Grade 1: Module 1: Labs

3 – Extend Stage

Labs: Extend Stage

Days 11–18

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

At this point in the Labs, students have had several days in each Lab to become acquainted with purpose, tasks, and the materials of each Lab, as well as Labs routines.

3. The Extend stage serves two purposes:
   - To push students' thinking and skills further by adding new materials and introducing greater complexity to each task (e.g., in the Create Lab, students learn how to add details to their tool drawings).
   - To learn and practice habits of character, such as collaboration and perseverance.

What stays the same from previous stage(s):

- During the Extend stage, the guiding questions remain the same as in previous stages.
- During the Extend stage, students continue to visit two Labs per day.

What is different from previous stage(s):

- The Extend stage begins with two "transition days." These days—described briefly at the beginning of each In the Lab section—give teachers time with their whole class to introduce new materials, introduce new layers of complexity to the task, model various Lab skills and behaviors, and clear up any confusion before students return to a more independent Lab experience.
- During the Extend stage, the learning targets change to reflect students' work in the Labs.
- During the Extend stage, students are given a greater variety of materials.

The chart that follows 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.)

Extend 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

Create Lab

I can use lines and texture to create detailed drawings of tools.

Engineer Lab

I can use classroom tools to recreate a magnificent thing from a picture.

Explore Lab

I can choose the best tool to complete a job.

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 Extend 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

Extend Stage: Storytime

Teaching Notes

Purpose:

- Review the Storytime Teaching Notes in the Launch stage document as needed.
- During the Extend stage, choose texts that meet the following criteria:
  - Allow students to recognize various types of details within the text or illustrations.
  - Highlight a character who is learning about or demonstrating strong collaboration skills.
  - Illustrate ways that imagination and perseverance can transform something ordinary (materials, spaces, etc.) into something extraordinary.

In advance:

- Choose a text from your 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).
- Post: Focus question (optional).

Materials

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

Experience

- 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.

Extend 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 Extend stage, Lab groups visit two Labs 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 Extend Stage: At-a-Glance for the specific target(s) for each Lab)
- ☑ Labs schedule (one to display)

Experience

- Students continue to follow a similar routine for setting Lab goals as they have in the Launch and Practice stages. They will:
  - Review the **learning target(s)** for each Lab.
  - Review the **Labs schedule** with the teacher.
  - Turn and talk with an elbow partner to identify the first Lab they will visit today.
  - Make a goal using a sentence frame. (Example: "Today I will be visiting the ____ Lab first. When I'm there, I want to ____.")
  - Repeat this process to identify the second Lab they will visit today.

Extend Stage: In the Labs

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

Extend Stage: Reflecting on Learning

Teaching Notes

Purpose:

- Recall that the reflection portion of Labs serves as a bookend to Setting Lab Goals. This time should invite students to recall how they spent their time in the Labs and to 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:
  - ***"Did you meet a goal for today?" (Responses will vary, but may include: I finished my tool drawing. I used lines and textures.)***
  - ***"How did you work well with a partner in the Labs today? How could you work better with your partner in the Labs tomorrow?" (Responses will vary, but may include: My partner and I planned a design together today. We did not agree at first, but then we decided on something we both like. Next time we will start building.)***
  - ***"What did you do to care for classroom materials in the Labs today?" (Responses will vary, but may include: In the Imagine Lab, I put away all the blocks before I played with the puppets.)***
  - ***"What is something you want to do better in the Labs tomorrow?" (Responses will vary, but may include: Tomorrow I want to add more details to my drawing.)***
  - ***"What was your favorite part of Labs today? Why?" (Responses will vary, but may include: My favorite part of Labs was moving the water through a funnel! It was fun to do the pouring.)***

- 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.

Extend Stage: In the Create Lab

Guiding Question

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

Learning Target

I can use lines and texture to create detailed drawings of tools.

Teaching Notes

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

- Students continue to identify and use various lines to draw tools.

What is new about this stage of this Lab:

- Students add the concept of texture to their Artist's Toolbelt and use texture in their tool drawings.
- Students have access to colored pencils, crayons, or markers to use color to create more detailed drawings.

Logistics:

- On the first day, students work as a whole class to make the transition to the Extend stage of the Labs.
- During the remaining days of the Extend stage, students divide into Lab groups and spend 20 minutes each in two Labs.

In advance:

- Prepare:
  - **Drawing Textures anchor chart** to help students remember the types of texture they can look for in a tool (e.g., smooth, rough, wood-grained, bumpy, etc.). Create just the heading of this chart, as the rest will be co-created with students during Transitioning to the Extend Stage.
  - Create Lab by placing paper, pencils, colored pencils, magnifying glasses, markers, lines cards, and a variety of tools or pictures of tools (to use as models for student drawings).
- Gather a variety of tools (or pictures of tools; see supporting materials).
- Choose several tools or pictures of tools to use for teacher modeling for how to identify and draw texture.

- Consider whether the system previously established for storing student work is working and change as necessary.

Materials

Continued materials:

- ☑ Paper (blank; various types, colors, and sizes; several 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)
- ☑ Lines card (one per pair; see supporting materials)

Additional materials:

- ☑ Magnifying glass (one per student)
- ☑ Tools or pictures of tools (several with various textures; for teacher modeling)
- ☑ Drawing Textures anchor chart (new; co-created with students during Transitioning to the Extend Stage; see Teaching Notes)
- ☑ Colored pencils, crayons, or markers (one set per pair)

Experience

Transitioning to the Extend Stage (Whole Class):

- Gather students whole group and give them specific positive feedback regarding their drawing of tools. (Example: "You have all done wonderful work in identifying and using different kinds of lines in your drawings!")
- Tell students that you are going to introduce them to a new tool that artists keep in their Artist's Toolbelt. This tool will help them draw tools even more beautifully and accurately. This tool is texture.
- Act out putting on an Artist's Toolbelt with students. Say the word *texture*, holding it up in your hand like a treasured object, as students do this with you. Add *texture* into a new pocket of your toolbelt. Invite students to do the same.
- Using a total participation technique, invite responses from the group:
  - ***"What do you know about the word texture?" (Responses will vary, but may include: It's the way something feels.)***
- Guide students to understand that texture describes the surface or outside of an object. It is the way the surface looks or feels.
- Show students a **magnifying glass** and explain that today they will use the magnifying glass to look at the textures of tools and add these texture details to their drawings. (Magnifying glasses are also a great motivation for students.)
- Hold up one **tool** (or a **picture of a tool**) for students to see. Dramatically zoom in on parts of this tool with the magnifying glass. Think-aloud some of the textures you see. (Example: "When I look at this hammer, I see a shiny, smooth end" or "When I look at this hammer, the bottom has wood or 'wood-grain' texture.")
- Add these texture words to the **Drawing Textures anchor chart**. Next to the name of a texture, quickly sketch how students might draw this texture in their own drawings.
- Continue to display a variety of tools (or pictures of tools) to students.

- Consider displaying the tool or picture of a tool with a document camera. Or consider allowing students to pass the pictures to one another. Students should be able to look closely.
- With each tool, invite students to identify different textures. As students share, add names of textures and sketches of how students might draw these textures to the Drawing Textures anchor chart.
- Show students how they can use their additional materials (**colored pencils, crayons**, or **markers**) to help add texture to their drawing.
- Remind them that their drawings do not have to look exactly like the tool. Emphasize that they are trying to capture the lines and the textures of the tool in their drawing. Being an artist is about perseverance: continuing to practice and get better, even when it feels difficult.
- Direct students' attention to the workstations around the room and the materials at each workstation. Point out that they still have access to the materials from the Launch and Practice stages: **paper**, **pencils**, and **tools**. Remind them that the tools are serving as their model for drawing and are not to be played with during this time.
- Encourage students to use the **lines cards** to help them both identify and draw lines.
- If students feel they are finished with one drawing, they may put it away in the designated storage space and begin a new one.
- Invite students to begin working.
- Circulate and support students as they work, identifying textures and including those texture details in their drawings.
- 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.

Extend 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 to recreate a magnificent thing from a picture.

Teaching Notes

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

- Students continue to build objects using everyday materials and classroom tools.

What is new about this stage of this Lab:

- During the Extend stage of the Engineer Lab, students try to create, or recreate, various everyday objects or devices based on a picture. This invites students to push their thinking and skills by asking them to build objects, or components of objects, they may not consider

on their own (e.g., students need to find a way to engineer a hinge if attempting to recreate a picture of a box).

- In the Extend stage, students will work with a Lab partner to design and build an object.
- Students have access to a greater range of materials during the Extend stage. Therefore, it is important to reinforce routines of proper storage and care of Lab materials.

Habits of character:

- Some students may need additional support with perseverance as they struggle with various components of the objects they are building. Inviting students to formulate a plan before they begin or to collaborate with a student partner in problem solving; this will help them persevere through these moments.

Logistics:

- On the first day, the teacher will introduce the task, the materials, and the expectations to help students make the transition to the Extend stage of the Labs.
- During the remaining days of the Extend stage, students divide into Lab groups and spend 20 minutes each in two Labs.

In advance:

- Prepare the Engineer Lab space by placing all materials to design and build their magnificent thing in the Lab space.
- Monitor the various materials students are choosing to use in their work. Some materials may be more popular than others and will need to be replenished.
- Consider:
  - Providing tape dispensers for easier student use.

Materials

Continued materials:

- ☑ Cardboard (various sizes; two or three pieces per student)
- ☑ Paper (blank; various types, colors, and sizes; several 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)

Additional materials:

- ☑ Pictures (variety; to use as models for student projects; see supporting materials)
- ☑ Paper (one piece per pair)
- ☑ Pencils (one per student)
- ☑ Cardboard tubes (make several available; not all students will use for their design)
- ☑ Paper bags (make several available; not all students will use for their design)
- ☑ Small milk cartons (make several available; not all students will use for their design)
- ☑ Craft sticks (five or six per student)
- ☑ Pipe cleaners (five or six per student)
- ☑ Tin cans (make several available; not all students will use for their design)
- ☑ Small cardboard boxes (make several available; not all students will use for their design)

- ☑ Items from the natural world (e.g., nuts, leaves, pinecones, rocks, beans) (make several available; not all students will use for their design)
- ☑ Brads (make several available; not all students will use for their design)
- ☑ Rubber bands (make several available; not all students will use for their design)

Experience

Transitioning to the Extend Stage (Whole Class):

- Explain that the biggest difference between the Practice stage and Extend stage for the Engineer Lab is that students are no longer exploring the materials to create their own designs. Now they are building an object based on a picture provided in the Engineer Lab.
- Tell students that they will work with a partner to attempt to build an object of their choice from a provided set of pictures.
- Invite students to turn and talk with an elbow partner:
  - ***"What might be difficult when re-creating an object based on a picture?" (Responses will vary, but may include: There might be parts of the object they don't know how to make. It might not work exactly like the object in the picture.)***
- Tell students that, to help them solve some of the design and building challenges they will encounter, they will have access to many materials, including those provided in the Launch and Practice stages, as well as new materials.
- Show students all the exciting additional materials they have to use as they work with their partner (in addition to the previously used materials: **cardboard**, **paper**, **tape**, **string**, and **scissors**).
- Tell students that a design process that might help them to be better partners, and one that real engineers use, is to:
  - Talk (share their ideas).
  - Compromise (be flexible).
  - Draw (make a design plan before they begin building).
- Consider modeling this design process with a student volunteer or another teacher. Students will benefit from seeing what these steps look like and sound like.
- Consider also modeling situations in which the design process is not working, so students can offer suggestions on how to solve common collaboration "breakdowns."
- Make clear to students where they are going with this process. Their goal is to design and build an object based on a picture. Be clear that, given the materials available, their object is not going to look or function exactly like the object pictured.
- Circulate and support students as they work in pairs. Reinforce the habit of perseverance as needed.
- 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.
- As students arrive to the whole group, invite them to congratulate or compliment as many of their peers as they can for 15–30 seconds before being seated. Model an example as necessary: "Great job in Labs today!" "Way to go!" "I'm proud of you!"

Extend Stage: In the Explore Lab

Guiding Question

- What's the best tool for the job?

Learning Target

I can choose the best tool to complete a job.

Teaching Notes

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

- Students continue to solve a design challenge using a variety of tools.

What is new about this stage:

- During the Extend stage, students complete a design challenge to transfer a substance between two containers, losing as little of the substance as possible, in the shortest time possible.
- Students have a variety of possible tools at their disposal to complete the design challenge. Their task is to attempt the challenge multiple times with different tools, choose which tool works best for the job, and explain their thinking with reasons.

Logistics:

- On the first day, the teacher will introduce the challenge, the materials, and the expectations to help students make the transition to the Extend stage of the Labs.
- On the second day of the Extend stage, students divide into Lab groups and attempt to move a substance (water, beans, or rice) between two identical containers.
- On the third and fourth days of the Extend stage, students divide into Lab groups and attempt to move a substance (water, beans, or rice) between two unlike containers (e.g., a bowl and a 2-liter bottle).

In advance:

- Based on availability of materials and class management considerations, choose which substance students will move between containers: rice, beans, or water.
- Based on availability of materials and the substance students will be moving, gather the appropriate tools (see materials).

Materials

Continued materials:

☑ N/A

Additional materials:

☑ Large bowls (two to share)

☑ Spoons (various sizes and shapes; two or three)

☑ Funnel (one to share)

- ☑ Measuring cup (one to share)
- ☑ Stopwatch or timer (one to share)
- ☑ 2-liter bottle (or other container with a small mouth, such as a vase; one to share)

If using water:

- ☑ Eye dropper (one to share)
- ☑ Baster (one to share)

If using rice or beans:

- ☑ Tweezers (one to share)

Experience

Transitioning to the Extend Stage (Whole Class):

- Tell students that in the Explore Lab, they will solve a new and exciting design challenge with their Lab groups.
- Their challenge will be to complete a task, using a variety of different tools, and then choose which of the tools was the best for the job.
- Show students the **two bowls** (one half-filled with the teacher's choice of water, beans, or rice and the other empty).
- Tell students that their goal is to transfer (or move) the contents of the first bowl into the second. The challenge is to do this without using their hands, losing as little of the substance as possible during the transfer, and doing it as quickly as they can. Emphasize that they need to try this multiple times using different tools to complete the transfer so they can make a comparison and have reasons to support their answer to the question:
  - "Which tool is best for the job?"
- Show students the various tools they have to complete this challenge. (If they are transferring water: **spoons**, **funnel**, **measuring cup**, **eye dropper**, and **baster**. If they are transferring beans or rice: **spoons**, **funnel**, **measuring cup**, and **tweezers**.)
- Show students the **stopwatch** or **timer**.
- Using a total participation technique, invite responses from the group:
  - ***"Why do you think we have this tool for this challenge?" (to see how quickly we can move the water from one container to the other)***
- If students have not used a stopwatch before, consider modeling how to use this tool and giving students an opportunity to practice.
- Remind students of the importance of showing respect for the materials in this Lab, as many students will be using these materials to help them learn.
- Using a total participation technique, invite responses from the group:
  - ***"What are some ways you can show respect for classroom materials in this Lab?" (handle the tools gently; put them back when I am done using them)***
  - ***"What are some ways you can show respect for one another in this Lab?" (take turns using the different tools)***
  - ***"How will you be sharing during this Lab?" (taking turns as the timer; taking turns using the tools to transfer, etc.)***

- Tell students that they will begin this challenge with their Lab groups the next time they visit the Explore Lab.

Extend Stage (Days 13–14, in Lab groups):

- Remind students of the learning target and expectations for the Explore Lab.
- Remind students that as they complete the design challenge with their Lab group, they should try to transfer the substance multiple times, using different tools, so they can compare and decide which tool is the best for the job.
- Invite students to begin working.
- Circulate and support students as they complete the challenge with their Lab group.
- 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.

Extend Stage (Days 15–18, in Lab groups):

- Remind students of the learning target and expectations for the Explore Lab.
- Give students specific, positive feedback regarding their work in the Explore Lab during the Extend stage so far. (Examples: "You have been doing a wonderful job of taking turns and sharing materials" or "I have noticed you have been careful to clean up any messes when your time in the Explore Lab is over.")
- Tell students that for the remaining days of the Extend stage, they will work on the same challenge; however, it will be a little more difficult.
- Show students the bowl (partially filled with water, beans, or rice) and the 2-liter bottle.
- Using a total participation technique, invite responses from the group:
  - ***"Looking at these two containers, can you predict what your challenge will be?" (to move the substance between these two containers)***
  - ***"How will this be more challenging?" (Since the new container has a much smaller opening, it will be more difficult to transfer it quickly without spilling the substance.)***
- Confirm that this challenge will be more difficult due to the shape of the new container.
- Remind students of the question they are trying to answer by completing this challenge:
  - "What tool is best for the job?"
- Invite students to begin working.
- Circulate and support them as they complete the challenge with their Lab group.
- 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.

Extend 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:

- Students are encouraged to use the Imagine Lab as space to reenact or incorporate characters and ideas they have encountered in the module lesson texts.

Logistics:

- Because students now have access to all Imagine Lab materials, it is important that students set a clear goal for how they want to spend their time in the Imagine Lab.
- On the first day of the Extend stage, students work as a whole class to make the transition to this stage of the Labs.
- During the remaining days of the Extend stage, students divide into Lab groups and spend 20 minutes each in two Labs.

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

Transitioning to the Extend Stage (Whole Class):

- Give students specific, positive feedback for behaviors you have noticed in the Imagine Lab during previous stages. (Example: "I have seen students sharing materials with one another, I have heard very kind and respectful words like 'please' and 'thank you,' and I have noticed students inviting each other to play when someone needs a partner.")

- Reinforce behaviors involving habits of character, especially respect for materials and peers.
- Tell students that the Imagine Lab is a place for them to use their powers of imagination, engaging in fun, creative play with one another.
- Tell them that the Imagine Lab is also a place they can act out or recreate some of their favorite characters or scenes from the books they have been reading in the module lessons.
- Invite students to share some of their favorite characters and parts of stories that you have read together during the module lessons. Using a total participation technique, invite responses from the group:
  - ***"How could we invite some of our favorite characters into the Imagine Lab with us?" (Responses will vary, but may include: using puppets to recreate scenes, using clay to create favorite settings, using dress-up clothes to become characters.)***
- Tell students they will have 20 minutes in the Imagine Lab. Invite them to begin exploring materials and imagining.
- Circulate to support students, 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.
- As Lab groups are ready, transition them back to the whole group area for Reflecting on Learning.