

Kindergarten: Module 2

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 next, more independent stages of the Labs.

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

During their 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 on the following pages 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) becomes more refined and precise from stage to stage.)



Launch Stage: At-a-Glance

Guiding Question

Create Lab

How can I create a scene that shows how weather affects people?

Engineer Lab

How can I design and build a weatherproof shelter?

Imagine Lab

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

Research Lab

What kind of weather is the most powerful?

How can I use photographs to research extreme weather events?

Learning Target(s)

Create Lab

I can create detailed weather landscapes and cityscapes.

Engineer Lab

I can use a variety of materials to build a shelter.

Imagine Lab

I can show respect for Lab materials and my peers.

I can collaborate with my Lab group to imagine exciting weather stories.

Research Lab

I can notice details in photographs of extreme weather events.

Ongoing Assessment

Create Lab

Create Lab Checklist (SL.K.1a, SL.K.4, L.K.1d, L.K.1f)

Engineer Lab

Engineer Lab Checklist (SL.K.1a, SL.K.4, L.K.1d, L.K.1f)

Imagine Lab

Imagine Lab Checklist (SL.K.1a, SL.K.4, L.K.1d, L.K.1f)

Research Lab

Research Lab Checklist (SL.K.1a, SL.K.4, L.K.1d, L.K.1f, W.K.7, W.K.8)

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

This table provides a brief lesson plan for read-alouds during Labs. Storytime remains identical during all four stages of Labs. Refer back to this table across all four stages.

Launch Stage: Storytime**10 MINUTES****Teaching Notes****Purpose:**

- The purpose and structure of Storytime remains 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-alouds 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 Labs.
- 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 students time to verbalize their understanding of stories. But do this judiciously; note that Storytime is only 10 minutes to allow students time to dig in to the Labs themselves.
- During the Launch stage, choose texts that meet the following criteria:
 - Include illustrations of beautiful landscapes or cityscapes in a variety of weather conditions
 - Show characters in a variety of settings reacting to a variety of weather events
 - Show people or animal characters that create shelters to protect them from various elements of weather

In advance:

- Choose a text from your own classroom library or the K–5 Recommended Texts 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.
- Post: Focus question (optional).
- Review the Labs song.

Materials

- Labs song (one to display; see supporting materials)
- 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. (Examples: “While I read this story aloud, think about the ways in which the characters collaborate, or work together” or “While I read this story aloud, think about the question: ‘How is the main character affected by the weather in 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 on the following pages).
- Review the Labs song.

Materials

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

Experience

- Briefly introduce the Lab that the class will launch today.
- Ask students to Think-Pair-Share something they already know about the name of that Lab to help build background knowledge. (Example: “Today, we are launching the Engineer Lab. What do you already know about engineers?” Or, “Today, we are launching the Imagine Lab. What does it mean to imagine?”)
- Tell students they will work in small groups called Lab groups, and for today, all groups will work on the same task. Students should already be seated in their Lab groups so they can begin to remember who they will work and move with during Labs.
- Share the **learning target(s)** for the Lab the class is focused on today. Ask students to Turn and Talk about each of the following 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!

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).

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 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 Lab today?” (Responses will vary, but may include: I helped clean up my workstations.)

“What is something you struggled with in the Lab today?” (Responses will vary, but may include: I could not figure out how to draw sunny weather in the Create Lab.)

“How did you get past a difficult obstacle?” (Responses will vary, but may include: I could not get my sticks to glue together. My friend told me to leave them still for a while. It worked!)

“What is something you want to do better in Lab time tomorrow?” (Responses will vary, but may include: I want to use the dress-up clothes to try out a story idea.)

“What was your favorite part of the Lab today? Why?” (Responses will vary, but may include: My favorite part was looking at photographs with my research partner.)

- 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.).



Launch Stage: In the Create Lab

Guiding Question

- How can I create a scene that shows how weather affects people?

Learning Target

- I can create detailed weather landscapes or cityscapes.

Teaching Notes

Purpose:

- In the Create Lab, the Launch stage serves three purposes:
 - Students build a shared list of different types of weather they can use for their landscapes.
 - Students build a shared list of a variety of settings they can use in their landscapes.
 - Students identify weather-related details they can include in their landscapes.

Habits of character:

- The Create Lab intentionally avoids the use of some traditional drawing supports such as stencils or tracing materials. Instead, students create their own “Artist’s Toolbelt” of skills. This promotes their independence and self-efficacy as artists and as learners.
- The Create Lab builds students’ perseverance as they work through multiple drafts of drawings, incorporate peer feedback, and use a co-created criteria list.

Logistics:

- During the Launch stage of the Create Lab, students work whole group with the teacher to build necessary background knowledge and introduce skills to be successful in their landscape drawings. Students then have approximately 25 minutes to get started on their first landscape.

In advance:

- Print photographs of a variety of landscapes, depicting different types of weather (see supporting materials). Students may choose, or not, to use these photographs in a variety of ways.
 - They may draw the landscape as depicted in the photograph.
 - They may use the photographs as inspiration to draw their own idea.
 - They may use the photographs as a resource to find and draw weather-related details in a landscape.

- Choose several photographs, depicting a variety of landscapes and cityscapes and types of weather, to use as models in the lesson.
- Prepare the Settings and Weather anchor chart with a T-chart titled “Settings and Weather.” Label one side “Settings” and the other side “Weather.” This will be used to co-create an anchor chart of possible settings and possible types of weather students may use in their drawings and paintings.
- Prepare four workstations by placing photographs, pencils, and paper at each workstation for students to draw landscapes (see materials list).
- Consider labeling each workstation with a name or number to assist students in transitioning from one to the next.
- 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 landscapes and cityscapes (three for teaching modeling; several per workstation)
- Settings and Weather anchor chart (new; co-created with students; see supporting materials)
- Paper (blank; one piece for teacher modeling; two pieces per student; if available, watercolor paper)
- Pencils (one per student or a cup of pencils per workstation)

Experience

- Tell students that in the Create Lab, they are going to use all they know about weather and some new skills in their Artist’s Toolbelt to create beautiful paintings.
- Direct students’ attention to the learning target and read it aloud:

“I can create detailed weather landscapes or cityscapes.”
- Using a total participation technique, invite responses from the group:

“What word do you see inside the word landscape?” (land)

“What word do you see inside the word cityscape?” (city)
- Define the word *scape*. (view)
- Using a total participation technique, invite responses from the group:

“Based on what we know about these word parts, what do you think you will be drawing and painting?” (drawings or paintings of land or cities)
- Affirm, or guide students to understand, that they will be drawing and painting pictures of land or cities.
- Direct students’ attention back to the learning target and ask:

“What else are we going to be showing in our landscape or cityscape drawings?” (weather, details)
- Affirm, or guide students to understand, that their pictures are not just going to show different kinds of land or cities. They are also going to show the weather. Specifically, their pictures will include details that help the viewer understand what kind of weather they are seeing.

- Using a document camera, display a photograph of a landscape or cityscape.
- Using a total participation technique, invite responses from the group:

“What is the setting, or place that is shown in this picture?” (Responses will vary, depending on the photograph, but may include: It is a city block. It is a beach. It is a farm.)
- Direct students’ attention to the **Settings and Weather anchor chart**. Add the setting (city, farm, etc.) to the Settings column of the anchor chart.
- Invite students to turn and talk to an elbow partner:

“What is the weather that is shown in this picture?” (Responses will vary, depending on the photograph, but may include: It is rainy. It is hot. It is snowy.)
- Add the appropriate weather word to the Weather column of the Settings and Weather anchor chart.
- Invite students to turn and talk to an elbow partner:

“What details, or clues, in this drawing helped you to know the weather?” (Responses will vary, depending on the photograph, but may include: I see puddles on the ground. I see a big sun in the sky. I see snow falling. I see the trees leaning in the wind.)
- Tell students that to understand the weather in a still photograph or painting, there must be weather-related details that help the viewer. These are like clues that the artist leaves in the picture. They should identify these types of details in the photographs so they can later include them in their own drawings and paintings.
- Repeat this process with two more pictures, adding on to the Setting and Weather anchor chart with each photograph. Be sure to discuss the details in each, so students begin to understand the types of detail they may add to their own pictures.
- Tell students that before they go and get started, they will add a new tool to their Artist’s Toolbelt that is going to help them draw landscapes and cityscapes.
- Invite students to dramatically put on their Artist’s Toolbelt (from Module 1).
- Tell students that artists begin a landscape or cityscape by drawing a *horizon line*. Pretend to hold the phrase “horizon line” in your hand and add it to your toolbelt. Ask students to do the same.
- Display a blank sheet of **paper**.
- Tell students that a horizon line is the place where the sky meets the land. In some places, the horizon line is a straight line. In other places, it might be hilly or mountainous. Whatever kind of horizon is being used, it is the first line drawn on a landscape or cityscape.
- Model drawing a horizon line on the paper.
- Tell students that any details below the horizon line are part of the ground. Anything above the horizon line has the sky in the background.
- Model adding different details (a tree, the sun, a cloud, a building) to help students understand the placement of details on the picture.
- Invite students to close their eyes and point a finger to their head, showing they are thinking deeply.
- Ask students to imagine the landscape or cityscape they want to create in the Create Lab today. Ask students to give a silent signal when they have their landscape or cityscape in their mind.

- Ask students to now imagine the weather of their landscape or cityscape: Is it rainy? Is it sunny? Is it cold? Is it windy?
- Again, ask students to give a silent signal when they have decided the weather of their landscape or cityscape.
- Invite students to turn and talk to an elbow partner:
 - “*What landscape or cityscape are you going to draw today? What details are you going to include as clues so the viewer understands the weather?*” (Responses will vary, but may include: *I am going to draw a farm, and there is going to be snow on the ground. I am going to draw a beach, and the trees are going to be bent by the wind.*)
- As students are ready, transition them to one of the workstations to get started on their first landscape or cityscape.
- Direct students’ attention to the materials at each workstation: photographs of landscapes and cityscapes, paper, and **pencils**.
- Circulate and support students as they work, identifying shapes and including those shapes in their drawings.
- After 18 minutes, signal for cleanup.
- Give Lab groups or individual students specific positive feedback of 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 Engineer Lab

Guiding Question

- How can I design and build a weatherproof shelter?

Learning Target

- I can use a variety of materials to build a shelter.

Teaching Notes

Purpose:

- In the Engineer Lab, the Launch stage serves two purposes:
 - It helps students build background knowledge about the idea of weatherproof shelters.
 - It allows students to explore materials they will use to build their own model weatherproof shelter.

Habits of character:

- The Engineer Lab helps students build their skills of goal-setting and reflection. The Engineer Lab has a clear shared goal by the time students reach the Choice and Challenge stage: to create a model shelter resistant to both “wind” and water. This clearly defined end goal will help students reflect on their own progress and set benchmark goals for their work along the way.

Logistics:

- During the Launch stage of the Engineer Lab, students spend the first 15 minutes of In the Lab building background knowledge about weatherproof shelters.
- Students then have approximately 25 minutes of work in their Lab group at one workstation trying out the materials.

In advance:

- For the Poster Session, hang photographs of various weather-related shelters around the classroom (see supporting materials). Consider hanging the guiding questions next to each photograph (e.g., “For what kind of weather is this shelter built?” and “How does it protect people or animals from weather?”).
- Choose a signal (bell, clap, etc.) that will tell students when it is time to rotate to the next photograph.
- Prepare workstations by placing cardboard, toothpicks, craft sticks, modeling clay, glue, and tape at each one for students to design and build a shelter (see materials list).
- Consider:
 - Pre-cutting cardboard that may be too thick for student-friendly scissors in a variety of sizes or shapes.
 - Providing tape dispensers for easier student use.
 - How to store students’ projects, since some may continue to work on the same shelter for several days or weeks.

Materials

- ☑ Photographs of various weather-related shelters (five or six to display)
- ☑ Cardboard (various sizes; two or three pieces per student)
- ☑ Toothpicks (several per student; in a container to share)
- ☑ Craft sticks (several per student; in a container to share)
- ☑ Modeling clay (one package to share)
- ☑ Liquid glue (one container per student)
- ☑ Tape (one roll per workstation or pre-cut 6-inch strips)

Experience

- Tell students that their goal in the Engineer Lab will be the same for the next several weeks: to answer the question, “How can I design and build a weatherproof shelter?”
- Tell students they will be engineers, going through the design process (drawing their ideas, building their ideas, and testing their creations) to try to create a shelter that is completely weatherproof.

- Using a total participation technique, invite responses from the group:
 - “*What does it mean for something to be waterproof?*” (It means water cannot get in.)
 - “*What are some examples of things that are waterproof?*” (rain jacket, houses, our bodies)
 - “*If waterproof means something is protected from water, what does weatherproof mean?*” (It is protected from weather.)
- Tell students that people, and animals, create many shelters that help to protect them from the weather.
- Show students the **photographs of various weather-related shelters** hanging around the room. Tell students they are going to participate in a Poster Session to travel around the room in a small group to look at these photographs and discuss them.
- Tell students that when they arrive at each photograph, their job is talk about two questions:
 - “*For what kind of weather is this shelter built?*”
 - “*How does it protect people or animals from weather?*”
- Remind students of the importance of walking slowly and safely and staying with their group.
- Transition small groups of students to separate photographs around the room.
- Tell them you will give them a signal for when it is time to rotate to the next photograph. Model the signal.
- As students arrive at a new photograph, remind them of the questions they are supposed to be considering.
- Give students about 2 minutes of talk time at each photograph.
- Once students have viewed and discussed several photographs, gather them whole group.
- Using a total participation technique, invite responses from the group:
 - “*What kind of weather did people and animals need protection from?*” (rain, wind, cold)
 - “*How did these shelters protect people or animals from weather?*” (They were underground. They were up high. They were built of strong materials.)
- Tell students that during the Launch and Practice stages, their job is to get to know the materials. They can try to build shelters a couple of different ways using a variety of materials.
- Consider telling students that the only limitation for their shelter is that it must be able to fit on their desktop (or within the constraints of their storage area).
- Direct students’ attention to the materials at each workstation: **cardboard, toothpicks, craft sticks, modeling clay, liquid glue, and tape.**
- Direct each Lab group to their workstation for the day.
- Invite students to begin working, reminding them that their goal for the next few days is just to explore the materials and attempt to build any type of shelter they can.
- As they work, remind students that they do not need to finish their shelter today. They will return to the Engineer Lab many times over the next days and weeks.
- Circulate and support students as they work, focusing on their sharing and caring for materials.
- At the conclusion of In the Lab time, signal students to clean up their Lab space.

- Give Lab groups or individual students specific positive feedback of 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 my imagination to create a world of play for myself and others?

Learning Targets

- I can show respect for Lab materials and my peers.
- I can collaborate with my Lab group to imagine exciting weather stories.

Teaching Notes

Purpose:

- In the Imagine Lab, the Launch stage serves two purposes:
 - Students are introduced to new module-specific materials for the Imagine Lab.
 - Students are introduced to new module-specific tasks for the Imagine Lab.

Habits of character:

- In this module, the Imagine Lab invites students to collaborate with one another in the creation and playacting of weather-related stories. Students will need to learn and practice compromising when working in a group to create a shared product.
- 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:

- During the Launch stage of the Imagine Lab, students work in their Lab groups and rotate among four workstations, spending 8 minutes at each one. While at each station, the teacher uses a new Imagine Lab material (story dice) to dictate two story elements: setting and a weather event. Students explore how they might use their Imagine Lab materials to create a story based on those story elements.

In advance:

- 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, common kitchen materials and safe cooking utensils, and 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)
- Consider labeling each workstation with a name or number to assist students in transitioning from one to the next.
- Create story dice (one pair to share).

Materials

- Story dice (see supporting materials)
- Workstation materials (various; used by students to create a world of play for themselves and others; see Teaching Notes)

Experience

- Consider walking students as a whole group to each workstation. Remind them that each Lab group visits all four workstations.
- While at each workstation:
 - Review the proper use and care of materials as well as the way materials should be stored when students are finished.
 - Invite students to share their favorite ideas from Module 1: “What was your favorite thing to do with the blocks? How did you use dress-up material?”
- Gather students whole group.
- Tell students that the materials in the Imagine Lab are going to remain the same, but there will be one new, exciting addition.
- Dramatically reveal the **story dice**.
- Tell students that these dice are so exciting because they are like a special key. Thousands of different stories live inside of each student’s imagination, and these dice help to unlock them and set them free!
- Tell students that one die has multiple settings, or places, that a wonderful new story might take place.
- Review each side of the setting die with students, connecting the picture to the word.
- Tell students that the other die has multiple weather events, each of which can help shape what happens in the story.
- Review each side of the weather die with students, connecting the picture to the word.
- Model for students proper rolling of the dice (gently, low to the ground or table).
- Show students the combination that was rolled. (e.g., school and snow)
- Tell students that if they rolled this dice, their job would be to come up with a story about a character or characters who were at school when a huge snowstorm came along! What would happen next?
- Invite students to turn and talk to an elbow partner:

“Imagine your character or characters were at school, and a huge snowstorm came along. What would your characters do?”

- Listen in to conversations, coaching students in creating a story when necessary and selecting a pair of students to share their idea for a story about a snowstorm at school.
- Invite a pair, or multiple pairs, of students to share their story idea. (Examples: The students have a snowman-building competition. The students have a school sleepover because they are stuck. The students and teachers go sledding on the playground.)
- Consider modeling how to use some of the materials in the Imagine Lab to act out stories: using blocks to build their school or using the white board to draw teachers and students sledding.
- Give students specific positive feedback on their creative story ideas. (Example: “It is wonderful how you created a story involving multiple characters and a problem!”)
- Tell students that the Imagine Lab materials can help them to tell stories in lots of ways: They can build settings with blocks and tell their stories, they can draw pictures on white boards to go along with their stories, or they can dress up as their characters to act out their stories.
- Tell students they will now visit two of the Imagine Lab workstations. When they arrive, you will roll the dice and give them a setting (a place) and a weather event. They can use these two story elements to work with their Lab group to come up with a story idea and think about how they would use the Imagine Lab materials to act that story out.
- Assign each Lab group to one of the workstations.
- Roll the dice and invite students to get started on coming up with story ideas and thinking about how they might use the materials to interact with their story.
- Tell students that today they will have 10 minutes of exploration time at two workstations. Invite students to begin storytelling and imagining.
- As students work, circulate and support them, specifically in the area of working together to come up with story ideas and using the materials to act them out.
- 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 students to rotate.
- 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. (Examples: “It’s wonderful to see this group storing materials neatly where they found them” or “It is great to see students collaborating on story ideas.”)
- 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

- What kind of weather is the most powerful?
- How can I use photographs to research extreme weather events?

Learning Target

- I can notice details in photographs of extreme weather events.

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 freely explore and discuss the various photographs and pictures they will use in the Research Lab.

Habits of character:

- The Research Lab invites students to study a series of photographs with a partner. Discussion and sharing of materials requires collaboration on the part of the students. Consider discussing this important habit of character with students throughout this Lab experience.

Logistics:

- During the Launch stage of the Research Lab, students work in their Lab groups and rotate among four workstations, spending 8 minutes at each one.

In advance:

- Prepare workstations, each with a different type of research material that will be housed in the Research Lab:
 - Workstation 1: Winter weather photographs (e.g., blizzard)
 - Workstation 2: Water weather photographs (e.g., flooding)
 - Workstation 3: Wind weather photographs (e.g., tornadoes)
 - Workstation 4: Sun photographs (e.g., drought)
- Consider labeling each workstation with a name or number to assist students in transitioning from one to the next.
- Create supportive partnerships within Lab groups. Have students seated next to their research partner at the launch of the Research Lab.
- Consider students' individual experiences with extreme weather. Photographs have been chosen with primary learners in mind; however, some students may have experiences making them more sensitive to these images. If this is the case, consider removing these types of images from the Research Lab.
- Primary learners have a natural curiosity about weather events, especially those of an extreme nature. However, the abstract idea of an extreme weather event can easily become a concrete fear. This Lab should be a safe space for exploration and discovery. Before studying these materials, consider discussing with students their experiences with weather events as well as all the ways in which they are protected from them in their homes, schools, and local communities.

Materials

- ☑ Photographs of extreme weather events (one for teacher modeling; several at workstations; see Teaching Notes)

- ☑ Sticky notes (one package for teacher modeling)
- ☑ Magnifying glasses (one per student)

Experience

- Welcome students to the Research Lab!
- This is a new Lab for students, and therefore it is important they enter it with a sense of purpose and understanding.
- Tell students that researchers have a very important job: to answer new and difficult questions.
- Define research. (the serious study and collecting of information about something)
- Tell students that researchers often work in teams or partnerships, and they are going to do the same. Tell them that they are already seated next to their research partner.
- Invite students to turn, high-five, and give their partner a “Howdy, partner!”
- Tell students they will be using the Research Lab and working with their partner to try to answer the question, “What kind of weather is the most powerful?”
- Using a total participation technique, invite responses from the group:
 - “What are some different kinds of weather?” (rainy, stormy, windy, hot, snowy)
 - “What does the word powerful mean? Do you see any words inside the word powerful that could help you figure out its meaning?” (I see the word power. Power is like strength. I see the ending -ful. That means “full of.” So powerful means “full of strength.”)
- Tell students that although they may already have an opinion about which kind of weather is most powerful, their job as researchers is to keep an open mind and look for evidence, or proof, in their research materials.
- Display a **photograph of an extreme weather event**.
- Tell students that their research material will be photographs. Students will look closely at photographs so they can:
 - Name details that they see
 - Ask questions about weather
- Using a total participation technique, invite responses from the group:
 - “What kind of weather are we looking at in this photograph?” (Responses will vary, depending on the photograph chosen.)
 - “What do you notice in this picture?” (Responses will vary, depending on the photograph chosen.)
- As students share what they notice, jot down notes (single words, phrases, or pictures) on sticky notes and post them somewhere visible to students.
- Share with students that researchers write down what they learn so they do not forget.
- Display a **magnifying glass** and tell students that researchers do not just look at the whole picture. They zoom in and try to notice small details throughout the picture.
- Dramatically use the magnifying glass to look at the picture. Act shocked to discover new details within the photograph. Say: “Wow! I did not see that before! Do you see this?”
- Model finding several new details in the photograph and jotting down the noticings on sticky notes.

- Tell students that there are several workstations around the room. Each workstation has photographs about a different type of weather.
- At each workstation, students should work with their research partner to name what kind of weather they are looking at, and then use their magnifying glasses to find weather details within the photographs.
- Tell students that today, they are just talking with their partner. Beginning in the Practice stage, they will jot down their notes.
- Assign each Lab group to one of the workstations.
- Tell students that today they will have 9 minutes of exploration time at each workstation. Invite them to begin exploring and imagining.
- As students work, circulate and support them, specifically in the areas of noticing details and working collaboratively with their research partner.
- 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: “It’s wonderful to see research partners talking to each other, staying on task, and storing materials neatly where they found them.”)
- As Lab groups are ready, transition them back to the whole group area for Reflecting on Learning.