

Grade 1: 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 sculpture of a bird that shows the form and function of its body parts?

Engineer Lab

How can I use my knowledge of birds to design a solution to a human problem?

Explore Lab

How can I learn more about birds by exploring the properties of different bird parts?

Imagine Lab

How can I use poetry and movement to learn more about birds?

Learning Target(s)

Create Lab

I can sculpt the beak, wings, and feet of a mallard duck.

Engineer Lab

I can match human inventions to different animal forms and functions.

Explore Lab

I can learn about birds' bones by building with hollow materials.

Imagine Lab

I can build knowledge about birds through poetry.

I can improve my reading fluency by reading poetry aloud.

I can create movement to match poetry about birds.

Create Lab

Create Lab Checklist (SL.1.1, SL.1.3, SL.1.4, SL.1.6)

Engineer Lab

Engineer Lab Checklist (SL.1.1, SL.1.5, SL.1.6)

Explore Lab

Explore Lab Checklist (SL.1.1, SL.1.4, SL.1.6)

Imagine Lab

Imagine Lab Checklist (RL.1.4, RF.1.4b, SL.1.1, SL.1.6)

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 1: 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 notebooks.
- 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

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

Practice Stage: Reflecting on Learning

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 sculpture of a bird that shows the form and function of its body parts?

Learning Target

- I can sculpt the beak, wings, and feet of a mallard duck.

Teaching Notes

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

- Students continue to sculpt the body parts of mallard ducks based on their knowledge of mallard ducks and photographs of mallard duck parts.

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.

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 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.
- Additionally, students often have difficulty working with clay, especially forming the right shapes or getting shapes to attach together properly. Students may require multiple attempts and some support from peers and teachers to achieve a greater degree of mastery over this new material.

Logistics:

- Because the purpose of the Practice stage is to build skill, not to work toward a product, students will not save their work between visits to the Create Lab. All clay should be put back together so students can begin anew with each experience. This will shift during the Choice and Challenge stage.

In advance:

- Prepare the Create Lab by placing photographs of mallard duck parts, clay, water, toothpicks, and plastic utensils in the Lab space.

Materials

Continued materials:

- ☑ Photographs of mallard duck parts (several in the Create Lab)
- ☑ Air-dry clay (class set; 10 pounds in the Create Lab)
- ☑ Plastic forks (one per student)
- ☑ Plastic knives (one per student)
- ☑ Toothpicks (one per student)
- ☑ Cup of water (one to share)

Experience

- Welcome students to the Create Lab.
- Remind them of the work they began in the Launch stage using **photographs of mallard duck parts** to identify the shapes and details of the beaks, wings, and feet and to form those shapes using **clay**, and using **plastic forks**, **plastic knives**, and **toothpicks** to create the details they see.
- Remind students that the work of an artist takes great perseverance. They will not form perfect shapes, or achieve exact details, on the first attempt. That is why they are practicing. With each attempt, they will better understand this new material, and their sculptures will become more and more beautiful.
- Remind students of the importance of using **water** throughout the process, as it makes the clay much easier to form and to attach.
- Circulate and support students as they work. Specifically, support them in helping one another overcome obstacles.
- 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 Engineer Lab

Guiding Question

- How can I use my knowledge of birds to design a solution to a human problem?

Learning Target

- I can match human inventions to different animal forms and functions.

Teaching Notes

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

- Students continue to explore the connection between aspects of the natural world and the human inventions they inspire.
- The Engineer Lab connects to Next Generation Science Standard 1-LS1-1. Students focus on the following science and engineering practice: Use materials to design a device that solves a specific problem or a solution to a specific problem. Students focus on the following cross-cutting concept: Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world.

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.

Habits of character:

- Respect is a central habit of character in this Lab as students are engaged in a learning game that requires taking turns, playing fairly, and caring for materials.

Logistics:

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

In advance:

- Pre-determine partners, as students work cooperatively in this Lab.
- Prepare the Engineer Lab by setting out one of the Nature's Inventions Memory Game for each pair.

Materials

Continued materials:

- ☒ Nature's Inventions Memory Game (one set per pair in the Engineer Lab)

Experience

- Welcome students to the Engineer Lab.
- Using a total participation technique, invite responses from the group:
“What are we exploring in the Engineer Lab?” (Guide students toward the understanding that they are exploring the idea of biomimicry, or human invention based on the natural world, by playing a memory and matching game.)
- Move students into pre-determined pairs.
- Turn and Talk:
“What are important habits of character, or behaviors, when playing a game with a partner?” (Responses will vary, but may include: taking turns, using kind words, taking care of the materials.)
“What are some examples of human inventions inspired by the natural world that we discovered during the Launch stage of the Engineer Lab?” (whale fins inspired a new kind of windmill; sharkskin inspired a new kind of bathing suit; etc.)
- Remind students that they should support each other in deciding whether or not a pair of photographs is a match.
- Using a total participation technique, invite responses from the group:
“How can you figure out if two cards are a match?” (Responses will vary, but may include: You can read the caption below each photograph and see if they go together. You can study the pictures and see how they are similar.)
- Circulate and support students as they work. Reinforce the habit of respect as students navigate the care for and 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 Explore Lab

Guiding Question

- How can I learn more about birds by exploring the properties of different bird parts?

Learning Target

- I can learn about birds' bones by building with hollow materials.

Teaching Notes

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

- Students continue to explore building structures with various hollow materials in order to better understand how such materials can be both strong and light, two properties important to the structure of birds.
- Students continue to use their Labs notebooks as a place to design and revise their ideas for the structures they are building.

What is new about this stage of this Lab:

- During the Practice stage, as opposed to being limited to a single challenge or a single type of structure, students design and build one, or a variety of, structures of their choice, limited only by the use of hollow materials.

Habits of character:

- The Explore Lab helps students build their skills of goal-setting and reflection as they engage in the design process. Students envision and design the types of strong structures they would like to build, test their design, reflect on the strengths and weaknesses of those designs, and then make necessary adjustments.

Logistics:

- Similar to Modules 1–2, the teacher and students engage in the design process. The whole group begins by brainstorming the types of structures that are possible using the hollow materials available. Students draw their design ideas in their Labs notebooks. They build their structures, test them for strength and durability, and then make adjustments based on their performance.

In advance:

- Prepare the Explore Lab with the all of the materials students will need to explore designing and building a structure with hollow materials (see materials list).
- Consider:
 - Collecting and displaying pictures of the types of structures students may want to try (e.g., buildings, bridges, airplanes, etc.).
 - Creating supporting partnerships within Lab groups for more efficient sharing of materials and collaboration in the design process.

Materials

Continued materials:

- ☒ Cardboard tubes (four per student)
- ☒ Paper plates (one or two per student)
- ☒ Pennies (100 to share)
- ☒ Tape (one roll to share)
- ☒ Paper (several pieces per student)
- ☒ Scissors (one pair per student)
- ☒ Labs notebooks (one per student)

Experience

- Welcome students to the Explore Lab.
- Remind them that their goal in the Explore Lab during this stage is to better understand the question:
 - “Can hollow materials be both light and strong?”
- Using a total participation technique, invite responses from the group:

“Can hollow materials be both light and strong? Answer using evidence from your experiences in the Explore Lab so far.” (Responses will vary, but may include: They can be strong; my structure held 25 pennies! My structure held only 10 pennies, so I think it would have been stronger if I used solid materials.)
- Tell students that in this stage of the Explore Lab, they can design and build a structure of their choice. Their only limitation is that they must build using only hollow materials: straws, cardboard tubes, rolled-up paper, etc.
- Remind students that their other goal is to keep their structure as light as they can, while also making it both strong and durable. Like a bird, the structure needs to be light but also strong.
- Turn and Talk:

“What types of structures could we design and build using our hollow materials?” (bridges, houses, towers, buildings, airplanes, etc.)
- As students share, consider collecting their ideas on a chart or white board for students to reference as they plan and build their own structure.
- Tell students that the design process for building a strong structure of hollow materials has four steps:
 1. Sketch the idea in your Labs notebook, labeling each material.
 2. Build your structure using the **continued materials** of the Explore Lab.
 3. Test out your structure’s strength and durability by testing how much weight it can hold.
 4. Make any revisions necessary based on your observations while testing.
- Using a total participation technique, invite responses from the group:

“How can you test your structure for strength and durability?” (Responses will vary, but may include: If you build a building or a bridge, you can put weight on it, like the pennies. If it is an airplane, you can fly it and see how well it stays together and how far it goes.)
- Display the “Hollow Design Challenge” page of the **Labs notebook**.
- Point out the space provided on this page for students to sketch their initial idea, the space to record their observations when testing their design, and the space to plan revisions.
- Encourage students to be imaginative, to be innovative, and to work with a sense of careful craftsmanship.
- Transition students to the Lab space.
- Circulate and support them 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.



Practice Stage: In the Imagine Lab

Guiding Question

- How can I use poetry and movement to learn more about birds?

Learning Targets

- I can build knowledge about birds through poetry.
- I can improve my reading fluency by reading poetry aloud.
- I can create movement to match poetry about birds.

Teaching Notes

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

- Students continue to:
 - Give students an additional genre through which they can build understanding of the topic.
 - Give students the space and opportunity to incorporate movement in their learning, an important practice in engaging primary learners and helping all learners to access the curriculum.
 - Build reading fluency through the practice of reading poetry, reading aloud, and repeating readings of an increasingly familiar text.

What is new about this stage of this Lab:

- During the Practice stage, students have access to all of the poems as well as the continued imaginative materials in one space, allowing them greater choice, independence, and responsibility.

Habits of character:

- Collaboration and respect continue to be a key to the success of this Lab. Students use collaboration to plan and execute movement based on their knowledge of birds and poetry about birds. Students productively negotiate with one another as they decide which poems to create movements for, how best to create those movements, and how to take turns reading aloud. Respect is central to the way students 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 poem to create movement for and choose materials.

In advance:

- Prepare the Imagine Lab space with the imaginative play materials from Modules 1–2 (e.g., building blocks, white boards, puppets, dress-up materials).

Materials**Continued materials:**

- ☑ Poems about birds (from Launch stage; several in the Imagine Lab)

Additional materials:

- ☑ Imaginative play materials (variety from Modules 1–2)

Experience

- Welcome students to the Imagine Lab.
- Remind them of the primary goal of the Imagine Lab: to work together and use poetry about birds, their knowledge of bird behaviors, their own bodies, and materials of the Imagine Lab to create movement that represents different birds and poems about birds.
- Using a total participation technique, invite responses from the group:
 - “What kinds of birds or bird behaviors might you create movements for today? (preening, waddling, eating, swimming, flying, etc.)”*
 - “What parts of birds’ bodies could you use in your bird movements today in the Imagine Lab?” (beaks, wings, feet)*
 - “What parts of your body could you use in your bird movements today?” (arms, hands, heads, etc.)*
 - “What materials of the Imagine Lab would you like to include in your movements?” (Responses will vary, but may include: I would like to use the white board to draw a tree where my bird might live. I would like to use the dress-up clothes to create wings or bird foliage. I would like to use blocks to build a nest.)*
 - “How might you use the poems to inspire your bird movements?” (Responses will vary, but may include: One person could read while the rest of the group uses movements to show the poem. We could take turns reading parts of a poem. We could read a poem and use Imagine Lab materials to build a setting for that poem.)*
- Give students specific, positive feedback on their ideas and offer more if they need additional support to think of a variety of ways to use the materials of the Imagine Lab.
- Remind students that their goals in the Imagine Lab are to:
 - Use poetry and movement to deepen their understanding of birds.
 - Use poetry and movement to show what they know about birds.
 - Reread poems aloud in order to become more fluent readers.
 - Create a world of play and imagination for themselves and their peers.
 - Have fun!

- Tell students that they will find the **poems about birds** they worked with during the Launch stage in the Imagine Lab, as well as some additional poetry about seeds and pollination.
- Review the steps students took to read a poem and create movements to accompany that poem:
 - Read the poem all the way through (they can take turns reading, or let one volunteer read it out loud).
 - Discuss and decide what they think the poem is about.
 - Read the poem, one small section at a time, choosing movements to match that section.
 - Read the poem all the way through with movements.
- Tell students they can work with multiple poems, or they can rehearse a single poem until they feel they have perfected it (students can read the poem fluently, and all members of the Lab group know their movements).
- Point out the materials in the Imagine Lab space: poems about birds and the other **imaginative play materials** that they worked with in Modules 1–2.
- Invite students to begin imagining.
- Circulate and support students as they work, focusing on students working together to create a world of imagination and play with one another, and students cooperating to read poetry and create movement.
- 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.