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.

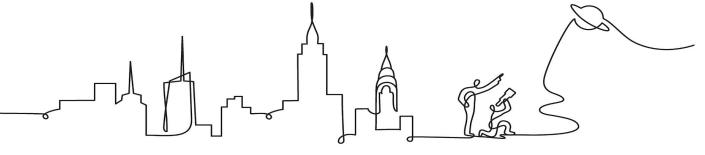


Amplify Science New York City

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

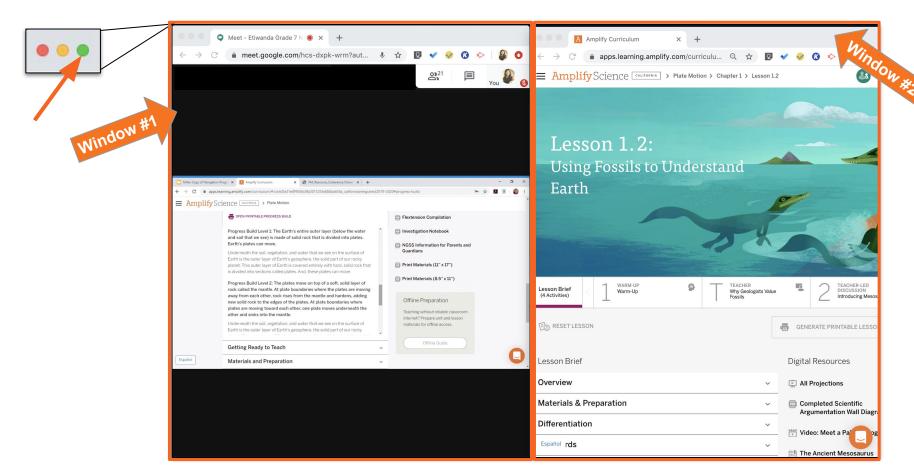


Make sure you have a note-catcher present



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

- Multimodal Instruction
- Strategies that support language development in science

• Amplify Science Embedded Support

- Differentiation
- Analyzing embedded supports for diverse learners

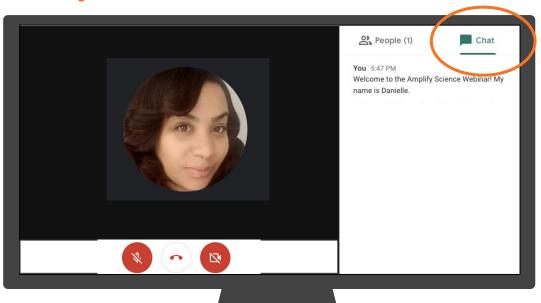
Closing

Reflection/Survey

Introductions!

Who do we have in the room today?

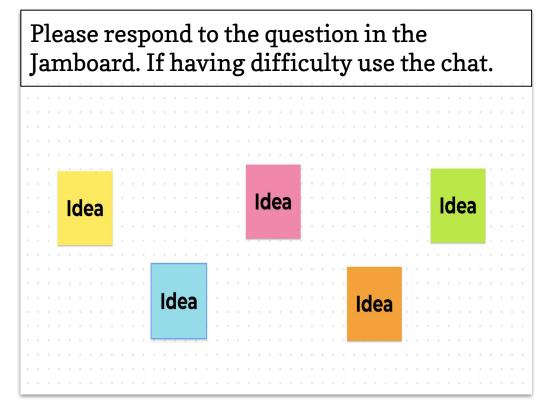
- Introduce yourself (Name, School, Role)
- In the chat, share one word or phrase thats describes how you teaching Amplify.



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



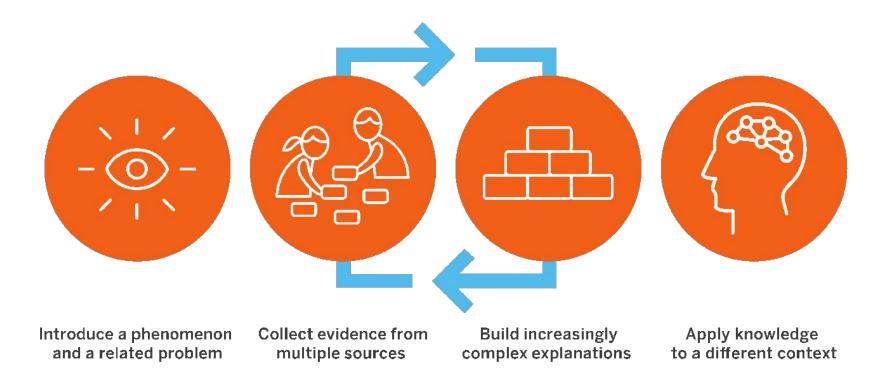
Multimodal, phenomenon-based learning

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.



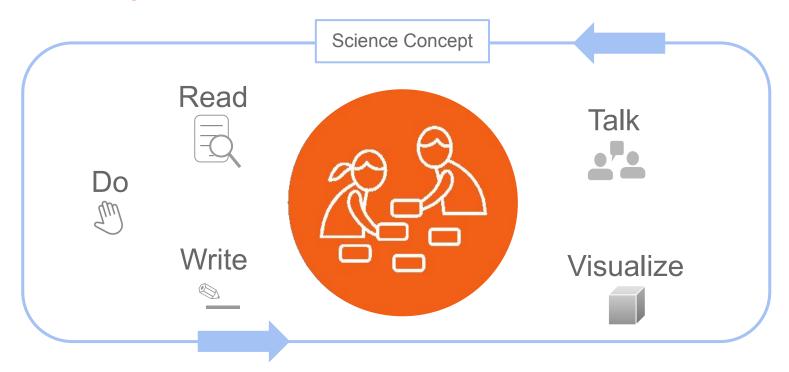
Amplify Science approach



Amplify.

Multimodal learning

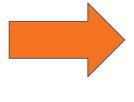
Gathering evidence from different sources



Topics vs. Phenomena

A shift in science instruction

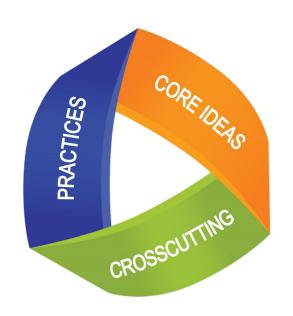
from learning about (like a student)



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

language

- 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 data5. Using mathematics and computational thinking
- 6. Constructing explanations (for science) and designing solutions (for engineering)
- 7. Engaging in argument from evidence
- Obtaining, evaluating, and communicating information © 2018 The Regents of the University of California

Disciplinary Core Ideas (DCI)

How students figure out what they want to know as scientist

LS1.A: Structure and Function: All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects; protect themselves; move from place to place; and seek, find, and take in food, water, and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)

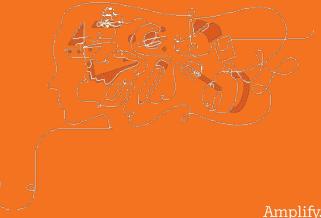
LS1.B: Growth and Development of Organisms: Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2)

LS1.D: Information Processing: Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1)

LS3.A: Inheritance of Traits: Young animals are very much, but not exactly, like their parents. Plants also are very much, but not exactly, like their parents. (1-LS3-1)

LS3.B: Variation of Traits: Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (1-LS3-1)

Do, Talk, Read, Write, Visualize



Crosscutting Concepts (CCC)

How students think like scientists

- <u>Do:</u> Students have multiple opportunities to explore structure and function by observing photographs and videos and by building and using physical models.
- <u>Talk:</u> Each opportunity to gather evidence—by reading, observing, or building models—is supported by opportunities for student-to-student talk, through which students develop an understanding of how body parts help living things meet survival needs and of animal and plant defenses, including for offspring.
- Read: Tortoise Parts highlights the structure and function of each of several tortoise body parts. Whose Lunch Is This? shows how the sharp, hard structures of teeth, claws, and beaks help animals catch and eat food. Frog Models describes how two children model and explain the structure and function of two defenses that frogs have against being eaten. Spikes, Spines, and Shells: A Handbook of Defenses describes a wide range of animal defenses, with a focus on the structure and function of each.
- <u>Write:</u> Students' written explanations of animal defenses include a focus on using relationships between structure and function to explain organisms' survival.
- <u>Visualize:</u> Students focus on the strategy of visualizing as they read and investigate the structure and function of animal and plant defenses.

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.

<u>Do:</u> Students have multiple opportunities to explore structure and function by observing photographs and videos and by building and using physical models.

Talk: Each opportunity to gather evidence—by reading, observing, or building models—is supported by opportunities for student-to-student talk.

Read:Students read a variety of books in order to discover the structures and functions that help animals survive.

Write: Students' written explanations of animal defenses include a focus on using relationships between structure and function to explain organisms' survival.

Visualize: Students focus on the strategy of visualizing as they read and investigate the structure and function of animal and plant defenses.

Support:

Support:

Support:

Support:

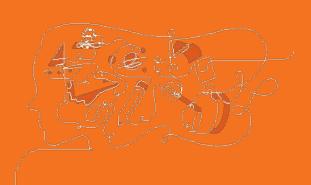
Support:



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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?

B Students are developing Students are understanding of science developing academic developing both academic and engineering ideas language and language 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.

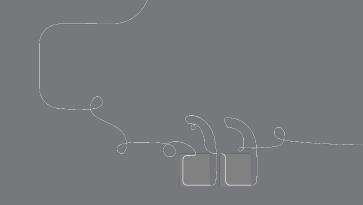
Students record observations of radish seeds; some are planted in soil with water and others are planted in soil with no water.

Students use their bodies to make a kinesthetic line plot of orangutan heights.

L Students are developing academic language and understanding of science and engineering ideas

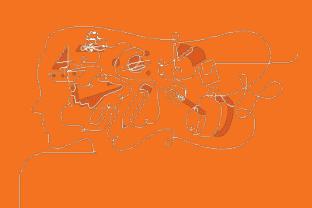
Students are developing both academic language and understanding of science and engineering ideas

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

 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

Gradual release of responsibility. In this lesson, students are introduced to the strategy of visualizing. Explicitly modeling how you evaluate you picture what is described in a book or imagine how something shown in a photograph or illustration would look as it moves prepares students to use this strategy more independently later in the unit. As the unit proceeds, students will practice visualizing with less teacher modeling and explicit support.

Shared Reading. Engaging in Shared Reading provides more support for reading and understanding at the beginning of the unit as students build their vocabulary and scientific knowledge. The book *Tortoise Parts* was designed to support a rich Shared Reading experience, during which you will guide students in reading, visualizing, and making sense of the text. *Tortoise Parts* has a repetitive sentence structure and text layout that may help students read some of the text along with you.

What Scientists Do chart. In this lesson, students are introduced to the What Scientists Do chart. By creating this chart with the class, you will model a way to organize information. The chart uses simple illustrations, which the teacher draws, to connect new concepts about the role of scientists to key vocabulary words (e.g., the word observe in this lesson). This chart records new information in an organized manner and provides an ongoing and accessible visual reference for students. The end result is a class reference tool that helps solidify new terms and related concepts in students' minds.

Multimodal instruction. Students gather evidence about how animals use body parts to meet their needs (particularly, their need for food) from text and photographs in a book, by eating a carrot, by observing their partner eat a carrot, and by discussing. Having experience with key ideas in many modalities gives students multiple opportunities to make sense of the concepts, as well as provides students who learn in different ways with different entry points.

Potential Challenges in This Lesson

Transfer of ideas from one context to another. In this lesson, students are asked to connect ideas about how a tortoise uses its body parts to meet its needs to ideas about how humans do the same. This transfer of ideas from one context to another may be challenging for some students, particularly if they have not thought about humans as animals before.

Specific Differentiation Strategies for English Learners

Academic language support. Developing science language and literacy is a complex process that includes, yet is broader than, vocabulary knowledge and usage. Science texts include general academic and discipline-specific vocabulary, and they also include disciplinary ways of using language, such as grammatically complex sentences and texts that are structured in more academic ways than everyday language. These broader aspects of academic language in science can be highlighted to students.

Vocabulary support. In this lesson, students are introduced to several high-utility science vocabulary words that are contextualized and used repeatedly in a variety of modalities. To help English learners gain greater access to the language of science, pay attention to their developing understanding of words such as observe and structure. Processing several new words can be challenging for English learners and primary English speakers alike. Students will have many opportunities to practice hearing and saying these words to deepen their understanding as the unit progresses.

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. The cognates that will be helpful for students in this lesson are: structure / estructura, tortoise / tortuga, and observe / observar. Have students practice forming sentences using these words in English and in Spanish. You can refer students who speak Spanish to the bilingual Glossary in the Investigation Notebook (pages 16-17) to provide additional support. 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

Revisit the text. Distribute copies of *Tortoise Parts* to partners and have them browse through the illustrations again. Have partners discuss the structures they see and how these structures help the tortoise survive.

Vocabulary support. Reading *Tortoise Parts* has a large vocabulary load and may be especially challenging for English learners or students who may need more language and vocabulary support. You may want to preview the text with a small group of students, pointing out certain words that are central to the reading, such as *defense*, *predator*, and *structure*. Students will continue to be exposed to and practice these words throughout the unit.

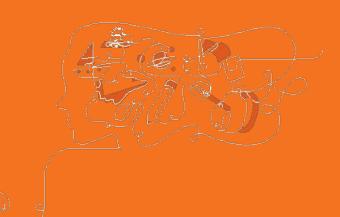
Specific Differentiation Strategies for Students Who Need More Challenge

Extend ideas. Invite students to look through copies of *Tortoise Parts* and consider whether any of the structures shown and described could help the tortoises in another way besides what the book shows. For example, ask students *Could the toenails help with anything besides digging nests?* [Digging for roots to eat. Digging for water below the ground.] *Could the beaky mouth help with anything besides getting food?* [Defending against predators. Drinking water.]

Further investigation. Challenge students to investigate additional human structures that help us meet our needs. The class has already discussed how our fingers and mouths help us eat. Ask students to work in pairs to come up with at least three more structures humans have and how they might help us survive. Students can make a drawing and/or write to record their ideas.

More independence. You may wish to invite students to read the book with partners after the Shared Reading. Provide all students with this opportunity as some will rely heavily on the pictures when revisiting the book, while others may take turns reading the text.

Instructional Sequence





Activity 1: Reading Tortoise Parts

Modality: Reading 🔯

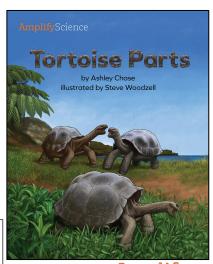
Teachers reminds students in their role as aquarium scientists, they are trying to help the director explain to kids who visit the aquarium how sea turtles, like Spruce, survive in the ocean. Students recall playing the survival game and revisit their findings on what animals need to survive (air, water, food). Students will the **read** Tortoise Parts to figure out what animals need to do to survive.









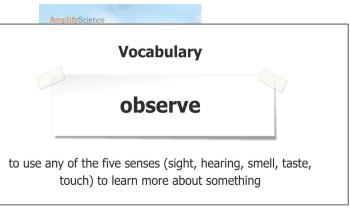


Activity 2: Observing Structures Used To Eat

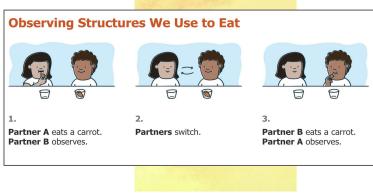
Modality: Hands On 🦃



Students discuss the needs of humans and then explore how humans use their sense to get what they need to survive. The teacher **introduces the word** *observe***,** and then students take turns carefully observing as their partner eats a baby carrot.







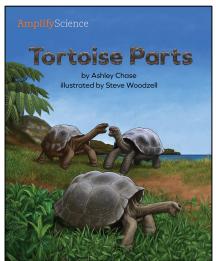
Activity 3: Discussing Observations and Structures

Modality: Teacher Led Discussion



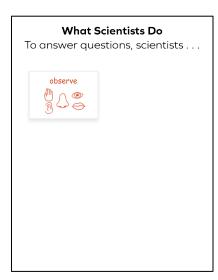
Students **share observations** from the Carrot Eating activity. The teacher introduces the What Scientists Do chart and adds *observe* to it. Students then **refer back to the Tortoise Parts book to compare and contrast** the way humans do what they need to survive with the way a tortoise does what it needs to survive. The class then begins to fill in the "What Scientists Do" Chart to document how they observed like scientist throughout the activity









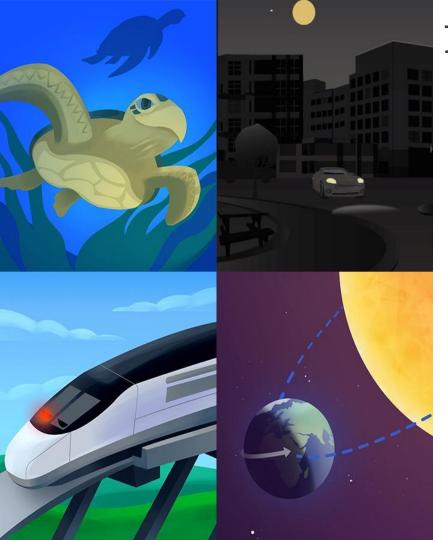


End of Lesson



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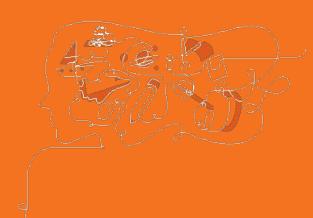
 $\label{published} \hbox{ Published and Distributed by Amplify. www.amplify.com}$



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Research Based Principles



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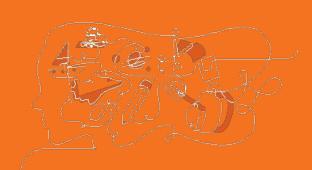




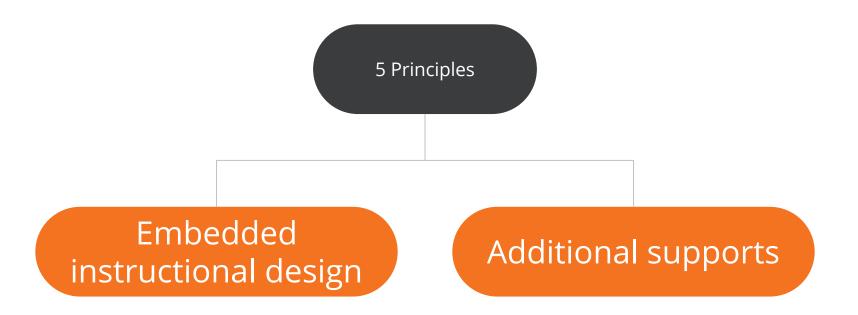
Think & Share

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

defend: to protect or keep safe

يدافع: يحمي أو يحافظ على السلامة

defense: what a living thing has or does to protect itself دفاع: ما يملكه أو يقوم به أي كائن حي لحماية نفسه

model: something scientists make to answer questions about the real world

نموذج: شيء ما يضعه العلماء للإجابة عن أسئلة حول العالم الواقعي

observe: to use any of the five senses (sight, hearing, smell, taste, touch) to learn more about something

يدرك: الاستعانة بأي من الحواس الخمس (البصر، السمع، الشم، التذوق، اللمس) لمعرفة المزيد عن شيء ما

predator: an animal that hunts and eats other animals

حيوان مفترس: حيوان يصصاد الحيوانات الأخرى ويأكلها

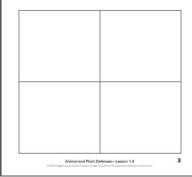
scientist: someone who learns about the natural world عالم: شخص على علم بشؤون العالم الطبيعي

structure: a part of an object or a living thing that does something

هيكل: جزء من جسم أو كائن حي يقوم بشيء ما



Name:	Date:
Animals Doing Wh	at They Need to Do to Survive
Directions:	
1. Choose one kind of ani	imal.
2. Visualize the animal do	oing each thing it needs to do to survive
In each box, draw the to survive.	animal doing one thing it needs to do
4. Label your drawings.	





Resources for Supporting Multilingual Learners

- Optional investigation notebook pages
- Digital copy of vocabulary words











- 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?







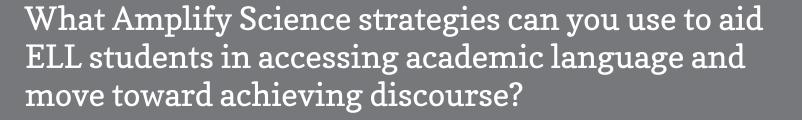
	Kindergarten - Grade 1	Grades 2-5
Discourse routines	Students engage in informal partner, small group, and full class talk as well as with Shared Listening, a structured discourse routine. To work towards answering each Chapter question, students first compose responses orally with a Language Frame activity 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

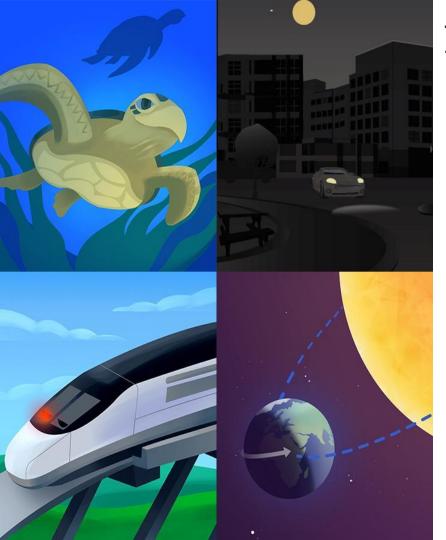
Additional support considerations

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





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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/



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Amplify Science Resources for NYC (K-5)

Welcome! This site contains supporting resources designed for the New York City Department of Education Amplify Science adoption for grades K–5.

UPDATE: Summer 2020

Introduction

Getting started resources

Planning and implementation resources

Admin resources

Parent resources

COVID-19 Remote learning resources 2020

Professional learning resources

Questions

Account Access: It's an exciting time for Amplify Sc have access to the many updates and upgrades in or your regular credentials to login and begin your sur curriculum until late August/early September whe rosters from STARS.

UPDATE: Summer 2020

Site Resources

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

Any schools or teachers new to Amplify Science in 20/21 are encouraged to contact our Help Desk (1-800-823-1969) for access to your temporary login for summer planning.

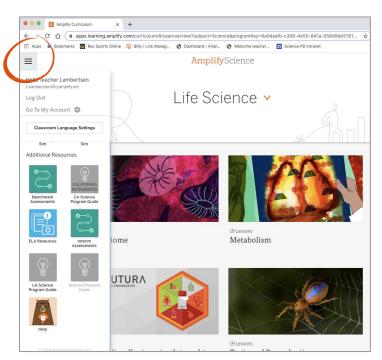
Upcoming PL Webinars: Join us for our Summer 2020 Professional Learning opportunities in July for NEW teachers and administrators and August for RETURNING teachers and administrators. Links to register coming soon!

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



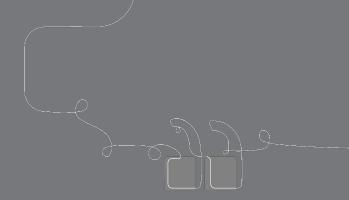
800-823-1969



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



