

Grade 1: Module 2: Labs

1 – Launch Stage

Labs: Launch Stage

Days 1–4

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

1. The Launch stage serves four purposes:
 - To introduce and practice the Lab schedule and routines and lay the groundwork for the habits of character that students will practice in each Lab.
 - To orient students to the purpose, guiding questions, and materials of each of the Labs for this module.
 - To establish expectations for each Lab.
 - To build a sense of wonder and excitement around each Lab. Students should be filled with anticipation, questions, and ideas as they continue on to the following, more independent stages of the Labs.

Each Lab launches with a whole group experience and does so on a separate day, so students can experience a full immersion into each Lab.

During their In the Lab time, students break up into smaller Lab groups and go to separate workstations (tables or other workspaces around the classroom).

This structure creates a small collaborative atmosphere in which students will work throughout their Labs experience. It also supports the management of materials (since each workstation has its own materials).

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. In contrast, the learning target(s) become more refined and precise from stage to stage.)



Launch Stage: At-a-Glance

Guiding Question

Create Lab

How can I contribute to an “Our Sky” class picture book?

Explore Lab

How can I explore light and shadow?

Imagine Lab

How can I use Imagine Lab materials and my imagination to bring our sky stories to life?

Research Lab

How can I use research skills to learn and wonder about our sky?

Learning Target(s)

Create Lab

I can blend colors together to create the colors of the sky at different times of day.

Explore Lab

I can explore light and shadow.

Imagine Lab

I can collaborate with others to reenact stories about our sky.

Research Lab

I can learn new information about the sky using my research materials.

I can ask questions about the sky based on my research materials.

Ongoing Assessment

Create Lab

Create Lab Checklist (SL.1.1a, c; SL.1.4; L.1.1b, c, d, f, i, j)

Explore Lab

Explore Lab Checklist (SL.1.1a, c; SL.1.4; L.1.1b, c, d, f, i, j)

Imagine Lab

Imagine Lab Checklist (RL.1.2; RL.1.3; RL.1.9; SL.1.1a, c; SL.1.4; L.1.1b, c, d, f, i, j)

Research Lab

Research Lab Checklist (W.1.8; SL.1.1a, c; SL.1.2; SL.1.4; L.1.1b, c, d, f, i, j; L.1.2a, b; L.1.4a)

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

Launch Stage: Daily Schedule

Lab Component	Time
Storytime	10 minutes
Setting Lab Goals	5 minutes
In the Lab	40 minutes
Reflecting on Learning	5 minutes

Launch Stage: Storytime

Teaching Notes

Purpose:

- The purpose and structure of Storytime is identical across all four stages of the Labs and can include a read-aloud of a text or an oral storytelling experience:
 - To increase the time students encounter complex text through read-alouds.
 - To build students' understanding of the structure of narrative and informational texts through read-aloud and oral storytelling.
 - To connect to the content of the Labs (and module), as well as to the habits of character that students practice during the Labs.
- During the Launch and Practice stages, Storytime should be dedicated to reading, rereading, or retelling narratives about the sky, especially those introduced during the module lessons, but can also include others of the teacher's choice. This supports student work in the Imagine Lab, where they are expected to use materials to collaboratively reenact familiar content-connected stories.
- Students benefit from seeing the text when it is read aloud. Consider displaying the text with a document camera. This is particularly essential if the illustrations are important or beautiful.
- Some students may benefit from time to verbally process a story as it is being read. Consider using discussion protocols such as Turn and Talk to allow them time to verbalize their understanding of stories. Do this judiciously; however, note that Storytime is only 10 minutes.

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 on the following page).
- Create four heterogeneous Lab groups. Seat students in their Lab groups during Storytime and Setting Lab Goals for easier transitions and more focused discussions. Consider keeping the same Lab groups through the Launch, Practice, and Extend stages of Labs for this module.
- 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 Imagine Lab. (Examples: “While I read aloud, think about the ways in which you might use Imagine Lab materials to act out this story” or “While I read aloud, think about this question: Who are the important characters and what are the important events that I would want to include in a reenactment of this story?”)
- Read aloud the text for Storytime slowly, fluently, and without interruption.

Launch Stage: Setting Lab Goals

Teaching Notes

Purpose:

- Setting Lab Goals is a time to activate and reinforce students’ executive functioning skills: 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.
- Consider using visual displays (anchor charts, a Labs schedule, a daily agenda, etc.) to support students in understanding and remembering where they are going that day and what is expected of them once they are there.

In advance:

- Post: Guiding question and learning target(s) for the Lab students will be launching that day (see detailed plans for each Lab below).

Materials

- ☑ Labs notebook (new; one per student and one for teacher modeling)
- ☑ Pencils (one per student)
- ☑ Learning target(s) (one to display for each Lab; see Launch Stage: At-a-Glance for the specific targets for each Lab)

Experience

- Gather students in the whole group meeting area.
- Distribute **Labs notebooks** and **pencils**.
- Invite students to sit in specified places so they will be close to their Lab group.
- Ask students to tuck their materials underneath them or at their sides, so as not to be distracted.
- Briefly introduce the Lab that the class will launch today.

- Ask students to Think-Pair-Share what they already know about that Lab based on their experiences in Module 1. (Examples: “Today we are launching the Engineer Lab. What do you remember about the Engineer Lab?” or “Today we are launching the Imagine Lab. What were your favorite experiences in the Imagine Lab thus far?”)
- Share the **learning target(s)** for the Lab the class is focused on today. Ask students to turn and talk about each of these questions with an elbow partner:
 - “*What do you think you will be doing in today’s Lab?*”
 - “*How can you show respect for materials?*”
 - “*How can you show respect for other students in your group?*”
- 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!
- Explain that, in addition to this, they should set a specific and individual goal that they will work toward in today’s Lab.
- Display a copy of the Labs notebook and open to page 1. Invite students to do the same.
- Focusing on the top of the page, review the possible sentence frames that they might use when setting a goal.
- Dramatically place your finger to your head in a thinking pose and ask students to do the same.
- Tell students you want them to think deeply about what it is they want to accomplish today.
- After sufficient think time, invite students to turn and talk to an elbow partner:
 - “*What is your goal in Labs today?*”
- Once students have verbally processed their goal, ask them to record it in their Labs notebooks so they can reflect on it after the Labs experience.
- Invite students to take out their imaginary bow and arrow and then stand up and take aim at the target.
- Invite students to put on their imaginary lab coats and goggles to show they are ready for learning and fun!

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

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

Launch Stage: Reflecting on Learning **5 MINUTES**

Teaching Notes

Purpose:

- The reflection portion of Labs serves as a bookend to Setting Lab Goals. Students both recall how they spent their time in the Lab and reflect on their experience in the Lab.

- This cycle of goal-setting and reflecting leads to greater intentionality by students as well as a sense of ownership in their learning.
- Students will have varying levels of experience with reflection. For those who may need additional support: Consider using predictable structures of reflection (such as protocols), as well as familiar sentence frames to support English language learners.

In advance:

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

Materials

- ☑ Labs song (one to display)
- ☑ Labs notebook (one for teacher modeling and one per student)

Experience

- Gather students back together 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.
- Ask students to look in their **Labs notebook** and review the goal they set at the beginning of Labs time.
- Ask a reflection question and direct students to the sentence starters at the top of the page, giving them think time before they respond. This promotes more considerate responses and supports English language learners. Examples:

“How did you do in reaching your goal today?” (Responses will vary, but may include: I partly reached my goal, but I need more time.)

“What is something you did really well in the Lab today?” (Responses will vary, but may include: I did really well in working with my Lab group.)

“What is something you struggled with in the Lab today?” (Responses will vary, but may include: I had a hard time with some new and tricky words.)

“How did you get past a difficult obstacle?” (Responses will vary, but may include: I got stuck on a word, so I asked a friend in my Lab group to help me figure it out.)

“What was your favorite part of the Lab today? Why?” (Responses will vary, but may include: I loved dressing up as the characters from our books 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.
- Display a copy of the Labs notebook and open to the appropriate page. Invite students to do the same.
- Invite students to record their reflection in the appropriate space.
- 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.



Launch Stage: In the Create Lab

Guiding Question

- How can I contribute to an “Our Sky” class picture book?

Learning Target

- I can blend colors together to create the colors of the sky at different times of day.

Teaching Notes

Purpose:

- In the Create Lab, the Launch stage serves two purposes:
 - Students closely examine the various colors of the sky, especially as they relate to the changing position of the sun.
 - Students explore how to create the various colors of the sky by mixing watercolor paints.

Habits of character:

- The Create Lab requires perseverance from students in different ways. For some, the process can be frustrating when their artwork does not match the model or does not meet their own expectations. Guide these students toward the understanding that mastery of skills and materials is long-term process and that making multiple attempts is a productive and natural part of the process. Other students will feel “done” with their first attempt. Perseverance will be necessary for these students when provided with descriptive feedback and encouraged to make additional drafts to improve their work.

Logistics:

- During the Launch stage of the Create Lab, the teacher and students work together to examine photographs of the sky at different points of the day. They use these photographs to identify the different colors and discuss how colors change as the sun moves through the sky.
- The teacher models for students how watercolors can be mixed to create new hues and shades in an attempt to match the colors in the photographs.
- Students then explore mixing watercolors to create their own palette of sky colors.

In advance:

- Based on classroom setup and available technology, determine the best way to display photographs of the sky and model mixing watercolor paints so all students can observe the process.
- Prepare four workstations by placing several photographs of the sky, watercolor paper, watercolor paints, and paintbrushes at each workstation (see supporting materials).
- Choose two or three photographs of the sky to use for modeling (see supporting materials).
- Determine the signal (bell, word, silent signal) you will use throughout Labs to let students know when it is time to clean up their station.

Materials

- ☑ Photographs of the sky (two or three for teacher modeling and several at each workstation)
- ☑ Watercolor paints (one set per student)
- ☑ Watercolor paper (blank; one piece for teacher modeling and one per student)
- ☑ Paintbrushes (one for teacher modeling and one per student or a cup of paintbrushes per workstation)
- ☑ Cup of water (one for teacher modeling and one per workstation)

Experience

- Gather students in the whole group meeting area.
- Welcome students to the Create Lab, where they will now be painters!
- Display a **photograph of the sky**.
- Using a total participation technique, invite responses from the group:
 - “What do you notice about this picture?” (It is a picture of the sky. It is a picture of buildings.)*
 - “What time of day do you think it is? Morning? Lunchtime?” (I think it is morning. I think it is day.)*
 - “What makes you think that?” (The sun is down low. The sun is up high. It is getting dark.)*
 - “What colors do you see in the sky?” (orange, yellow, blue, pink, etc.)*
- Repeat this process with a second picture.
- Tell students that the colors in the sky are the most important part of the picture for now.
- Explain that the sky appears to be many different colors, even in a single day or at a single moment. Tell them that one thing that affects the color of the sky is the apparent position of the sun. In the morning, the sky has different colors than at noon or in the evening.
- Tell students that in the Create Lab, they will look closely at pictures of the sky and try to create some of the colors that they see.
- Show students a tray of **watercolor paints**.
- Using a total participation technique, invite responses from the group:
 - “Does this tray of paints have all the colors that we just saw in our photographs?” (It does not.)*
 - “If I wanted to paint a picture of the sky, how could I get the colors that I need?” (Responses will vary, but may include: You need to get more paints. You need to mix the colors together.)*
- Reaffirm for students that, sometimes, the only way to get the color you need is to mix some colors together.
- Tell students that in the Create Lab, they will continue to develop their own “Artist’s Toolbelt” that they began in Module 1.
- Pretend to put on an imaginary toolbelt and invite students to dramatically do the same.
- Tell students that the next tool they are adding to their belt is “blending.” Blending means to mix colors together to make new colors.

- Pretend to hold the idea of “blending” in your hand and add it to your toolbelt. Invite students to do the same.
- Choose a color from one of the photographs, one that is not available in the watercolor paints.
- Using a total participation technique, invite responses from the group:
 - ***“What colors do you think I need to mix together to make this color?” (Responses will vary, based on the color selected.)***
- Using **watercolor paper**, a **paintbrush**, and a **cup of water**, begin to model how to blend multiple colors together to make a new color.
- Tell students that the best way to do this is to continually dip the paintbrush into the water, take a little of the color they need, and then blend directly on the paper. As long as the paint is still wet, it will mix together.
- Involve students in the process of correcting the color by adding and blending.
- Using a total participation technique, invite responses from the group:
 - ***“Does this look like the color in the photograph?” (Responses will vary.)***
 - ***“Do I need to add a new color? More of a color?” (Responses will vary.)***
- Reaffirm for students that blending colors is a process that takes time, patience, and perseverance. It is not something they will get right away, and they may only be able to achieve a color very close to the one they are trying to create.
- Tell students that today their job is to experiment with color blending.
- They should:
 - Look closely at a photograph of the sky (available at their workstation).
 - Decide what colors they think they need to blend to make that color.
 - Work on blending that color until they are satisfied that they have made a close match.
- Repeat the process with another color, either from the same photograph or a different one.
- Tell them that each student should need only one piece of watercolor paper, as they can use various spaces on the paper to blend different colors.
- Assign each Lab group a workstation and invite them to get started.
- Circulate and support students as they work. Encourage them in the process of blending colors, respectfully sharing materials with their Lab group, and showing perseverance when they are having difficulty.
- At the conclusion of In the Lab time, signal students to clean up their Lab space. Cleaning up paints and storing materials may need to be modeled the first time they do this.
- Give Lab groups or individual students specific, positive feedback for responsible and respectful cleanup behaviors. (Example: “I love that I see this Lab group neatly putting away their papers so they can continue working on them later.”)
- As Lab groups are ready, transition them back to the whole group area for Reflecting on Learning.



Launch Stage: In the Explore Lab

Guiding Question

- How can I explore light and shadow?

Learning Target

- I can explore light and shadow.

Teaching Notes

Purpose:

- In the Explore Lab, the Launch stage serves two purposes:
 - Students are introduced to the purpose and materials of the Explore Lab.
 - Students engage in an open exploration of light and shadow with a variety of materials.

Habits of character:

- Because the Explore Lab makes use of a variety of materials, respect will be central to students' success in multiple ways. First, students must learn and exhibit respect for materials as learning tools. Starting with this “open exploration” time works toward this goal, as it gives students time to use the materials more like toys before creating more prescriptive, guided experiences. Additionally, students must learn and exhibit respect for one another by sharing materials and roles equitably.

Logistics:

- Teachers and students begin by examining the various materials that will be available in the Explore Lab and by setting expectations for the respectful care of those materials.
- Teachers set a purpose for the Explore Lab so students have a clear idea of how they should be spending their time.
- Students then work with their Lab groups in an open exploration of light and shadow at multiple workstations around the room.

In advance:

- Prepare workstations by placing flashlights, 3-D blocks, a variety of paper, and a variety of transparent or translucent materials (e.g., plastic wrap, wax paper, and colored plastic) at each.
- Consider:
 - Pre-cutting materials (paper, plastic wrap, wax paper, etc.) into squares large enough to cover the end of a flashlight.
 - Creating supporting partnerships within Lab groups for more efficient sharing of materials, such as flashlights.
 - Inviting students to bring flashlights from home, if necessary.

Materials

- ☑ Flashlights (one for teacher modeling and one per pair)
- ☑ 3-D blocks (various shapes and sizes; two or three for teacher modeling and several per workstation)
- ☑ Paper (blank; various types, colors, and levels of translucence; several pieces per workstation)

Experience

- Welcome students to the Explore Lab!
- Arrange students in a circle or other configuration in which all are able to see.
- Turn off the classroom lights, reminding students to stay in their places and maintain quiet voices.
- Turn on a **flashlight**, bouncing it around the circle, playfully directing it in front of different students, inviting them to try to “catch” the light without leaving their spots.
- Using a total participation technique, invite responses from the group:
 - *“What do you know about this tool I am using?” (It is a flashlight. It makes light. It helps you see in the dark.)*
 - *“What do you know about light?” (It helps you see in the dark. You can use it to make shadows. The sun makes light.)*
- Set up a rectangular **3-D block** in front of you, and holding the flashlight parallel to the ground, create a shadow.
- Using a total participation technique, invite responses from the group:
 - *“What is the light doing now?” (It is making a shadow.)*
 - *“What do you notice about the shadow?” (The shadow is the same shape as the block. The shadow is bigger than the block.)*
- Move the flashlight to a 45-degree angle to the floor.
- Using a total participation technique, invite responses from the group:
 - *“What do you notice?” (Responses will vary, but may include: The shadow changed. The shadow is smaller. The shadow is still a rectangle.)*
- Choose a square of translucent **paper** and show it to students.
- Using a total participation technique, invite responses from the group:
 - *“What do you predict will happen if I cover the end of the flashlight with this paper?” (Responses will vary, but may include: It will block the light. The light will change color. The light will be less.)*
- Use the paper to cover the end of the flashlight and aim it at the block. Ask:
 - *“What happened when I covered the end of the flashlight? Was your prediction correct?” (No, the paper did not block the light. Yes, the light changed color. You cannot see the shadow very well anymore.)*
- Give students specific, positive feedback on all their great thinking and sharing. (Example: “You are doing an amazing job noticing small changes in light and shadow. I love how students are comparing how the light changes the shadow.”)

- Point out that students have these same materials at their workstations.
- Tell students that they will work with a partner from their Lab group. They will share a flashlight with their partner, so it is important that they are being fair, making sure each partner gets a turn to hold and use the flashlight.
- Tell students that today their job is to be explorers of light and shadow. Challenge them to discover all they can and be ready to share something they realized when they return to reflect on learning.
- Direct each Lab group to their workstation for the day.
- Invite students to begin working.
- Circulate and support students as they work, focusing on their sharing and caring for materials.
- As you visit workstations, guide students toward other challenges they might try out with light and shadow (e.g., preparing them for task cards in the Practice stage of the Explore Lab by prompting: “What’s the biggest shadow you can make? What’s the smallest shadow you can make? What’s the darkest shadow you can make? Can you make a shadow that is lighter?”)
- 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: “I notice this Lab group is handling each material carefully as they put it away. This keeps the materials in good shape for the next group that works here.”)
- As Lab groups are ready, transition them back to the whole group area for Reflecting on Learning.



Launch Stage: In the Imagine Lab

Guiding Question

- How can I use Imagine Lab materials and my imagination to bring our sky stories to life?

Learning Target

- I can collaborate with others to reenact stories about our sky.

Teaching Notes

Purpose:

- The Imagine Lab continues to provide students the time, space, and materials to create a world of imaginative play, both independently and in collaboration with their peers. This opportunity is vital to the development of primary learners in multiple ways: negotiating with others in creating a shared set of expectations, fulfilling their own role within that framework, building language in an engaging and authentic way, and expressing their learning through multiple mediums.

- In this module, the Imagine Lab becomes a more guided experience, as students retell familiar stories (from the module lessons) through dramatization and reenactment. This gives students an additional entry point toward mastery of Reading Literature standards being taught in other parts of the day.
- It is important to note that guided play, as it is being done in the Imagine Lab, is most successful, especially in terms of student engagement and language development, when students are given greater ownership of the experience. The teacher is central in establishing the Lab's purpose and expectations and then monitoring student progress, but students should be given autonomy in designing and regulating the actual experience.

Habits of character:

- As students are expected to work together in reenacting stories, collaboration is central to the success of the Imagine Lab. It is important that students are first taught, and then reminded of, specific strategies and rationale for planning and executing a fair, shared experience.

Logistics:

- During the Launch stage of the Imagine Lab, the teacher and students review a familiar story from the module lessons. As a whole group, they discuss ways in which the various Imagine Lab materials might be used to reenact, or retell, that story.
- After establishing the purpose and expectations of the Imagine Lab, students travel with their Lab groups to their workstation to explore the materials and how they might use them to reenact, or retell, the story they just reviewed.

In advance:

- Consider:
 - Forming new Lab groups based on students' progress, strengths, and needs as exhibited in the Module 1 Labs.
- Prepare workstations, each with a different type of imaginative play material that will be housed in the Imagine Lab (other possible materials might include modeling clay or felt or magnet boards):
 - Workstation 1: building blocks (one set of wood or linking blocks)
 - Workstation 2: white board (one large to share or several small) and dry erase markers (one per student)
 - Workstation 3: hand or finger puppets (several to share)
 - Workstation 4: dress-up materials (several to share)

Materials

- Workstation materials (for students to use to create a world of play for themselves and others; see Teaching Notes)

Experience

- Welcome students to the Imagine Lab!
- Invite students to point a finger to their brain, telling them you need them to dig into their memories and think back to the beginning of first grade.

- Using a total participation technique, invite responses from the group:
“Of all the things you have done in the Imagine Lab, what has been your favorite so far?” (Responses will vary, but may include: I loved building with the blocks. I loved dressing up. My favorite is the puppets!)
- Give students specific, positive feedback about the time they have spent in the Imagine Lab already this year. (Example: “It has been wonderful to see how you bring all the beautiful ideas you have in your imagination to life in the Imagine Lab. It is also so wonderful how you collaborate with one another in sharing your ideas and working together to create a world of play.”)
- Tell them that they will be continuing to use all those great Imagine Lab materials, including their imaginations.
- Say: “I think that, because you have been so successful in the Imagine Lab, it is time for a new challenge! Do you agree? I have been loving the books we have been reading about the sky, like *Summer Sun Risin’* and *Why the Sun and the Moon Live in the Sky*. They are such great stories with such beautiful illustrations. Don’t you wish you could go inside those books and meet those characters and see those places?”
- Invite students to turn and talk with an elbow partner:
“If you could go inside either of those books and meet those characters, which one would you choose? Why?” (Responses will vary.)
- Select students to share out.
- Tell students that, although they cannot actually go inside the books, they can do something just as good: They can bring those places, those events, and those characters into their own classroom!
- Share with students that they will be using all the great materials in the Imagine Lab, and their wonderful imaginations, to work with their Lab groups to bring those stories to life, by drawing them, by building the sets, by dressing up, and by acting them out.
- Choose a familiar story that students have read or heard during the module lessons.
- Invite students to turn and talk with an elbow partner:
“What characters are in that book?” (Responses will vary, based on the text selected.)
“What important events or actions happen in the book, in order from the beginning to the end that you would need to include if you acted out this story?” (Responses will vary, based on the text selected.)
- Support students in formulating an accurate list of characters and events of the story. (Students may need additional support to sequence the story or choose the most relevant details. Students will receive direct instruction on retelling stories in the module lessons. This should simply serve as an introductory activity.)
- 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: “I appreciate how this group is working together to clean up their workstation.”)
- As Lab groups are ready, transition them back to the whole group area for Reflecting on Learning.



Launch Stage: In the Research Lab

Guiding Question

- How can I use research skills to learn and wonder about our sky?

Learning Targets

- I can learn new information about the sky using my research materials.
- I can ask questions about the sky based on my research materials.

Teaching Notes

Purpose:

- In the Research Lab, the Launch stage serves two purposes:
 - Students are introduced to the purpose of the Research Lab.
 - Students are given time to explore the various materials they will use in the Research Lab and begin to formulate ideas about their individual research interests and how they might use these materials in the future.

Habits of character:

- The Research Lab requires both responsibility and collaboration on the part of students. Students are expected to remain focused on the research materials, recording facts and questions as they read. They are also encouraged to collaborate with their peers, sharing interesting things they learned, and to support one another in solving tricky words or understanding new, complex ideas.

Logistics:

- During the Launch stage, the teacher and students set a purpose for the Research Lab, namely for students to begin with an open exploration of sky-related texts and materials, and then to choose a more focused area in which they would like to build expertise.
- Students then visit multiple workstations, each with its own sky-related focus, to become acquainted with the research materials available on each topic and begin to formulate their own, individual interest for future research and reading.

In advance:

- Prepare one workstation for each of the sky-related topics by placing a variety of research materials (e.g., books, photographs, videos) at the workstation. This helps all students access new information and answer questions about which they are curious:
 - Workstation 1: The planets
 - Workstation 2: The sun
 - Workstation 3: The moon
 - Workstation 4: The stars
- Consider labeling each workstation with a name or number to assist students in transitioning from one to the next.

Materials

- ☑ Labs notebook (one for teacher modeling and one per student)
- ☑ Book or photograph (one for teacher modeling)
- ☑ Baskets of research materials (one per workstation; see Teaching Notes)

Experience

- Welcome students to the Research Lab!
- Tell students that you have overheard them notice interesting facts about they sky, make connections between different texts they have encountered, and ask many insightful questions they are curious about. They are already doing the important work of being a researcher!
- Remind students that the Research Lab is a space for them to discover new and exciting things about the planets, the sun, the moon, and the stars. It is a place to explore. It is a place to find answers to all of their important questions.
- Invite students to turn and talk to an elbow partner:
 - *“What is something you are wondering about the sky?” (Responses will vary.)*
- Circulate and listen in to student conversations, choosing several examples of questions to share with the whole group. (e.g., How many stars are there? How hot is the sun? Could I travel to another planet?)
- Give students specific, positive feedback about the questions they are asking. (Example: “Wow! These are such great questions, now you have me curious to find out more about the sky around us!”)
- Tell students that today and over the next several days in the Research Lab, they will use a variety of materials (e.g., books, pictures, videos) to learn more about the sky and, just as importantly, to continue to ask questions based on those research materials.
- Point out the physical setup of the classroom space for today’s Lab time. Each workstation has a unique focus: the planets, the sun, the moon, and the stars.
- Tell students that Lab groups will have time at each station to explore the research material. While at each station, students should use their **Labs notebooks** to record interesting information they discover as well as questions they have based on that material.
- Display the Labs notebook and open to the first page of the research section. Invite students to do the same.
- Tell students that each day they visit the Research Lab, they should use a new page of this section in their Lab notebooks. Today they will record on the first page of the research section, next time on the second page, etc.
- Display a **book or photograph**. Tell students that this is an example of a material they may encounter in the Research Lab. Read through the text or give students time to study the photograph.
- Using a total participation technique, invite responses from the group:
 - *“What is something that this research material helps you to learn about the sky?” (Responses will vary, based on the material being studied, but may include: I see that the sun looks like fire. The moon has many “dents” in it.)*

- While still displaying the Labs notebook, model how students could record this in the “I notice ...” section of the page.
- Using a total participation technique, invite responses from the group:
 - ***“What is something that this research material makes you wonder about the sky?”***
(Responses will vary, based on the material being studied, but may include: What is the sun made of? Why does the moon have those “dents” in it?)
- While still displaying the Labs notebook, model how to record this in the “I wonder ...” section of the page.
- Assign each Lab group to one of the workstations and invite them to quickly and quietly move there.
- Tell students that today they will have 9 minutes of exploration time at each workstation. Invite them to begin exploring and researching.
- As students work, circulate and support them, specifically in the area of recording their notices and wonders.
- After 9 minutes, give the cleanup signal. Take a quick survey of each workstation to be sure students have carefully stored all materials and are ready to rotate.
- Remind students which workstation they will visit next. Invite them to rotate.
- Repeat this process until students have visited each of the four workstations.
- 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: “I love to see students kindly reminding each other how to put materials back where they belong.”)
- As Lab groups are ready, transition them back to the whole group area for Reflecting on Learning.