

What grows first?

Ages 5–7 with a grown-up · 10-minute setup; 2–5 minutes daily for days or weeks · Observe over days

<https://kiddos.ai/explorations/learning-with-gina-and-ollie/what-grows-first>

Wonder together

Root or shoot? Before we begin, make a guess. Which will appear first?

Materials

One whole dried grocery bean, clear unbreakable cup, paper towel and water.

Adult setup – read before trying

Adult handles the small bean; no split/cooked beans or treated gardening seeds. Tuck it between damp paper and cup wall, top open, no standing pool. Store out of reach between checks in a bright room away from hot sun. No tasting; wash hands. Adult discards moldy contents without child touching or smelling.

Try together

1. Adult tucks the bean between damp paper and the open cup wall.
2. Keep warm, bright and damp. Avoid hot direct sun.
3. Look daily. Draw the first root. Keep watching for a shoot.

Keep the comparison clear

Keep fixed: The same bean viewer, kept damp, observed at a similar time each day.

What changes: What is visible as days pass.

Look for: Record an unchanged bean too. Compare the first root and later shoot if it germinates.

Explain with care

In this bean example the root emerges before the shoot. Stored food supports early growth, and the root takes in water.

No sprouting deadline is promised. Soil and sunlight are not required to begin germination, but a growing plant later needs suitable conditions beyond this temporary viewer.

Talk about it

Root or shoot? Before we begin, make a guess. Which will appear first?

Answer cue: Welcome a guess before reading the result. No correct prediction is required.

What is new since yesterday?

Answer cue: Describe the bean, first pale root or later shoot you actually see.

Is a paper flower opening the same as this bean growing?

Answer cue: No. The bean is living and grows new parts; wet paper unfolds.

A parent move: Wait before naming a part; invite the child to point or direct your drawing.

Start simply: Adult maintains one viewer; the child chooses what to record each day.

Explore further: If nothing changes after a week or two, try a fresh whole bean and check moisture and room warmth. Transplanting a healthy seedling is adult-led and may fail.

Return to it: Look back at the drawings and ask which part came first in your bean.

In the classroom

A 20-minute launch with brief daily checks afterward.

3 min · Wonder

Read pages 1–2. Invite a prediction with words, pointing or a sketch; keep the result hidden.

4 min · Notice the story

Read pages 3–5. What is new since yesterday? Separate the observation from the explanation.

9 min · Try together

Use the materials and adult setup on this guide, then follow the activity steps in this guide. Record an unchanged bean too. Compare the first root and later shoot if it germinates.

4 min · Make meaning

Is a paper flower opening the same as this bean growing? Invite a drawing, a description or an adult-written note. Wait before naming a part; invite the child to point or direct your drawing.

Understanding check

Is a paper flower opening the same as this bean growing?

Answer guidance: No. The bean is living and grows new parts; wet paper unfolds.

Participation choices: Adult maintains one viewer; the child chooses what to record each day. Accept pointing, words, a drawing or adult-directed action. Use the story alone if the activity is unsuitable.

Words to explore

root — A plant part that takes in water; here it emerges before the shoot.

Full adult notes and honest limits

Prepare a seed viewer with an adult. Use one whole dried grocery bean, an unbreakable clear cup, paper towel and water. Avoid split or cooked beans and treated gardening seeds. Fold the damp towel against the inside wall and tuck the bean between it and the transparent wall. Keep the top open and the paper damp without a pool of standing water. The adult handles the small bean, stays beside the child and stores the viewer out of reach between observations. No tasting; wash hands afterward. If mold appears, an adult disposes of the contents without asking the child to touch or smell it.

Keep the viewer indoors in a bright room, away from hot direct sun. Peek at about the same time each day. A root may appear after several days; there is no promised day or deadline. Draw what is actually visible, including an unchanged bean. If nothing happens after a week or two, try a fresh whole bean and check moisture and room warmth. A seed that does not sprout is an observation, not a child's failure.

The pale first root emerges before the shoot in this bean example. Early growth uses food stored in the seed. Soil is not required for this short germination observation; a growing plant later needs suitable growing conditions beyond a damp towel. The viewer is temporary. An adult may transplant a healthy seedling gently into a suitable pot with drainage, recognizing that transplanting can fail. Do not eat experimental seeds or sprouts.

Parent move: wait before naming the part. Ask “What is new since yesterday?” Then invite the child to point, describe, sketch or direct the adult’s drawing. For a small group, the adult maintains one viewer and the children take turns contributing observations. A later check is “Which came first in our bean?” Accept a pointing answer. This is observation over time, not a controlled test of every plant need.

Discovery connection: compare this living bean with carousel 15, Can a paper flower bloom? The paper flower unfolds as it absorbs water; it does not grow as a living plant. Next, use carousel 19’s same-size-unit idea to describe a larger plant part without touching fragile roots. The related story How Does It Grow? uses a planted seed in a pot, not this exact viewer; gently clarify that germination can begin without soil and sunlight. No family outcome testing has been performed.

Related reading

How Does It Grow? uses a planted seed in a pot. Clarify that this short germination observation can begin without soil or sunlight.

Scientific sources

rhs-root — <https://www.rhs.org.uk/advice/understanding-plants/how-plants-reproduce>

illinois-seed — <https://web.extension.illinois.edu/gpe/case3/c3a.html>

kg-seed — <https://kidsgardening.org/resources/garden-activities-seed-viewer/>

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