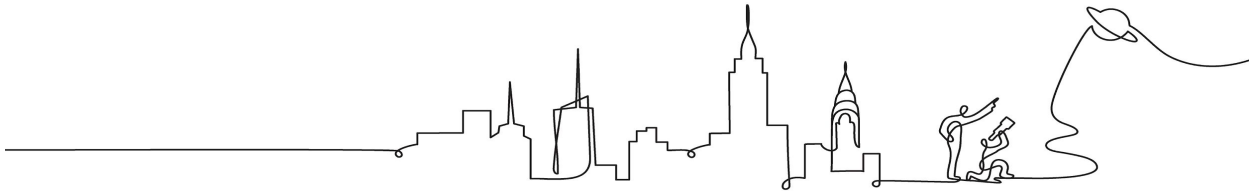
Welcome to Amplify Science!

Follow the directions below as we wait to begin.

1. Please log in to your Amplify Account.

2. Sign in using link dropped in chat.

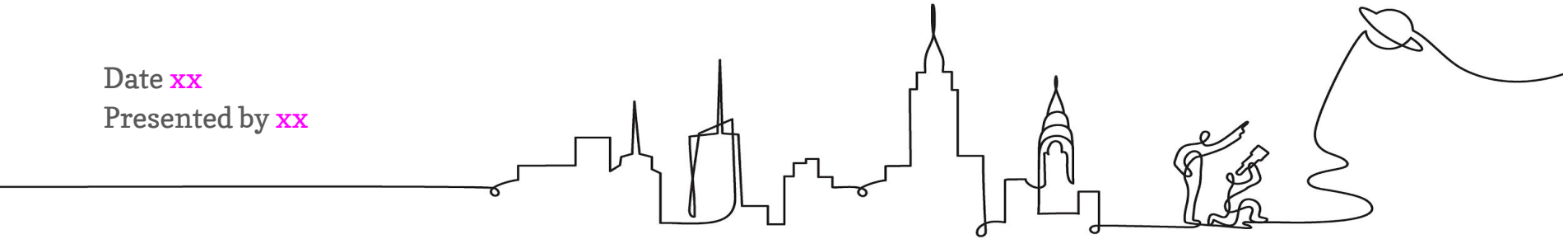
3. In the chat, share your name, grade level, and school you teach in.



Amplify Science
New York City

Supporting ELL's in the Amplify Science Classroom
Grade 1

Date xx
Presented by xx



Remote Professional Learning Norms

Take some time to orient yourself to the platform

- *"Where's the chat box? What are these squares at the top of my screen?, where's the mute button?"*

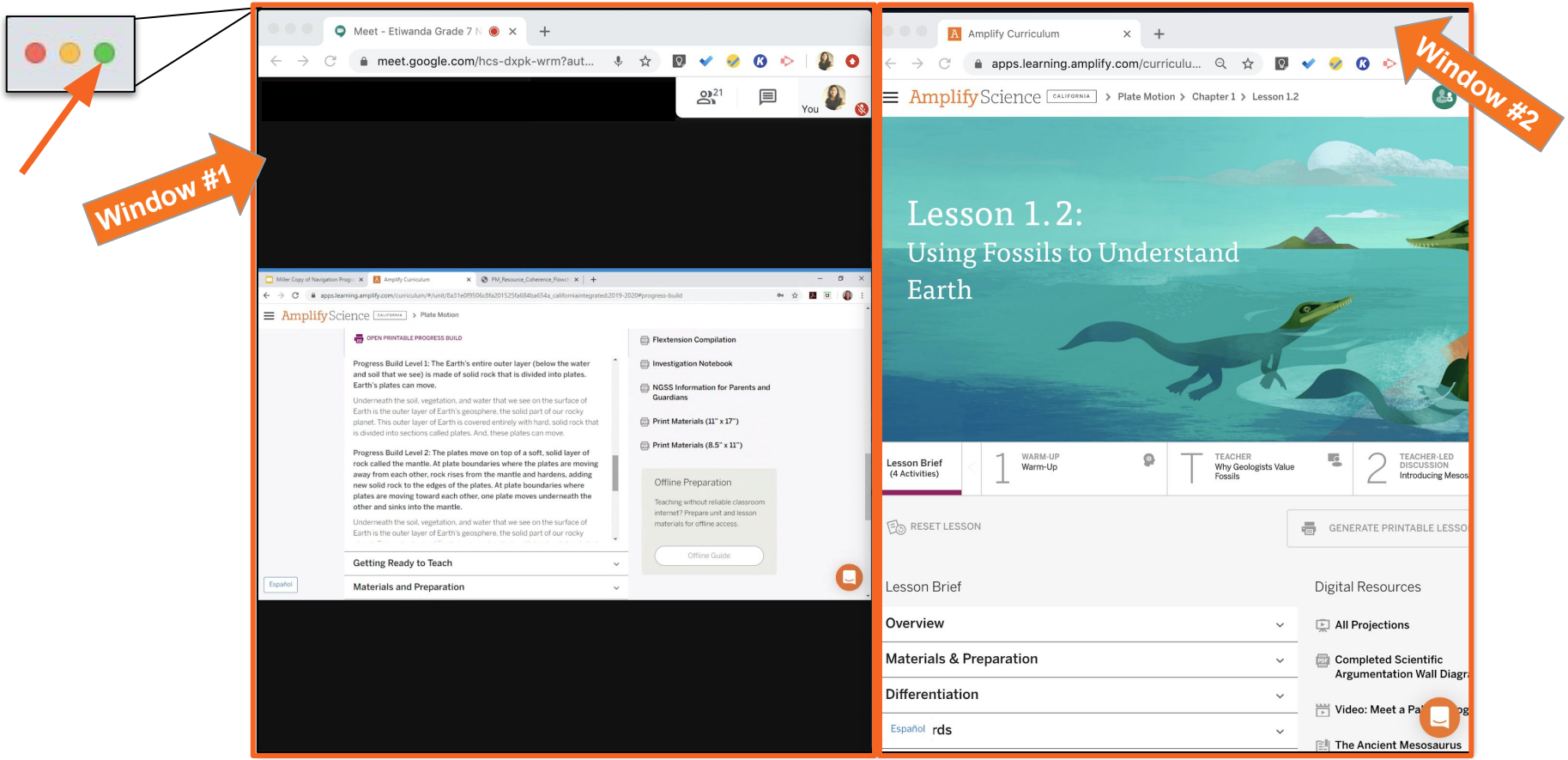
Mute your microphone to reduce background noise unless sharing with the group

The chat box is available for posting questions or responses to during the training

Make sure you have a note-catcher present

Engage at your comfort level - chat, ask questions, discuss, share!

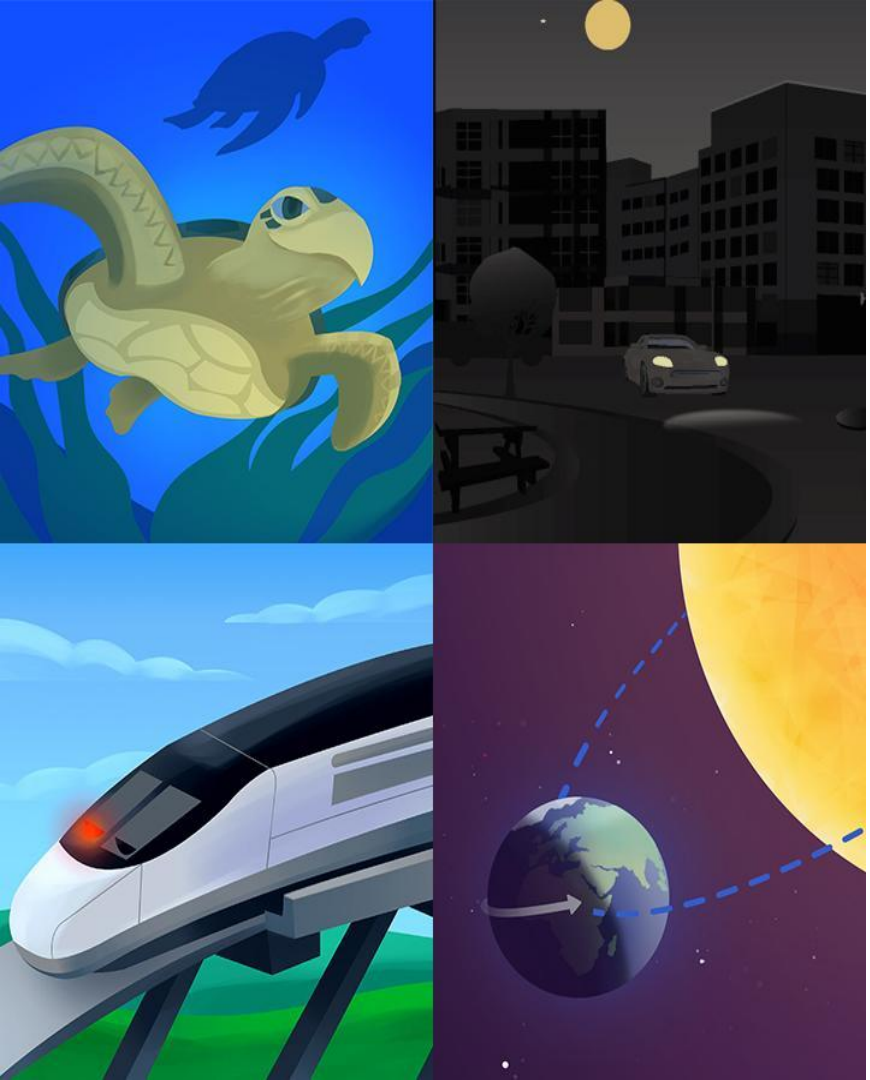
Use two windows for today's webinar



Objectives

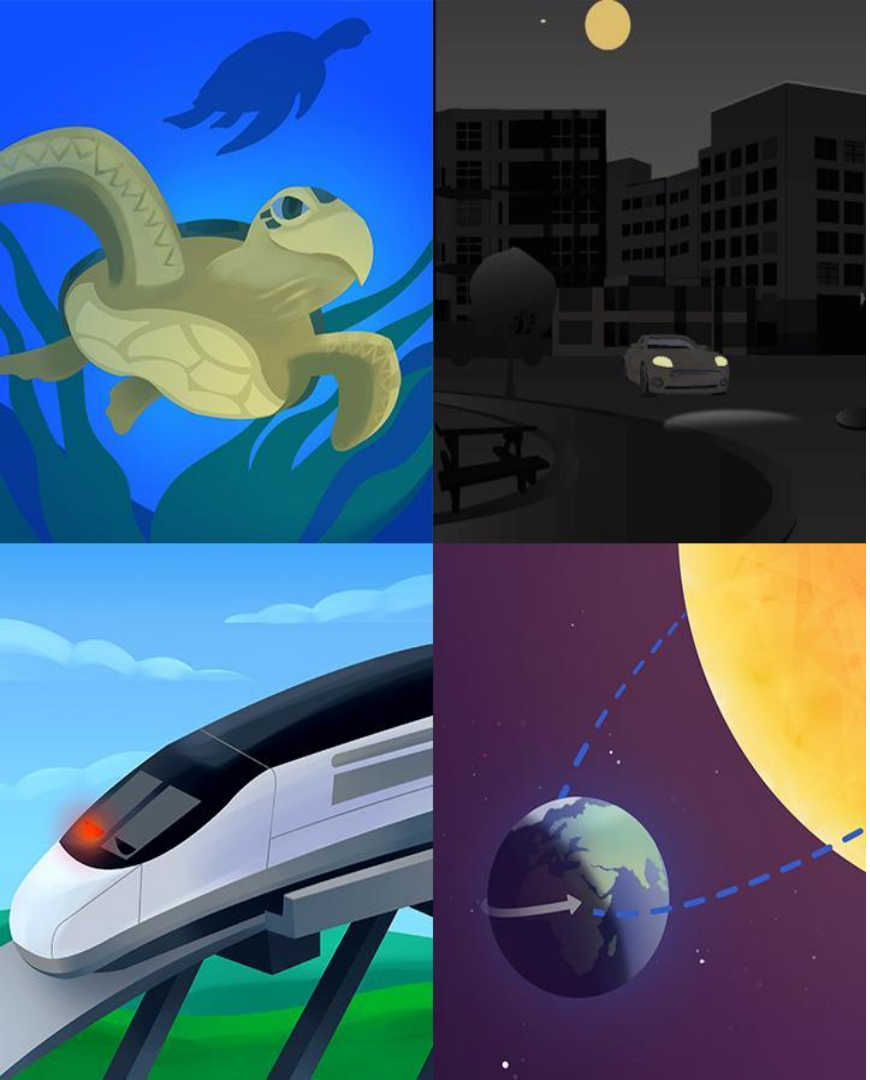
By the end of this 1-hour workshop, you will be able to…

- Explore strategies to support English learners ability to Do, Talk, Read, Write, Visualize, and argue like scientists.
- Analyze an instructional sequence through the lens of an English learner to deepen your knowledge of the critical role of language and literacy in developing scientific understanding.
- Become familiar with the research based principles which guide the creation of the supports and strategies in Amplify science that aid students development of disciplinary literacy in science.



Plan for the day

- **Framing the day**
  - Welcome and introductions
- **Amplify Science Approach**
  - Multimodal Instruction
  - Exploring strategies Do, Talk, Read, Write, and Visualize
- **Amplify Science Embedded Supports**
  - The role of language and literacy
  - Differentiation
  - Lesson instructional sequence
- **Amplify Science Discourse Routines**
  - Research based principles for creating supports
  - Strategies that supporting language & literacy development in science
- **Closing**
  - Reflection/Survey



Plan for the day

- **Framing the day**
  - Welcome and introductions
  - The role of language and literacy
- **Amplify Science discourse routines**
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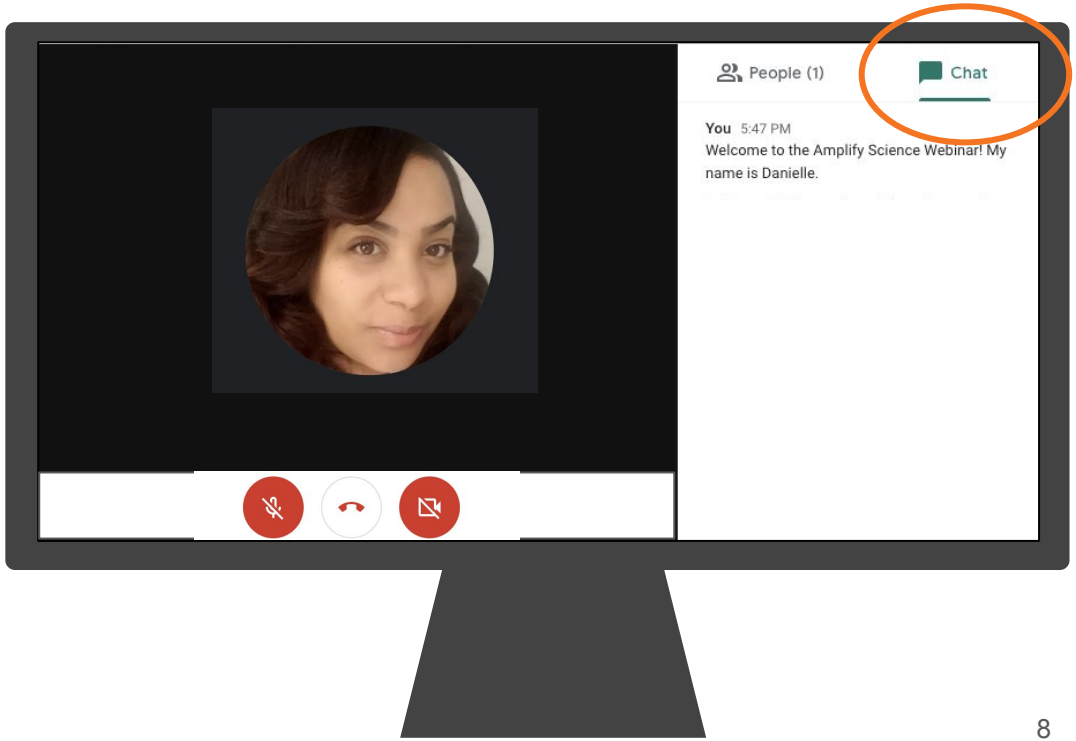
  - Strategies that support language development in science
- **Amplify Science Embedded Support**
  - Differentiation
  - Analyzing embedded supports for diverse learners
- **Closing**
  - Reflection/Survey

Introductions!

Who do we have in the room today?

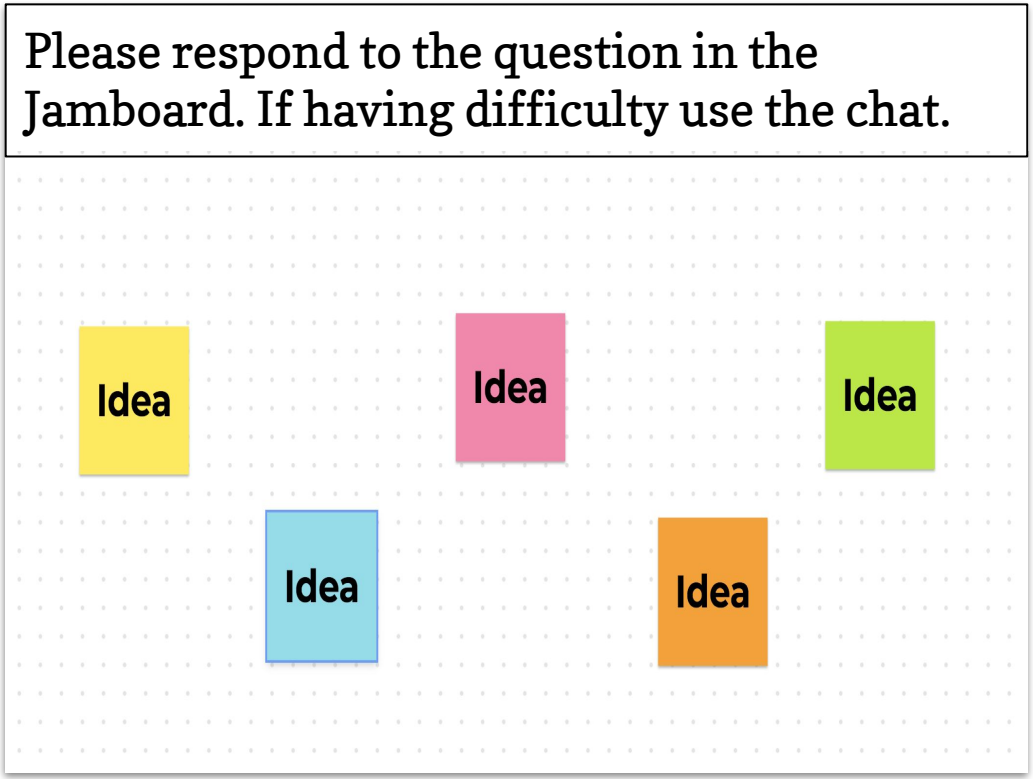
- **Introduce yourself (Name, School, Role)**
- **In the chat, share one word or phrase thats describes how you teaching Amplify.**

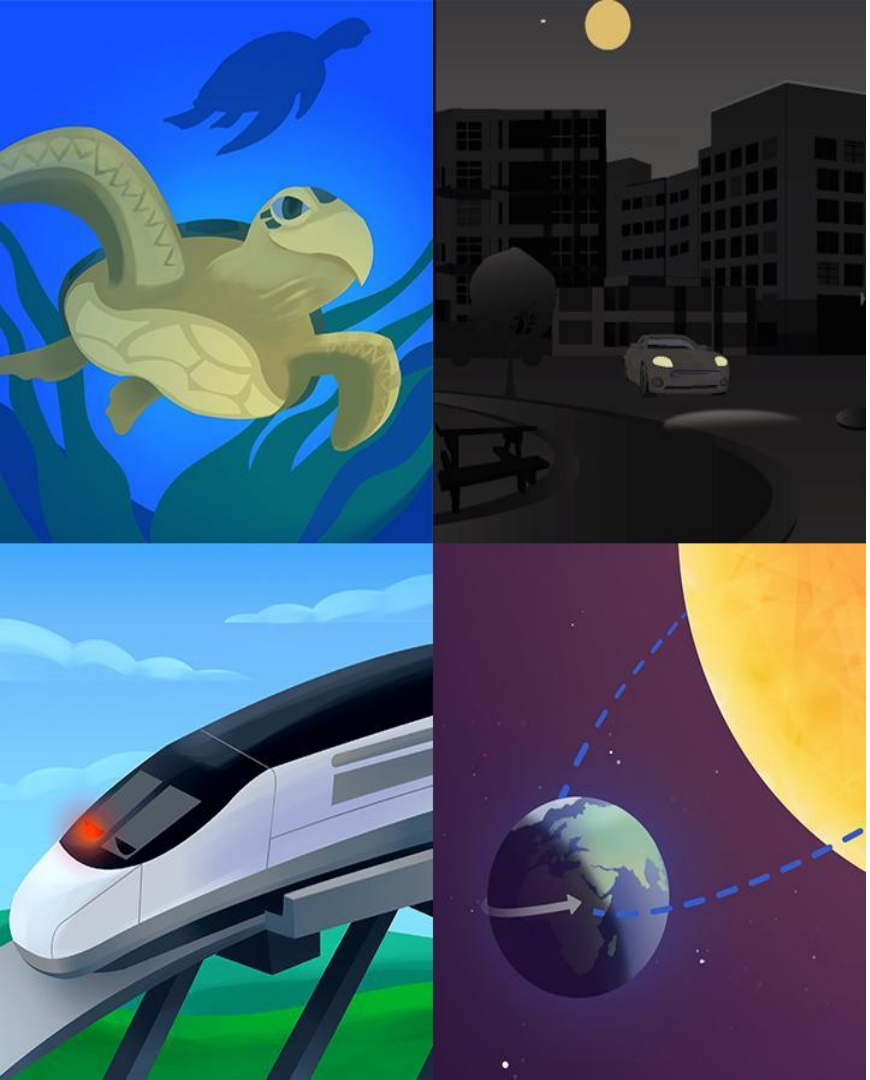


Anticipatory activity

On the Jamboard "post"….

- What strategies are you currently using to engage and support ELL learners in your classroom?





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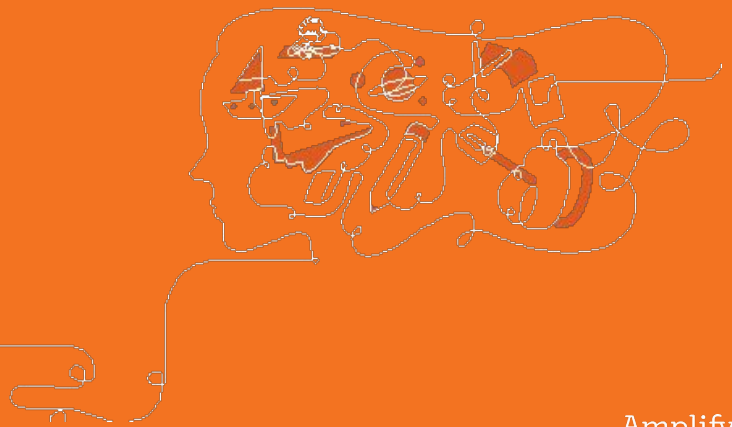
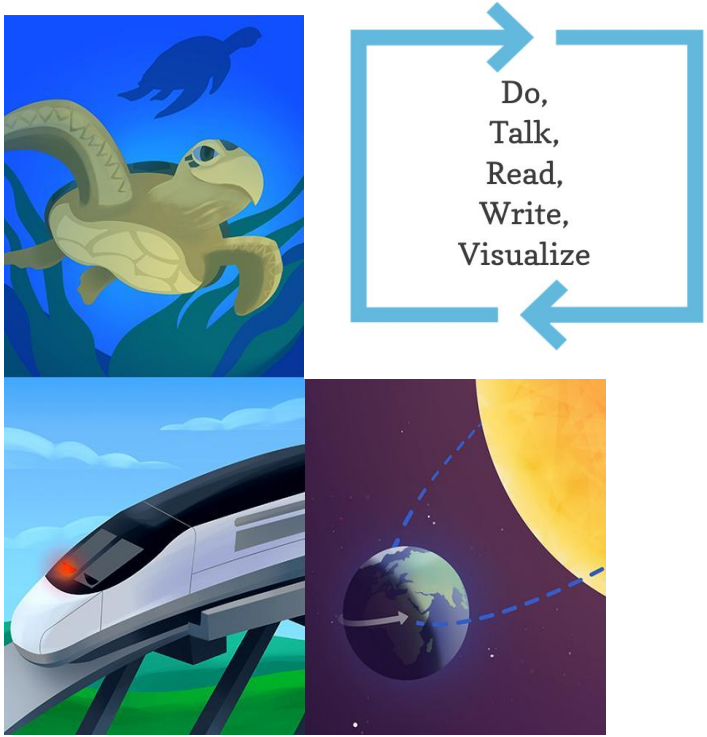
Multimodal Instruction & 3D Learning



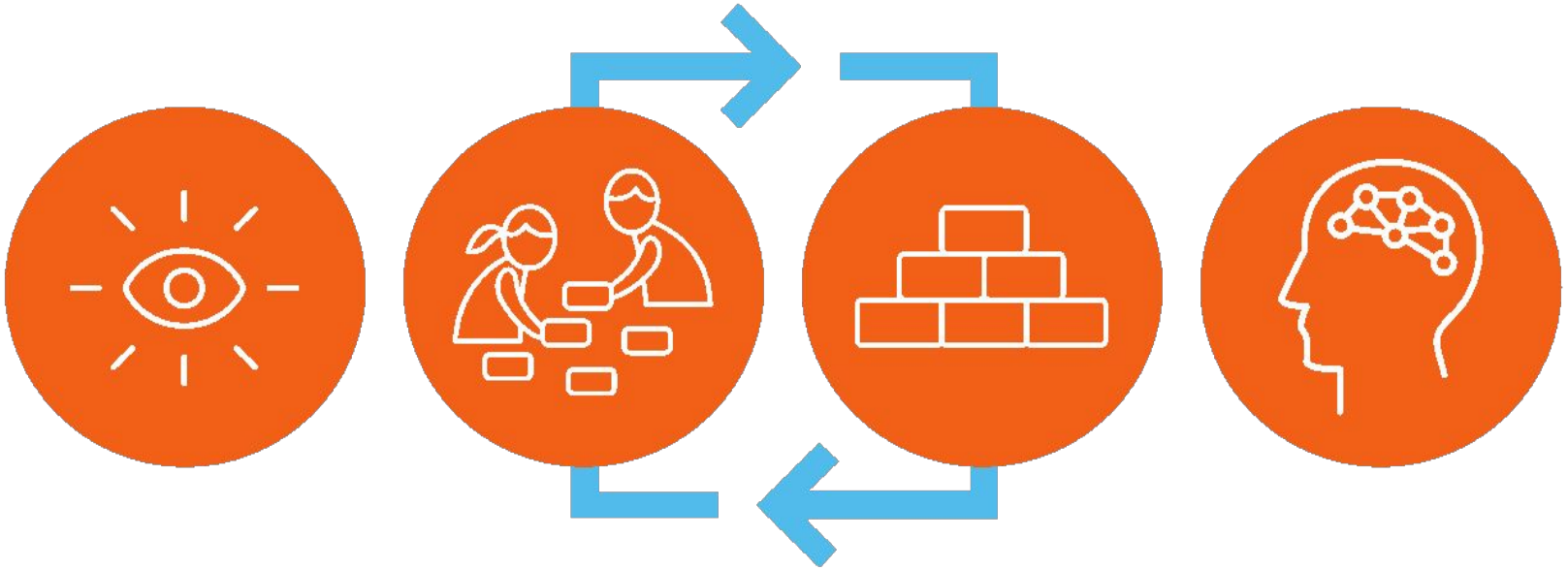
Multimodal, phenomenon-based learning

In each Amplify Science unit, students embody the role of a scientist or engineer to **figure out** phenomena.

Through problem based deep dives, they gather evidence from multiple sources, using multiple modalities.



Amplify Science approach



Introduce a phenomenon and a related problem

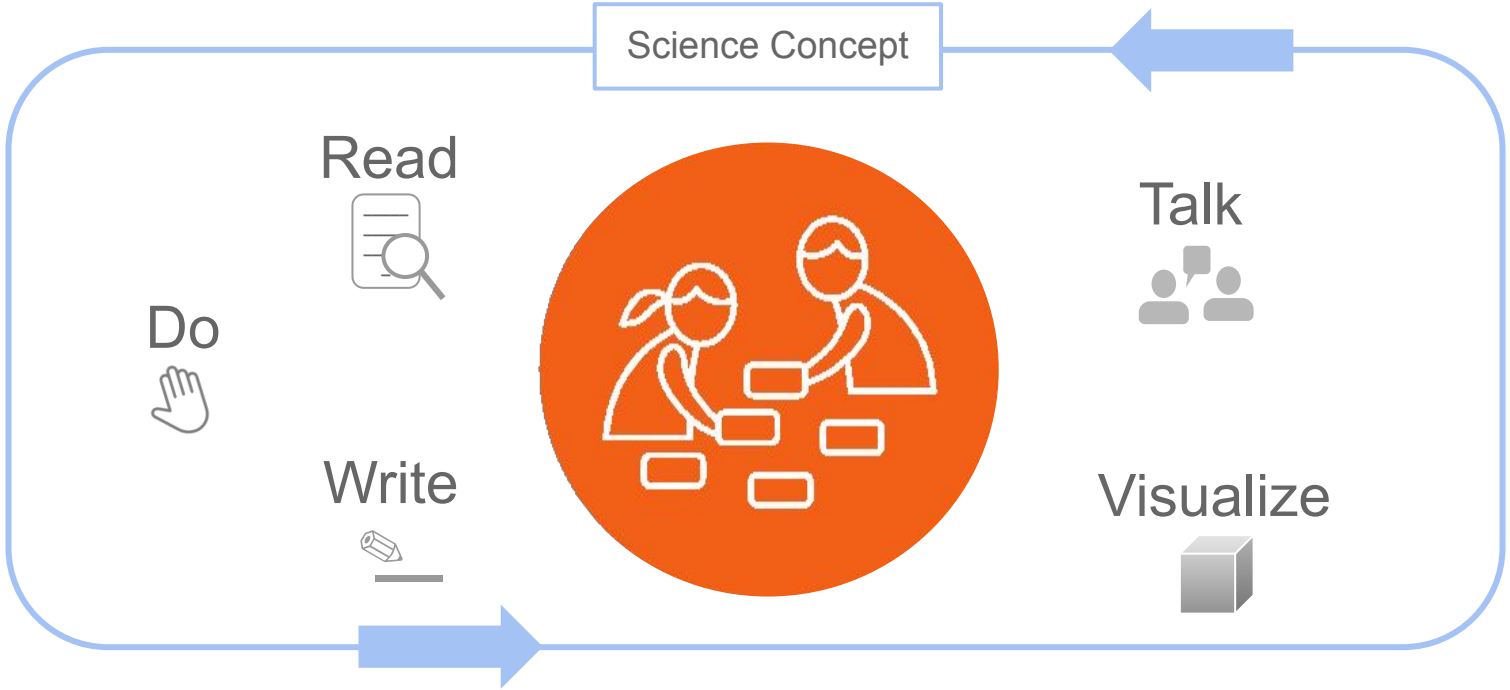
Collect evidence from multiple sources

Build increasingly complex explanations

Apply knowledge to a different context

Multimodal learning

Gathering evidence from different sources

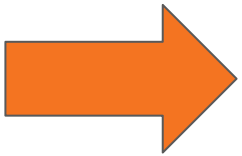


Topics vs. Phenomena

A shift in science instruction

from learning about

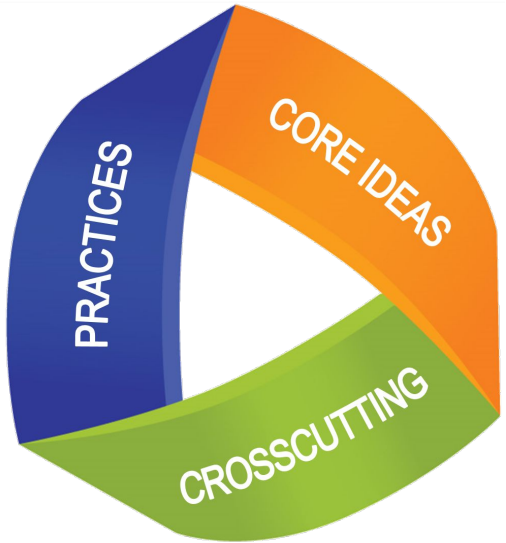
(like a student)



to figuring out

(like a scientist)

Three dimensions of NYSSLS



Disciplinary Core Ideas

- Describe core ideas in the science discipline (DCI)

Science and Engineering Practices

- Describe behaviors scientists and engineers engage in (SEP)

Crosscutting Concepts

- Describe concepts linking the different domains of science (CCC)

Science and Engineering Practices (SEP)

How students engage as scientists

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

Science and Engineering Practices (SEP)

How students engage as scientists

inquiry

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations

math

4. Analyzing and interpreting data
5. Using mathematics and computational thinking

language

6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

Disciplinary Core Ideas (DCI)

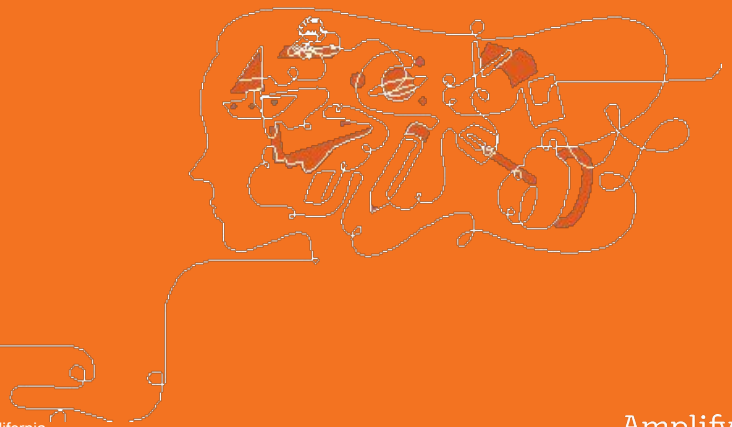
How students figure out what they want to know as scientist

LS2.A: Interdependent Relationships in Ecosystems: Plants depend on water and light to grow. (2-LS2-1) • Plants depend on animals for pollination or to move their seeds around. (2-LS2-2)

LS4.D: Biodiversity and Humans: There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)

Connections to Other Disciplinary Core Ideas This unit provides opportunities to make connections to this core idea, which is also addressed in other Amplify Science units. ESS2.B: Plate Tectonics and Large-Scale System Interactions: Maps show where things are located. One can map the shapes and kinds of land and water in any area. (2-ESS2-2)

Do, Talk, Read, Write, Visualize



Crosscutting Concepts (CCC)

How students think like scientists

Do. Students engage in a whole-class model of the interacting parts of a habitat in order to examine how the plants and animals in this habitat interact. Students discover that certain animals depend on specific plants for food, and those plants depend on the animals to disperse their seeds by eating the fruit, moving around the habitat, and leaving droppings with seeds inside.

Talk. Multiple opportunities for student-to-student talk, including the Think-Draw-Pair-Share discourse routine, engage the class in figuring out the role of certain plant parts and how plants and animals interact in a habitat.

Read. Students read the book A Plant Is a System to investigate the concept that plants are systems made of parts that work together to help the plant get what it needs to grow.

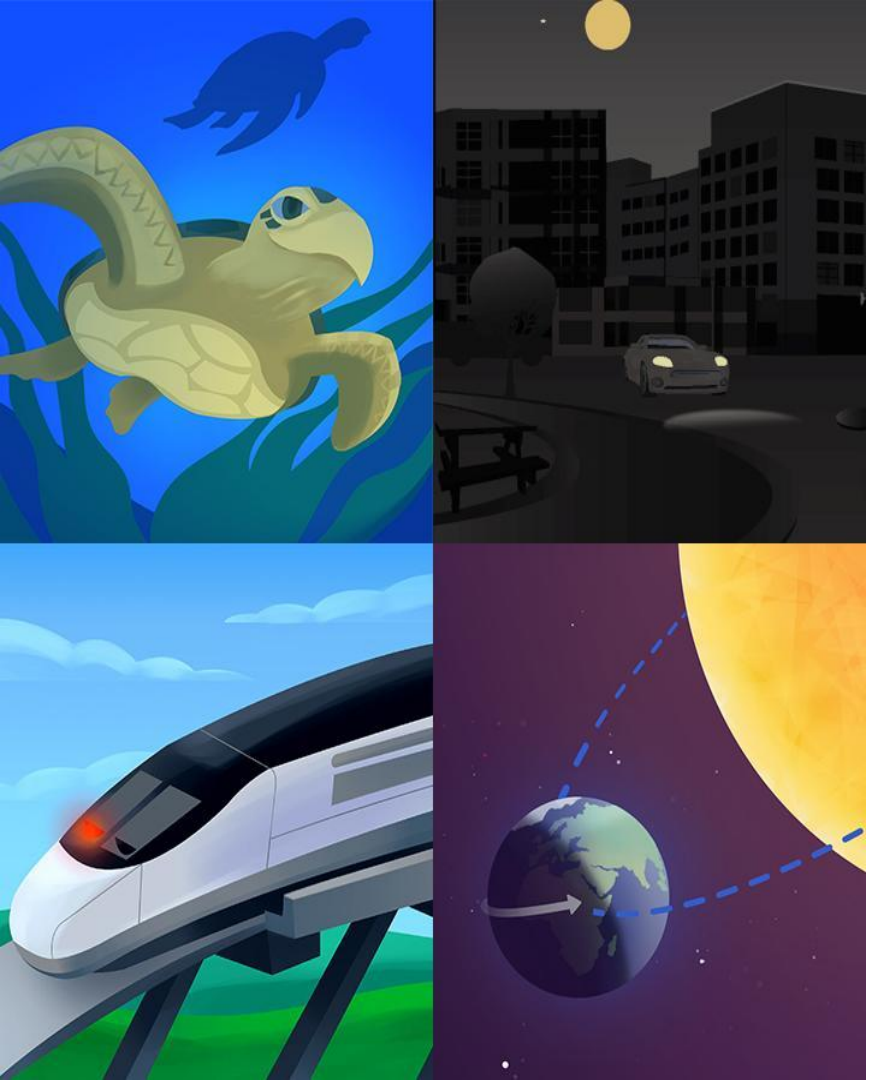
Write. During the course of the unit, students write several scientific explanations about what plants need to grow and how they get what they need to grow.

Visualize. Through participating in kinesthetic and physical models, students work to visualize the interacting parts of a habitat.

Do, Talk, Read, Write, Visualize (Multimodal Instruction)

Look at each modality, choose one, and drop a current support you would provide for your ELL students in the chat.

Do: Students engage in a whole-class model of the interacting parts of a habitat in order to examine how the plants and animals in this habitat interact. Students discover that certain animals depend on specific plants for food, and those plants depend on the animals to disperse their seeds by eating the fruit, moving around the habitat, and leaving droppings with seeds inside.	**Talk:** Multiple opportunities for student-to-student talk, including the Think-Draw-Pair-Share discourse routine, engage the class in figuring out the role of certain plant parts and how plants and animals interact in a habitat.	**Read:** Students read the book A Plant Is a System to investigate the concept that plants are systems made of parts that work together to help the plant get what it needs to grow.	**Write:** During the course of the unit, students write several scientific explanations about what plants need to grow and how they get what they need to grow.	**Visualize:** Through participating in kinesthetic and physical models, students work to visualize the interacting parts of a habitat.
Support:	**Support:**	**Support:**	**Support:**	**Support:**



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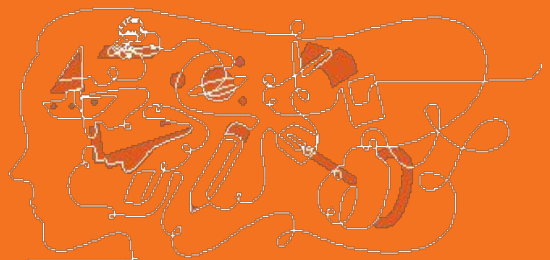
The role of language and literacy



Reflect and Share:

How does learning Science support language development?

“Science class is a language development opportunity if the discourse is managed to be inclusive and supportive. All students need support at some level or another.”

-Dr. Helen Quinn
Particle physicist and
National Academy of Sciences Chair

Language of the science classroom

The ways in which **students and teachers** use **oral** and **written** language to interact with each other, to **obtain information** from written materials, and to participate in **discourse** to construct understanding about science.

Language vs. Science

In the following activity you will read descriptions of Amplify Science activities students engage with as they figure out unit phenomena.

Language: Students are developing academic language

Science: Students are developing understanding of science and engineering ideas

You decide! Language, Science, or Both!

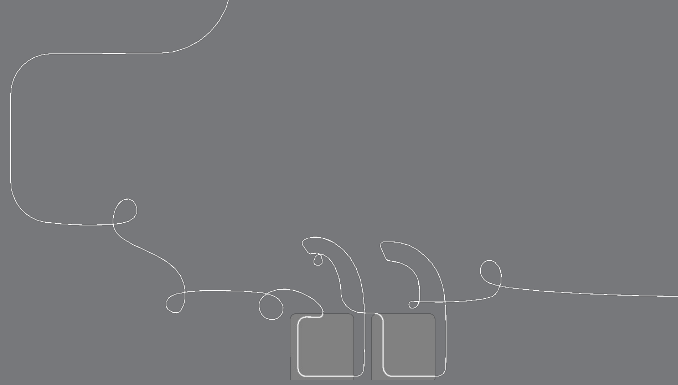
For each of the cards, indicate if students are developing language, science ideas, or both?

L	B	S
Students are developing **academic language**	Students are developing **both** academic language and understanding of science and engineering ideas	Students are developing **understanding of science and engineering ideas**

Students explain what type of force caused the ball in the pinball machine they designed to go in the direction it went	
A student looks at genetic information from two "parent" creatures and creates a model of an offspring's traits using clay	
Students explore magnetic forces using magnets and other materials, then generate and discuss questions and initial ideas about magnets.	
Partners read a book about how two sisters learn about magnets and record what they learn.	
After sorting a series of temperature graphs, the class figures out how temperature can vary differently over a year in different parts of the world.	
Students write up and share their ideas for the best way to solve Ergstown's rolling blackout problem.	
Students record observations of radish seeds; some are planted in soil with water and others are planted in soil with no water.	
Students use their bodies to make a kinesthetic line plot of orangutan heights.	

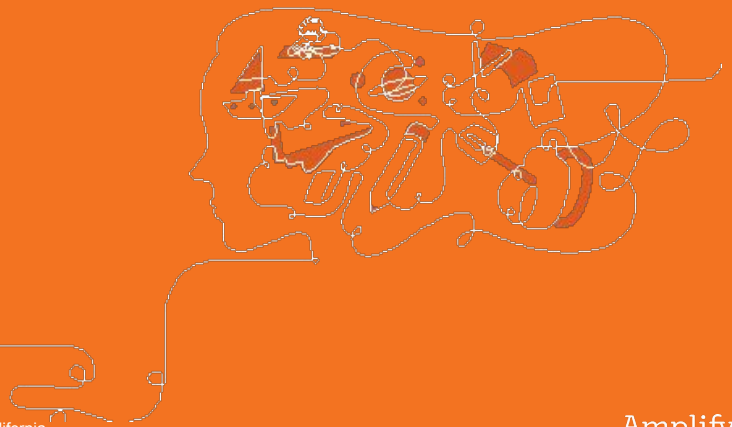
L	B	S
Students are developing **academic language**	Students are developing **both** academic language and understanding of science and engineering ideas	Students are developing **understanding of science and engineering ideas**

Reflect and Share:



What new insights were you able to gain about language ideas vs. science idea for ELL students in Amplify Science?

Differentiation



Multilingual Learners

ENACTING THE FIVE PRINCIPLES IN THE CURRICULUM

Science Program Guide

- **Principle 1:** Leverage and build students' informational background knowledge.
- **Principle 2:** Capitalize on students' knowledge of language.
- **Principle 3:** Provide explicit instruction about the language of science.
- **Principle 4:** Provide opportunities for scaffolded practice.
- **Principle 5:** Provide multimodal means of accessing science content and expressing science knowledge.

Differentiation briefs

Categories of differentiation briefs

- Embedded supports for diverse learners
- Potential challenges in this lesson
- Specific differentiation strategies for English learners
- Specific differentiation strategies for students who need more support
- Specific differentiation strategies for students who need more challenge

Lesson 1.2 Differentiation for ELL students

Embedded Supports for Diverse Learners

Partner Reading. Reading with a partner provides opportunities for students to assist each other with reading and understanding complex text. Partner Reading encourages discussion of the text and allows students to share ideas with each other, notice illustrations and text features, and interact with the book.

Setting a Purpose chart. The Setting a Purpose chart, which is introduced in this lesson prior to reading *My Nature Notebook*, is added to with help from the class throughout the unit. The chart provides an ongoing and accessible visual reference for how to set a purpose prior to reading or investigating. It also serves as an in-the-moment reminder for students about what their purpose for reading or investigating is during a particular lesson or activity.

Model searching for and recording information. In this lesson, you will model using *My Nature Notebook* to search for information about how people study habitats, and then recording that information in the Investigation Notebook. This helps students understand how to use the book to find information, and will help them when reading and recording information with a partner.

Potential Challenges in This Lesson

Reading-centered. Reading science texts can be challenging. Some students may benefit from additional reading supports. Consider if any of your students would benefit from extra reading instruction in order to be successful with reading *My Nature Notebook* in Activity 2. This book is organized as chronological journal entries and contains metric measurements. Students may benefit from getting acquainted to these aspects of the text.

Specific Differentiation Strategies for English Learners

Bilingual Spanish glossary. Having access to translations and definitions of new science terms in Spanish is helpful for English learners for whom Spanish is their primary language. Have students turn to pages 73–74, Glossary, in the *Plant and Animal Relationships* Investigation Notebook to see Spanish translations and definitions. Encourage students to refer to this glossary as needed throughout the unit.

Cognates. Many of the academic words that students will be learning over the course of this lesson and unit are Spanish cognates. Cognates are words in two or more different languages that sound and/or look the same or very nearly the same, and that have similar or identical meanings. At several points in this unit, a note will be provided in this section listing relevant Spanish/English cognates. You may decide to support students by keeping a running list of cognates that students encounter in this unit on chart paper, or by encouraging students to keep their own lists that they can refer to as needed. The Spanish cognates that will be helpful for students in this lesson are: *habitat/habitat*, *investigate/investigar*, *plant/planta*, *animal/animal*, *soil/suelo*, *centimeters/centímetros*, and *observe/observar*. Cognates are especially rich linguistic resources to exploit for academic English language development and for biliteracy development.

Specific Differentiation Strategies for Students Who Need More Support

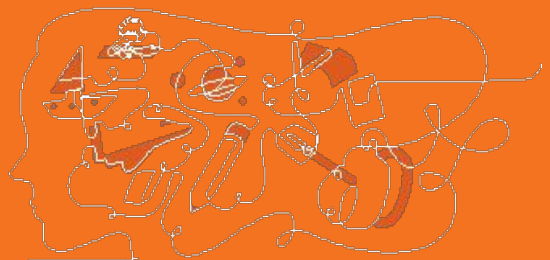
Anticipation Guide. For each book, we provide an optional Anticipation Guide in the Investigation Notebook. Anticipation Guides can help support students by activating prior knowledge before reading, promoting engaged reading, and encouraging students to monitor their comprehension. If you choose to use this optional activity, have students turn to page 3, Getting Ready to Read: *My Nature Notebook*, in the Investigation Notebook. To use this activity, explain that students should work with a partner to decide if they agree or disagree with each statement. After reading, ask partners to revisit the statements and discuss whether they want to change any responses based on their reading. Encourage students to refer to the text as they discuss.

Reading support. Before students read *My Nature Notebook*, you can describe and model how to use the visual representations, captions, and headings in the book as tools to locate information quickly. Draw students' attention to the way the book is organized—as chronological journal entries that explain the plants and animals in the sample study site in each month—and the headings throughout the book. You might also provide students with additional support in understanding the metric measurements included in the text, especially if students have had limited experience with the metric system.

Specific Differentiation Strategies for Students Who Need More Challenge

Reading Reflection. A Reading Reflection activity for each book is included in the Investigation Notebook. These are optional written activities designed to reinforce concepts in the books and provide prompts to encourage further thinking about the text. These activities are designed for early finishers to use during Partner Reading. They can also be used in a variety of other ways, such as to reinforce concepts on a second read of the book or as homework. The Reading Reflection for this book (on page 5, Reading Reflection: *My Nature Notebook*, in the Investigation Notebook) invites students to think about how a habitat might change over time.

Instructional Sequence



Grade 2 | Plant and Animal Relationships

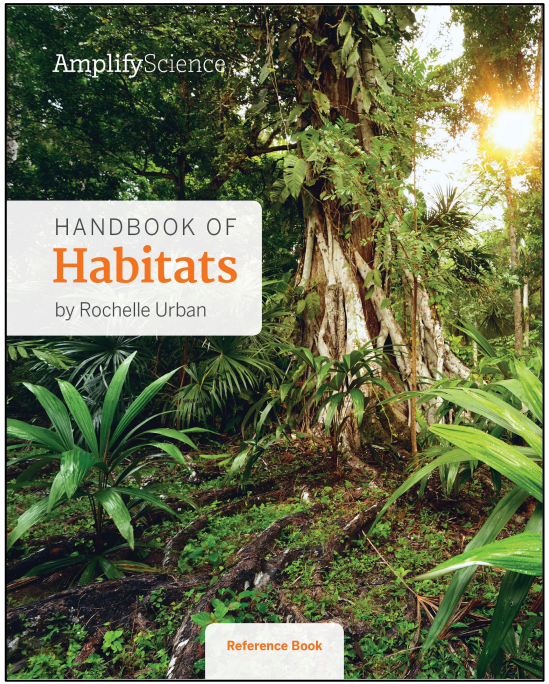
Lesson 1.2: My Nature Notebook

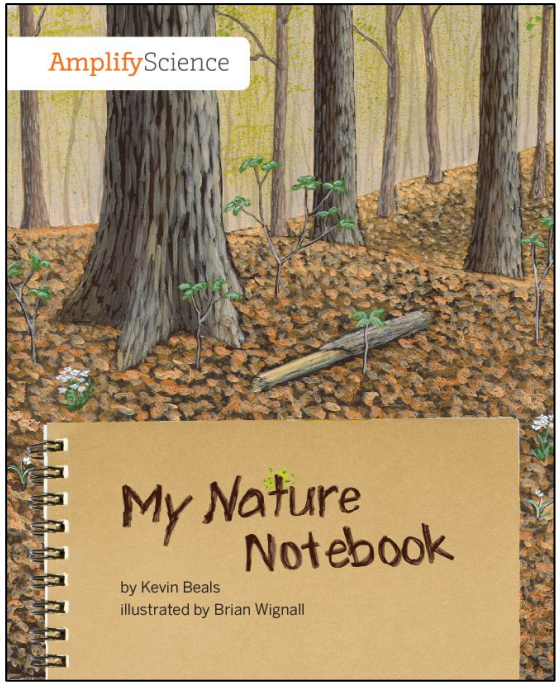
AmplifyScience

Activity 1: Setting A Purpose Reading

Modality: Teacher Led Discussion

The teacher reviews the last activity of observing habitats using the “Handbook of Habitats”. The teacher **introduces *My Nature Notebook*** and the strategy of **setting a purpose for reading**.





Setting a Purpose

Reading	

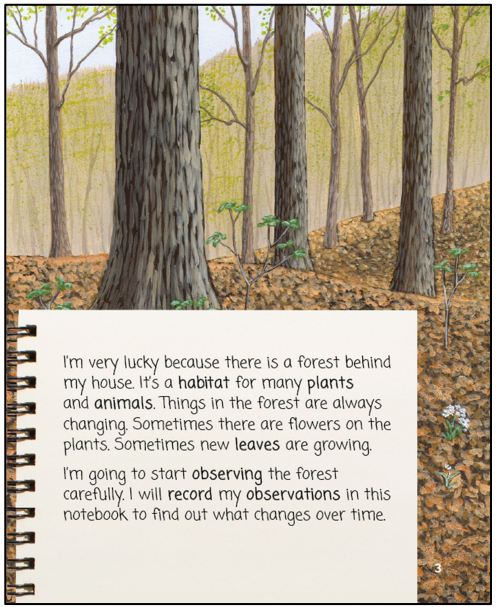
Activity 2:Partner Reading

Modality: Reading

Students are introduced to the **partner reading** guidelines and **read *My Nature Notebook* with partners.** As students are reading the book there are prompts where they stop and think about different ways scientists observe habitats. Students are also introduced to the vocabulary word *observe.*

Partner Reading Guidelines

1. Sit next to your partner and place the book between you.
2. Take turns reading.
3. Read in a quiet voice.
4. Be respectful and polite to your partner.
5. Ask your partner for help if you need it. Work together to make sure you both understand what you read.



Vocabulary

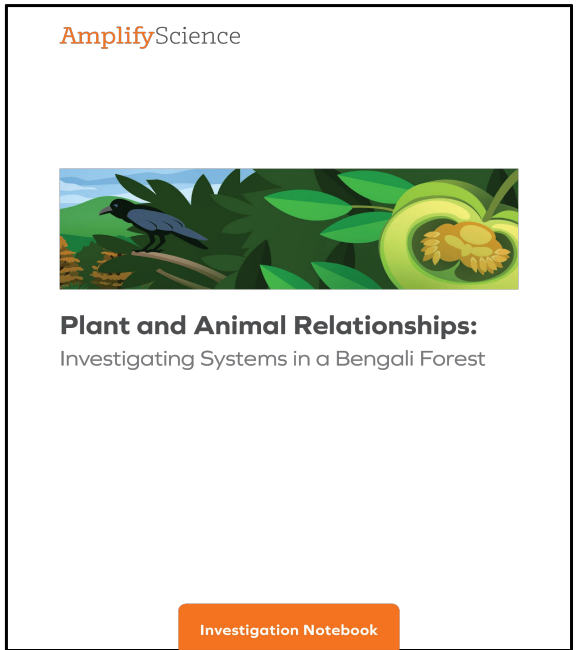
observe

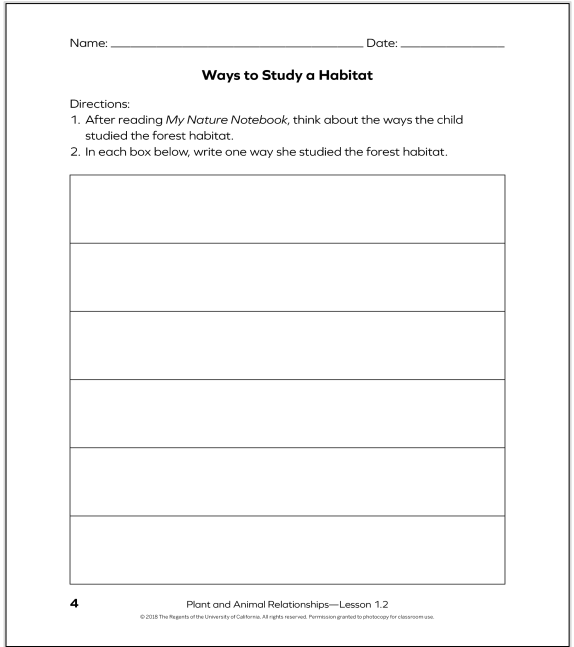
to use any of the five senses to gather information about something

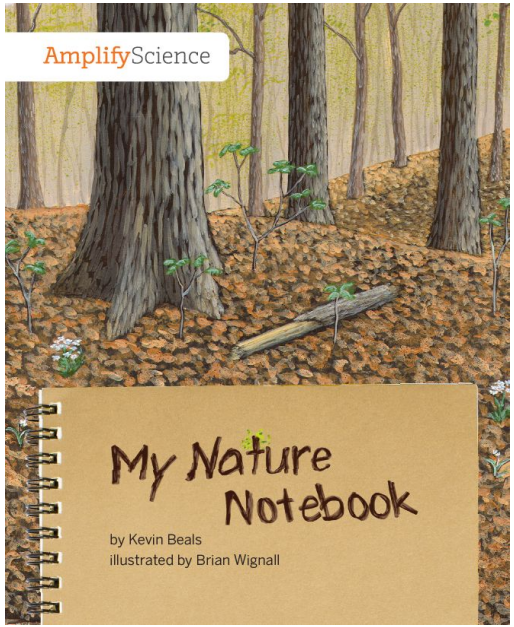
Activity 3: Reflecting on Ways to Study a Habitat

Modality: Teacher Led Discussion

Students return to the text to **record ways to study a habitat and compare plants across habitats.**
Students are reminded they are investigating the question *How do scientists study habitats?*
Students use their investigation notebooks to jot down key information.







End of Lesson

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

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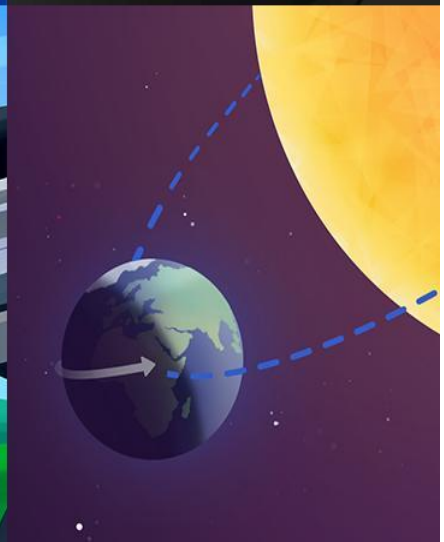

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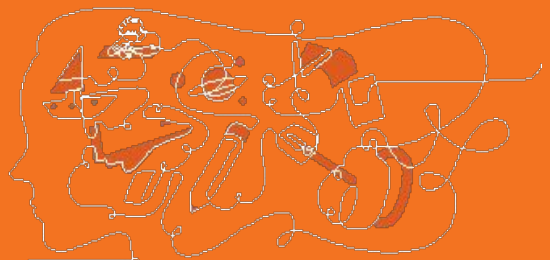
  - Reflection/Survey

Research Based Principles



Multilingual Learners

ENACTING THE FIVE PRINCIPLES IN THE CURRICULUM

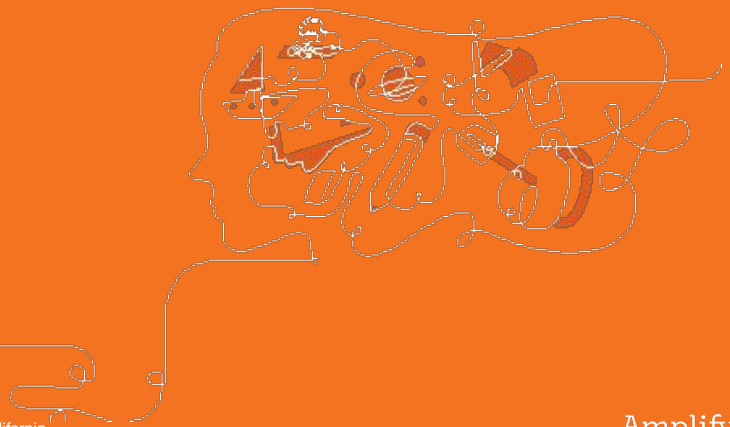
Science Program Guide

- **Principle 1:** Leverage and build students' informational background knowledge.
- **Principle 2:** Capitalize on students' knowledge of language.
- **Principle 3:** Provide explicit instruction about the language of science.
- **Principle 4:** Provide opportunities for scaffolded practice.
- **Principle 5:** Provide multimodal means of accessing science content and expressing science knowledge.

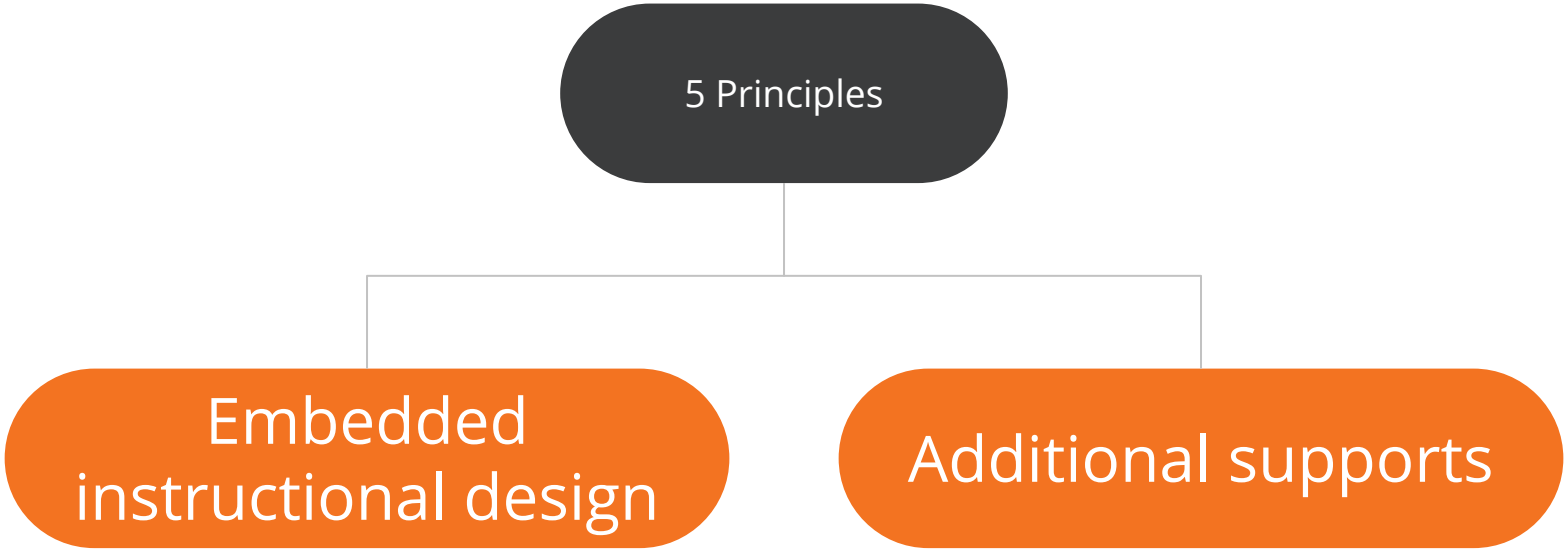
Think & Share

Choose one principle, how could you implement this principle to support ELL students in your classroom?

Strategies that support language and literacy development



Supports for English learners



Embedded instructional design

- Modeling Active Reading/ Active Reading
- Anticipation Guides
- Science/ Everyday Word Chart
- Word Relationships Activities
- Graphic Organizers
- Reflective writing with language frames/ sentence starters
- Practice Tools
- Physical and digital models

Additional supports

- Cognates
- Multilingual Glossary
- Word Banks
- Multiple-Meaning Words
- Extended Modeling
- Additional Visual Representations
- Optional Graphic Organizers
- Response Option

English-Arabic Glossary

data: observations or measurements recorded in an investigation
بيانات: ملاحظات أو قياسات مسجلة في دراسة ما

disperse: to spread around
ينثر: يُفرّق في المناطق المحيطة

explanation: a description of how something works or why something happens
شرح: وصف آلية عمل شيء ما أو سبب حدوث شيء ما

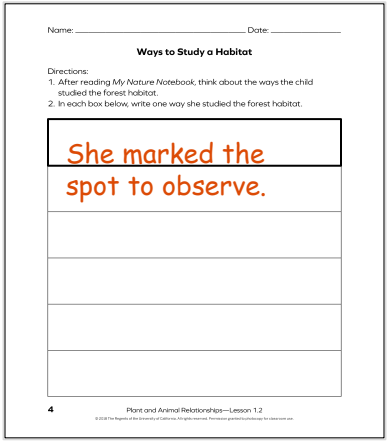
evidence: information that supports an answer to a question
دليل: معلومات تدعم إجابة عن سؤال ما

habitat: the place where an animal or plant lives and gets what it needs
موئل: المكان الذي يعيش فيه حيوان أو نبات ما ويحصل على احتياجاته منه

investigate: to try to learn more about something
بحث: محاولة معرفة المزيد عن شيء ما

leaves: the flat, green plant parts that use light to help the plant grow
أوراق النبات: أجزاء خضراء مسطحة في النبات تستخدم الضوء للمساعدة على نمو النبات

Plant and Animal Relationships—English-Arabic Glossary 1



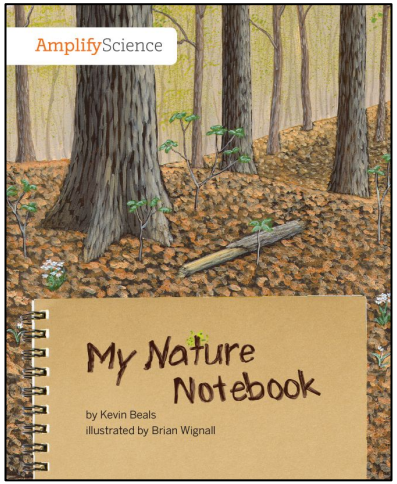
Name: _____ Date: _____

Ways to Study a Habitat

Directions:
1. After reading *My Nature Notebook*, think about the ways the child studied the forest habitat.
2. In each box below, write one way she studied the forest habitat.

She marked the spot to observe.

4 Plant and Animal Relationships—Lesson 1.2



Resources for Supporting Multilingual Learners

- Optional investigation notebook pages
- Digital copy of vocabulary words
- Access to lesson level powerpoints (editable)
- Remote learning access for students (via Program Hub)
  - Student readers (English/Spanish)
  - Modeling tools/Sims/Practice tools
  - Videos with calls to action (English/Spanish)
  - Student slides, packets, and sheets (editable)

Language vs. Discourse

Academic language

Academic discourse

- Identify…
- What is…?
- List…
- Students use tier 1 and 2 vocabulary

- Prove/disprove with evidence…
- What would happen if….how do you know?
- Explain how this connects to…
- Students use tier 2 & 3 vocabulary

Amplify Science discourse routines

- Oral Composition and/or Drawings as teacher captures words (K-1)
- Explanation Language Frames
- Shared Listening
- Partner Reading
- Thought Swap
- Think-Pair-Share
- Word Relationships
- Questioning Strategies [K-8]
    - Do you agree/disagree?

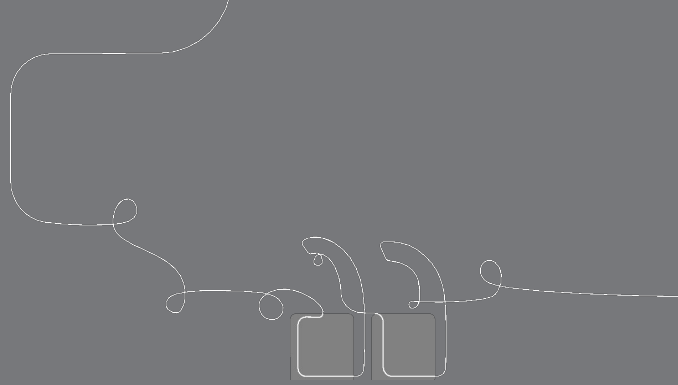
	Kindergarten - Grade 1	Grades 2-5
Discourse routines	Students engage in informal partner, small group, and full class talk as well as with Shared Listening, a structured discourse routine. To work towards answering each Chapter question, students first compose responses orally with a Language Frame activity using sentence frames written on sentence strips, completed with cards. They use this practiced sentence structure to write explanations together as a class (Shared Writing) or in their investigation notebooks.	Students engage in informal partner, small group, and full class talk as well as with a variety of structured discourse routines. Each unit includes 2-3 different routines such as: • Shared listening • Think-pair-share • Think-draw (or write) -pair-share • Thought swap • Concept mapping • Word relationships • Building on ideas • Evidence circles

Additional support considerations

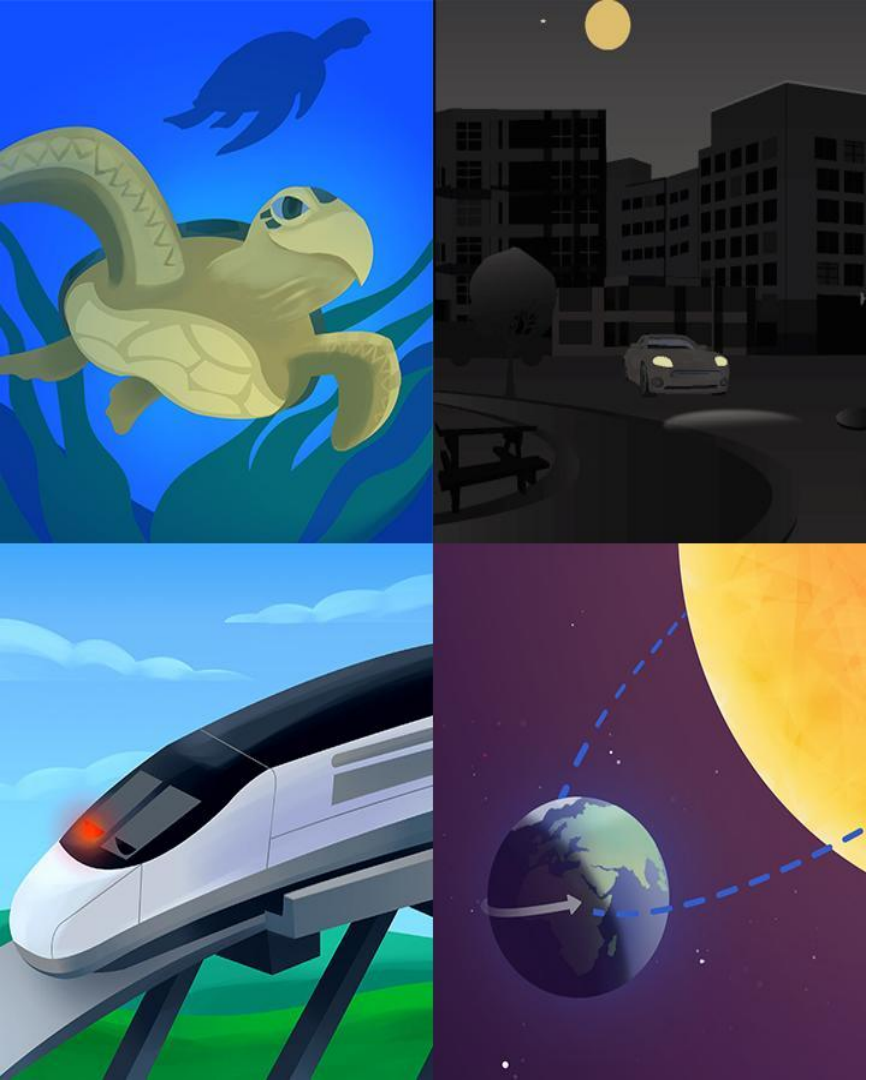
Modifying the instructional suggestions for my students

- Additional practice time
- Strategic grouping
- Additional resources (multilingual glossary, word banks, other environmental print)
- Increased support for gradual release of responsibility
- Alternative response options

Reflect and Share



What Amplify Science strategies can you use to aid ELL students in accessing academic language and move toward achieving discourse?



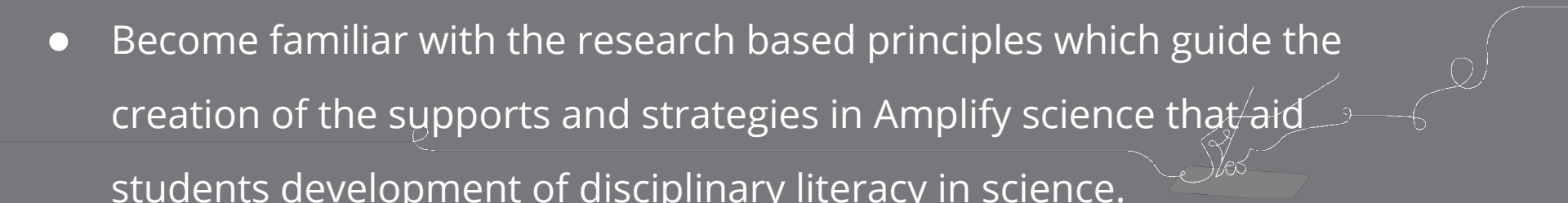
Plan for the day

- **Framing the day**
  - Welcome and introductions
- **Amplify Science Approach**
  - Multimodal Instruction
  - Exploring strategies Do, Talk, Read, Write, and Visualize
- **Amplify Science Embedded Supports**
  - The role of language and literacy
  - Differentiation
  - Lesson instructional sequence
- **Amplify Science Discourse Routines**
  - Research based principles for creating supports
  - Strategies that supporting language & literacy development in science
- **Closing**
  - Reflection/Survey

Revisiting Session Objectives:

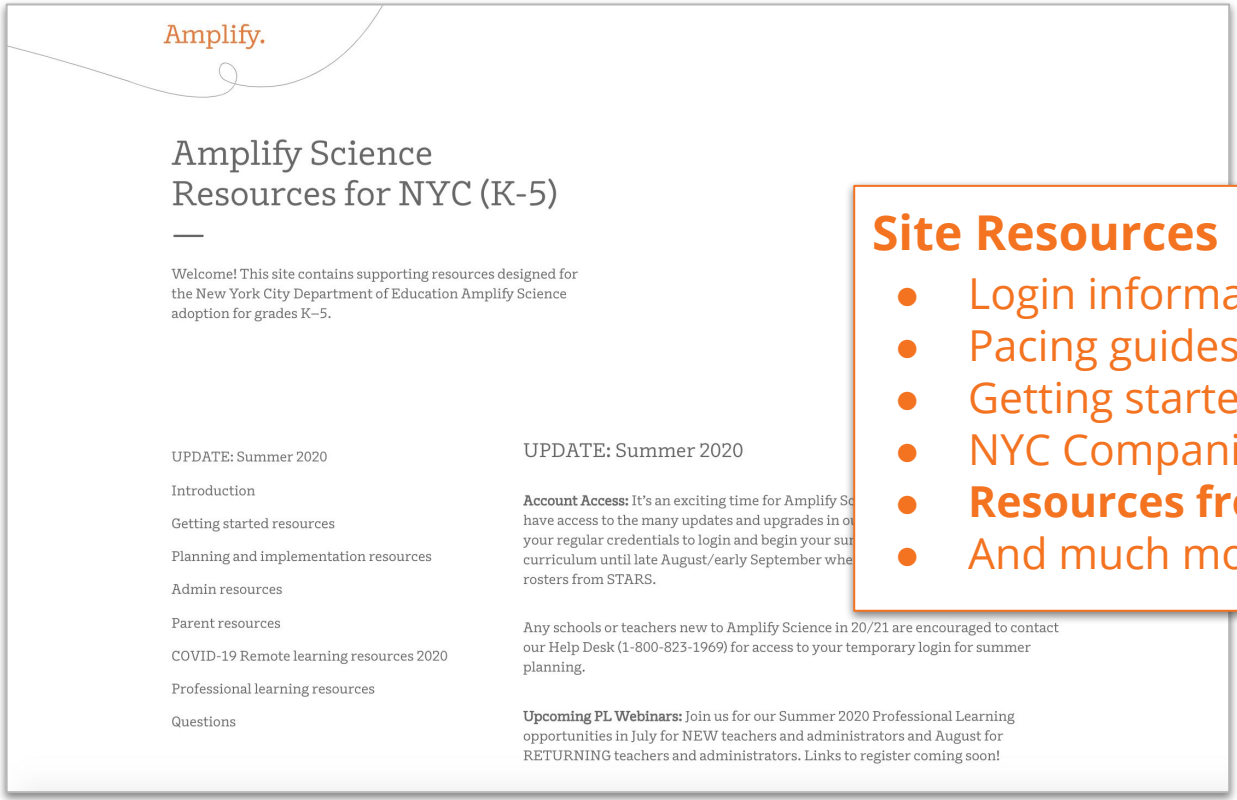
By the end of this 1-hour workshop, you will be able to…

- Explore strategies to support English learners ability to Do, Talk, Read, Write, Visualize, and argue like scientists.
- Analyze an instructional sequence through the lens of an English learner to deepen your knowledge of the critical role of language and literacy in developing scientific understanding.
- Become familiar with the research based principles which guide the creation of the supports and strategies in Amplify science that aid students development of disciplinary literacy in science.



New York City Resources Site

https://amplify.com/resources-page-for-nyc-k-5/



Site Resources

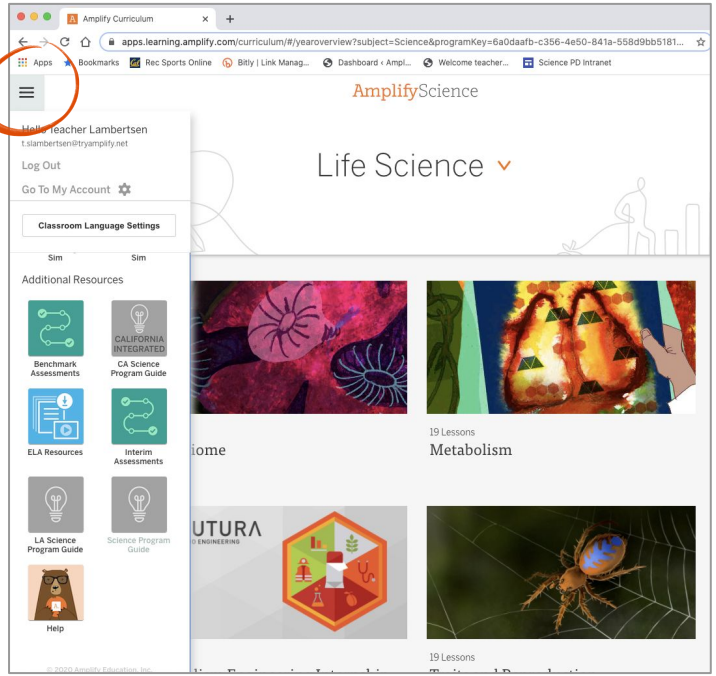
- Login information
- Pacing guides
- Getting started guide
- NYC Companion Lessons
- **Resources from PD sessions**
- And much more!

Amplify Science Program Hub

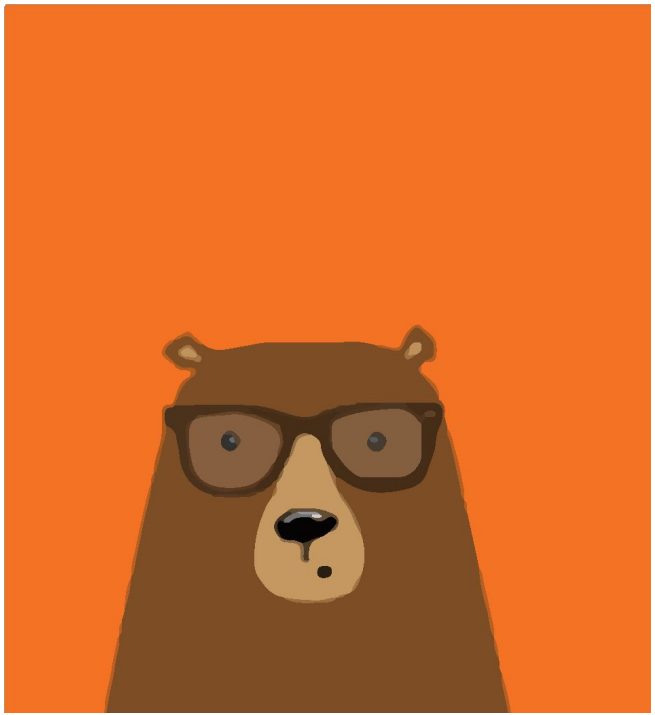
A new hub for Amplify Science resources

- **Videos and resources to prepare for instruction**
- **Amplify@Home resources**
- **Self study resource and much more!**

***Check back often to stay update to date with Amplify Science ***



Additional Amplify resources



Program Guide

Glean additional insight into the program's structure, intent, philosophies, supports, and flexibility.

https://my.amplify.com/programguide/content/national/welcome/science/

Amplify Help

Find lots of advice and answers from the Amplify team.

my.amplify.com/help

Additional Amplify Support

Customer Care

Seek information specific to enrollment and rosters, technical support, materials and kits, and teaching support, weekdays 7AM-7PM EST.

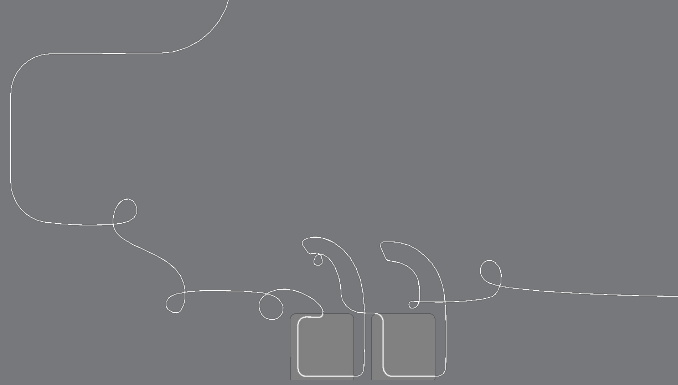
scihelp@amplify.com

800-823-1969

Amplify Chat

When contacting the customer care team:

- Identify yourself as an Amplify Science user.
- Note the unit you are teaching.
- Note the type of device you are using (Chromebook, iPad, Windows, laptop).
- Note the web browser you are using (Chrome or Safari).
- Include a screenshot of the problem, if possible.
- Copy your district or site IT contact on emails.



Final Questions?

Please provide us feedback!

URL: https://www.surveymonkey.com/r/BY56SBR

Presenter name: XXX