Grade 1: Module 1: Labs

2 – Practice Stage

Labs: Practice Stage

Days 5–10

Each of the Labs unfolds across an entire module, and takes place in four stages: Launch, Practice, Extend, and Choice and Challenge.

2. The Practice stage serves three purposes:
   - To practice using materials and navigating the Labs before introducing new materials and an additional layer of complexity in the Extend stage.
   - To build independence in meeting Lab goals and transitioning between various components of the Labs schedule.
   - To continue applying the habits of character in each Lab.

What stays the same from previous stage(s):

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

What is different from previous stage(s):

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

The chart below shows the guiding question, learning target(s), and ongoing assessment for each Lab during this specific stage.

(Note: The guiding question for a given Lab remains the same for the entire module. By contrast, the learning target(s) become more refined and precise from stage to stage.)

Practice Stage: At-a-Glance

Guiding Question

Create Lab

How can I create a realistic drawing of a tool?

Engineer Lab

How can I use classroom tools to create my own magnificent thing?

Explore Lab

What's the best tool for the job?

Imagine Lab

How can I use my imagination to create a world of play for myself and others?

Learning Target(s)

Create Lab

I can use different kinds of lines to draw tools.

Engineer Lab

I can use classroom tools and materials responsibly.

Explore Lab

I can build a boat that floats and holds pennies.
I can collaborate with a partner in the design and building process.

Imagine Lab

I can show respect for Lab materials and my peers.

Ongoing Assessment

Create Lab

Create Lab Checklist (**SL.1.1, SL.1.3, SL.1.4, SL.1.5, SL.1.6**)

Engineer Lab

Engineer Lab Checklist (**SL.1.1, SL.1.3, SL.1.4, SL.1.5, SL.1.6**)

Explore Lab

Explore Lab Checklist (**SL.1.1, SL.1.3, SL.1.4, SL.1.6**)

Imagine Lab

Imagine Lab Checklist (**SL.1.1, SL.1.3, SL.1.4, SL.1.6**)

Labs are one hour long in all four stages. During the Practice stage, this hour is divided as follows:

Practice Stage: Daily Schedule

Lab Component	Time
Storytime	10 minutes
Setting Lab Goals	5 minutes
In the Lab	40 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.
- Similar to the Launch stage, choose texts that meet the following criteria:
  - Support students' understanding of lines.
  - Illustrate ways that imagination and perseverance can transform something ordinary (materials, spaces, etc.) into something extraordinary.
  - Include a character (fictional or real) who is learning about or demonstrating responsibility.

In advance:

- Choose a text from your own classroom library or the K–5 Recommended Text List (stand-alone document).
- Consider creating a focus question for Storytime (see example in the Experience section below).
- Review the Labs song.
- 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)

- Gather students whole group by singing the (start of the) **Labs song**.
- Introduce the **text for Storytime**.
- Consider giving students a focus question with which you would like them to listen, especially as it supports their work in the Labs. Example: "While I read this story aloud, think about the ways in which the characters collaborate, or work together."
- Read aloud the text for Storytime slowly, fluently, and without interruption.

Practice Stage: Setting Lab Goals

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. All students, but especially primary learners, need to learn and practice the behaviors associated with executive functioning.
- Students may need additional support remembering the second Lab they will be visiting on any given day. Consider posting the Labs schedule in a clearly visible location and pause to review it before students transition to their second Lab.

Logistics:

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

In advance:

- Post: Guiding question for each Lab, learning target(s) for each Lab, and Labs schedule.

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)** for each Lab.
- Review the **Labs schedule** with students.
- Invite students to turn and talk with an elbow partner, providing a sentence frame as needed (Example: "Today, I will visit the ____ Lab first. When I'm there, my goal is to ____."):
  - ***"Which Lab will you visit first? What will your goal be when you are there?" (Responses will vary, but may include: I am going to the Explore Lab. My goal is to find the best tool to move the beans.)***
- Revisit the Labs schedule. Point to the column labeled Lab 2.
- Invite students to turn and talk with an elbow partner, providing a sentence frame as needed:
  - ***"Which Lab will you visit second? What will your goal be when you are there?" (Responses will vary, but may include: I will be going to the Engineer Lab. My goal is to build my own dollhouse.)***
- 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 on the following pages for detailed plans on each specific Lab.

Practice Stage: Reflecting on Learning 5 MINUTES

Teaching Notes

Purpose:

- Recall that the Reflecting on Learning portion of Labs serves as a bookend to Setting Lab Goals. This time should both invite students to recall how they spent their time in the Labs and reflect on their experience in the Labs.
- Continue to support students with predictable structures of reflection (such as repeated protocols) as well as familiar sentence frames.

In advance:

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

Experience

- Gather students back together whole group by singing the (conclusion of the) **Labs song**.
- Remind students of the learning target(s) for their Labs and invite them to think about the goals they made at the beginning of Lab time.
- Ask a reflection question, giving students think time before they respond. This promotes more considerate responses and supports English language learners. Examples:
  - ***"What is something you did really well in the Labs today to meet the learning target(s)?" (Responses will vary, but may include: I showed respect for materials. I helped clean up.)***
  - ***"What is something you struggled with in the Labs today?" (Responses will vary, but may include: I had a hard time drawing zigzag lines.)***
  - ***"How did you get past a difficult obstacle?" (Responses will vary, but may include: I used a ruler to help make straight lines in my drawing.)***
  - ***"What is something you want to do better in Lab time tomorrow?" (Responses will vary, but may include: I want to draw a different tool tomorrow.)***
  - ***"What was your favorite part of the Labs today? Why?" (Responses will vary, but may include: I liked building with blocks the best today.)***
- 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.).
- Invite students to give a neighbor a high five and take off their imaginary lab coat and goggles to indicate the end of the Lab experience.

Practice Stage: In the Create Lab

Guiding question

- How can I create a realistic drawing of a tool?

Learning target

I can use different kinds of lines to draw tools.

Teaching Notes

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

- Students continue to draw tools or pictures of tools, focusing primarily on the lines that compose each tool.

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.
- Some students may need additional support with this drawing process, as their drawings may not look exactly like the tool in front of them. As a result, students may want to begin their drawing multiple times or habitually erase. Remind students that drawing is a learned skill that comes with practice and perseverance.

Habits of character:

- During the Practice stage of the Create Lab, perseverance continues to be an important habit of character. Often students become frustrated in the drawing process or in the creating of multiple drafts.

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 drawings as they continue to work on them in future Labs.

In advance:

- Prepare the Create Lab by placing paper, pencils, a variety of tools (or pictures of tools), and lines cards in the Lab space.
- Gather a variety of tools or pictures of tools for students to draw.
- Consider whether the storage system previously established for storing student work is working and change as necessary.

Materials

Continued materials:

- ☑ Lines card (one per pair; see supporting materials)
- ☑ Paper (various types, colors, and sizes; several blank pieces per student)
- ☑ Pencils (two per student)
- ☑ Tools or pictures of tools (variety; for students to use as a model to draw; see Teaching Notes)

Experience

- Remind students that in the Create Lab, they are drawing tools.
- Point out that previously they were given a tool (or a picture of a tool) to draw, but today they get to choose a tool (or a picture of a tool) to draw.
- Tell them that they may begin a new drawing or continue a drawing from a previous session.
- Remind students that they will follow the same basic drawing process they used previously:
  - Choose a tool to examine.
  - *Identify* as many lines as you can in the tool. (Examples: "I see a curved line in this part of the tool" or "The bottom of a saw is a zigzag line, but the top of the saw is a straight line.")
  - Use the lines to draw the tool.
- Encourage students to use the **lines card** to help them both identify and draw lines.
- Remind students of the materials of the Create Lab: **paper**, **pencils**, lines card, and **tools** (or **pictures of tools**). Remind them that the tools are serving as their model for drawing and are not to be played with during this time.
- If students feel they are finished with one drawing, they may put it away in the designated storage space and begin a new one.
- It will be helpful for students to have a range of drawings to return to as they choose which ones to revise or create new drafts of during the Choice and Challenge stage.
- Invite students to put on their imaginary Artist's Toolbelt begun in the Launch stage.
- Invite students to begin working.
- Circulate and support them as they work, identifying lines and including those lines in their drawings. Reinforce the habit of perseverance as needed.
- 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. (Example: "Thank you for separating each material you used and putting each where it belongs.")
- 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 classroom tools to create my own magnificent thing?

Learning target

I can use classroom tools and materials responsibly.

Teaching Notes

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

- Students continue to create objects using found or recycled materials and classroom tools.

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:

- Responsibility is an important habit of character to be learned and practiced in the Engineer Lab as students are working independently with a variety of materials that need to be cared for and properly organized.

Logistics:

- During the Practice stage, students have only 20 minutes in the Engineer Lab. They will need a system and space to store their projects as they continue to work on them.

In advance:

- Recall that some students may need additional support or feel stuck for ideas as they begin working in the Engineer Lab. Consider hanging pictures in the Engineer Lab space of a variety of objects that students may try to emulate using their everyday materials.
- Prepare the Lab space by placing paper, tape, string, and scissors for students to design and build something of their own.
- Consider:
  - Providing tape dispensers for easier student use.
  - Whether the storage system previously established for storing student work is working and change as necessary.

Materials

Continued materials:

- ☑ Cardboard (various sizes; two or three pieces per student)
- ☑ Paper (various types, colors, and sizes; several blank pieces per student)
- ☑ Tape (one roll or pre-cut 6-inch strips)

- ☑ String (one roll or pre-cut 12-inch strips)
- ☑ Scissors (one per pair)

Experience

- Review the proper handling and storage of the materials students will use in the Engineer Lab.
- Remind students of the size limitations, if you placed any, so they can store their projects between Lab sessions.
- Remind students of the materials they already explored at the Engineer Lab: **cardboard**, **paper**, **tape**, **string**, and **scissors**.
- If students feel they are finished with one project, they may put it away in the designated storage space and begin a new one.
- Invite students to begin working.
- As they work, remind students that they do not need to finish their project today. They will return to the Engineer Lab many times over the coming days and weeks.
- Circulate and support students as they work.
- 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 Explore Lab

Guiding question

- What's the best tool for the job?

Learning target

I can build a boat that floats and holds pennies.

I can collaborate with a partner in the design and building process.

Teaching Notes

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

- Students continue to design and build miniature boats in an attempt to make pennies float.

What is new about this stage of this Lab:

- During the Practice stage, students are challenged to build a boat that can hold as many pennies as possible.
- Students engage in a multiday design process of "plan, do, review" with their partner. This helps students to learn the benefit of planning, trying, reflecting, and revising.

Habits of character:

- Collaboration is key to the success of this Lab, as students are working in partnerships to design, build, and reflect.

Logistics:

- Similar to the Launch stage, students visit the Explore Lab with their Lab group, but they work with an individual partner.
- The design process happens over multiple days:
  - On the first day of the Practice stage, students design their idea.
  - On the second day of the Practice stage, students build their boat and try it out.
  - On the third day of the Practice stage, students reflect on the successes and challenges of their design, make adjustments, and try it again.

In advance:

- Consider:
  - Covering workstations with cloth or plastic.
  - Continuing with or changing the partnerships from the Launch stage, depending on how well they worked together.
- Fill containers about halfway with water.
- Prepare:
  - Design Process anchor chart (see supporting materials).
  - Workstations by placing containers (halfway filled with water), aluminum foil, and pennies (see materials).

Materials

Continued materials:

- ☑ Aluminum foil (6-inch squares; eight to 10 per workstation)
- ☑ Containers (a deep baking dish or shallow bucket; one per workstation)
- ☑ Pennies (10 per partnership)

Additional materials:

- ☑ Aluminum foil (12-inch squares; two per partnership)
- ☑ Design Process anchor chart (new; teacher-created; see supporting materials)
- ☑ Paper (blank; one piece per partnership; for design drawings and note taking)
- ☑ Pencils (one per partnership)

Experience

- Tell students that they will continue to design and build boats with their partner.
- Give students specific, positive feedback about their work in the "Make It Float" challenge during the Launch stage. (Example: "It is wonderful to see students showing respect for their workspace by keeping water in their container and the rest of their workspace dry.")

- Tell students that today's challenge is going to be a bit more difficult. They are competing against themselves to see how may pennies they can make float in a boat of their own design. Two pennies? Five pennies? Ten pennies?
- Review the **continued materials** with students. Point out that they have more pennies this time because they are trying to engineer a boat that holds multiple pennies.
- Show students that they also have larger pieces of **aluminum foil**. It is important that they are aware of the materials available as they begin to design.

Day One—"Plan":

- Remind students of their partnerships from the Launch stage and explain that they will be working through a design process: Plan, Do, Review.
- Direct students' attention to the **Design Process anchor chart** and review each step, addressing any confusion that may arise.
- Tell students that today they will collaborate to draw—or plan—the design of their boat.
- Direct students' attention to the **paper** and **pencils** available at their workstations.
- Using a total participation technique, invite responses from the group:
  - ***"Why do you think there is only one pencil when there are two people working together?" (Responses will vary, but may include: We are working together, so we need to share the pencil and take turns drawing.)***
- Encourage students to use the sentence stems (on the Design Process anchor chart) to have a conversation about their ideas before they begin drawing.
- Tell students that they can make multiple drawings and then decide which one they will build later.
- Move students into partnerships.
- Invite students to begin planning and drawing.
- Circulate and support students as they work, reminding them that their design can only include the materials available.
- Support partnerships as they collaborate, focusing on the language of collaboration from the Design Process anchor chart.
- 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.
- Collect students' design drawings for use in the next session.

Day Two—"Do":

- Distribute students' design drawings from Day One of the design process. Ask them to place these drawings beside them or underneath them so they do not distract their attention as they discuss the next steps of the design process.
- Direct students' attention to the Design Process anchor chart. Tell students that today they are in the "Do" phase of the design process. Read this section aloud as students read along.
- Tell them that today they will work with their partner to build a boat based on their design from Day One.

- Remind students of the materials they have available to build their boat.
- Tell them that once their boat is built, they should place it in the container with water to see if it will float and how many pennies it can hold.
- Remind students that their challenge is to build a boat that can float while holding as many pennies as possible.
- Encourage students to begin by adding a single penny and then add one penny at a time until their boat begins to take on water.
- Once their boat begins to take on water, they should stop and record the number of pennies somewhere on their original design drawing.
- Move students into partnerships.
- Invite them to begin building.
- Circulate and support students as they work.
- 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.
- Collect students' design drawings for use in the next session.

Day Three—"Review":

- Remind students that in their previous visit to the Explore Lab, they built their boat and tested how many pennies it could hold before taking on water.
- Direct students' attention to the Design Process anchor chart.
- Review the "Review" section and answer clarifying questions.
- Tell students that the review step is an important one for engineers, giving them a chance to reflect on their previous designs, think about what went well and what did not go well, then try it again.
- Distribute students' original designs.
- Direct students to find and face their partner. Tell them that you will read a question aloud, and they should discuss this question with their partner, making sure that each person has a chance to speak.
- Read each question aloud from the "Review" section of the Design Process anchor chart, pausing to give students time to discuss after each one.
- Circulate to support students as they discuss and reflect with their partners.
- Once students have discussed all of the questions, tell them they have the remainder of Lab time to make modifications to their boat and retry the experiment using the same materials.
- Remind students that their goal is to make adjustments to their boat (or build a new one) and float more pennies than they were able to in the previous session.
- Circulate and support students as they work.
- 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 Imagine Lab

Guiding question

- How can I use my imagination to create a world of play for myself and others?

Learning target

I can show respect for Lab materials and my peers.

Teaching Notes

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

- Students continue to use a variety of imaginative play materials to create their own imaginative play scenarios.
- Students continue to show respect for materials and one another.

What is new about this stage of this Lab:

- All Imagine Lab materials will now be in one space, giving students the option of what they want to do during this time.

Habits of character:

- The Imagine Lab continues to incorporate multiple types of materials to allow students to create a world of play for themselves and others. Respect for these materials and respect for peers is necessary for the success of the Imagine Lab.

Logistics:

- Because students now have access to all Imagine Lab materials, it is important that they set a clear goal for how they want to spend their time in the Imagine Lab.

In advance:

- Prepare the Imagine Lab space by placing building blocks, white boards and dry erase markers, hand or finger puppets, dress-up materials, and other possible materials for students to create a variety of imaginative play scenarios.

Materials

Continued materials:

- ☑ Building blocks (one set of wood or linking blocks)
- ☑ White board (one large to share or several small) and dry erase markers (one per student)
- ☑ Hand or finger puppets (several to share)
- ☑ Dress-up materials (several to share)
- ☑ Other materials could include modeling clay, common kitchen materials and safe cooking utensils, felt or magnet boards

Experience

- Remind students of the importance of showing respect for Imagine Lab materials and their peers.
- Invite students to turn and talk with an elbow partner:
  * ***"In what ways might you show respect for materials?" (put away materials before I move on to new ones; clean up materials at the end of Lab time)***
  * ***"In what ways might you show respect for one another?" (share materials; use my body safely; include others in my imaginative play)***
- Tell students that today they will have 20 minutes in the Imagine Lab. Invite them to begin exploring materials and imagining.
- As students work, circulate and support them, specifically in the area of respect toward materials and peers.
- 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. (Example: "It is great to see students working together to organize materials in the Imagine Lab, even if it is not a material you used.")
- As Lab groups are ready, transition them back to the whole group area for Reflecting on Learning.