

Kindergarten: Module 3: Labs

2 – Practice Stage

Labs: Practice Stage

Days 5–10

Labs continue to take place in four stages, and the purposes of each remain the same (see Module 2 Practice stage).

What stays the same from previous stage(s):

- During the Practice stage, the materials, tasks, and guiding questions remain similar to those of the Launch stage.

What is different from previous stage(s):

- During the Practice stage, students visit two Labs per day.



Practice Stage: At-a-Glance

Guiding Question

Create Lab

How can I create a collage that shows multiple parts of a plant?

Explore Lab

How can I use the skills of a plant scientist to learn about plants?

Imagine Lab

How can I use movement to better understand living things?

Engineer Lab

How can I create a storyboard that shows the life of a plant?

Learning Target(s)

Create Lab

I can create collages of leaves.

Explore Lab

I can use my senses to learn about plants.

I can use the tools of a plant scientist to learn about plants.

Imagine Lab

I can use movement to represent plants as living things.

Engineer Lab

I can sketch a stage of plant growth.

Create Lab

Create Lab Checklist (SL.K.1b, SL.K.3)

Explore Lab

Explore Lab Checklist (SL.K.1b, SL.K.3)

Imagine Lab

Imagine Lab Checklist (SL.K.1b, SL.K.3)

Engineer Lab

Engineer Lab Checklist (W.K.2, W.K.8, SL.K.1b, SL.K.3)

Practice Stage: Daily Schedule

Lab Component	Time
Storytime	10 minutes
Setting Lab Goals	5 minutes
In the Lab, Part I	20 minutes
In the Lab, Part II	20 minutes
Reflecting on Learning	5 minutes

Practice Stage: Storytime

10 MINUTES

Teaching Notes**Purpose:**

- Review the Storytime Teaching Notes in the Launch stage document as needed.

In advance:

- Choose a text from your classroom library or the Grade K: Labs Recommended Storytime and Research Book List (in the Labs Teacher Guide)
- Consider creating a focus question for Storytime (see example in the Experience section below).
- Post: Focus question (optional).

Materials

- ☒ Labs song (one to display)
- ☒ Text for Storytime (chosen by teacher; see Teaching Notes)

Experience (identical during all four stages of Labs)

- Follow the routine established in Modules 1–2 to engage students with the **Labs song** and **text for Storytime**

Practice Stage: Setting Lab Goals

5 MINUTES

Teaching Notes

Purpose:

- Students continue to use this time to reinforce executive functioning skills by focusing their attention, making a plan for their time, exhibiting self-regulation, and following instructions.

Logistics:

- During the Practice stage, Lab groups visit two workstations for 20 minutes each.

In advance:

- Decide on a system of storage and movement of Labs materials.
- Post:
 - Guiding question for each Lab, learning target(s) for each Lab, and Labs schedule.
 - Labs schedule for students to review as they transition to their second Lab.

Materials

- ✓ Learning target(s) (one to display for each Lab; see Practice Stage: At-a-Glance for the specific target(s) for each Lab)
- ✓ Labs schedule (one to display)

Experience

- Tell students that today they will visit two Labs.
- Review the **learning target(s)** and **Labs schedule** with students.
- Invite students to follow the routine established in Modules 1–2 to guide them through setting goals:
 - Turn and Talk:

“Which Lab will you visit first? What will your goal be when you are there?”
(Responses will vary)
 - Turn and Talk:

“Which Lab will you visit second? What will your goal be when you are there?”
(Responses will vary)
 - Tell students that their most important goals for the day are to think about the learning target, show respect for materials, show respect for other students in their group, and have fun!
 - Invite students to put on their imaginary lab coats and goggles to show they are ready for learning and fun!

Practice Stage: In the Labs**40 MINUTES**

- Refer to the In the Labs section below for detailed plans on each specific Lab.

Practice Stage: Reflecting on Learning**5 MINUTES****Teaching Notes****Purpose:**

- Similar to Modules 1–2, the cycle of goal-setting and reflecting is meant to increase student ownership and intentionality. Continue to support students with predictable structures of reflection and familiar sentence frames.

In advance:

- Post: Sentence frames or picture clues for any reflection questions you will use regularly (optional).

Materials

- ☑ Labs song (one to display)
- ☑ Learning target(s) (one to display for each Lab; see Practice Stage: At-a-Glance for the specific target(s) for each Lab)

Experience

- Gather students whole group by singing the (conclusion of) the **Labs song**.
- Remind students of the guiding question for the specific Lab the class focused on today and guide them through their reflection:
 - Ask a reflective question.
 - Invite students to use a silent signal to indicate when they are ready to share.
 - Invite students to share with a partner, a small group, or the whole class, as time permits.
- Continue to reinforce specificity in students' responses (e.g., referring back to their goal, referring back to the learning target(s), giving concrete examples, etc.).



Practice Stage: In the Create Lab

Guiding Question

- How can I create a collage that shows multiple parts of a plant?

Learning Target

- I can create collages of leaves.

Teaching Notes

How this stage of this Lab builds on previous stage(s):

- Students continue to create paper collages of leaves by cutting or tearing construction paper and gluing and layering it onto a template.

What is new about this stage of this Lab:

- Students have a greater degree of independence, both in their work in the Lab and in their movement during Lab time.
- Students continue to create a variety of paper collage leaves. The choice of leaf templates, shades of green, and use of tearing or scissors will allow for further practice.

Habits of character:

- During the Practice stage of the Create Lab, students continue to practice their perseverance. Similar to the Launch stage, students may have difficulty in achieving a “perfect” result right away, leading to a sense of frustration or failure. On the other hand, some students will need to be pushed in their craftsmanship and encouraged to attempt multiple drafts or work carefully and slowly to achieve their personal best.

Logistics:

- During the Practice stage, Lab groups spend 20 minutes in the Create Lab. Since students have limited time, they will need a system and space to store their collages as they continue to work on them in future Labs.
- Consider having a folder for each student’s work in progress and leftover materials.

In advance:

- Create one new paper collage model to show varying techniques in how to cut/tear, choose appropriate shades of color, and/or layer paper.
- Based on classroom setup and available technology, determine the best way to display the collage models.
- Prepare four workstations by placing at each several photographs of the paper collage models, leaf templates, construction paper, scissors, and glue sticks (see supporting materials).

Materials

Continued materials:

- ✓ Paper collage: teacher model #1 (new; teacher-created; see Teaching Notes)
- ✓ Leaf templates (one for teacher modeling and one set per workstation)
- ✓ Leaf images (one for teacher modeling and one set per workstation)
- ✓ Construction paper (shades of green; for teacher modeling and one small pile per workstation)
- ✓ Scissors (one pair for teacher modeling and one pair per student)
- ✓ Glue sticks (one for teacher modeling and one per student)

Additional materials:

- ✓ Paper collage: teacher model #2 (new; teacher-created; see Teaching Notes)

Experience

- Welcome students to the Create Lab!
- Remind students that in the Create Lab, they are layering with small pieces of paper to create a paper collage of a leaf.
- Tell students that they will now use the skill of layering that they added to their Artist's Toolbelt to create a variety of paper leaf collages.
- Display the paper collage teacher model #1 and the new paper collage: teacher model #2.
- Using a total participation technique, invite responses from the group:

“What do notice about these paper leaf collages? What is similar, or the same, about them? What is different?” (Responses will vary, but may include: The leaves are different shapes; one leaf uses light green, and the other uses a mix of light and dark green; both have covered all of the white space.)
- Remind students that the colors chosen for each leaf collage are based on a **leaf image**, of which there are several available in the Create Lab.
- Using a total participation technique, invite responses from the group:

“What might be difficult about creating a leaf collage? How might you overcome this difficulty?” (Responses will vary, but may include: It may be hard to get the cut or torn paper to the right size and shape; it takes a lot of time to layer.)
- Remind them of the materials they already explored during the Launch stage: **leaf images, leaf templates, construction paper, scissors, and glue sticks.**
- Invite students to put on their imaginary Artist's Toolbelt begun in the Launch stage to practice “layering.”
- Invite students to begin working on their paper leaf collages.
- Circulate and support them as they work. Reinforce the habit of perseverance as needed.
- As they work, remind students that they do not need to finish their collages today. They will return to the Create Lab many times over the coming days and weeks.
- At the conclusion of In the Lab time, signal students to clean up their Lab space.
- Give Lab groups or individual students specific, positive feedback for responsible and respectful cleanup behaviors.
- As Lab groups are ready, transition them back to the whole group area for Reflecting on Learning.



Practice Stage: In the Explore Lab

Guiding Question

- How can I use the skills of a plant scientist to learn about plants?

Learning Targets

- I can use my senses to learn about plants.
- I can use the tools of a plant scientist to learn about plants.

Teaching Notes

How this stage of this Lab builds on previous stage(s):

- Students continue to explore plants, how they change and grow, and what the students, as plant scientists, can do to help the growth of plants.

What is new about this stage of this Lab:

- During the Practice stage, students have a greater degree of independence, both in their work in the Lab and in their movement during Lab time.
- Students are introduced to the Checklist for Our Class Garden, with which they will begin completing challenges from the checklist and recording their observations.

Habits of character:

- Responsibility continues to be a key to the success of this Lab, as students are working with a partner with a variety of materials that need to be cared for and properly organized. Additionally, these materials are easily used as toys, so students need to show responsibility (and, perhaps, be given gentle reminders) to remain focused on the goals of the Lab.

Logistics:

- During the Practice stage, students have only 20 minutes in the Explore Lab.

In advance:

- Pre-determine partners, as students work cooperatively in this Lab.
- Prepare workstations by placing at each a plant from the class garden, a spray bottle of water, an eyedropper, a cup of water, and a ruler.

Materials

Continued materials:

- ☒ Spray bottle of water (one per workstation)
- ☒ Eyedropper (one per workstation)
- ☒ Cup of water (one per workstation)
- ☒ Ruler (one per workstation)
- ☒ Plants (one per workstation)

Additional materials:

- ☑ Checklist for Our Class Garden (one for teacher modeling and one per student)
- ☑ Pencils (one per student)

Experience

- Welcome students to the Explore Lab!
- Using a total participation technique, invite responses from the group:

“What are we exploring in the Explore Lab?” (Guide students toward the understanding that they are exploring plants and how they change as they grow.)
- Move students into pre-determined pairs.
- Tell students that during the Practice stage, there is one more material that will guide their explorations: the **Checklist for Our Class Garden**.
- Display the Checklist for Our Class Garden.
- Tell students that this checklist provides different challenges to collect information about the plants and their growth.
- Post the following directions:
 1. Complete each challenge with your partner.
 2. Check off each complete item on your checklist.
 3. Record a note and sketch about it in the final column.
- Answer clarifying questions.
- To build anticipation, invite students to give a signal of affirmation if they are ready to hear the first challenge from the checklist, and on their signal read it aloud:

— “Check the soil. Is it wet or dry?”
- Using a total participation technique, invite responses from the group:

“How might you try to complete this challenge with your partner?” (touch the soil)

“How can you be sure to work cooperatively with your partner?” (take turns feeling the soil carefully, so as not to harm the plant)
- Model how to complete the first challenge on the checklist by feeling the soil, passing it carefully around the group so students can feel it, stating if it is wet or dry, checking it off the checklist, and sketching and writing the results in the final column of the checklist.
- Review challenges 2–4 on the checklist so students are familiar with them before encountering them with their partner.
- Tell students that today, they will only work on challenges 1–4.
- Tell students that they might not finish all four challenges today and that is okay. By using the checklist, they can keep track of the challenges they still need to complete.
- Distribute the Checklist for Our Class Garden and invite students to begin working.
- Circulate and support students as they work. Reinforce the habit of collaboration and responsibility as students navigate the sharing of materials.
- At the conclusion of In the Lab time, signal students to clean up their Lab space.
- Give Lab groups or individual students specific, positive feedback for responsible and respectful cleanup behaviors.
- As Lab groups are ready, transition them back to the whole group area for Reflecting on Learning.



Practice Stage: In the Imagine Lab

Guiding Question

- How can I use movement to better understand living things?

Learning Target

- I can use movement to represent plants as living things.

Teaching Notes

How this stage of this Lab builds on previous stage(s):

- Students continue to:
 - Use a variety of engaging and malleable materials to create an imaginative world of play.
 - Use movement to represent living things—specifically, plants.

What is new about this stage of this Lab:

- During the Practice stage, students have access to the various materials in one space, allowing them greater choice.

Habits of character:

- Collaboration and respect continue to be a key to the success of this Lab. Students use collaboration to plan and execute a plant movement. Students productively negotiate with one another as they decide which plants to create movements for, how best to create that movement, and how to take turns. Respect is central to the way they make decisions and handle and organize Imagine Lab materials.

Logistics:

- Similar to the Launch stage, students visit the Imagine Lab with their Lab group to decide on the plants to create movement for and choose materials.

In advance:

- Prepare the Imagine Lab space with the plant masks and a variety of imaginative play materials (other possible materials might include modeling clay or felt or magnet boards).

Materials

Continued materials:

- ✓ Plant masks (from the Launch stage; one for teacher modeling and one per student)
- ✓ Building blocks (one set of wood or linking blocks)
- ✓ White board (one large to share or several small)
- ✓ White board markers (one per student)
- ✓ Hand or finger puppets (several to share)
- ✓ Dress-up materials (several to share)

Experience

- Welcome students to the Imagine Lab!
- Remind students of the primary goal of the Imagine Lab: to work together and use materials of the Imagine Lab to create movement that represents different plants.
- Using a total participation technique, invite responses from the group:

“What kinds of plants might you create movements for today?” (Responses will vary based on which plant masks were created in the Launch stage.)
- Choose one of the **plant masks** that students created during the Launch stage as an example. Invite students to stand up in the space and move their body like that plant (e.g., stretching arms high up into the air like tree branches; winding arms around like vines).
- Using a total participation technique, invite responses from the group:

“What parts of the plant could you use in your plant movements today in the Imagine Lab?” (Responses will vary.)

“What parts of your body could you use in your plant movements today?” (Responses will vary.)

“What materials of the Imagine Lab would you like include in your movements?” (Responses will vary, but may include: I would like to use the white board to draw a forest where my plant might live. I would like to use the dress-up clothes to create leaves and roots. I would like to use blocks to build the roots coming out of my feet.)
- Give students specific, positive feedback on their ideas and offer more if they struggle to think of a variety of ways to use the materials of the Imagine Lab.
- Remind students that they will have multiple opportunities to act and use movement in the Imagine Lab. This means they should be flexible about the plants and materials their group chooses.
- Point out the materials in the Imagine Lab space: plant masks and the other continued materials from Modules 1–2.
- Invite students to begin working.
- Circulate and support students as they work.
- When visiting the Imagine Lab, offer students concrete strategies for working positively and collaboratively with others, specifically providing language that creates a collaborative experience.
- At the conclusion of In the Lab time, signal students to clean up their Lab space.
- As Lab groups are ready, transition them back to the whole group area for Reflecting on Learning.



Practice Stage: In the Engineer Lab

Guiding Question

- How can I create a storyboard that shows the life of a plant?

Learning Target

- I can sketch a stage of plant growth.

Teaching Notes

How this stage of this Lab builds on previous stage(s):

- Students continue to explore the various materials they will use in the Lab and begin to sketch the life cycle of plants.
- This Engineer Lab connects to Next Generation Science Standard KLS-1. While creating a storyboard to show the life cycle of a plant, students focus on the following science and engineering practice: Develop and/or use a model to represent amounts, relationships, relative scales (bigger, smaller), and/or patterns in the natural and designed world(s).

What is new about this stage of this Lab:

- During the Practice stage, students build upon their understanding of plant growth as they prepare for the creation of the final life cycle of a plant storyboard by beginning to sketch the different stages of plant growth.

Habits of character:

- Similar to Modules 1–2, the Engineer Lab helps students build their skills of goal-setting and reflection. The Engineer Lab has a clearly shared goal by the time students reach the Choice and Challenge stage: to create a model “storyboard” that shows how a plant grows. This clearly defined end goal will help students reflect on their own progress and set benchmark goals for their work along the way.

Logistics:

- Similar to Modules 1–2, the teacher and students engage in the design process, specific to the design of a storyboard, by drafting their scientific sketches of the stages of plant growth.

In advance:

- Prepare workstations by placing at each a plant growth collection, plant growth – draft copies, and one magnifying glass for each student.
- Label the sets of the plant growth collection with the proper names: seed, shoot, seedling, and plant.

- Consider:
 - Organizing plant materials into clear containers to make cleanup easier.
 - Creating supporting partnerships within Lab groups for more efficient sharing of materials, such as magnifying glasses.

Materials

Continued materials:

- ☑ Plant growth collections (one for teacher modeling and one set per workstation)
- ☑ Magnifying glasses (one per student)

Additional materials:

- ☑ Plant growth – draft (one for teacher modeling and one per student)

Experience

- Welcome students to the Engineer Lab!
- Remind students that their goal in the Engineer Lab is to answer the question: “How can I design and create a storyboard that shows the life of a plant?”
- Display the **plant growth collection** (pre-labeled) and read aloud the labels pointing to each stage of growth.
- Turn and Talk:
 - “What do you notice about the stages of growth of a plant?” (Responses will vary, but may include: They start out as a small seed; they grow taller and taller; the grown plant has lots of leaves, but the seedling has only a few.)*
- Restate the stages of growth and invite students to read aloud each label with you.
- Remind students that their goal is to create a storyboard showing the life of a plant, so during the Practice Labs they will sketch the different stages of a plant.
- Tell students that the design process for creating a storyboard has three steps:
 1. Sketch the stages of plant growth.
 2. Revise your sketches for accuracy.
 3. Draw a final draft with attention to detail and labels.
- Point out the plant growth collection and **magnifying glasses** at students’ workstations.
- With excitement, reveal that students will be using one new material in the Engineer Lab today: the **plant growth – draft**.
- Display the **plant growth – draft** template and focus students on the four boxes with the labels: seed, shoot, seedling, and plant. Read the labels aloud.
- Model how to sketch two stages of plant growth. Tell students that the first stage of growth should go in the first box, then the next stage below, and so on. Remind students that sketching takes time. They will need to use perseverance to go slowly, look at the details, and create their best work. They will most likely not have time to finish in one Lab session but will be able to come back and continue working.

Trees Are Alive

- Tell students that today they will work on two plant sketches with labels, and that they may choose which stage to sketch first.
- Circulate and support students as they work, focusing on their sharing and caring for materials and perseverance in sketching.
- At the conclusion of In the Lab time, signal students to clean up their Lab space.
- Give Lab groups or individual students specific, positive feedback for responsible and respectful cleanup behaviors.
- As Lab groups are ready, transition them back to the whole group area for Reflecting on Learning.