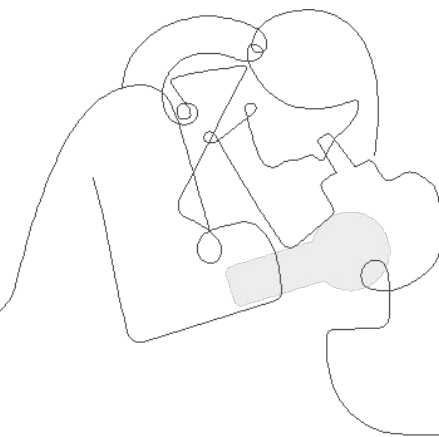


Amplify Science

Assessment System Strengthening workshop

School/District Name
Date
Presented by Your Name



Amplify's Purpose Statement

Dear teachers,

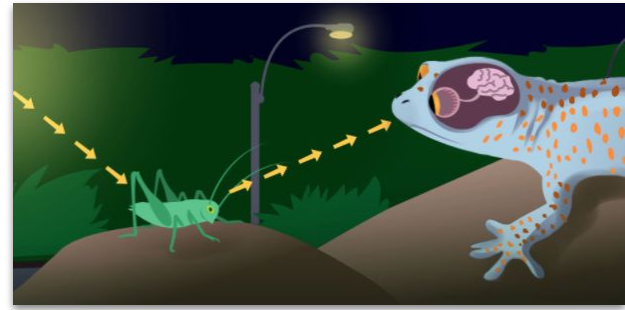
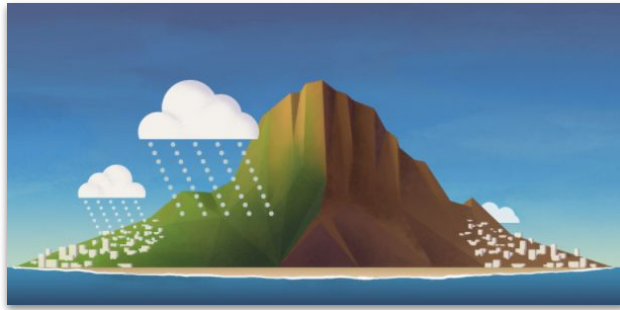
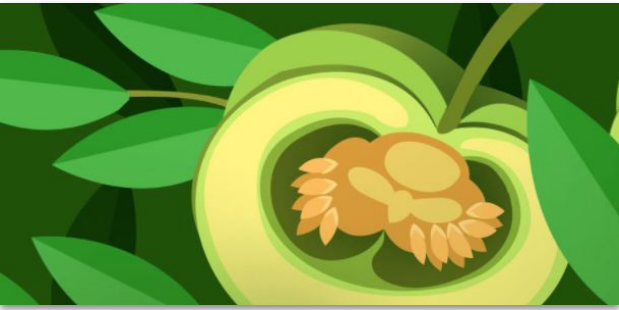
You do a job that is nearly impossible and **utterly essential**.

We are in your corner – extending your reach, saving you time, and enhancing your understanding of each student.

Thank you for working with us to craft rigorous and riveting learning experiences for your classroom.

We share your goal of **inspiring all students to think deeply, creatively, and for themselves**.

Sincerely,
Amplify



Plan for the day

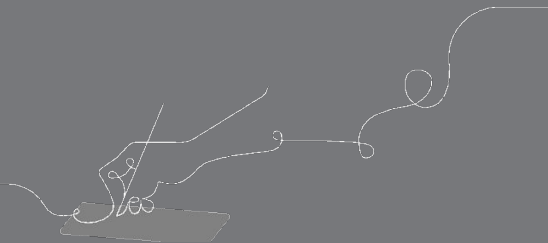
- Introduction
- Progress Builds
- Formative assessment
- Pre and end of unit assessment
- Closing

Overarching goals

By the end of this workshop, you will be able to:

- ❑ Describe the overall structure of the Assessment System
- ❑ Describe the purpose of the Formative, Pre and Post Unit Assessments

e



Norms: Establishing a culture of learners

- **Take risks:** Ask any questions, provide any answers.
- **Participate:** Share your thinking, participate in discussion and reflection.
- **Be fully present:** Unplug and immerse yourself in the moment.
- **Physical needs:** Stand up, get water, take breaks.

Opening reflection

Why do we assess our students?

What is **challenging** about assessing our students?

Opening Reflection: Assessment



Why do we assess our students?

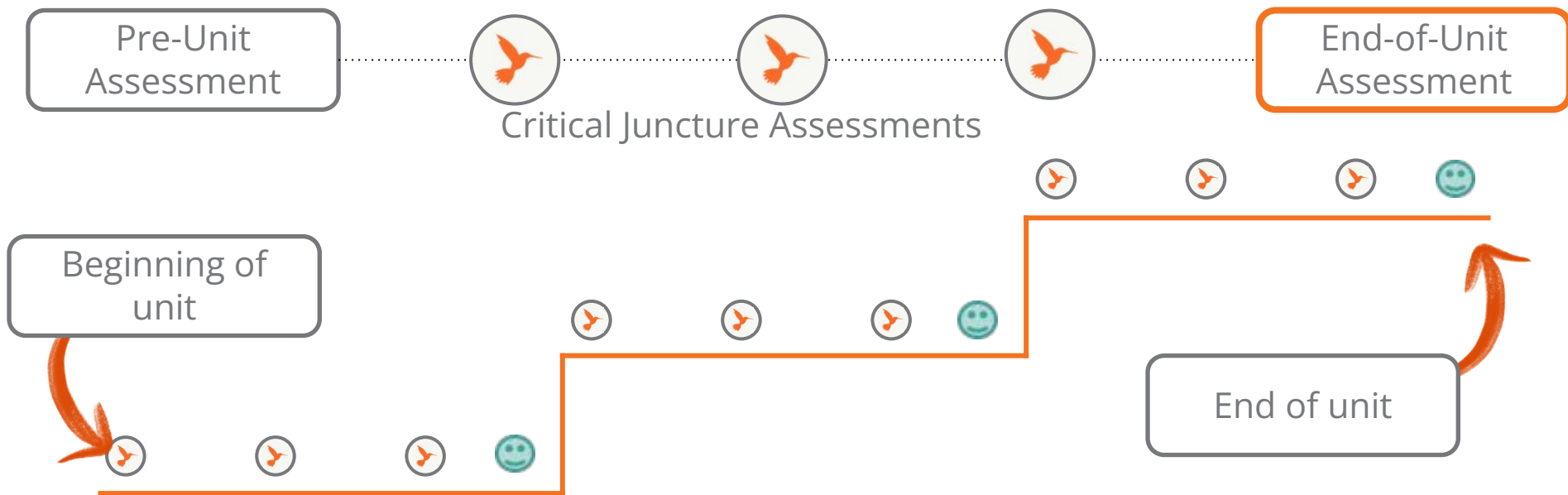


Why do we assess our students?

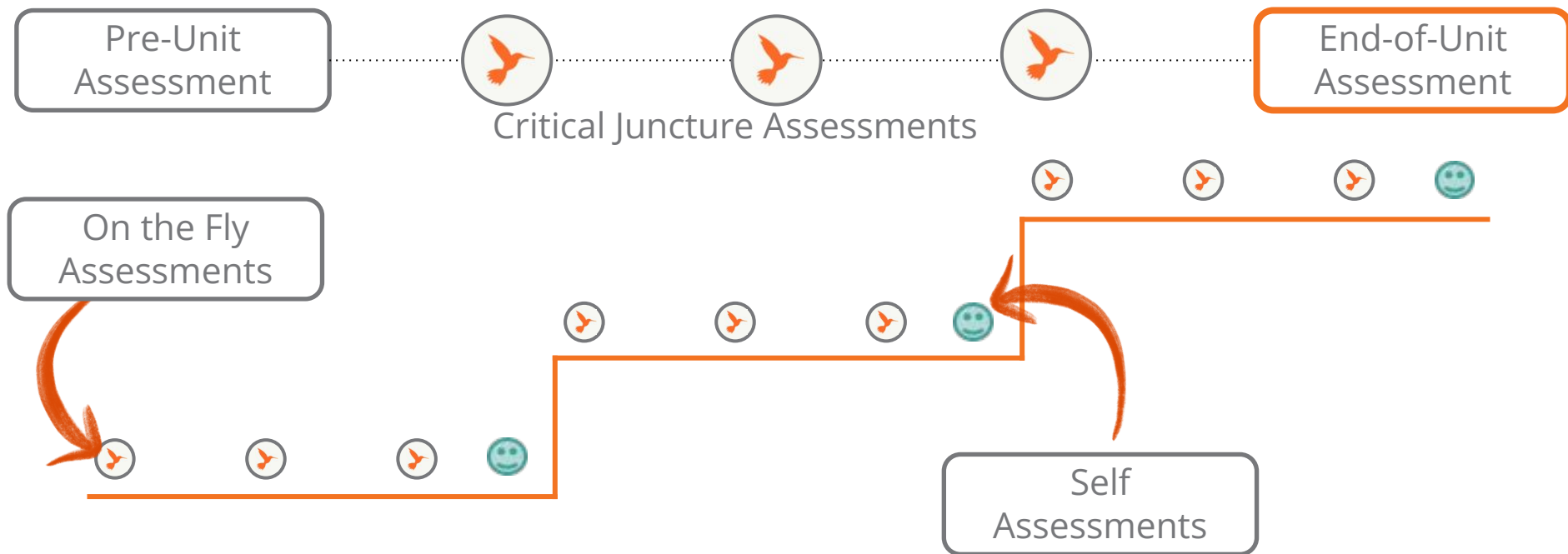


K-5 Assessment System

Pg. 2



K-5 Assessment System



Assessment System Document




Planning for the Unit		Printable Resources	
Unit Overview	▼	3-D Assessment Objectives	
Unit Map	▼	Coherence Flowcharts	
Progress Build	▼	Copypmaster Compilation	
Getting Ready to Teach	▼	Crosscutting Concept Tracker	
Materials and Preparation	▼	Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds	
Science Background	▼	Flexension Compilation	
Standards at a Glance	▼	Investigation Notebook	
Teacher References		Multi-Language Glossary	
Lesson Overview Compilation	▼	NGSS Information for Parents and Guardians	
Standards and Goals	▼	Print Materials (8.5" x 11")	
3-D Statements	▼	Print Materials (11" x 17")	
Assessment System	▼	Offline Preparation	
Embedded Formative Assessments	▼		
Books in This Unit	▼		
Apps in This Unit	▼		
Opportunities for Unit Extensions	▼		
Flextensions in This Unit	▼	Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.	
		Offline Guide	

Plant and Animal Relationships


▶ Jump down to unit map

Generate printable teacher's guide




Chapter 1: Why aren't new chilla trees growing in the Bengal Tiger reserve?

Teacher's Guide




Chapter 2: Why aren't the chilla seeds getting to places where they need to grow?

Classroom



Chapter 3: Why aren't the chilla seeds getting to places where they...

Extension



Chapter 4: How are other seeds in the reserve able to get to places where they...

Extension

Planning for the Unit

Unit Overview

Unit Map

Progress Build

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

Lesson Overview Compilation

Standards and Goals

3-D Statements

Assessment System

Embedded Formative Assessments

Books in This Unit

Apps in This Unit

Opportunities for Unit Extensions

Flextensions in This Unit

Printable Resources

3-D Assessment Objectives

Coherence Flowcharts

Copypmaster Compilation

Crosscutting Concept Tracker

Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds

Flexension Compilation

Investigation Notebook

Multi-Language Glossary

NGSS Information for Parents and Guardians

Print Materials (8.5" x 11")

Print Materials (11" x 17")

Offline Preparation

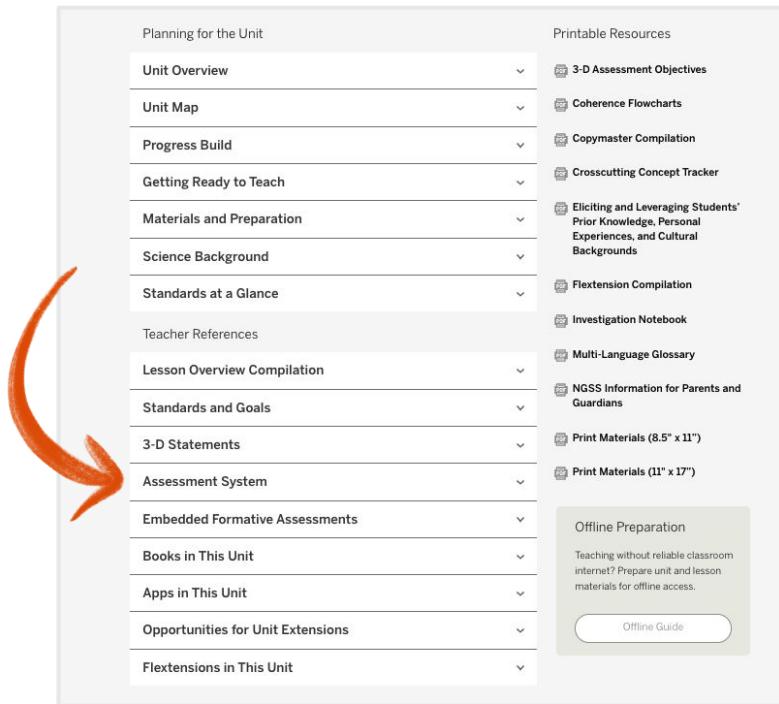
Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide

Assessment System

Work time

- Browse the Assessment System Document

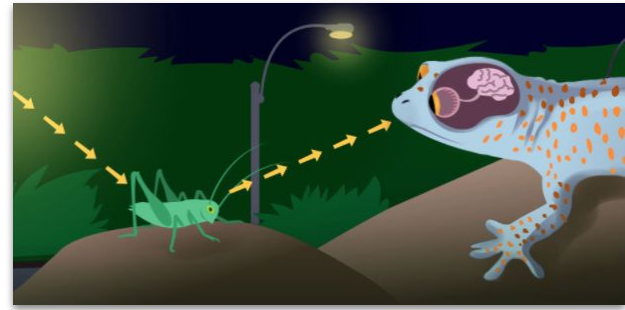
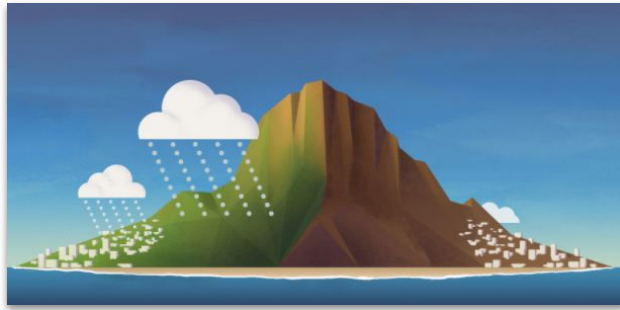
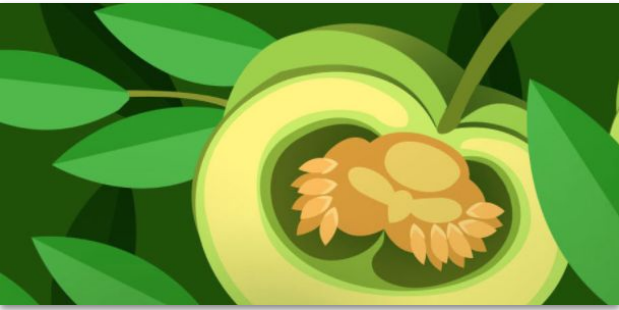


The screenshot displays a web interface for the Assessment System. It is organized into three main sections: Planning for the Unit, Teacher References, and Printable Resources. A large red arrow points to the 'Assessment System' link in the Teacher References section.

Planning for the Unit	Printable Resources
Unit Overview	3-D Assessment Objectives
Unit Map	Coherence Flowcharts
Progress Build	Copymaster Compilation
Getting Ready to Teach	Crosscutting Concept Tracker
Materials and Preparation	Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds
Science Background	Flexension Compilation
Standards at a Glance	Investigation Notebook
	Multi-Language Glossary
Teacher References	NGSS Information for Parents and Guardians
Lesson Overview Compilation	Print Materials (8.5" x 11")
Standards and Goals	Print Materials (11" x 17")
3-D Statements	
Assessment System	
Embedded Formative Assessments	
Books in This Unit	
Apps in This Unit	
Opportunities for Unit Extensions	
Flexensions in This Unit	

Offline Preparation
Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide



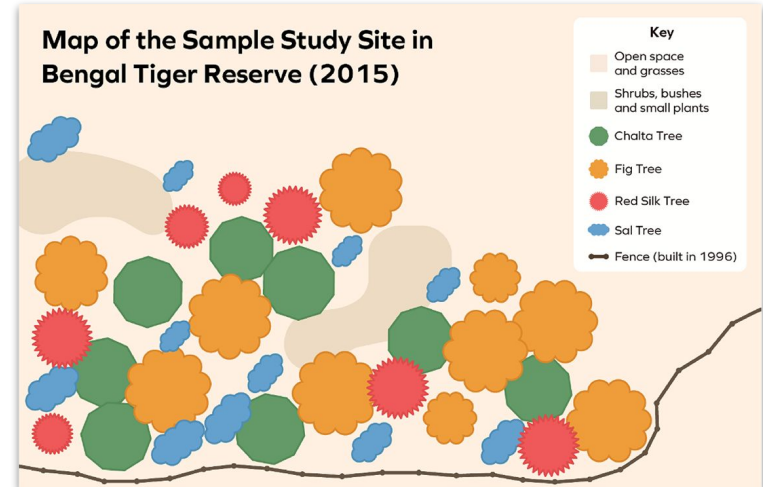
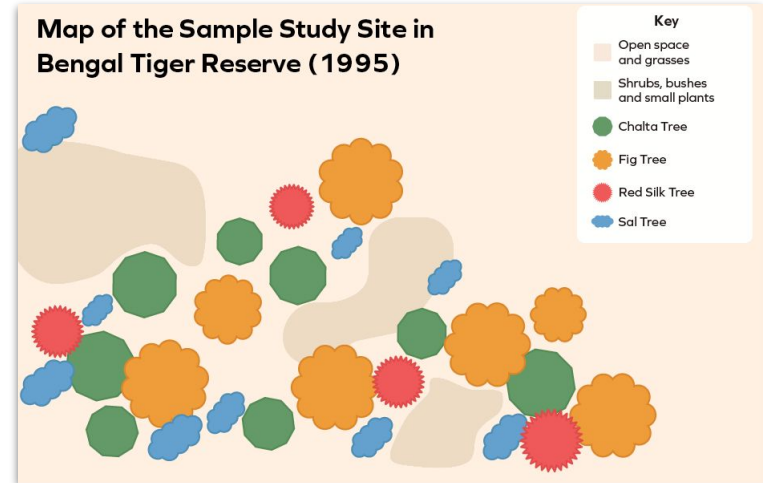
Plan for the day

- Introduction
- **Progress Builds**
- Formative assessment
- Pre and post unit assessment
- Closing

Focal unit: Grade 2

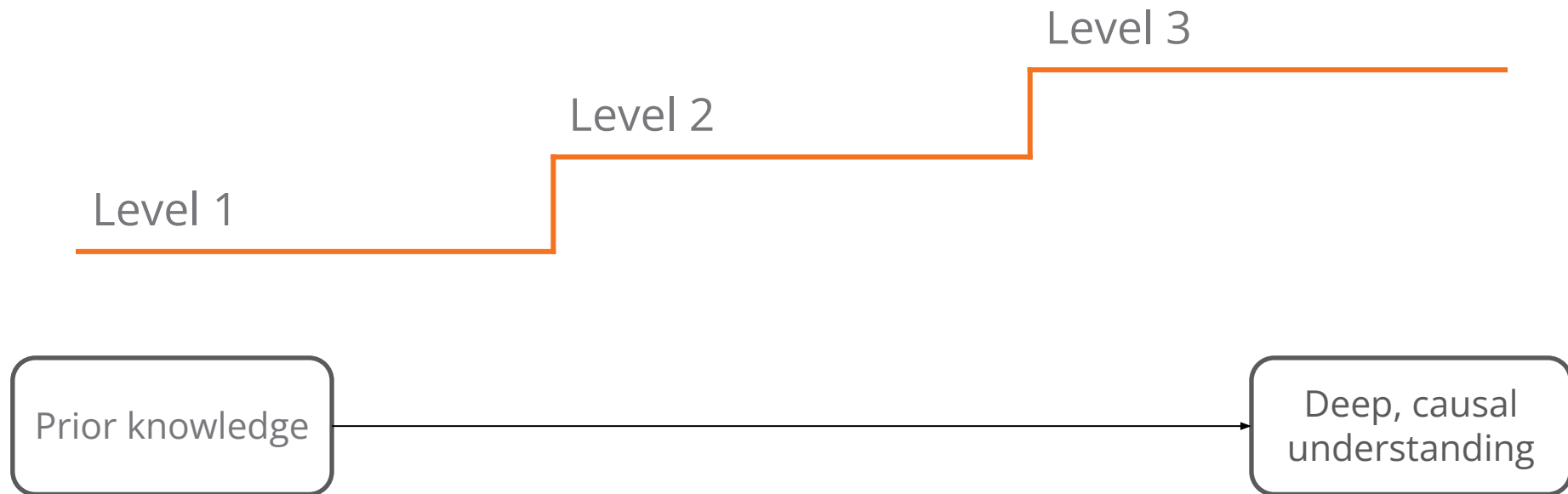
Plant and Animal Relationships

In their role as **plant scientists**, students work to figure out why there are no new chalta trees growing in the Bengal Tiger Reserve, which is part of a broadleaf forest.



Progress Build **A unit-specific learning progression**

Assumed prior knowledge (preconceptions): Students are likely to understand that some animals eat plants for food and that plants need water and sunlight to grow.. However, it is not expected that students have considered the interdependence of plants and animals.



Plant and Animal Relationships Progress Build

Level 3

Some plants depend on animals to disperse their seeds, and some animals depend on these plants for food.

Level 2

In order to grow, seeds need space to get sunlight on their leaves and to spread their roots to get water.

Level 1

Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water.

Prior knowledge

Deep, causal understanding

Plant and Animal Relationships Progress Build

What new ideas are added at Level 2?

Level 1

Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water.

What new ideas are added at Level 3?

Level 2

In order to grow, seeds need space to get sunlight on their leaves and to spread their roots to get water.

Level 3

Some plants depend on animals to disperse their seeds, and some animals depend on these plants for food.

Prior knowledge

Deep, causal understanding

Progress Build analysis

Work time

Read and analyze your unit's Progress Build.

Pg. 3

learning.amplify.com/curriculum/#/unit/Ba31e0dd4f40e85c014f4892a112225f:2021-2022

Apps

AmplifyScience > Plant and Animal Relationships

22 Lessons

Plant and Animal Relationships

JUMP DOWN TO UNIT GUIDE

GENERATE PRINTABLE TEACHER'S GUIDE

Beta

Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger...
7 Lessons

Beta

Chapter 2: Why aren't the chalta seeds getting what they need to grow?
5 Lessons

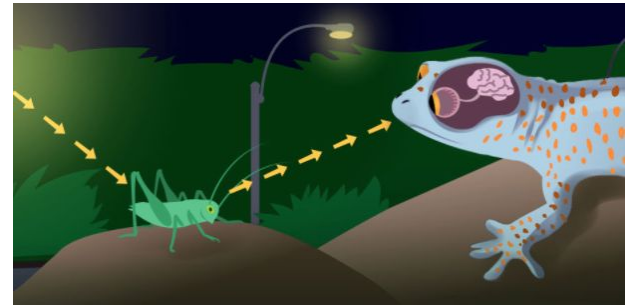
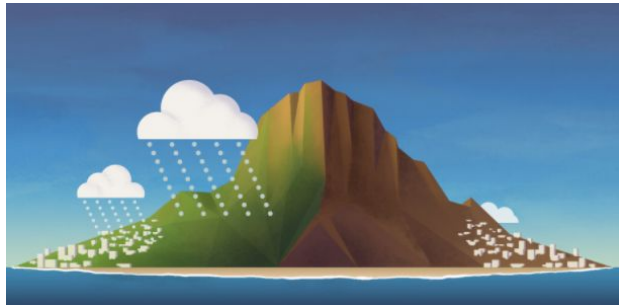
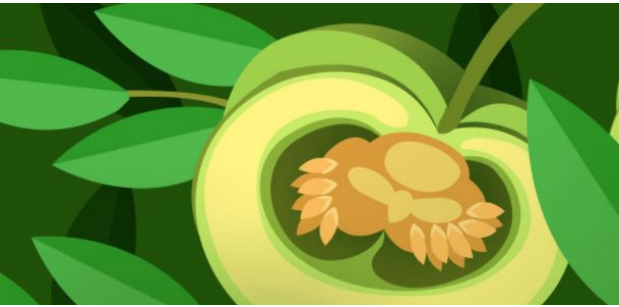
Beta

Chapter 3: Why aren't the chalta seeds getting to places where they...
6 Lessons

Beta

Chapter 4: How are...

Español



Plan for the day

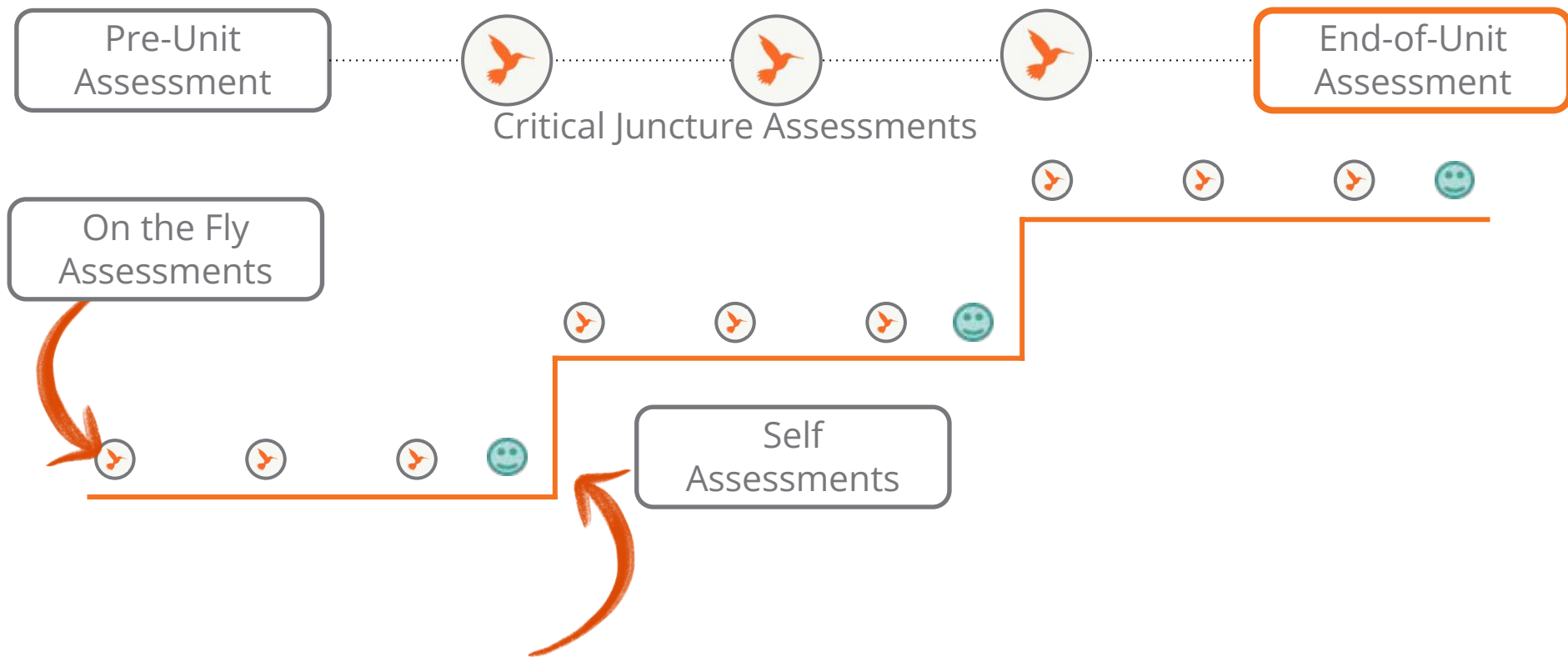
- Introduction
- Progress Builds
- **Formative Assessment**
- Pre and end of unit assessment
- Closing

Formative assessment

A cycle of eliciting, interpreting, and taking action on information about student learning



K-5 Assessment System



On the Fly Assessments

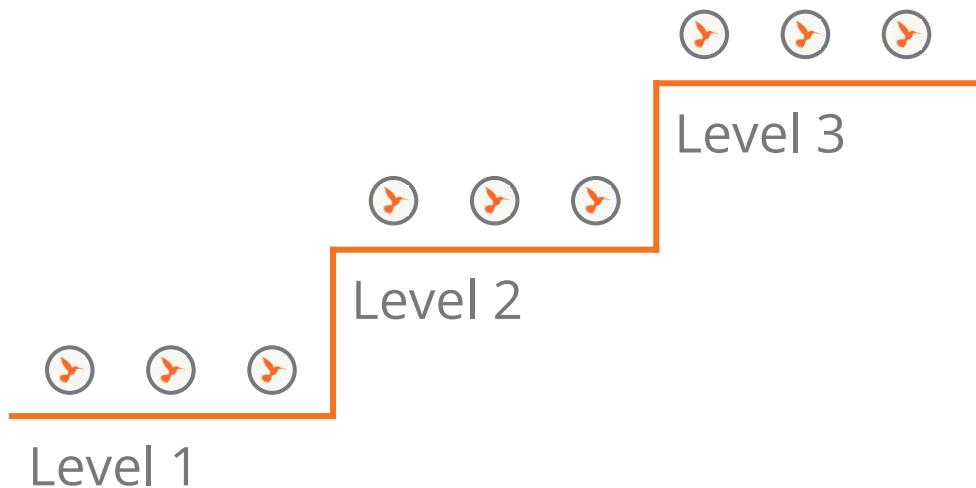
.....

On the Fly
Assessments



On-the-Fly Assessments

- Track student progress within a Progress Build level
- Embedded into instruction
- Assessment resource includes “Look for” and “Now what”



On The Fly Assessment

The screenshot displays a digital lesson plan interface for 'On The Fly Assessment'. The main content area is titled 'Debriefing Plant Parts' and includes a description: 'Students share their observations and discuss initial ideas about how plants use their parts to get sunlight and water to grow.(15 min)'. A red arrow points from the top left towards the 'Debriefing Plant Parts' section. A red circle highlights the 'ON THE FLY ASSESSMENT' button at the bottom left. Another red circle highlights the 'EMBEDDED FORMATIVE ASSESSMENT' icon in the center. The interface also features a sidebar on the right with a tree illustration and a 'Chapter 2: Why aren't the chalta seeds getting what they need to grow?' section. The top navigation bar includes 'HANDS-ON Exploring Roots and Leaves', '3 HANDS-ON Measuring Roots and Leaves', and '4 STUDENT-TO-STUDENT DISCUSSION Debriefing Plant Parts'. The bottom navigation bar includes 'ON THE FLY ASSESSMENT' and 'INSTRUCTIONAL GUIDE'.

Chapter 2: Why aren't the chalta seeds getting what they need to grow?

JUMP DOWN TO CHAPTER OVERVIEW

Lesson 2.1: ... System

Lesson 2.2: ... System

Lesson 2.3: Investigating How Roots and Leaves Grow

Chapter 3: Why aren't the chalta seeds getting to places where they... 6 Lessons

HANDS-ON Exploring Roots and Leaves

3 HANDS-ON Measuring Roots and Leaves

4 STUDENT-TO-STUDENT DISCUSSION Debriefing Plant Parts

Debriefing Plant Parts

Students share their observations and discuss initial ideas about how plants use their parts to get sunlight and water to grow.(15 min)

ON THE FLY ASSESSMENT

EMBEDDED FORMATIVE ASSESSMENT

INSTRUCTIONAL GUIDE

GENERATE PRINTABLE LESSON GUIDE

Digital Resources

- Classroom Slides 2.1 | PowerPoint
- Classroom Slides 2.1 | Google Slides
- All Projections
- Setting a Purpose chart: Completed
- Plant and Animal Relationships Investigation Notebook, pages 23-26

Lesson 2.1, Activity 4



On-the-Fly Assessment 5: Parts of the Plant System

Look for: As students work, circulate and look at students' drawings, and listen to students sharing with partners. Listen for how well students are able to express the idea that a plant is a system made up of different parts (leaves, stems, roots), and that each of these parts has a unique role so that the plant can live and grow. This activity helps students to construct understanding of the Crosscutting Concepts of Structure and Function and Systems and System Models.

Now what? It is okay if students are unsure of the function of each plant part within the plant system. Students will investigate plant part functions in Lesson 2.2 as they read and discuss the book *A Plant Is a System*. However, make note of what your students already know, don't know, or have alternate conceptions about with regards to plant part function. Build on these ideas in the next lesson.

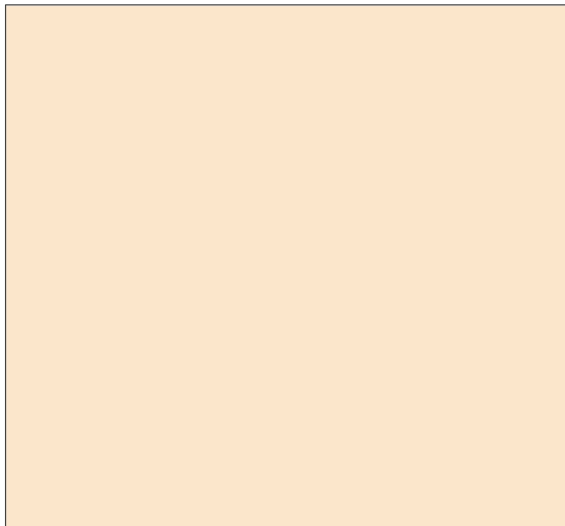
NGSS connection: This formative assessment reveals student knowledge and use of the crosscutting concept of Systems and System Models, and the crosscutting concept of Structure and Function.

Name: _____ Date: _____

Think-Draw-Pair-Share: What Do Plant Parts Do?

Directions:

1. Think about the question: *How do you think a plant's roots and leaves help the plant get what it needs to grow?*
2. In the box below, make a drawing to explain your ideas.
3. Label your drawing.
4. Use your drawing to discuss your ideas with your partner.



Turn to page 26 in your notebooks.



How do you think a plant's **roots and leaves** help the plant get what it needs to grow?

Lesson 2.1: Exploring Plant Parts
Activity 4

Name: _____

Think-Draw-Pair-Share: What Do Plant Parts Do?


1. Read about the question now as you think about roots and leaves.

2. Help the plant grow and it needs to grow!

3. At the top below, make a drawing to support your ideas.


4. Label your drawing.

5. Talk your drawing to discuss your ideas with your partner.



This work is derived from the California Science Curriculum Framework for Grade 5, published by the California Department of Education.

Turn to page 26 in your notebooks.



How do you think a plant's **roots and leaves** help the plant get what it needs to grow?

ON-THE-FLY

Teacher action:

Use the Think-Draw-Pair-Share routine to discuss this question. Circulate among the pairs and listen as they share ideas. After partners have discussed, call on several students to share their ideas with the class.

On-the-Fly Assessment 5: Parts of the Plant System

Look for: As students work, circulate and look at students' drawings, and listen to students sharing with partners. Listen for how well students are able to express the idea that a plant is a system made up of different parts (leaves, stems, roots), and that each of these parts has a unique role so that the plant can live and grow. This activity helps students to construct understanding of the Crosscutting Concepts of Structure and Function and Systems and System Models.

Now what? It is okay if students are unsure of the function of each plant part within the plant system. Students will investigate plant part functions in Lesson 2.2 as they read and discuss the book *A Plant Is a System*. However, make note of what your students already know, don't know, or have alternate conceptions about with regards to plant part function. Build on these ideas in the next lesson.



Suggested teacher talk:

Next, we will learn more about these plant parts and the jobs they do.

Plant and Animal Relationships Progress Build



On-the-Fly
Assessment

Level 2

Level 3

Level 1

Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water.

In order to grow, seeds need space to get sunlight on their leaves and to spread their roots to get water.

Some plants depend on animals to disperse their seeds, and some animals depend on these plants for food.

Prior knowledge

Deep, causal
understanding

On the Fly Assessment

Work time

- Explore the On the Fly Assessments



Planning for the Unit

Unit Overview

Unit Map

Progress Build

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

Lesson Overview Compilation

Standards and Goals

3-D Statements

Assessment System

Embedded Formative Assessments

Books in This Unit

Apps in This Unit

Opportunities for Unit Extensions

Flextensions in This Unit

Printable Resources

3-D Assessment Objectives

Coherence Flowcharts

Copymaster Compilation

Crosscutting Concept Tracker

Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds

Flextension Compilation

Investigation Notebook

Multi-Language Glossary

NGSS Information for Parents and Guardians

Print Materials (8.5" x 11")

Print Materials (11" x 17")

Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

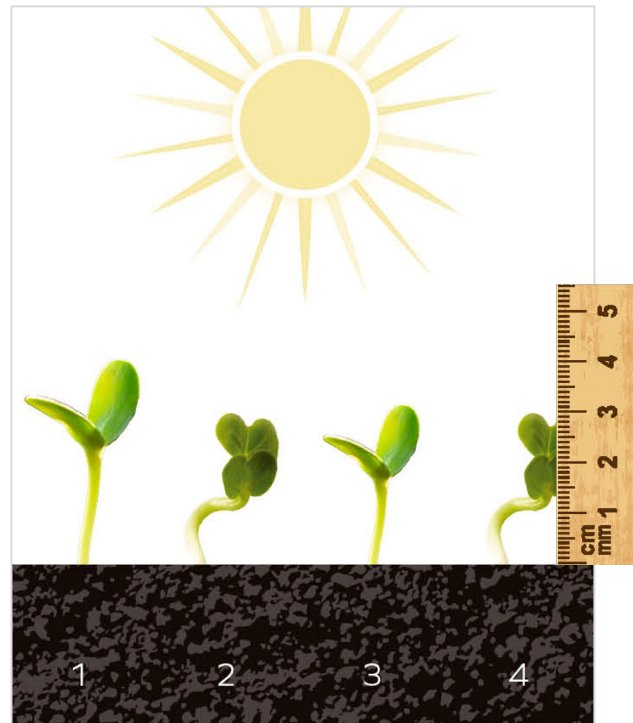
Offline Guide

Additional formative assessment information

On-the-Fly Assessments

In addition to assessing concepts in the Progress Build, some On-the-Fly Assessments provide data about:

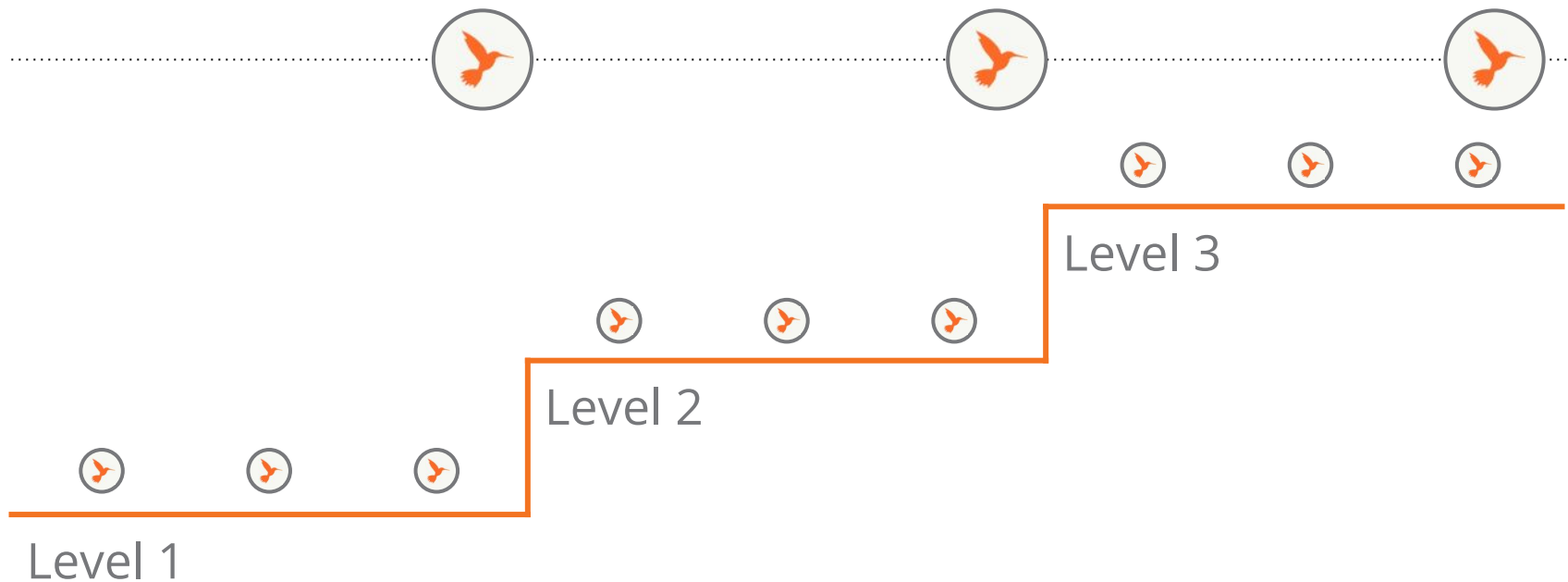
- Science and Engineering Practices
- Crosscutting Concepts
- Literacy skills
- Student collaboration



Questions?

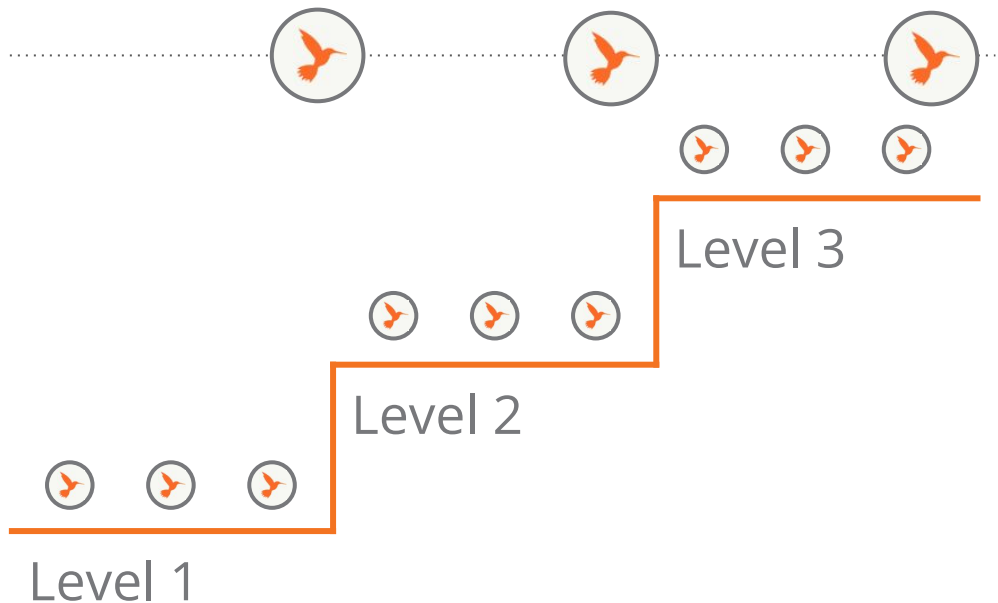


Critical Juncture Assessments



Critical Juncture Assessments

- Track student progress between Progress Build levels
- Embedded into instruction
- Assessment resource includes “Assess Understanding” and “Tailor Instruction”



Critical Juncture Assessment

Planning for the Unit

- Unit Overview
- Unit Map

Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger Reserve?

JUMP DOWN TO CHAPTER OVERVIEW

Lesson 1.1: Lesson 1.2: Lesson 1.3:

Lesson 1.7:

Introduction to Concept Mapping

Students are introduced to the Concept Mapping Routine, which they will use throughout the unit to help them discuss science ideas.(25 min)

Critical Juncture Assessment 1: How New Plants Sprout and Grow

CRITICAL JUNCTURE

EMBEDDED FORMATIVE ASSESSMENT

INSTRUCTIONAL GUIDE

Printable Resources

- 3-D Assessment Objectives
- Coherence Flowcharts
- Copymaster Compilation
- Crosscutting Concept Tracker
- Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds
- Flexension Compilation
- Investigation Notebook
- Multi-Language Glossary
- NGSS Information for Parents and Guardians
- Print Materials (8.5" x 11")
- Print Materials (11" x 17")

Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide

Name: _____ Date: _____

Using Science Words to Write About How Plants Grow

Directions:

1. Read each question below.
2. Use science words to write an answer to each question.

Where do new plants come from?

What do seeds need to grow into full-grown plants?

Turn to page 21 in your notebooks.



Use the science words
you just worked
with—*seeds, water,
sunlight, full-grown, and
sprout.*

Embedded formative assessments

On-the-Fly and Critical Juncture Assessments

Use the Embedded Formative Assessments document to get familiar with the Critical Juncture Assessments in your unit.

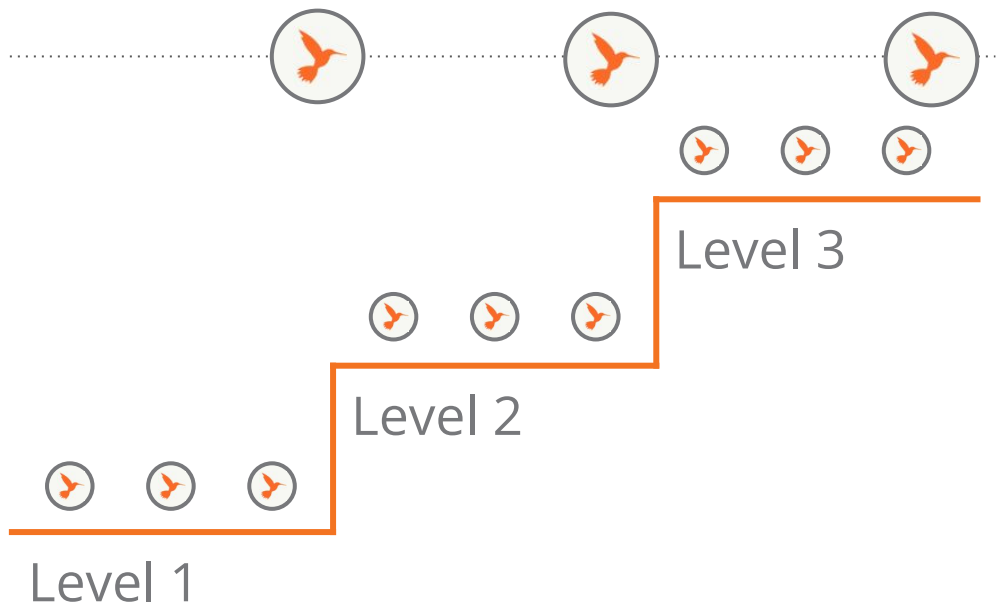


Embedded formative assessments

Reflection

In 1-2 sentences, describe the relationship among:

- Progress Build
- On-the-Fly Assessments
- Critical Juncture Assessments



Questions?



Additional formative assessment information

Locating assessment resources

Full text of assessment

- Embedded Formative Assessments document
- Instructional guide
- Classroom Slides notes

The screenshot displays the Learning Amplify web interface. At the top, a navigation bar includes a 'Lesson Brief (4 Activities)' tab and a sequence of numbered tabs: 1. TEACHER-LED DISCUSSION: How Do Plants Get Water and Sunlight?, 2. HANDS-ON: Exploring Roots and Leaves, 3. HANDS-ON: Measuring Roots and Leaves, and 4. STUDENT-TO-STUDENT DISCUSSION: Debriefing Plant Parts. The fourth tab is currently selected. Below the navigation bar, the main content area is titled 'Debriefing Plant Parts' and contains the text: 'Students share their observations and discuss initial ideas about how plants use their parts to get sunlight and water to grow. (15 min)'. To the right of this text are two icons: 'EMBEDDED FORMATIVE ASSESSMENT' and 'INSTRUCTIONAL GUIDE'. Below the main content area is a tabbed interface with 'Step-by-step', 'Teacher Support', and 'My Notes'. The 'Step-by-step' tab is active, showing a list of instructions for the debriefing activity. An orange arrow originates from the 'Embedded Formative Assessments' button in the top right corner of the interface and points to the 'EMBEDDED FORMATIVE ASSESSMENT' icon in the bottom right corner.

Plant and Animal Relationships
Teacher References

Embedded Formative Assessments

docs.google.com/presentation

learning.amplify.com/curriculum/#/unit/8a31e0dd4f40e85c014f4892a112225f-2021-22/cardstack/ff8080815a81...-22/cardstack/ff8080815a81...

Lesson Brief (4 Activities)

1 TEACHER-LED DISCUSSION: How Do Plants Get Water and Sunlight?

2 HANDS-ON: Exploring Roots and Leaves

3 HANDS-ON: Measuring Roots and Leaves

4 STUDENT-TO-STUDENT DISCUSSION: Debriefing Plant Parts

Debriefing Plant Parts

Students share their observations and discuss initial ideas about how plants use their parts to get sunlight and water to grow. (15 min)

EMBEDDED FORMATIVE ASSESSMENT

INSTRUCTIONAL GUIDE

Step-by-step Teacher Support My Notes

1. Debrief student observations. Solicit students' observations about leaves and roots.

What did you observe about the leaves? What was similar or different between the leaves of different plants?

What did you observe about the roots? What was similar or different between the roots of different plants?

Accept all responses. Prompt students to describe the plant parts in detail, including their shape and color.

2. Introduce evidence. Post the evidence vocabulary card.

We think that roots and leaves look different on different plants. We think this because we observed different plants and saw that the shape and size of roots and leaves of different plants are different.

What we observed is our evidence. Evidence is information that supports an answer to a question.

3. Remind students of the Think-Draw-Pair-Share routine and explain directions. Remind students about the purpose for the Roots and Leaves Investigation. Let students know that they will now use the Think-Draw-Pair-Share routine to discuss their ideas about what the roots and leaves might do for a plant. Remind them that you'll ask a question, and they will follow four steps.

- **Think.** After you ask a question, you'll say, "Think," and students will think silently about the question for about 1 minute.
- **Draw.** When you say, "Draw," students will draw in their notebooks.
- **Pair.** When you say, "Pair," students will discuss their ideas and drawings with their partners.
- **Share.** When you say, "Share," students will stop talking and raise their hands to share an idea—their own idea or their partner's idea—with the class.

4. Project notebook page 26. Have students turn to page 26. Think-Draw-Pair-Share: What Do Plant Parts Do? in their notebooks.

Español

Additional formative assessment information

Possible student responses

- Within assessments:
 - “Look fors” (OtF)
 - “Assess Understanding” (CJ)
- Possible responses within the Instructional Guide
- Digital resources
 - Assessment Guides
 - Teacher References

The screenshot shows the AmplifyScience interface for the activity 'Writing About Roots and Leaves'. The breadcrumb trail at the top reads: AmplifyScience > Plant and Animal Relationships > Chapter 2 > Lesson 2.3. Below this is a navigation bar with three tabs: '1 WRITING Writing About Roots and Leaves', '2 HANDS-ON Playing the Growing Roots Game', and '3 HANDS-ON Modeling Sunlight on Leaves'. The main title 'Writing About Roots and Leaves' is displayed, followed by the instruction: 'Students reread a section of *A Plant Is a System* to support writing about how a plant is a system. (20 min)'. Below the instruction is a navigation bar with four tabs: 'Step-by-step', 'Teacher Support', 'Possible Responses' (which is circled in orange), and 'My Notes'. The 'Possible Responses' tab contains a list of five numbered prompts for students to discuss or write about. At the bottom of the page, there is a 'Next Activity' button and a small icon of a book.

AmplifyScience > Plant and Animal Relationships > Chapter 2 > Lesson 2.3

Lesson Brief (3 Activities)

1 WRITING Writing About Roots and Leaves

2 HANDS-ON Playing the Growing Roots Game

3 HANDS-ON Modeling Sunlight on Leaves

Writing About Roots and Leaves

Students reread a section of *A Plant Is a System* to support writing about how a plant is a system. (20 min)

INSTRUCTIONAL GUIDE

Step-by-step Teacher Support Possible Responses My Notes

1. Connect to prior learning.

Q We have been working as plant scientists to investigate plants in their habitats. What have you learned about how new plants grow?
[New plants grow from seeds when they get enough water and sunlight.]

2. Hold up *A Plant Is a System* and review previous purpose for reading. Refer to the Setting a Purpose chart.

Q In our last lesson, we read this book. Our purpose for reading was to find out how a plant uses its parts to get the water and sunlight it needs to grow.

Q What have you learned about how plants get the water and sunlight they need to grow?
[Plants use their roots to get water and their leaves to get sunlight.]

3. Review system. Remind students that the book is called *A Plant Is a System*, and review that a system is a group of parts that work together.

4. Set the purpose for rereading and recording.

Q Today we will read part of this book again to think more about how a plant can be a system.

Q Scientists record important ideas they have learned, so as plant scientists, we're going to use what we read to write down our ideas about how a plant is a system.

5. Project notebook page 32. Have students turn to page 32, *A Plant Is a System*, in their notebooks. Read aloud the directions.

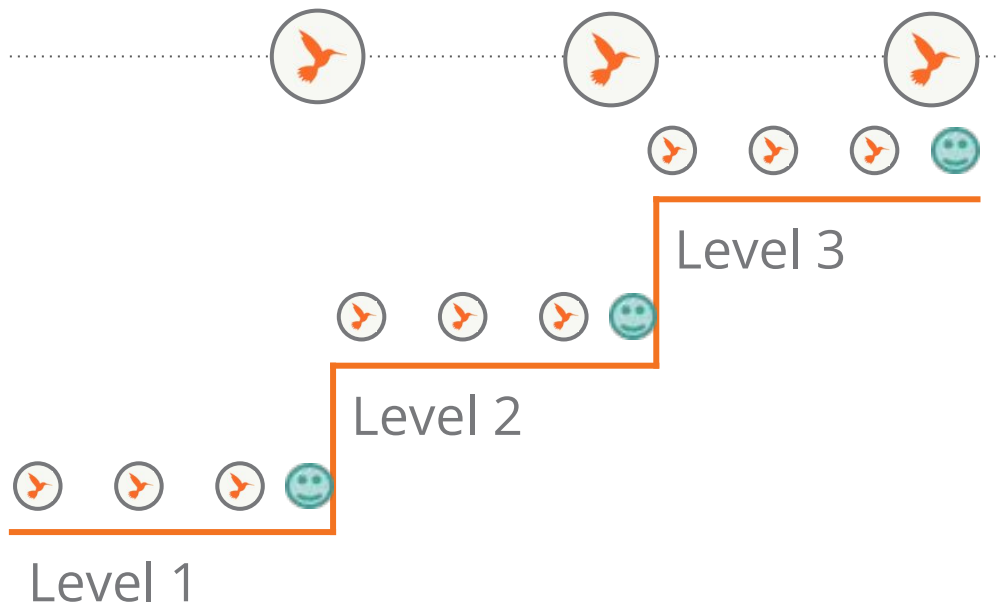
6. Designate pairs and distribute books. Have student [pairs read and complete](#) the notebook page. [Click for more](#)

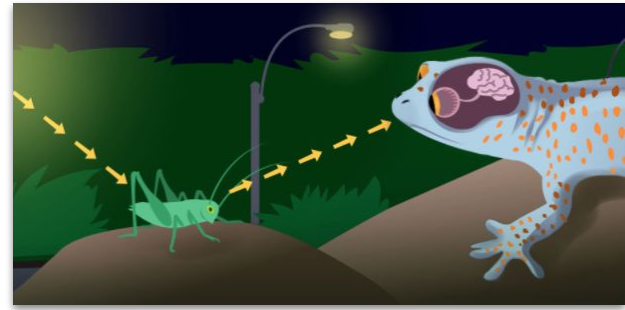
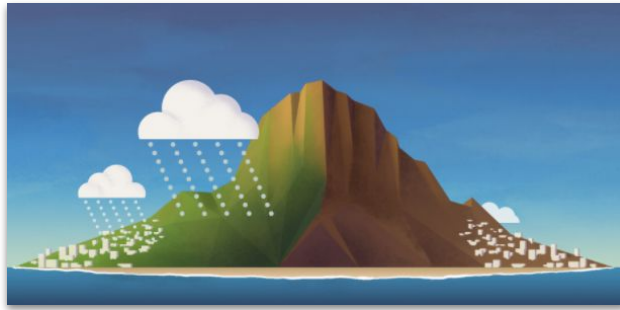
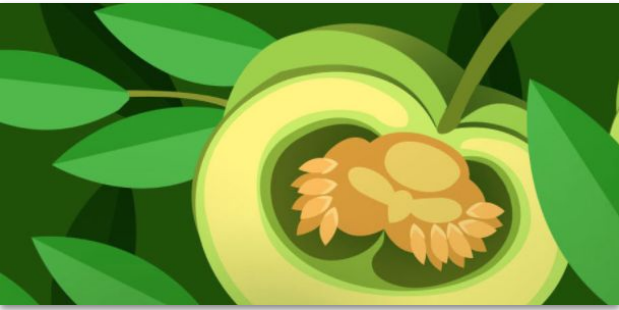
Next Up: 2: Playing the Growing Roo... Next Activity

Additional formative assessment information

Student Self-Assessments

- End of each chapter
- Grades K-1: Pair Share activity
- Grades 2-5: Independent Investigation Notebook activity



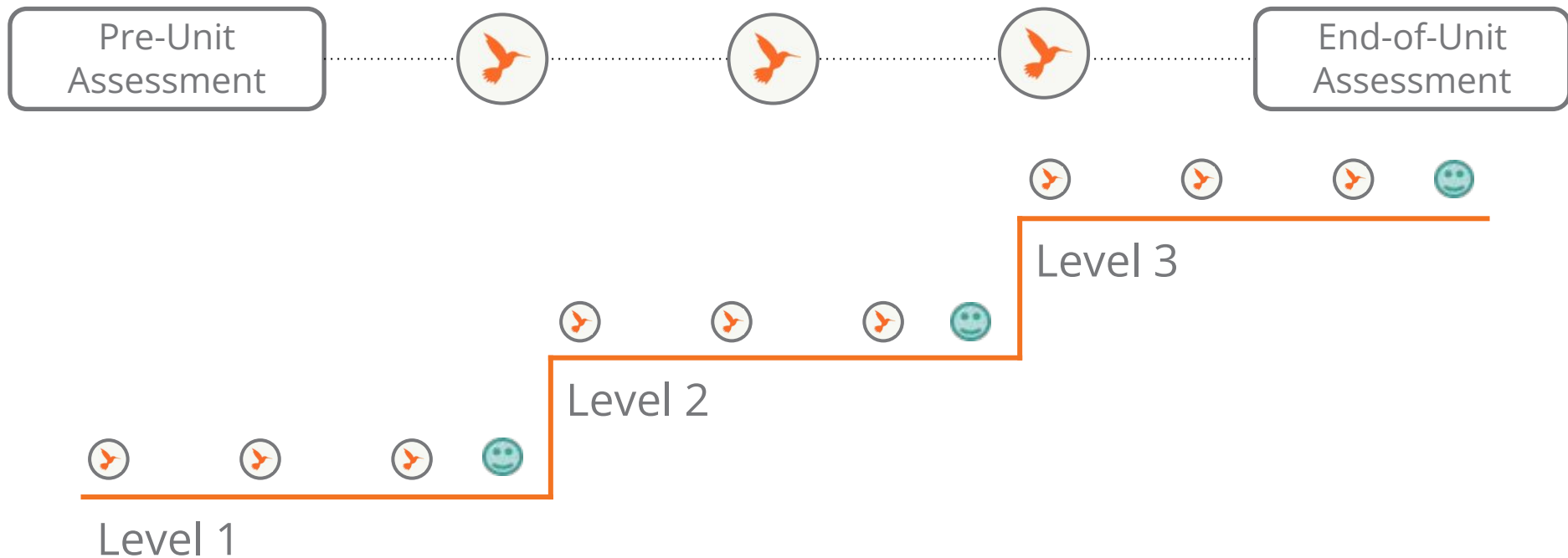


Plan for the day

- Introduction
- Progress Builds
- Formative assessment
- **Pre and end of unit assessment**
- Closing

Pre and End-of-Unit Assessment

Pg. 2



Pre-Unit Assessment

Lesson 1.1

Locate the Assessment Guide in Lesson 1.1 of your unit and skim it.

Open up the classroom slides and see how the pre-unit assessment is embedded in the lesson.

AmplifyScience > Plant and Animal Relationships > Chapter 1 > Lesson 1.1

Lesson 1.1: Pre-Unit Assessment

Lesson Brief (3 Activities)

1 TEACHER-LED DISCUSSION Introducing the Context of the Unit

2 READING Introducing the Reference Book

3 STUDENT-TO-STUDENT DISCUSSION Diagramming Initial Explanations

RESET LESSON

GENERATE PRINTABLE LESSON GUIDE

Overview

Materials & Preparation

Differentiation

Standards

Vocabulary

Unplugged?

Overview

Students' Initial Diagrams

Students are introduced to the *Plant and Animal Relationships* unit and to their role as plant scientists investigating changes in the trees at a Bengal Tiger Reserve in India. To initiate student thinking about habitats, the teacher introduces and demonstrates how to use the unit's reference book, *Handbook of Habitats*. Pairs explore the book and read an introductory section about diversity within and across different types of habitats. Next, students show their initial ideas by adding to a diagram of a habitat. They identify the parts of a plant, which seeds in the habitat are most likely to grow, and how seeds can move from one place to another. Students' diagrams serve as the pre-unit assessment for formative purposes, designed to reveal

Digital Resources

- Classroom Slides 1.1 | PowerPoint
- Classroom Slides 1.1 | Google Slides
- All Projections
- Pre-Unit Diagram: Explaining the Plants in a Habitat copymaster
- Assessment Guide: Interpreting Students' Pre-Unit Diagrams About Explaining the Plants in a Habitat
- Investigation Notebook

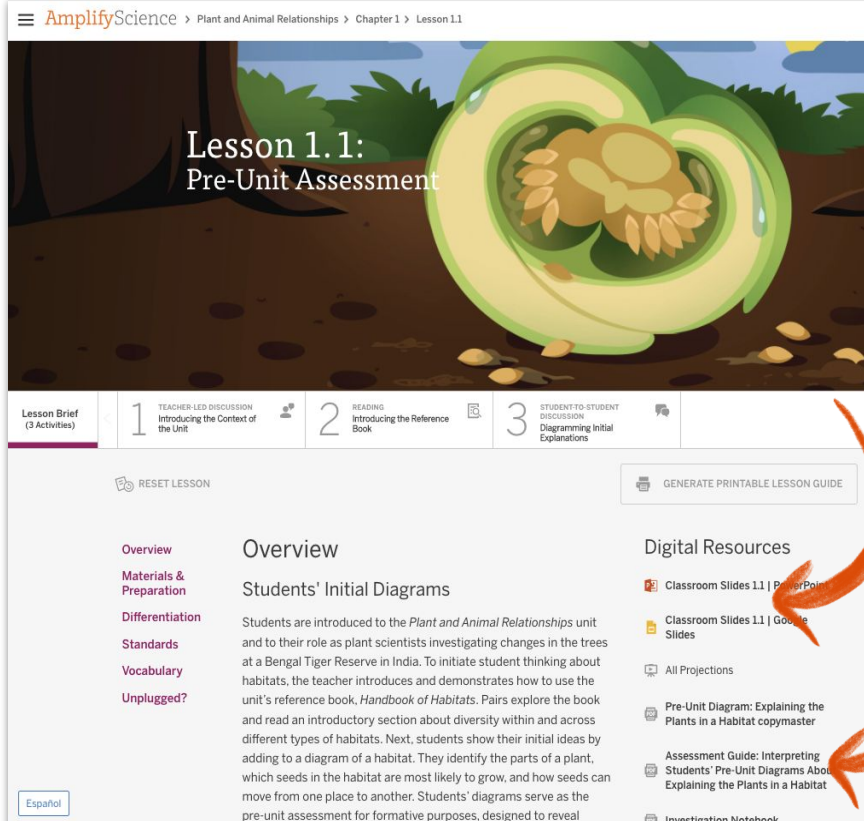
Español

Pre-Unit Assessment

Work Time

Locate the Assessment Guide in Lesson 1.1 of your unit and skim it.

Open up the classroom slides and see how the pre-unit assessment is embedded in the lesson.



The screenshot displays the AmplifyScience website interface for Lesson 1.1: Pre-Unit Assessment. The top navigation bar shows the path: AmplifyScience > Plant and Animal Relationships > Chapter 1 > Lesson 1.1. The main header features a large illustration of a green, heart-shaped plant with a yellow center, set against a background of a forest floor. The title "Lesson 1.1: Pre-Unit Assessment" is prominently displayed.

Below the header, a horizontal navigation bar lists three sections: "Lesson Brief (3 Activities)", "1 TEACHER-LED DISCUSSION: Introducing the Context of the Unit", and "2 READING: Introducing the Reference Book". The "Lesson Brief" section is currently selected.

The main content area is divided into two columns. The left column contains a sidebar with links: "Overview", "Materials & Preparation", "Differentiation", "Standards", "Vocabulary", and "Unplugged?". The right column, titled "Overview", contains the text: "Students are introduced to the *Plant and Animal Relationships* unit and to their role as plant scientists investigating changes in the trees at a Bengal Tiger Reserve in India. To initiate student thinking about habitats, the teacher introduces and demonstrates how to use the unit's reference book, *Handbook of Habitats*. Pairs explore the book and read an introductory section about diversity within and across different types of habitats. Next, students show their initial ideas by adding to a diagram of a habitat. They identify the parts of a plant, which seeds in the habitat are most likely to grow, and how seeds can move from one place to another. Students' diagrams serve as the pre-unit assessment for formative purposes, designed to reveal

On the right side of the page, there is a "Digital Resources" section. It lists several resources, including "Classroom Slides 1.1 | PowerPoint", "Classroom Slides 1.1 | Google Slides", "All Projections", "Pre-Unit Diagram: Explaining the Plants in a Habitat copymaster", "Assessment Guide: Interpreting Students' Pre-Unit Diagrams About Explaining the Plants in a Habitat", and "Investigation Notebook". Two red arrows point from the "Classroom Slides 1.1 | Google Slides" and "Assessment Guide: Interpreting Students' Pre-Unit Diagrams About Explaining the Plants in a Habitat" links to the right.

End-of-Unit Assessment

3-dimensional assessment opportunity

- Summative assessment of mastery of science concepts
- Formative assessment of Science and Engineering Practices



End of Unit Assessment for Gr. 4 Earth's Features

Two Part summative assessment


Lesson 3.5 Part 1

Name: _____ Date: _____

End-of-Unit Writing Part 1: Scientific Argument About the Environment When the Unknown Rock Layer Formed

1. Write a scientific argument that answers Question 1 below.
2. Your audience is the park director at Desert Rocks National Park.

Desert Rocks Canyon rocky outcrop



UNKNOWN LAYER
Siltstone, Floodplain

UPPER LAYER
Mudstone, Deep Ocean

LOWER LAYER
Siltstone, Floodplain

Question 1: What was the environment like when the unknown layer formed?

Earth's Features—Lesson 3.5 (Version A)
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Lesson 3.5: Students' Arguments

GENERATE PRINTABLE LESSON GUIDE

Overview

In this lesson, students discuss a newly discovered fossil in a different rock layer of the rocky outcrop at Desert Rocks National Park and write about how and in what order the rock layers formed. Students discuss the new evidence in an Evidence Circle in order to make a claim about what the environment was like when the rock layer formed. After a brief whole-class discussion, students complete a two-part writing activity, which serves as Part 1 of the End-of-Unit Assessment. In the first part, students write an argument about what the environment was like when the unknown rock layer formed. In the second part, students determine the order of the three environments they have been investigating. The End-of-Unit Assessment is designed to reveal students' understanding of unit-specific science concepts, the crosscutting concept of Stability and Change, and the practice of engaging in argument from evidence. The purpose of this lesson is for students to demonstrate knowledge of unit content while engaging in the practice of argumentation.

Digital Resources

- Classroom Slides 3.5 | PowerPoint
- Classroom Slides 3.5 | Google Slides
- All Projections
- End-of-Unit Writing Part 1: Arguing About the Environment When the Unknown Rock Layer Formed Version A copymaster
- Optional: End-of-Unit Writing Part 1: Arguing About the Environment When the Unknown Rock Layer Formed Version B copymaster
- Assessment Guide: Assessing Students' End-of-Unit Part 1 Arguments About the Environment When the Unknown Rock Layer Formed

Two Part summative assessment (usually found in Units 3 & 4)

Lesson 4.5- Part 2

Name: _____ Date: _____

End-of-Unit Writing Part 2: Arguing About Why More Rock Layers Were Exposed in Desert Rocks Canyon

- Write a scientific argument that answers the question below.
- Your audience is the park director of Desert Rocks National Park.

Question: Why did more rock layers get exposed in Desert Rocks Canyon than in Keller's Canyon?

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Earth's Features—Lesson 4.5 (Version A)
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End-of-Unit Assessment

Work time

Locate the End-of-Unit Assessment and Assessment Guide in your unit.

Chapter 4: How are other seeds in the reserve able to get to places where they can grow?

✓ JUMP DOWN TO CHAPTER OVERVIEW

Lesson 4.4:
End-of-Unit Assessment

Lesson 4.3:
Explaining the Seed Dispersal Methods

2 TEACHER-LED DISCUSSION
Reflecting on Dispersal Methods

3 WRITING
Habitat Explanations

4 TEACHER-LED DISCUSSION
Concluding the Unit

RESET LESSON

GENERATE PRINTABLE LESSON GUIDE

Overview
Materials & Preparation
Differentiation
Standards
Vocabulary
Unplugged?

Overview

Students' End-of-Unit Diagrams

This culminating lesson of the unit, in which students work with a digital app and then complete habitat diagrams, serves as the End-of-Unit Assessment. Students use a digital app and information from the reference book to categorize seeds based on their structures and dispersal methods. The class then reflects on the different ways seeds can be dispersed based on their readings and investigations throughout the unit. Finally, students complete their habitat diagrams, which serve as their End-of-Unit Assessment, in which they annotate how a specific plant's seeds are dispersed based on information about the plant and animals' relationships in the habitat. The purpose of this lesson is for students to apply all they have learned about plant and animal relationships and about how seeds are dispersed in order to create diagrams for seed dispersal in a specific habitat.

Digital Resources

- Classroom Slides 4.4 | PowerPoint
- Classroom Slides 4.4 | Google Slides
- All Projections
- Classroom Videos 4.4 | Zip
- End-of-Unit Diagram: Explaining the Plants in a Habitat copymaster
- Assessment Guide: Assessing Students' End-of-Unit Diagrams About Explaining the Plants in a Habitat
- Plant and Animal Relationships Investigation Notebook, pages 71-72

End-of-Unit Assessment

Work time

Locate, open and read your End-of-Unit Assessment Guide

Assessment Guide: Interpreting Students' Pre-Unit Explanations About the Rocky Outcrop

This pre-unit writing assessment is an opportunity for students to articulate their initial ideas about how fossils and rocks form and how they can be used to interpret the geologic history of a place. It also provides a baseline for considering student growth over the course of the unit. See the 3-D Assessment Objectives (under Printable Resources) for a summary of how summative and formative assessments across the unit, grade and grade band reveal student knowledge and use of the three dimensions to support progress toward the focal Performance Expectations for this unit.

This pre-unit assessment provides students with an opportunity to connect their background knowledge and the initial ideas they have to the concepts they will be learning about in the *Earth's Features: Mystery in Desert Rocks Canyon* unit. It can also provide insight into students' thinking as you begin this unit of instruction. This will allow you to draw connections to students' experiences and to watch for alternate conceptions that might get in the way of students' understanding. In particular, look for the following:

Connecting to students' experiences. Examples of students' experiences they might reference that you can connect to the content of lessons in the unit include the following:

- seeing fossils exhibited in a natural history museum
- hiking or visiting a national park
- seeing rocks in a river or other moving water

Building on prior knowledge. Examples of ideas that students can build on throughout the unit include the following:

- Fossils are evidence of life from the past.
- Things can build up over time.
- Rock material can be different sizes, such as boulders, pebbles, or sand.

Applying crosscutting concepts. Example of ways students could demonstrate facility with the crosscutting concept of Stability and Change:

- The environment of Desert Rocks National Park could have been different in the past (applying the idea that *some systems appear stable, but can change over long periods of time*).

Gauging students' facility with science practices. Since students write a scientific explanation for this task, it offers an entry-level assessment of student facility with this science and engineering practice. However, because students' work in response to this pre-assessment may be sparse and the unit is focused on the science and engineering practice of Engaging in Argument from Evidence, we recommend using students' first independently written arguments, and corresponding assessment guidance in Lesson 2.6 (Assessment Guide: Reviewing Students' Chapter 2 Arguments About the Environment When the Upper Layer Formed) as an entry-level assessment of this science and engineering practice. Additional entry-level assessments of science and engineering practices and

Earth's Features: Mystery in Desert Rocks Canyon (Grade 4)

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crosscutting concepts can be found in the following lessons: the science and engineering practice of Obtaining, Evaluating, and Communicating Information in Lesson 1.2 (On-the-Fly Assessment 1, Activity 4), and the crosscutting concept of Stability and Change in Lesson 2.4 (On-the-Fly Assessment 7, Activity 4).

Preconceptions, contrasted with accepted scientific understandings include the following:

- **Rock doesn't change.** Because geologic processes take so long, many students might not think that rocks ever change. However, rock on Earth is constantly changing: new rocks form and old rocks break down. Most rock transformation processes happen at times scales too long for humans to experience.
- **The environment in one place doesn't change.** Similar to rocks, environments change slowly over time, and students might not understand that one place can transition from an underwater environment to being exposed to air. However, because of sea transgressions and regressions, as well as sedimentary infilling of basins and tectonic activity, the environment in one location can change over geologic time.
- **Water or wind can't affect rock.** Rock is a very solid, while water and wind are not thought of as very strong or powerful. However, moving water or wind can move small pieces of sediment, which creates friction with existing rock and can wear the rock down over time.
- **All fossils are the same age, which is very old.** Students might think of any fossil as representing "the past," without considering Earth's nearly four-billion-year-old history of life and the range of relative ages for fossils. In fact, one fossil can be hundreds of millions of years older than another fossil, and fossils range from billions of years old to just 10,000 years old.
- **Life has always been as it is.** Some students might think that all the species that are alive now have always been alive, or that species have never gone extinct. However, new species evolve and existing species go extinct regularly over time.

The assessment task in this lesson provides an opportunity to formatively assess students' preliminary understanding of the following standards:

Science and Engineering Practice

- Practice 6: Constructing Explanations and Designing Solutions

Disciplinary Core Idea

- ESS1.C: The History of Planet Earth:
 - Local, regional, and global patterns of rock formations reveal changes over time due to earth forces, such as earthquakes. The presence and location of certain fossil types indicate the order in which rock layers were formed. (4-ESS1-1)

Crosscutting Concept

- Stability and Change

Earth's Features: Mystery in Desert Rocks Canyon (Grade 4)

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2

Questions?



Assessment System

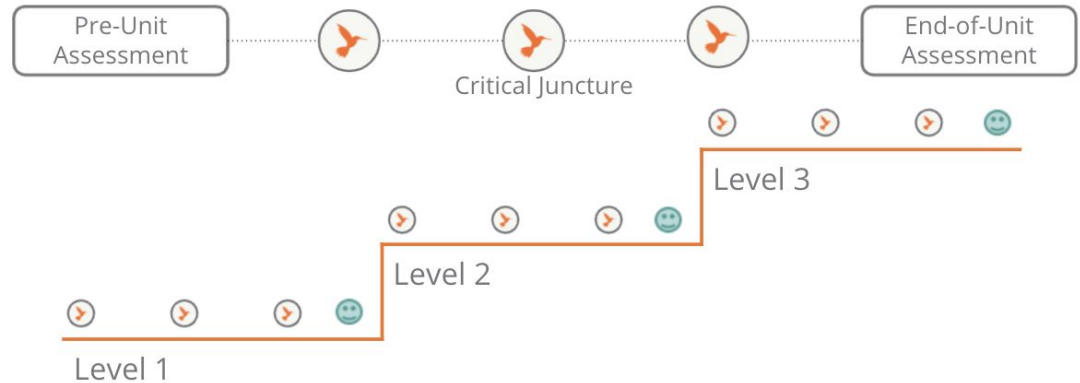
Reflection

How do the Progress Build and assessments work as a system?

What are the benefits of this system for students? For teachers?

Which assessments include students engaging in authentic discourse?

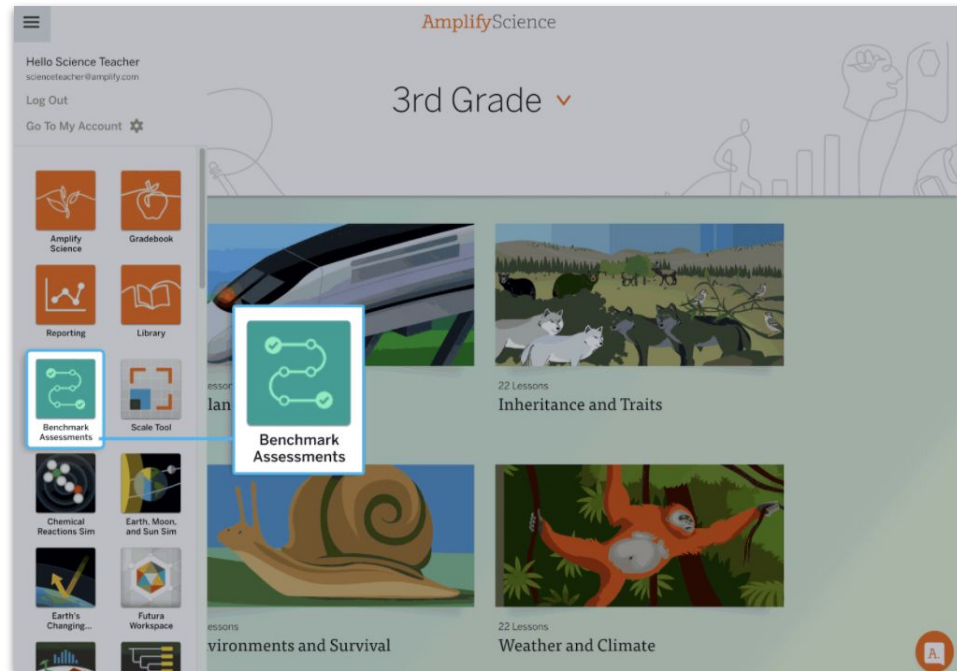
K-5 Assessment System



Resources for NGSS progress monitoring

NGSS Benchmark assessments

- Accessible in the Global Navigation menu
- Grades 3-5
- 4 assessments per grade



Resources for NGSS progress monitoring

3D Assessment Objectives

- Located in the Unit Guide
- Identifies where each dimension of the target Performance Expectations are assessed in the unit, in the grade, or in the grade-band.

≡ Amp

2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.

SEP: Planning and Carrying Out Investigations

Needs of Plants and Animals (Grade K)
OTFA 7: Lesson 2.3, Activity 3
OTFA 10: Lesson 3.1, Activity 2

Pushes and Pulls (Grade K)
PRE: Lesson 1.1, Activity T
OTFA 4: Lesson 2.1, Activity 2

Sunlight and Weather (Grade K)
OTFA 2: Lesson 2.1, Activity 4
INV: Lesson 4.1, Activities 3 + 4 (S)
OTFA 14: Lesson 5.2, Activity 4

Light and Sound (Grade 1)
OTFA 2: Lesson 1.3, Activity 3
OTFA 7: Lesson 3.1, Activity 2
INV: Lesson 4.1, Activity 3 (S)

Spinning Earth (Grade 1)
OTFA 7: Lesson 3.1, Activity 2
OTFA 8: Lesson 3.3, Activity 4
OTFA 11: Lesson 4.1, Activity 2

Plant and Animal Relationships (Grade 2)
OTFA 4: Lesson 1.6, Activity 4
OTFA 9: Lesson 3.3, Activity 3
OTFA 12: Lesson 4.1, Activity 4
OTFA 13: Lesson 4.2, Activity 4
INV: Lesson 4.3, Activity 4 and Lesson 4.3, Activities 1-4 (S)
OTFA 14: Lesson 4.3, Activity 3

DCI: LS2.A: Interdependent Relationships in Ecosystems

Plant and Animal Relationships (Grade 2)
PRE: Lesson 1.1, Activity 3
CJ 1: Lesson 1.7, Activity 2
OTFA 7: Lesson 2.3, Activity 3
CJ 2a: Lesson 2.4, Activity 3
CJ 2b: Lesson 2.5, Activity 3
INV: Lesson 4.3, Activity 4 and Lesson 4.3, Activities 1-4 (S)
EQU: Lesson 4.4, Activity 3 (S)

CCC: Cause and Effect

Pushes and Pulls (Grade K)
PRE: Lesson 1.1, Activity T
EQU: Lesson 6.3, Activity 1 (S)

Sunlight and Weather (Grade K)
PRE: Lesson 1.3, Activity 4
OTFA 13: Lesson 4.4, Activity 1
EQU: Lesson 5.6, Activity 1 (S)

Animal and Plant Defenses (Grade 1)
OTFA 3: Lesson 1.4, Activity 3

Light and Sound (Grade 1)
PRE: Lesson 1.1, Activity 1
OTFA 3: Lesson 1.4, Activity 3
OTFA 9: Lesson 3.6, Activity 1
INV: Lesson 4.1, Activity 3 (S)
EQU: Lesson 4.6, Activity 1 (S)

Changing Landforms (Grade 2)
OTFA 5: Lesson 2.4, Activity 2

Properties of Materials (Grade 2)
OTFA 8: Lesson 2.3, Activity 5
OTFA 16: Lesson 4.3, Activity 4
EQU: Lesson 4.4, Activity 2 (S)

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: Objectives

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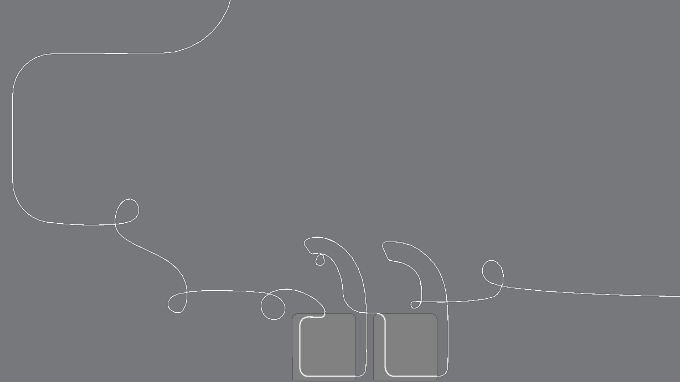
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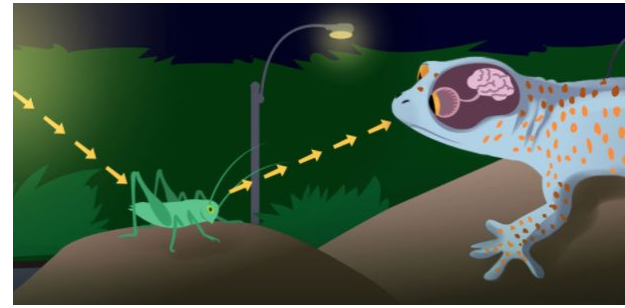
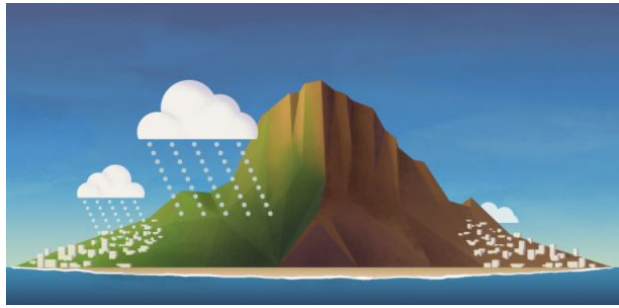
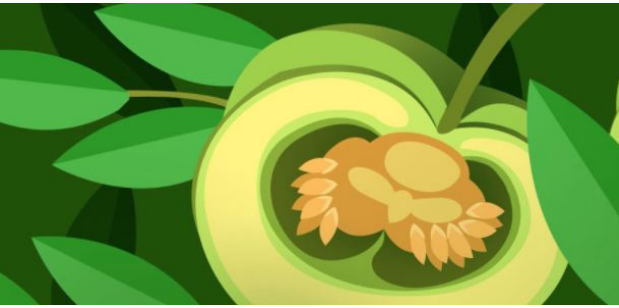
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Glossary

on for Parents and

Questions?





Plan for the day

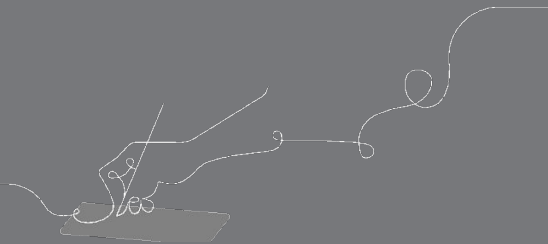
- Introduction
- Progress Builds
- Formative assessment
- Pre and end of unit assessment
- **Closing**

Overarching goals

By the end of this workshop, you will be able to:

- ✓ Describe the overall structure of the Assessment System
- ✓ Describe the purpose of the Formative, Pre and Post Unit Assessments

e



Closing reflection

Based on our work today, share:

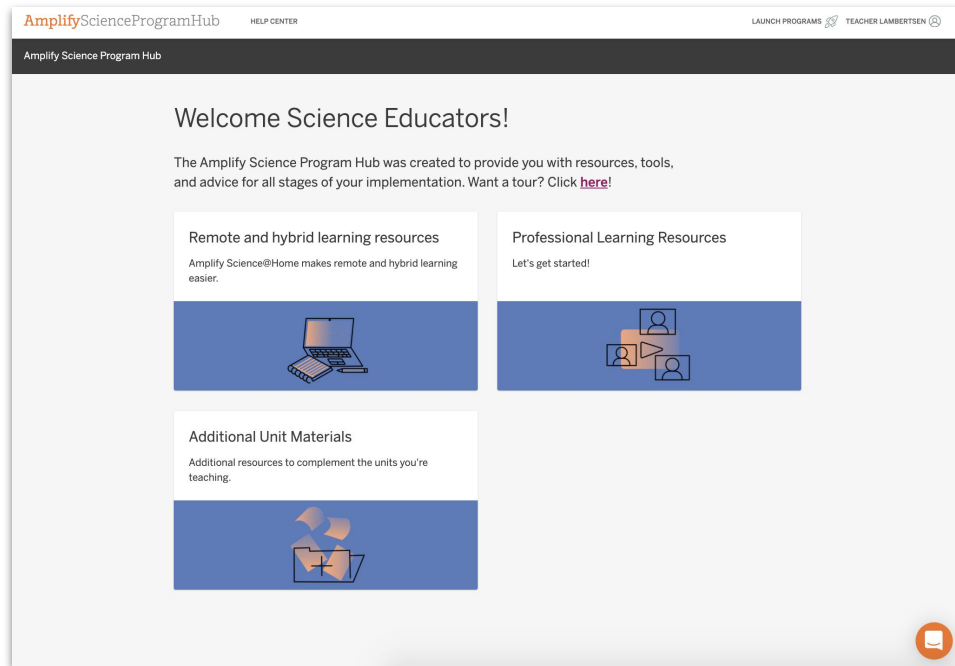
Head: something you'll keep in mind

Heart: something you're feeling

Feet: something you're planning to do

Program Hub

- Unit overview videos
- Planning tools
- Remote and hybrid learning resources.



Additional resources and ongoing support

Customer Care

Seek information specific to enrollment and rosters, technical support, materials and kits, and teaching support, weekdays 7AM-10PM EST and weekends 10AM-6PM EST.



help@amplify.com



800-823-1969



Amplify Chat

