

The Life Cycle of a Bean Plant

Participant Name:	Heather Chontosh
District:	Massena Central School (Jefferson Elementary)
Grade Level:	3rd grade
Subject/Course:	Science
Cross-curricular Link:	Technology/Literacy/Science
Approximate Time (IN MINUTES):	75 minutes

CONTENT AND SKILLS

Learning Objectives:

- **Recall:** Students will be able to identify and describe the stages of the bean plant life cycle.
- **Understand:** Students will understand the conditions necessary for the growth of a bean plant.
- **Apply:** Students will be able to sequence the stages of the bean plant life cycle correctly.
- **Analyze:** Students will examine and compare the bean plant life cycle with other plant life cycles.
- **Evaluate:** Students will assess the importance of each stage in the life cycle of the bean plant.
- **Create:** Students will design a digital presentation showcasing the bean plant life cycle using a presentation tool.

Essential Questions (optional):

- What are the stages/steps of a bean plant life cycle?
- How can you create a plant from a seed?

Students' I can statements . . .

- I can describe the stages/steps of a bean plant life cycle.
- I can grow a plant from a seed.
- I can create a digital presentation showcasing the bean plant life cycle (google slides or canva).

How will you meet the needs of SWD and ELL/MLL students?

- Visuals throughout the lesson.
- Guidance with the digital presentation/can be presented in other languages as well.
- Guidance with planting their bean plant.

NYS COMPUTER SCIENCE AND DIGITAL FLUENCY STANDARDS

List all standards that authentically align (e.g., K-1.CT.4)

- **2-3.CT.1** Create a model of an object or computational process in order to identify patterns and essential elements of the object or process.
- **2-3.NSD.5** Describe and navigate to various locations where digital information can be stored.
- **2-3.DL.4** Use a variety of digital tools and resources to create digital artifacts.

OTHER SPECIFIC STANDARDS (e.g., Content, SEL Benchmarks)

List all standards that authentically align

<https://www.p12.nysed.gov/sss/documents/SELBenchmarks2022.pdf>

- **CCSS.ELA-LITERACY.RI.3.3:** Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
- **CCSS.ELA-LITERACY.SL.3.5:** Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details.
- **(Science)3-LS1-1:** Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

INSTRUCTIONAL PLAN

List the steps of the lesson, including instructions for the students.

Add and highlight Standard Indicator next to activity that aligns

Introduction (10 minutes)

1. **Hook:** Show a time-lapse video of a bean plant growing from seed to full plant. Read "From Seed to Plant" By Gail Gibbons  Growing Beans Time Lapse
2. **Discussion:** Ask students what they observed in the video. Write their observations on the board.
3. **Objective Sharing:** Explain the day's objectives and the importance of understanding plant life cycles.

Direct Instruction (15 minutes)

1. **Presentation:** Provide a detailed presentation on the life cycle of a bean plant, covering the following stages:
 - Seed
 - Germination
 - Seedling
 - Growth
 - Flowering
 - Pollination
 - Pod formation
 - Maturation
2. **Visual Aids:** Use diagrams and images to illustrate each stage of the life cycle.

Guided Practice (20 minutes)

1. **Seed Planting:** Have students plant their own bean seeds in pots.
2. **Science Journals:** Students will document the planting process and predict what will happen in each stage of the bean plant's growth. Pass out "Bean Plant Life Cycle Worksheet" reviewing the stages a bean plant goes through.
3. **Group Discussion:** Discuss the conditions necessary for the growth of a bean plant (sunlight, water, soil).

Independent Practice (20 minutes)

1. **Digital Presentation:** Students will use a presentation tool to create a digital presentation

that outlines the life cycle of a bean plant.

- **Slides to Include:** Title slide, introduction, each stage of the life cycle, and a conclusion.
 - **Images and Text:** Encourage students to use images and descriptive text for each stage.
2. **Peer Review:** Students will pair up to review each other's presentations and provide constructive feedback.

Conclusion (10 minutes)

1. **Sharing:** Select a few students to present their digital presentations to the class.
2. **Review:** Recap the stages of the bean plant life cycle and highlight key points from the student presentations.
3. **Assessment:** Collect science journals and digital presentations for evaluation.

Assessment

- **Formative:** Observations during discussions and guided practice, peer reviews.
- **Summative:** Science journals, digital presentations.

Extension Activities

- **Comparative Study:** Research and compare the life cycle of a bean plant with another type of plant.
- **Creative Writing:** Write a story from the perspective of a bean seed growing into a plant.

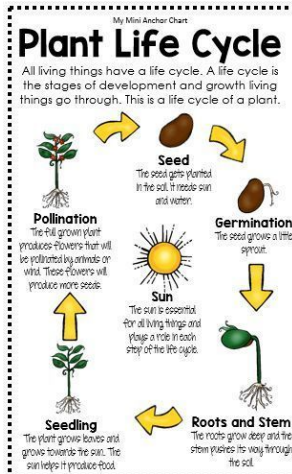
Reflection

- **Teacher Reflection:** Assess the effectiveness of the lesson and make notes for future improvements.
- **Student Reflection:** Have students write a short reflection on what they learned and how they felt about the digital presentation activity.

SPECIFIC NEEDS: MATERIALS / RESOURCES / TECHNOLOGY

Add additional resources needed for this lesson such as instructional technology templates, images, videos, etc.

- Bean seeds
- Soil and pots
- Venn Diagram to compare
- Presentation tool (e.g., Google Slides, PowerPoint)
- Book: From Seed to Plant by Gail Gibbons
- Bean plant time lapse video  Growing Beans Time Lapse
- Science Journals
- Bean plant life cycle video
-  Watch a Seed Sprout! | Squeaks Grows a Garden! | SciShow Kids



- Bean plant life cycle anchor chart

Name: _____

THE LIFE CYCLE OF A BEAN PLANT

Beans are vegetables that grow from plants. Beans grow through four main stages: seed, germination, seedling, flower.

SEED	A bean's life cycle starts when a seed is planted in soil. The seed requires sunlight, water, and nutrients in order for it to grow.
GERMINATION	The seed goes through the process of germination next. The seed starts to grow from the ground in this stage.
SEEDLING	Next, the seed becomes a seedling. It has roots in the soil and a short stem. The stem supports the leaves as they grow. Seedlings need water and sunlight to grow.
FLOWER	The seedling becomes a flower in the final stage. The flower produces the beans that humans can eat. Flowers produce new seeds and the cycle starts again.

MULTIPLE CHOICE: Choose the best answer.

- What happens during germination?
 - A seed is planted in soil.
 - A seedling becomes a flower.
 - The seed starts to grow from the ground.
 - New seeds are produced and the cycle starts over.
- Which best describes the seedling stage?
 - A flower produces beans.
 - A seed is planted in the soil.
 - The seedling becomes a flower.
 - The plant has roots and a short stem.
- Which part of a bean plant produces the beans that humans eat?
 - Flower
 - Seedling
 - Seed
 - Stem

- Bean plant worksheet
- [Bean Worksheets in google doc](#)