fell on the rock and as it grew up, it withered for lack of moisture. Some fell among the thorns and the thorns grew up with it and choked it. Some fell into good soil, and when it grew, it produced a hundredfold." As he said this, he called out, "Let anyone with ears to hear listen!"

Luke 8: 9-15

Then his disciples asked him what this parable meant. He said, "To you it has been given to know the secrets of the kingdom of God; but to others I speak in parables, so that 'looking they may not perceive, and listening they many not understand.'

Now this parable is this: The seed is the word of God. The ones on the path are those who have heard; then the devil comes and takes away the word from their hearts, so that they may not believe and be saved. The ones on the rock are those who, when they hear the word, receive it with joy. But these have no root; they believe only for a while and in a time of testing fall away. As for what fell among the thorns, these are the ones who hear; but as they go on their way, they are choked by the cares and riches and pleasures of life, and their fruit does not mature. But as for that in the good soil, these are the ones who, when they hear the word, hold it fast in an honest and good heart and bear fruit with patient endurance.



[www.holdontoyourcatholickids.blogspot.com/](http://www.holdontoyourcatholickids.blogspot.com/)

Hold On To Your *Catholic* Kids

For any change, development or *growth*, to take place, whether in nature or in the *spiritual* realm, there must be a fixed, constant, unchanging object ... **For Teacher background.**

## KEY WORDS

- PHOTOSYNTHESIS
- PARTS OF A PLANT
- CONDITIONS
- OPTIMAL
- MINIMAL

## KEY WORDS

- SCRIPTURE
- DOCTRINE
- TRADITION
- SPIRITUAL GROWTH
- CATHOLIC PUBLICATIONS
- EWTN
- SACRAMENTS
- PRAYER