

Week 5 Day 1

Read page 58 of the **textbook** together.



Try This! Provide a fresh flower for your student to dissect. Simple flowers like lilies, daffodils, and tulips are easy flowers to examine. Avoid compound flowers like daisies. Have your student begin by carefully removing the petals.

Not all flowers are the same and the number of each flower part can vary. Have the student count the number of pistils, stamens, petals, and sepals. Have them record this data. Have them look through the lesson to help identify any parts they do not know. Tell them to save the flower dissection. They will write a sentence describing the job of each flower part on their drawing as they study the rest of the lesson.



Vocabulary: Have your student write each vocabulary word on an index card and then look in the lesson or the glossary to find each definition. Write the definition and/or a diagram describing the vocabulary word. Add these cards to the ones created in lesson 1. Review them frequently so they are mastered.



Structured Inquiry: Complete the Structured Inquiry located on page 59 of the **textbook** and pages 28 and 29 of the **Student Science Journal**.

Prep and Tips: Obtain about 10-15 pea pods for this inquiry. Discuss with your student whether they think every pea pod will have the same number of peas.

Predict—How many peas will you find in each pod? Student may count the lumps on the outside of each pea pod to make their predication.

Expected Results: Student should find that the number of peas in a pea pod will vary slightly from pod to pod, even though the pea pods were all grown from plants in the same way.

Create Explanations:

1. Answers will vary. The number of peas in a pod varies slightly from one pod to another. Check to make sure your student has calculated the averages correctly.
2. No, there is variation in their size as a result of differences in growth conditions and genetics.

The scoring rubric can be found in the Supplemental section of this manual.



Supplies

- Textbook
- Student Science Journal
- Scoring Rubric
- Index cards
- Flower
- Magnifying lens
- Blank paper
- Paper plate
- Pencil
- Pea pods
- Metric ruler
- Balance



Vocabulary

- Nectar pg. 60
- Ovary pg. 61
- Stamen pg. 61
- Anther pg. 61
- Fruit pg. 62
- Germinate pg. 62

Week 5 Day 2



Supplies

Read pages 60-62 of the **textbook** together.

Discussion Questions:

- Textbook
- Bible

Optional:

- Bean seeds
- Various materials discussed in the optional Guided Inquiry activity

- **Name three different flowers. How are they alike? How are they different?**
Student should be able to compare different types of flowers. Properties they can compare include colors, size, leaves, and so on.
- **Why are wind-pollinated flowers likely to be small or less brightly colored?**
Because they do not need to attract pollinators, they were designed in a way that does not waste energy by making showy blossoms.
- **Why do you think peas and beans have many seeds?** *Sample answer: It is the method God designed them with to distribute the seeds and reproduce. If they produce more seeds, then the seeds have a better chance of germinating and growing.*



Objectives



Scripture Spotlight:

- Explain how a flower produces a seed.

- **What does Jesus say about the lilies of the field in Matthew 6:28-29?**
Jesus says that even Solomon at the height of his glory was not clothed like one of these.
- **Isaiah 40:8 says that grass withers and flowers fade. What is it that stands forever?** *The Word of God stands forever.*
- **Genesis 1:11-12—Why is it good that when we plant rice, we get rice instead of some other plant, like weeds?** *Answers will vary. Accept any reasonable response. Emphasize to your student that God created a consistent universe to help us survive and thrive.*



Vocabulary

- Nectar
- Ovary
- Stamen
- Anther
- Fruit
- Germinates



Optional: Log on to Encyclopedia Britannica (school.eb.com) and search “*rafflesia arnoldii*” to see pictures and discover facts about one of the world’s largest flowers. Username and password are provided by Griggs.



Guided Inquiry (optional): Have your student complete the Guided Inquiry located on pages 32 and 33 of the **Student Science Journal**.

Teaching Tip: Provide simple seeds like peas and beans, glue, tape, string, and a variety of materials such as self-fastening strips, balloons, rubber bands, paper clips, chenille stems, and craft sticks with which to make and test the models.

Week 5 Day 3

Read pages 63-65 of the **textbook** together.

Discussion Questions:

- **What is a seed?** *A seed is a plant part that grows into a new plant.*
- **Where does a seed come from?** *A seed comes from the ovary of a plant.*
- **Why is it important that seeds spread in many ways?** *It provides a better chance for survival. Seeds can be spread through the wind, travel on animals, be buried by animals and forgotten about, or be moved by water and carried to new places to help more plants grow.*
- **Why is this group of plants (image on page 63) called gymnosperms, or “naked seeds”?** *Because their seeds are not protected by a fleshy fruit.*
- **How are spores and seeds alike? How are they different?** *Both spores and seeds need water to germinate and are dispersed by wind or water. A seed is protected inside a fruit or cone until it germinates. The seed contains its own food supply until photosynthesis takes over, but the spore does not carry a food supply. The seed contains a living embryo and its food packaged within a seed coat, but the spore consists of only the single cell.*
- **Why can't you see individual spores?** *They contain only one cell, and they are too small to be seen with just the naked eye.*



Video (optional): Watch the “Seeds and Plants” video located on your Supplemental Materials thumb drive.



Supplies

- Textbook



Objectives

- Describe how the seeds from cones are different from the seeds from fruit.
- Explain the difference between a spore and a seed.

Week 5 Day 4



Supplies

- Textbook
- Large piece of blank paper or posterboard
- Coloring supplies
- Pencil

Read page 66 of the **textbook** together.



The third paragraph of the text describes grafting, which is common with fruit trees and flowering trees. Generally, grafts are successful only if two plants are botanically related, such as two varieties of citrus or two varieties of dogwood. Grafting is often used to help produce plants that are better suited for a certain soil or climate than those that are produced naturally. Grafting also produces dwarf plants and produces trees with different colors of flowers or different kinds of fruit.

Why would grafting branches of two trees be a good way to grow new plants? *It is fast. It also creates a variety—by joining parts of two plants, you can have two different varieties of fruit on the same tree.*



Objectives

- Identify other ways of producing new plants by vegetative reproduction.



Performance Assessment: Ask your student to compare the ways plants reproduce. Ask them to create a poster comparing how plants can grow from these processes: seeds, spores, and from part of another plant. The poster should have images and labels that demonstrate an good understanding of plant reproduction.

Week 5 Day 5

Lesson Review: Read the essential question and lesson summary on page 67 with your student. Ask the student if they have any questions about the summary. Then ask your student what additional details they would add to it.

Have your student complete the Lesson Review on a piece of lined paper. Evaluate their responses and review concepts as needed.



Supplies

- Textbook
- Lined paper
- Pencil

Check Answers

1. Graphic organizers for flowering plant might include: (1) pollen from flower to flower, (2) ovary fertilized, (3) fruit and seed growing, (4) seeds spread, (5) seed germinates.
2. Water causes the seed coat to break open. The seedling develops a stem, roots, and tiny leaves and grows into a plant.
3. C
4. You can infer that a plant with many seeds is able to produce more seedlings than a plant that produces few seeds. You cannot infer how many seeds will germinate and grow.
5. You would find ferns and mosses in moist places, protected from wind and sunlight.
6. Plants grown from cuttings are identical to the parent plant and develop faster. Seed plants tend to vary from parent stock.