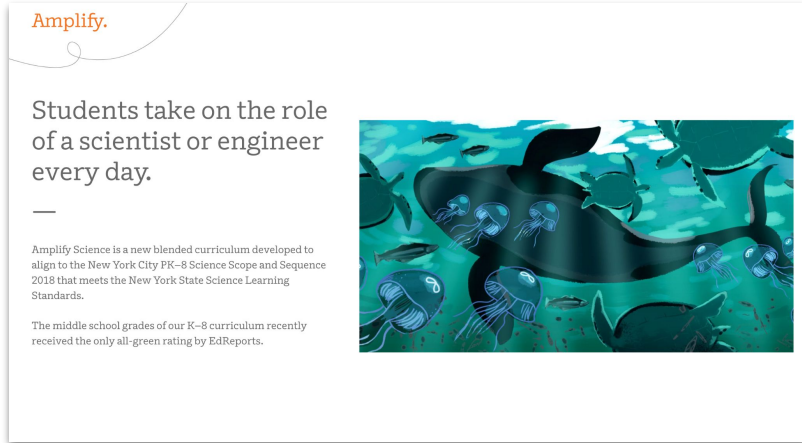


# Welcome to Amplify Science!

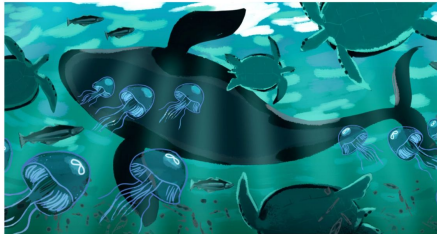
Do Now: Open auto-login site & explore as we wait to begin

Go to <https://amplify.com/amplify-science-nyc-doe-review/>



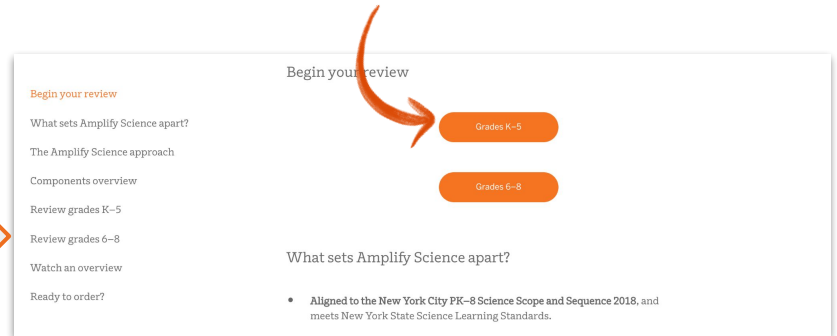
Amplify.

Students take on the role of a scientist or engineer every day.



Amplify Science is a new blended curriculum developed to align to the New York City PK–8 Science Scope and Sequence 2018 that meets the New York State Science Learning Standards.

The middle school grades of our K–8 curriculum recently received the only all-green rating by EdReports.



Begin your review

Begin your review

What sets Amplify Science apart?

The Amplify Science approach

Components overview

Review grades K–5

Review grades 6–8

Watch an overview

Ready to order?

- Aligned to the New York City PK–8 Science Scope and Sequence 2018, and meets New York State Science Learning Standards.

Grades K–5

Grades 6–8

Click your grade band & then follow prompts

# Amplify Science

New York City

## Exploring the Amplify Science Curriculum

### Grades 3-5

### Part 2

Date xx

Presented by xx



# 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**.

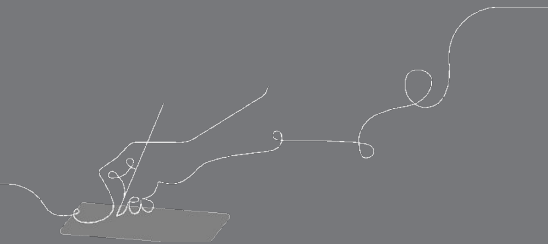
Sincerely,  
Amplify

# Goals for Part 2 session

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

- ❑ Unpack the progress build.
- ❑ Understand the coherence of an exemplar unit.
- ❑ Describe how Amplify Science supports CR-SE.

e





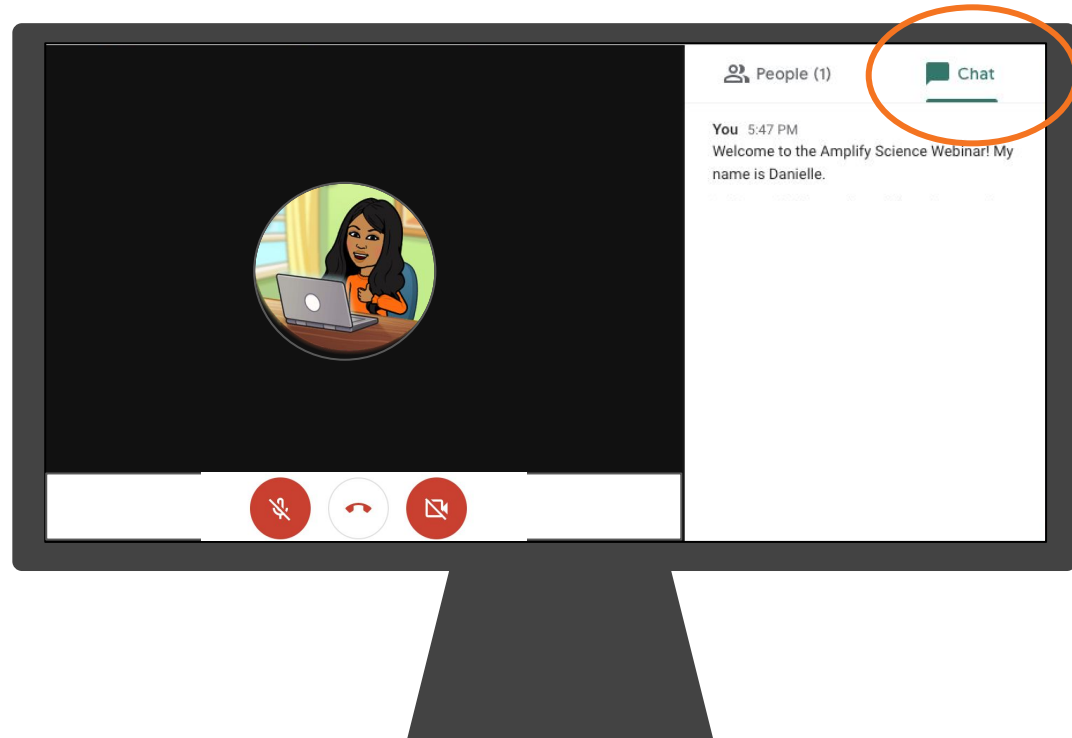
## Plan for part 2

- **Framing the day**
  - Welcome
- **Unit Exploration**
  - Unpacking the Progress Build
- **Unit Coherence**
  - Unpacking unit coherence in your first unit
- **Planning for CR-SE**
  - Unpacking - Eliciting and Leveraging Students' Prior Knowledge
- **Closing**
  - Final Questions & Feedback

# Ice Breaker!

## How's everyone today?

- **Prompt 1:** Drop an emoji in the chat that describes how you're feeling today.
- **Prompt 2:** What can we do to energize & excite you about Amplify Science today?



# 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.



## Plan for part 2

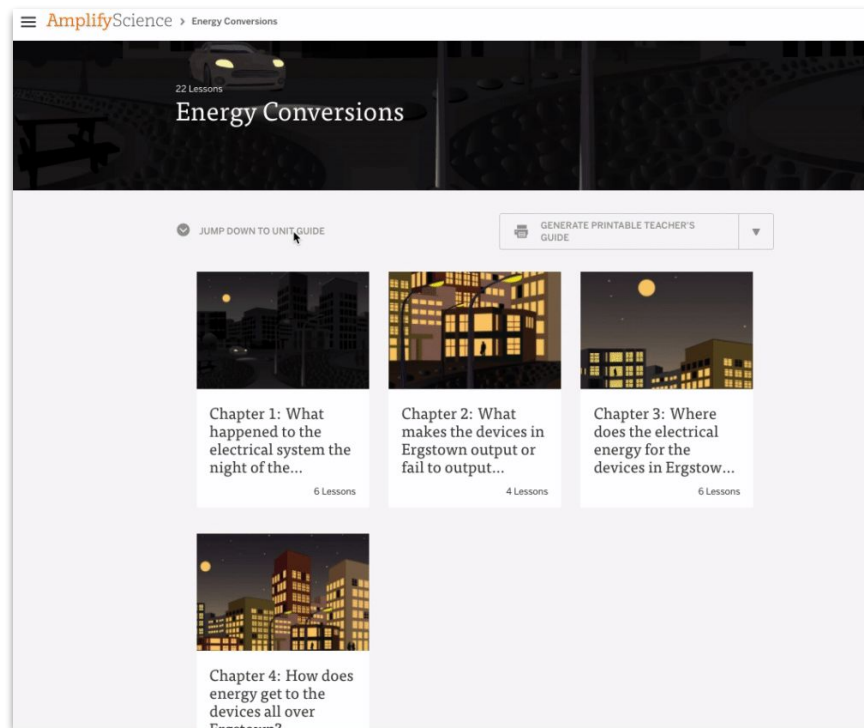
- Framing the day
  - Welcome
- **Unit Exploration**
  - Unpacking the Progress Build
- **Unit Coherence**
  - Unpacking unit coherence in your first unit
- **Planning for CR-SE**
  - Unpacking - Eliciting and Leveraging Students' Prior Knowledge
- **Closing**
  - Final Questions & Feedback



# Unit Guide

The Unit Guide is a collection of resources to support planning and day-to-day instruction in the unit.

You can access the Unit Guide on the Unit landing page below the chapter buttons.

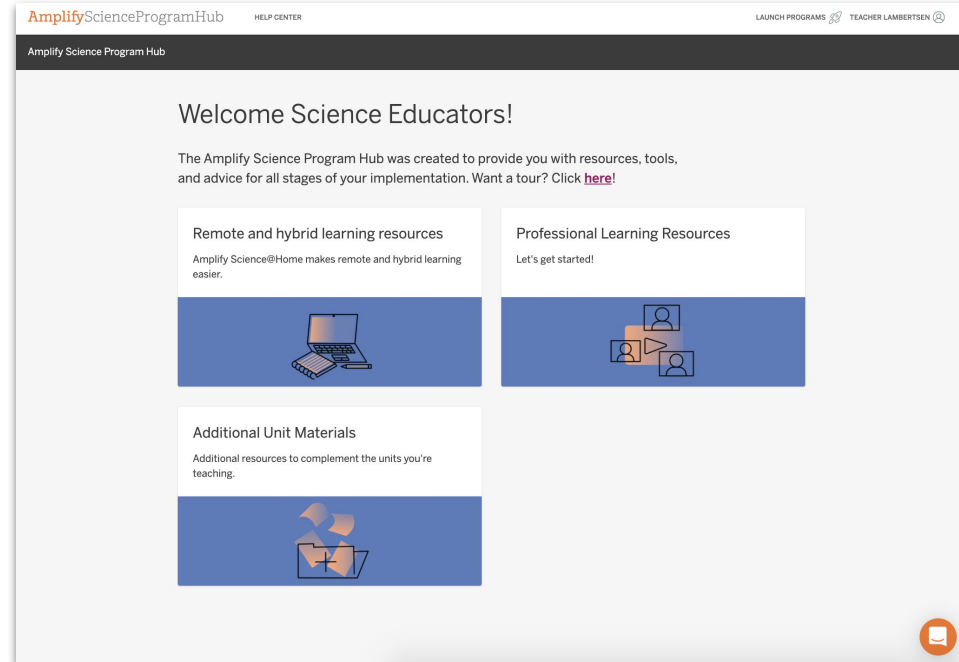


The screenshot shows the AmplifyScience website interface for the 'Energy Conversions' unit. At the top, the navigation bar includes the AmplifyScience logo and the unit title 'Energy Conversions'. Below the navigation bar is a large banner image with the text '22 Lessons' and 'Energy Conversions'. Underneath the banner, there are two buttons: 'JUMP DOWN TO UNIT GUIDE' and 'GENERATE PRINTABLE TEACHER'S GUIDE'. The main content area features four chapter cards, each with a night-time cityscape image and text describing the chapter's focus and the number of lessons. Chapter 1 is titled 'Chapter 1: What happened to the electrical system the night of the...' and contains 6 lessons. Chapter 2 is titled 'Chapter 2: What makes the devices in Ergstown output or fail to output...' and contains 4 lessons. Chapter 3 is titled 'Chapter 3: Where does the electrical energy for the devices in Ergstown...' and contains 6 lessons. Chapter 4 is titled 'Chapter 4: How does energy get to the devices all over Ergstown?' and contains 6 lessons.

# Program Hub

Use the Amplify Science Program Hub to find useful resources for implementing Amplify Science, including unit overview videos and planning tools.

The Program Hub also contains remote and hybrid learning resources.

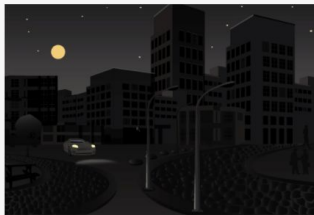


The screenshot shows the Amplify Science Program Hub website. The header includes the logo "AmplifyScienceProgramHub", a "HELP CENTER" link, and user information for "LAUNCH PROGRAMS" and "TEACHER LAMBERTSEN". The main content area features a welcome message: "Welcome Science Educators!" followed by a paragraph: "The Amplify Science Program Hub was created to provide you with resources, tools, and advice for all stages of your implementation. Want a tour? Click [here!](#)". Below this are three resource cards: "Remote and hybrid learning resources" with the text "Amplify Science@Home makes remote and hybrid learning easier." and an icon of a laptop and books; "Professional Learning Resources" with the text "Let's get started!" and an icon of three people; and "Additional Unit Materials" with the text "Additional resources to complement the units you're teaching." and an icon of a folder with a plus sign. A small orange chat icon is visible in the bottom right corner.

22 Lessons

# Energy Conversions

▼ JUMP DOWN TO UNIT GUIDE



Chapter 1: What happened to the electrical system the night of the...

6 Lessons

Hello Teacher Lambertsen

t.slambertsen@tryamplify.net

Log Out

Go To My Account ⚙️

Classroom Language Settings

CA Science Program Guide



ELA Resources

ELA Professional Learning



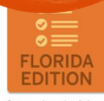
Interim Assessments



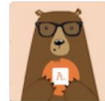
Program Hub



Science Program Guide



Standards Map



Help

22 Lessons

# Energy Conve

▼ JUMP DOWN TO UNIT GUIDE



Chapter 1: What happened to the electrical system night of the...

6 L

## Welcome Science Educators!

The Amplify Science Program Hub was created to provide you with resources, tools, and advice for all stages of your implementation. Want a tour? [Click here!](#)

### Remote and hybrid learning resources

Amplify Science@Home makes remote and hybrid learning easier.



### Professional Learning Resources

Let's get started!



### Additional Unit Materials

Additional resources to complement the units you're teaching.



## Additional Unit Materials ▾

Grade Level Units



Transiti

Grade TK ▲

Grade K    Grade 6    NYC Grade 6

Grade 1    Grade 7    NYC Grade 7

Grade 2    Grade 8    NYC Grade 8

Grade 3    Earth

Grade 4    Life

Grade 5    Physical

## Energy Conversions ▼

[Hands-on investigations videos](#)[Read-Aloud Videos](#)[Unit Extensions](#)[Unit Orientation](#)

### Hands-on investigations videos

The playlist below contains videos of this unit's hands-on activities.

[EC Hands-on Playlist](#)

## Welcome Science Educators!

The Amplify Science Program Hub was created to provide you with resources, tools, and advice for all stages of your implementation. Want a tour? Click [here!](#)

### Remote and hybrid learning resources

Amplify Science@Home makes remote and hybrid learning easier.



### Additional Unit Materials

Additional resources to complement the units you're teaching.



### Professional Learning Resources

Let's get started!



## Professional Learning Resources

This section will provide you with the knowledge and skills you need to start teaching with Amplify Science. You'll find **self-study** professional learning videos and resources.



### Getting started



### Planning

Videos and resources to help you plan

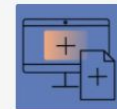


### Assessment

Student Assessments and Work



### Unit Orientation



### Additional Support

## Planning

The videos you'll find in this section provide Science instructional resources for Science units, highlighting helpful next steps.

We recommend you watch the Unit Level video, and finally

Grade K

Grade 1

Grade 7

NYC Grade 7

Grade 2

Grade 8

NYC Grade 8

Grade 3

Earth

Grade 4

Life

Grade 5

Physical

Grade 6

NYC Grade 6

**Unit Level Walkthrough (K-5)**

Learn how students work throughout a whole unit to explain an anchor phenomenon.

**Chapter Level Walkthrough (K-5)**

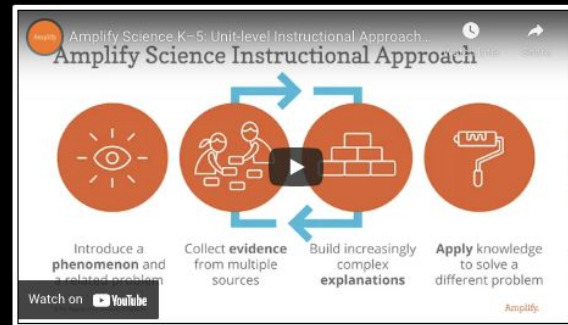
Dig into how students gather evidence from multiple sources through coherent, multimodal instruction.

**Lesson Level Walkthrough (K-5)**

Explore strategies for internalizing Amplify Science lessons.

**Lesson Planning Template**

## Unit Level Walkthrough (K-5)

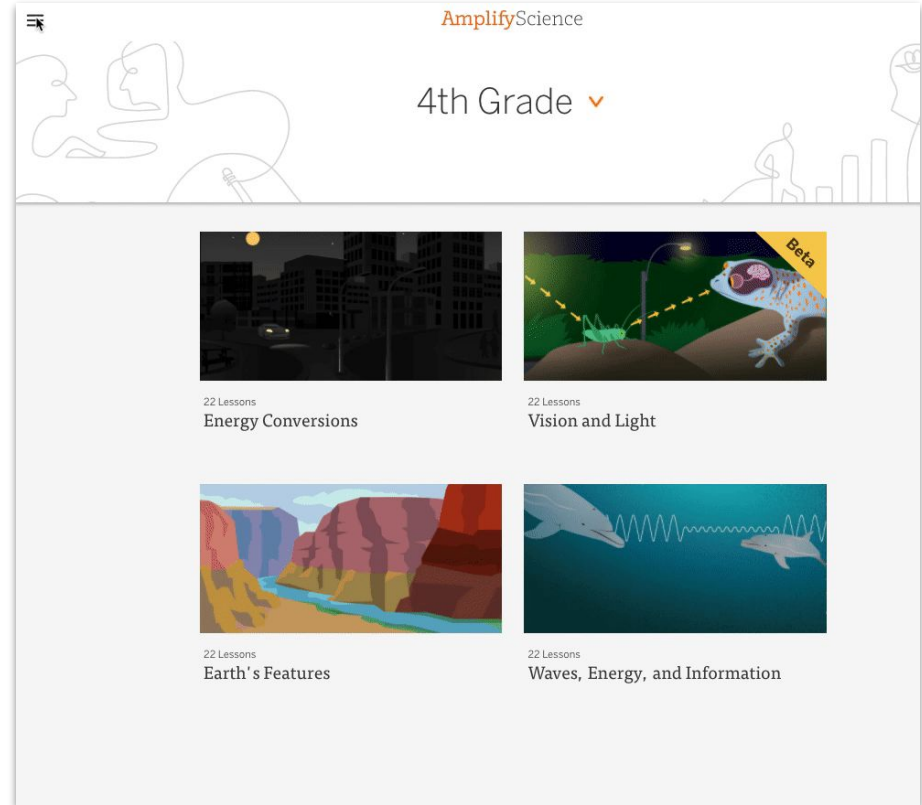




# Explore the Program Hub

Familiarize yourself with the Program Hub.

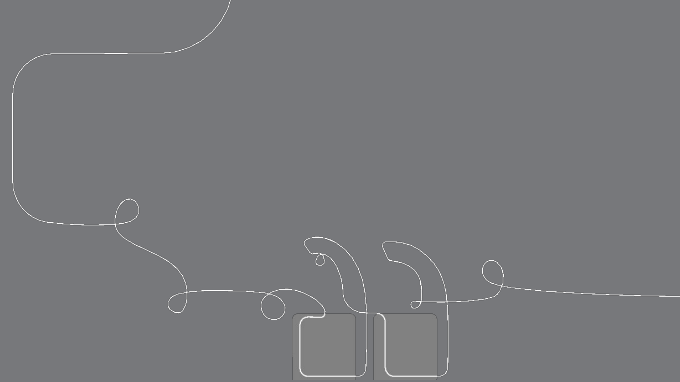
Be ready to share one resource you've found that you'll use while planning and teaching.



The screenshot shows the AmplifyScience Program Hub interface. At the top right, the logo "AmplifyScience" is displayed. Below it, the text "4th Grade" is shown with a downward arrow indicating a dropdown menu. The main content area features four lesson cards arranged in a 2x2 grid. Each card includes a representative image, the number of lessons (22), and the lesson title. The top-right card is marked with a yellow "Beta" banner.

Image Description	Lessons	Topic
City street at night with a full moon	22 Lessons	Energy Conversions
Green frog and spotted toad under a street lamp	22 Lessons	Vision and Light
Colorful canyon landscape with a river	22 Lessons	Earth's Features
Two whales underwater with sound waves	22 Lessons	Waves, Energy, and Information

# Questions?



# Self-assessment

Reflect upon and celebrate your work so far by completing the first part of the self-assessment.

## Self-assessment: Reflect on your learning

Use the self-assessment statements below to reflect upon and evaluate your learning from today's workshop.

	Strongly Disagree			Strongly Agree	
	1	2	3	4	5
I know the phenomenon students will figure out in my unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can navigate to and between lessons in the Amplify Science platform.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know how to access and edit Classroom Slides decks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can describe what learning is like for students in Amplify Science.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can explain how evidence sources work together in Chapter 1 of my unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can describe how Amplify Science supports students' literacy development (including reading, writing, speaking, and listening).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6-8: I know how to access assessment resources including Classwork, Assign, and Reporting.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand how to read a Coherence Flowchart.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know what types of resources I can find on the Program Hub.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I'm comfortable using the Unit Guide as a resource when looking for a specific piece of information.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've internalized my unit's Progress Build and I understand the science concepts my students will learn.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can describe how learning is 3-dimensional in my unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand how I can use the Coherence Flowchart as a planning tool.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can describe the purpose of different types of assessments in the Assessment System and supports available to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can visualize how teaching Amplify Science will lead my students to deeper learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know how to access support from Amplify if I need it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

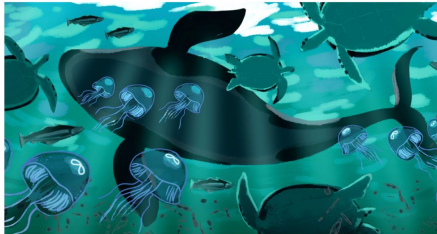
# Logging in

## Safari or Chrome

Go to <https://amplify.com/amplify-science-nyc-doe-review/>

Amplify.

Students take on the role of a scientist or engineer every day.



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Begin your review

What sets Amplify Science apart?

The Amplify Science approach

Components overview

Review grades K–5

Review grades 6–8

Watch an overview

Ready to order?

Grades K–5

Grades 6–8

What sets Amplify Science apart?

- Aligned to the New York City PK–8 Science Scope and Sequence 2018, and meets New York State Science Learning Standards.

Click your grade band & then follow prompts

# Unit Guide

In this part of the day, we'll work on using the Unit Guide as a planning and teaching resource.

The screenshot displays the Unit Guide interface, which is organized into several sections:

- Planning for the Unit:** A list of dropdown menus for navigation, including Unit Overview, Unit Map, Progress Build, Getting Ready to Teach, Materials and Preparation, Science Background, and Standards at a Glance.
- Teacher References:** A list of dropdown menus for additional resources, including Lesson Overview Compilation, Standards and Goals, 3-D Statements, Assessment System, Embedded Formative Assessments, Books in This Unit, Apps in This Unit, and Flexensions in This Unit.
- Printable Resources:** A list of downloadable materials, such as 3-D Assessment Objectives, Coherence Flowcharts, Copymaster Compilation, Flexension Compilation, Investigation Notebook, Multi-Language Glossary, NGSS Information for Parents and Guardians, and two sets of Print Materials (8.5" x 11" and 11" x 17").
- Offline Preparation:** A section with a text box explaining that teaching without reliable internet requires offline materials, and a button labeled "Offline Guide".

At the bottom left, there is a language selector for "Español". At the bottom right, there is a version number "015269BF90C2782F REV.46678" and a small orange icon.

# Unit Guide scavenger hunt

Practice identifying which Unit Guide document has the information you need.

## Unit Guide resources cont.

### Printable resources

3-D Assessment Objectives	K-5: Identifies where each dimension of the target Performance Expectations are assessed in the unit, in the grade, or in the grade-band
---------------------------	--

for the teacher to print and copy  
unit  
her to print and copy throughout the  
in Flexextension lessons throughout the  
k, for copying and projecting. The  
lete their work digitally.  
pages  
d the shifts for teaching and learning  
abulary cards, student card sets)  
ions and Key Concepts provided in

## Unit Guide resources

Once a unit is selected, select **JUMP DOWN TO UNIT GUIDE** in order to access all unit-level resources in an Amplify Science unit.

### Planning for the unit

Unit Overview	Describes what's in each unit, the rationale, and how students learn across chapters
Unit Map	Provides an overview of what students figure out in each chapter, and how they figure it out
Progress Build	Explains the learning progression of ideas students figure out in the unit
Getting Ready to Teach	Provides tips for effectively preparing to teach and teaching the unit in your classroom
Materials and Preparation	Lists materials included in the unit's kit, items to be provided by the teacher, and briefly outlines preparation requirements for each lesson
Science Background	Adult-level primer on the science content students figure out in the unit
Standards at a Glance	Lists NGSS (Performance Expectations, Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts) and CCSS (English Language Arts and Mathematics).

### Teacher references

Lesson Overview Compilation	Lesson Overview of each lesson in the unit, including lesson summary, activity purposes, and timing
Standards and Goals	Lists NGSS and CCSS in the unit, explains how the standards are reached
3-D Statements	Describes 3-D learning across the unit, chapters, and in individual lessons
Assessment System	Describes components of the Amplify Science assessment system, identifies each 3-D assessment opportunity in the unit
Embedded Formative Assessments	Includes full text of formative assessments in the unit
Books in This Unit	K-5: Summarizes each unit text and explains how the text supports instruction
Articles in This Unit	6-8: Summarizes each unit text and explains how the text supports instruction
Apps in This Unit	2-8: Outlines functionality of digital tools and how students use them
Flexensions in This Unit	Summarizes information about the Hands-On Flexextension lesson(s) in the unit

# Unit Guide scavenger hunt

Where would I look to find...

the 3-D Statement for Chapter 1?

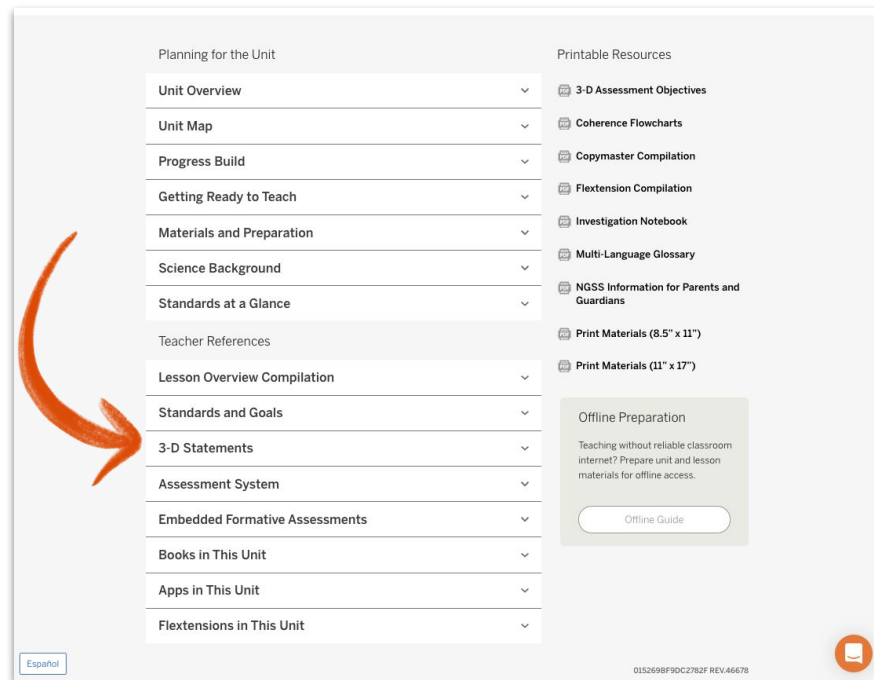


# Unit Guide scavenger hunt

Where would I look to find...

the 3-D Statement for Chapter 1?

- The 3-D Statements doc has 3-D statements for the whole unit, each chapter, and each individual lesson.



The screenshot shows a digital interface for a unit guide. It is organized into two main columns. The left column is titled "Planning for the Unit" and contains a list of items, each with a dropdown arrow: 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, and Flexensions in This Unit. A large red arrow points from the left towards the "3-D Statements" link. The right column is titled "Printable Resources" and lists various documents: 3-D Assessment Objectives, Coherence Flowcharts, Copymaster Compilation, Flexension Compilation, Investigation Notebook, Multi-Language Glossary, NGSS Information for Parents and Guardians, Print Materials (8.5" x 11"), and Print Materials (11" x 17"). Below these is an "Offline Preparation" section with a text box and an "Offline Guide" button. At the bottom left, there is a "Español" button, and at the bottom right, there is a small orange icon and a version number: 015269BF90C2782F REV.46678.

Planning for the Unit	Printable Resources
Unit Overview	3-D Assessment Objectives
Unit Map	Coherence Flowcharts
Progress Build	Copymaster Compilation
Getting Ready to Teach	Flexension Compilation
Materials and Preparation	Investigation Notebook
Science Background	Multi-Language Glossary
Standards at a Glance	NGSS Information for Parents and Guardians
Teacher References	Print Materials (8.5" x 11")
Lesson Overview Compilation	Print Materials (11" x 17")
Standards and Goals	Offline Preparation
3-D Statements	Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.
Assessment System	Offline Guide
Embedded Formative Assessments	
Books in This Unit	
Apps in This Unit	
Flexensions in This Unit	

Español

015269BF90C2782F REV.46678



# Unit Guide scavenger hunt

Where would I look to find...

more background information  
about a Key Concept I'm not sure I  
understand?

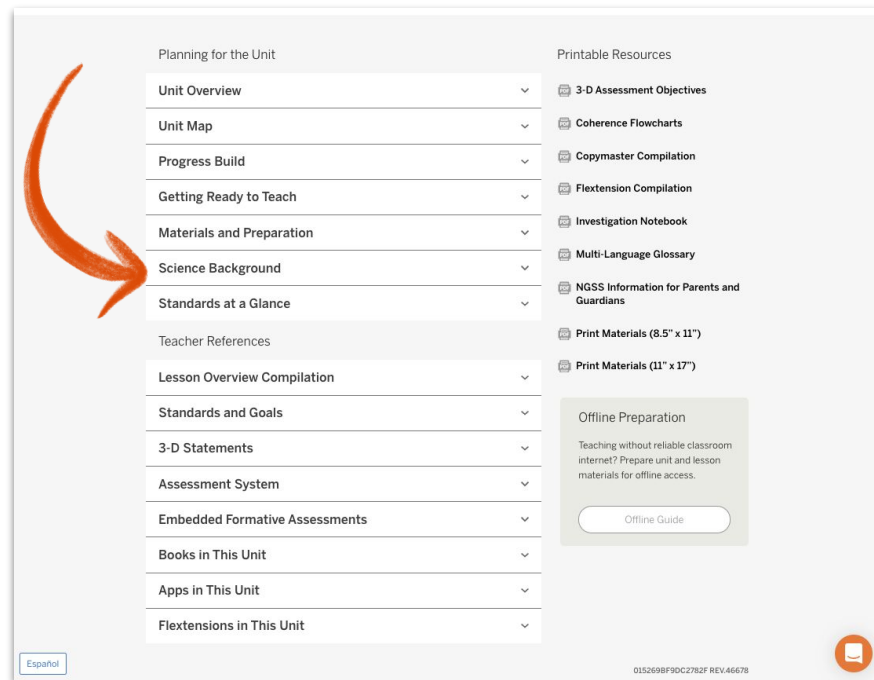


# Unit Guide scavenger hunt

## Where would I look to find...

more background information about a Key Concept I'm not sure I understand?

- The **Science Background** doc explains the unit's science content at an adult level. It also includes information about student thinking and 3-D learning in the unit.

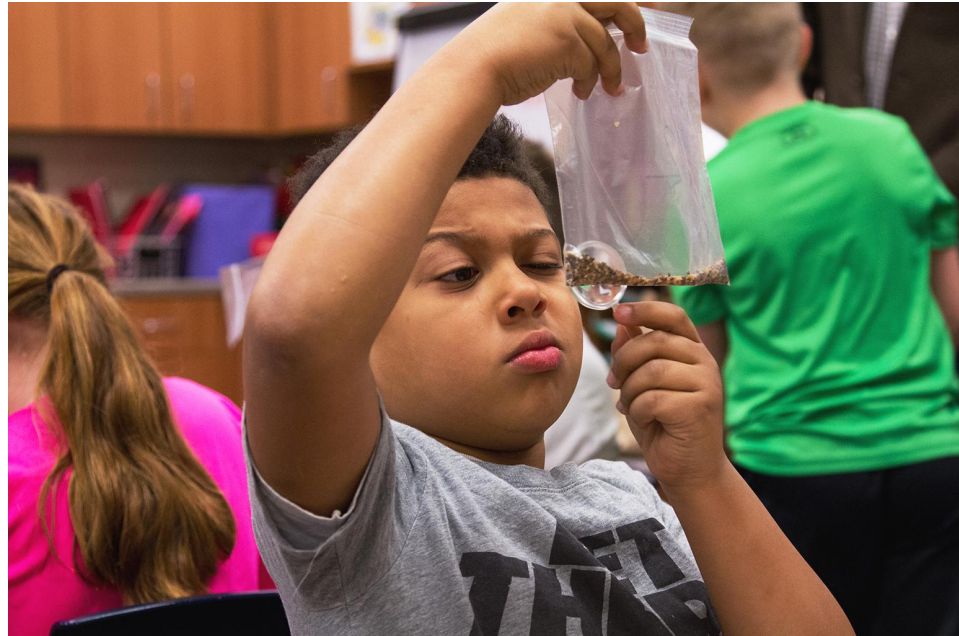


The screenshot shows a digital interface for a unit guide. On the left, under the heading "Planning for the Unit", there is a list of links: Unit Overview, Unit Map, Progress Build, Getting Ready to Teach, Materials and Preparation, Science Background, and Standards at a Glance. A large red arrow points from the left towards the "Science Background" link. Below this list is a section for "Teacher References" containing links for Lesson Overview Compilation, Standards and Goals, 3-D Statements, Assessment System, Embedded Formative Assessments, Books in This Unit, Apps in This Unit, and Flextensions in This Unit. On the right side, under "Printable Resources", there are links for 3-D Assessment Objectives, Coherence Flowcharts, Copymaster Compilation, Flextension Compilation, Investigation Notebook, Multi-Language Glossary, NGSS Information for Parents and Guardians, Print Materials (8.5" x 11"), and Print Materials (11" x 17"). Below these is an "Offline Preparation" section with a text box and an "Offline Guide" button. At the bottom left, there is a "Español" button, and at the bottom right, there is a small orange icon and a version number: 015269BF90C2782F REV.46678.

# Unit Guide scavenger hunt

## Where would I look to find...

a list of the teacher-provided materials I'll need to gather before I start teaching?

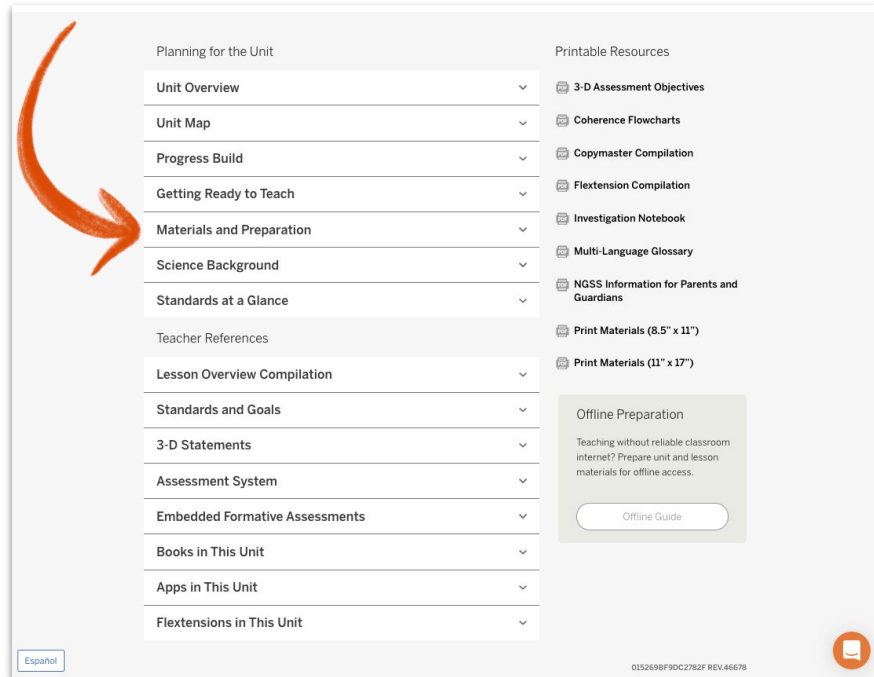


# Unit Guide scavenger hunt

## Where would I look to find...

a list of the teacher-provided materials I'll need to gather before I start teaching?

- The **Materials and Preparation** doc lists kit and teacher-provided materials and has information about prepping for each lesson.



The screenshot shows a digital interface for a Unit Guide. On the left, there is a vertical list of sections, each with a dropdown arrow. A large red arrow points from the left edge of the screen towards the 'Materials and Preparation' dropdown. The sections listed are:

- 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
  - Flextensions in This Unit

On the right side of the interface, there are two columns of resources:

- Printable Resources**
  - 3-D Assessment Objectives
  - Coherence Flowcharts
  - Copymaster Compilation
  - 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

At the bottom left, there is a small blue box with the word 'Español'. At the bottom right, there is a small orange circle with a white envelope icon. In the bottom right corner, there is a small text string: '015269BF90C2782F REV.46678'.

# Unit Guide scavenger hunt

Where would I look to find...

the timing of the activities in Lesson 3.2?

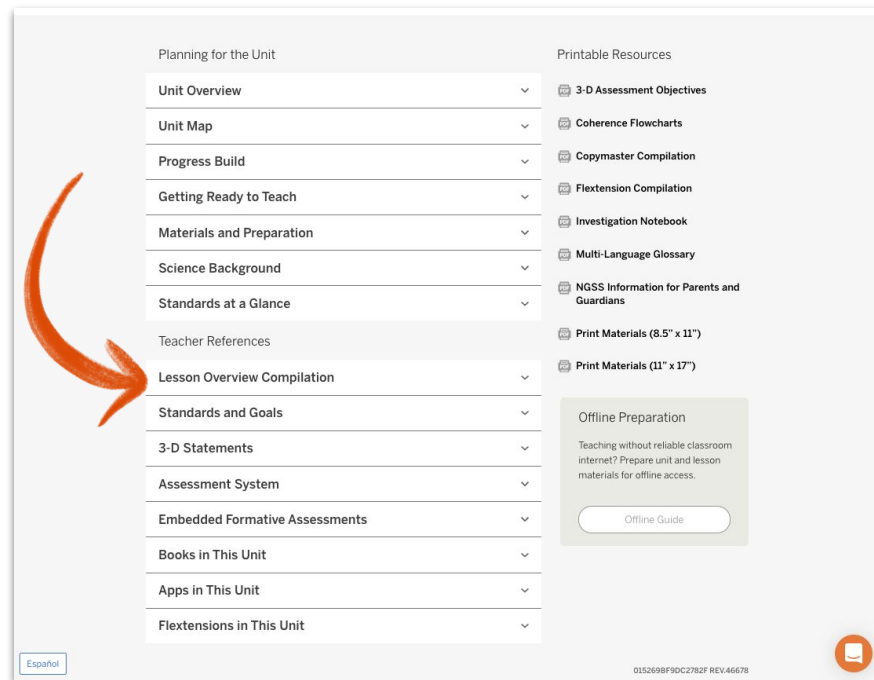


# Unit Guide scavenger hunt

Where would I look to find...

the timing of the activities in Lesson 3.2?

- Use the **Lesson Overview Compilation** to see all the Lesson Overviews together in one document.



The screenshot shows a digital interface for a Unit Guide. It is divided into two main columns. The left column is titled "Planning for the Unit" and contains a list of menu items, each with a downward arrow: 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, and Flexensions in This Unit. A large red arrow points from the left towards the "Lesson Overview Compilation" item. The right column is titled "Printable Resources" and lists various documents: 3-D Assessment Objectives, Coherence Flowcharts, Copymaster Compilation, Flexension Compilation, Investigation Notebook, Multi-Language Glossary, NGSS Information for Parents and Guardians, Print Materials (8.5" x 11"), and Print Materials (11" x 17"). Below these is an "Offline Preparation" section with a text box and an "Offline Guide" button. At the bottom left, there is a "Español" button, and at the bottom right, there is a small orange icon and a version number: 015269BF90C2782F REV.46678.

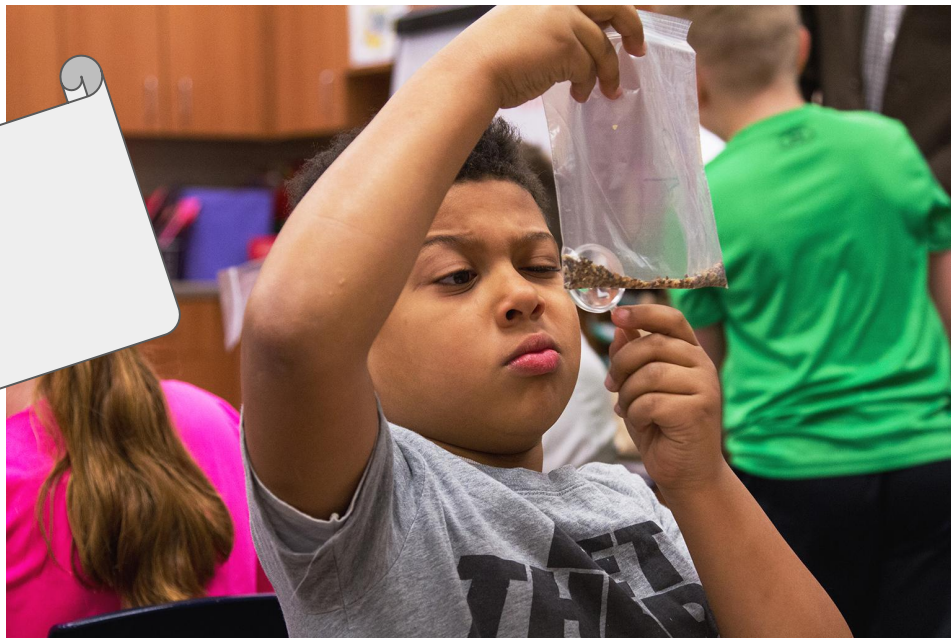


# Unit Guide scavenger hunt

Where would I look to find...

which Crosscutting Concepts are emphasized in the unit?

Two possible answers!

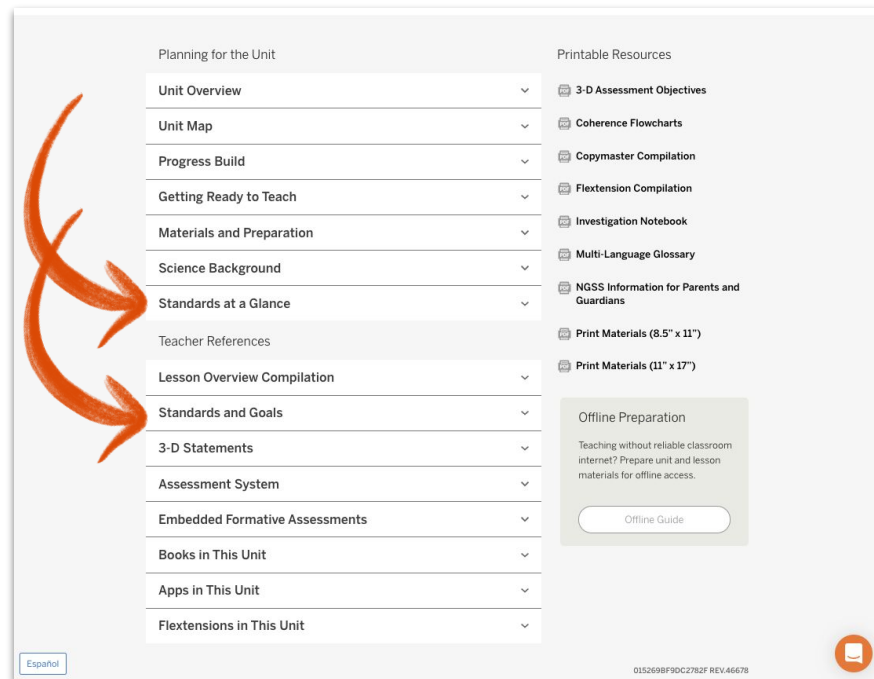


# Unit Guide scavenger hunt

## Where would I look to find...

which Crosscutting Concepts are emphasized in the unit?

- **Standards at a Glance** lists NGSS and CCSS standards.
- **Standards and Goals** lists the standards and explains how students reach them.



The screenshot shows a digital unit guide interface. On the left, a vertical list of menu items includes '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', and 'Flextensions in This Unit'. Two orange arrows originate from the left side of the screen, pointing to the 'Standards at a Glance' and 'Standards and Goals' items. On the right side, there are sections for 'Printable Resources' (including 3-D Assessment Objectives, Coherence Flowcharts, Copymaster Compilation, Flextension Compilation, Investigation Notebook, Multi-Language Glossary, NGSS Information for Parents and Guardians, and Print Materials) and 'Offline Preparation' (with a note about preparing materials for offline access and an 'Offline Guide' button). At the bottom left, there is a 'Español' button, and at the bottom right, there is a small orange icon and a version number '015269BF90C2782F REV.46678'.



# Unit Guide scavenger hunt

Where would I look to find...

the titles of the books students read in the unit?

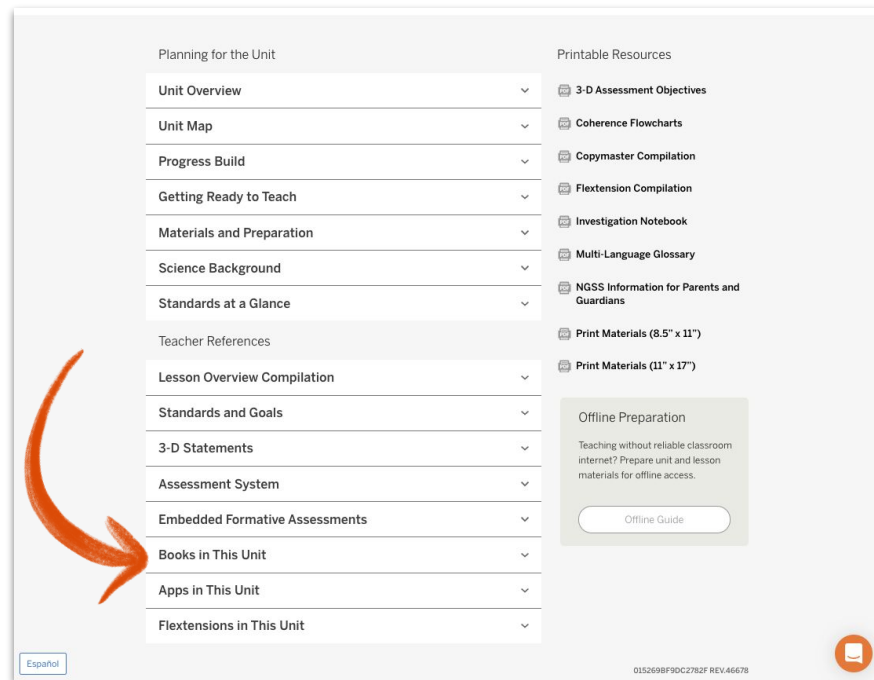


# Unit Guide scavenger hunt

Where would I look to find...

the titles of the books students read in the unit?

- **Books in This Unit** summarizes each book and explains when and how students work with them.



The screenshot shows a digital interface for a unit guide. It is organized into several sections:

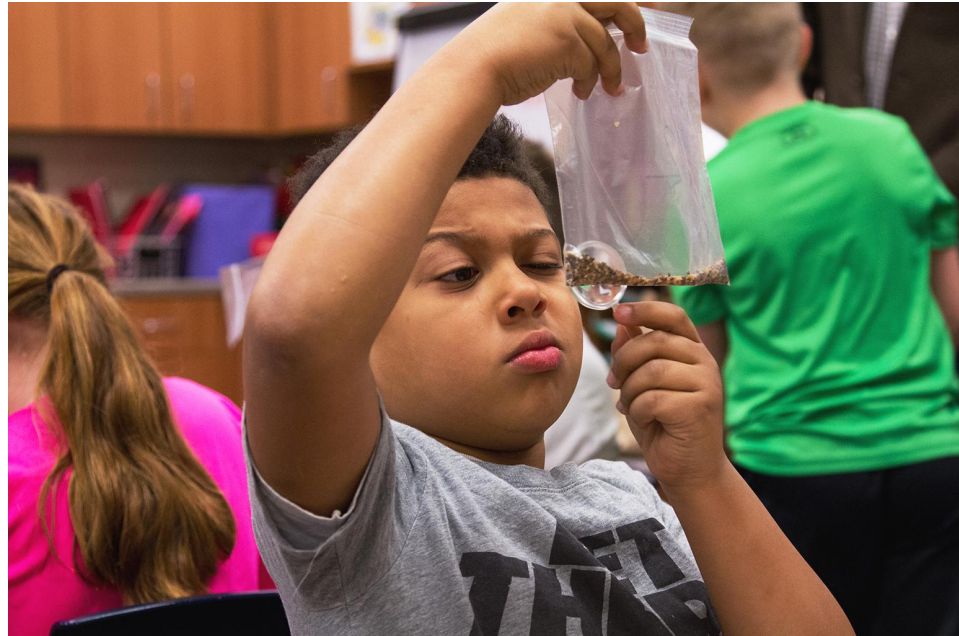
- Planning for the Unit:** A list of dropdown menus including Unit Overview, Unit Map, Progress Build, Getting Ready to Teach, Materials and Preparation, Science Background, and Standards at a Glance.
- Teacher References:** A list of dropdown menus including Lesson Overview Compilation, Standards and Goals, 3-D Statements, Assessment System, Embedded Formative Assessments, **Books in This Unit** (highlighted by a red arrow), Apps in This Unit, and Flexensions in This Unit.
- Printable Resources:** A list of resources including 3-D Assessment Objectives, Coherence Flowcharts, Copymaster Compilation, Flexension Compilation, Investigation Notebook, Multi-Language Glossary, NGSS Information for Parents and Guardians, Print Materials (8.5" x 11"), and Print Materials (11" x 17").
- Offline Preparation:** A section with a text box explaining that materials are available for offline access and an "Offline Guide" button.

At the bottom left, there is a "Español" button. At the bottom right, there is a small orange icon and a version number: 015269BF90C2782F REV.46678.

# Unit Guide scavenger hunt

## Where would I look to find...

a tool to help visualize the structure of each chapter in the unit?

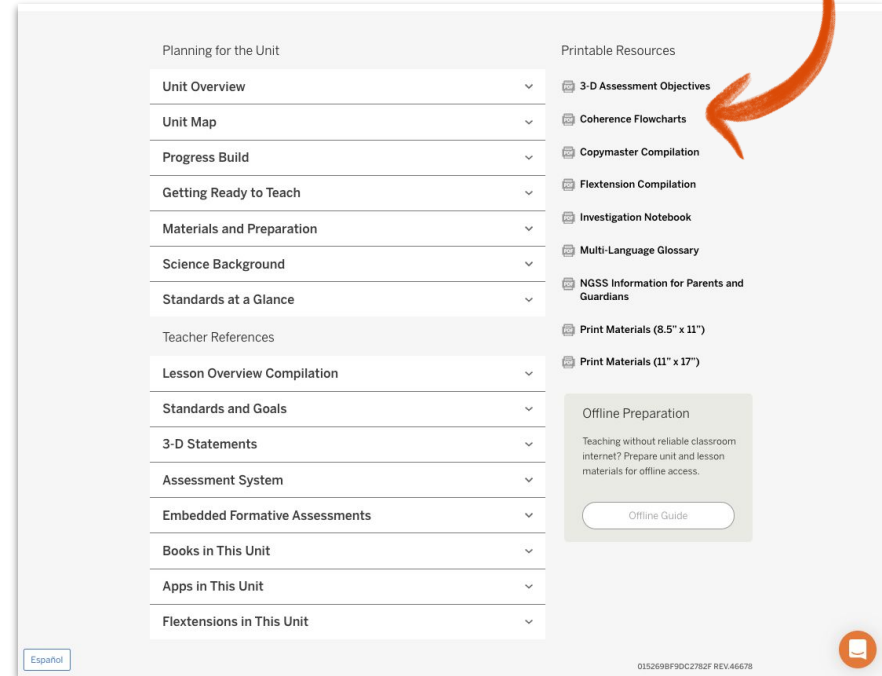


# Unit Guide scavenger hunt

## Where would I look to find...

a tool to help visualize the structure of each chapter in the unit?

- The **Coherence Flowchart** diagrams the coherent flow of questions, evidence, and ideas in the unit.



The screenshot displays a user interface for a Unit Guide. It is organized into two main columns of resources. The left column, titled 'Planning for the Unit', contains a list of items with dropdown arrows: 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, and Flexensions in This Unit. The right column, titled 'Printable Resources', includes: 3-D Assessment Objectives, Coherence Flowcharts (highlighted by an orange arrow), Copymaster Compilation, Flexension Compilation, Investigation Notebook, Multi-Language Glossary, NGSS Information for Parents and Guardians, Print Materials (8.5" x 11"), and Print Materials (11" x 17"). Below these is an 'Offline Preparation' section with a text box and an 'Offline Guide' button. At the bottom left is a 'Español' button, and at the bottom right is a version number '015269BF90C2782F REV.46678' and a small orange icon.

# Deeper learning

“When the goal is to prepare students to be successful in solving new problems and adapting to new situations, then **deeper learning** is called for.”



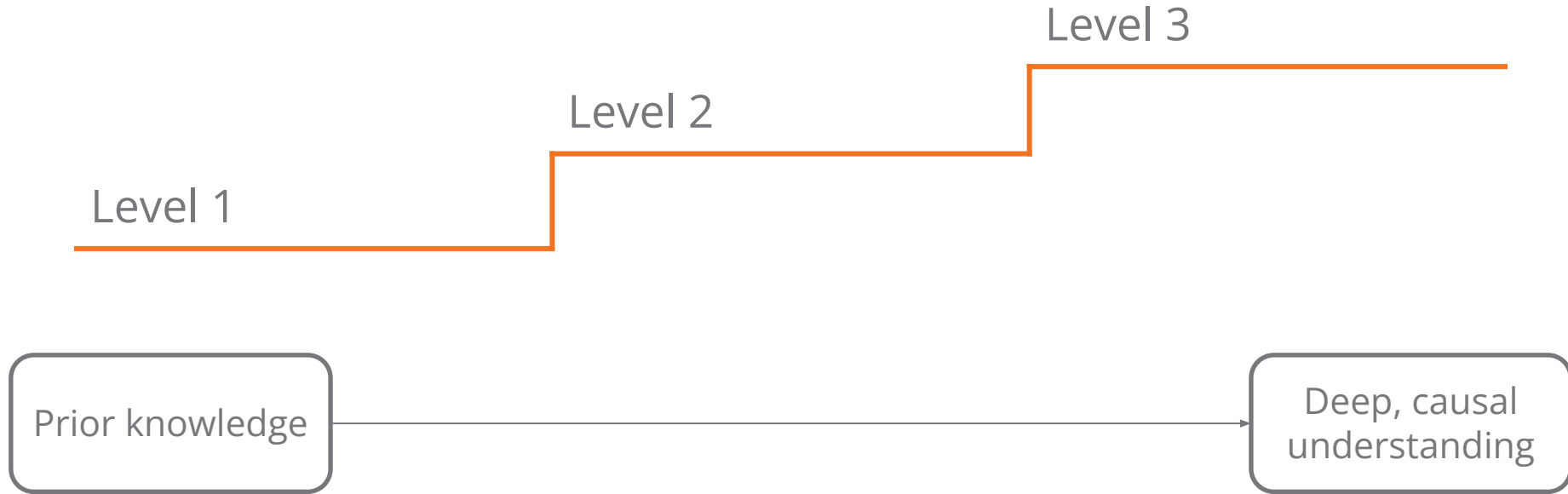
# Deeper learning

- Conceptual knowledge that moves past the what to the why or how
- Analysis, reasoning, communication, and other skills
- Beyond retention, an ability to transfer and apply knowledge and skills to new contexts



# Progress Build

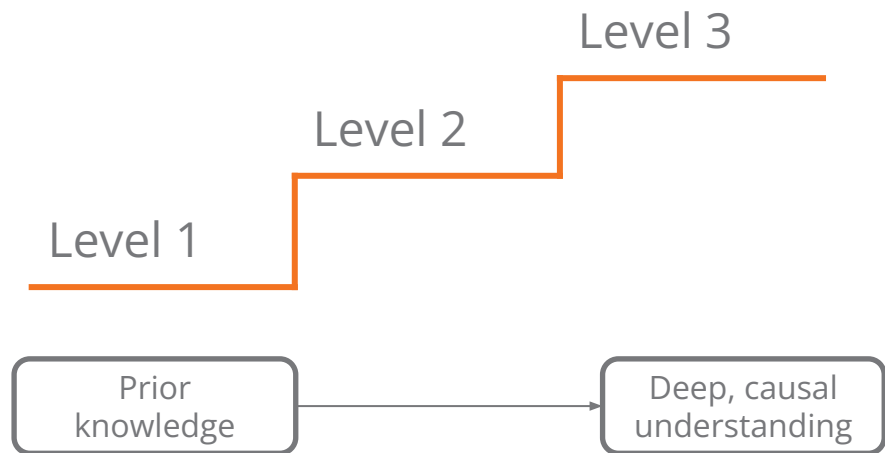
## A unit-specific learning progression



# Unpacking the Progress Build

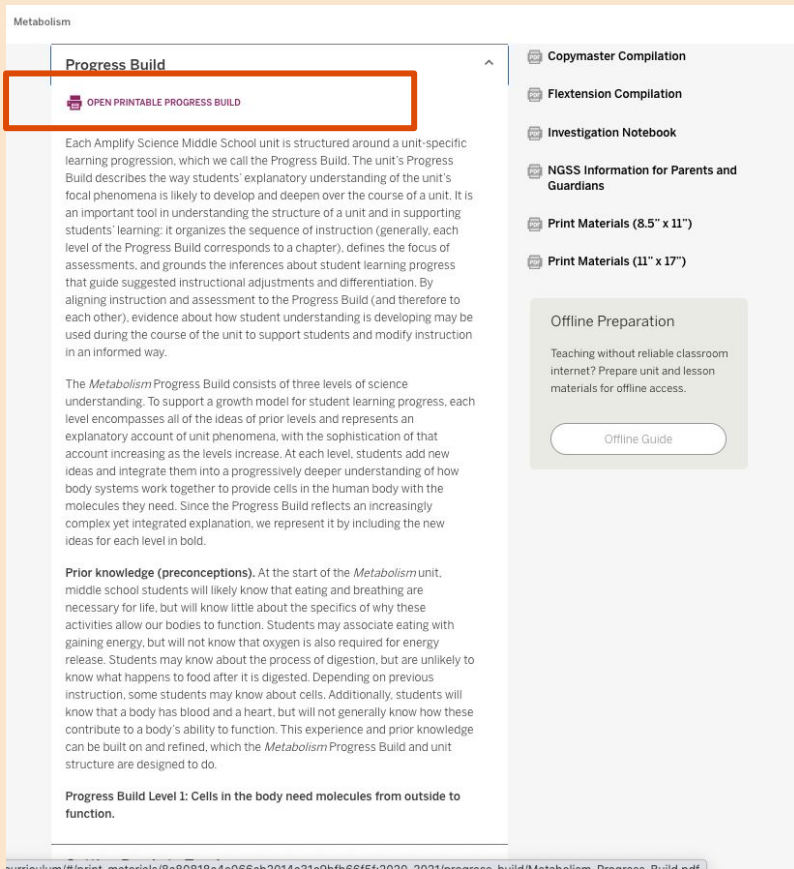
Understanding a unit's Progress Build will help you guide your students, address misconceptions, and avoid giving ideas away too early in the unit.

In this activity, you'll use the Progress Build and the Science Background.





# Hidden Slide: Progress Build



Metabolism

## Progress Build

**OPEN PRINTABLE PROGRESS BUILD**

Each Amplify Science Middle School unit is structured around a unit-specific learning progression, which we call the Progress Build. The unit's Progress Build describes the way students' explanatory understanding of the unit's focal phenomena is likely to develop and deepen over the course of a unit. It is an important tool in understanding the structure of a unit and in supporting students' learning; it organizes the sequence of instruction (generally, each level of the Progress Build corresponds to a chapter), defines the focus of assessments, and grounds the inferences about student learning progress that guide suggested instructional adjustments and differentiation. By aligning instruction and assessment to the Progress Build (and therefore to each other), evidence about how student understanding is developing may be used during the course of the unit to support students and modify instruction in an informed way.

The *Metabolism* Progress Build consists of three levels of science understanding. To support a growth model for student learning progress, each level encompasses all of the ideas of prior levels and represents an explanatory account of unit phenomena, with the sophistication of that account increasing as the levels increase. At each level, students add new ideas and integrate them into a progressively deeper understanding of how body systems work together to provide cells in the human body with the molecules they need. Since the Progress Build reflects an increasingly complex yet integrated explanation, we represent it by including the new ideas for each level in bold.

**Prior knowledge (preconceptions).** At the start of the *Metabolism* unit, middle school students will likely know that eating and breathing are necessary for life, but will know little about the specifics of why these activities allow our bodies to function. Students may associate eating with gaining energy, but will not know that oxygen is also required for energy release. Students may know about the process of digestion, but are unlikely to know what happens to food after it is digested. Depending on previous instruction, some students may know about cells. Additionally, students will know that a body has blood and a heart, but will not generally know how these contribute to a body's ability to function. This experience and prior knowledge can be built on and refined, which the *Metabolism* Progress Build and unit structure are designed to do.

**Progress Build Level 1: Cells in the body need molecules from outside to function.**

- Copymaster Compilation
- Flxextension Compilation
- Investigation Notebook
- 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

## Progress Build

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**Progress Build Level 1: Cells in the body need molecules from outside to function.**

The body can function when the cells of the body are getting and using molecules that come from outside the body—from the food we eat and the air we breathe. Oxygen, glucose, and amino acids are molecules the cells need that come from outside the body.

**Progress Build Level 2: Systems in the body work together to take in, break down, and deliver needed molecules to the cells.**

The body can function when the cells of the body are getting and using molecules that come from outside the body—from the food we eat and the air we breathe. Oxygen, glucose, and amino acids are molecules the cells need that come from outside the body. **The digestive system breaks down starch and protein molecules from food into glucose and amino acids, and then the circulatory system transports these molecules to the cells. Also, the respiratory system takes in oxygen molecules from the air, and the circulatory system transports those molecules unchanged to the cells because oxygen molecules are already small enough to fit into cells.**

# Hidden Slide: Science Background

AmplifyScience > Metabolism

## Science Background

**OPEN PRINTABLE SCIENCE BACKGROUND**

This document contains background information about the disciplinary core ideas, science and engineering practices, and crosscutting concepts addressed in the *Metabolism* unit. The rationale for the selection and organization of particular concepts within the unit, and a discussion of alternate conceptions students may hold about these concepts. This document is intended to provide you, as the teacher, with more detailed information that will help you as you teach the unit and is expressly not meant as student-facing material.

### Molecules from Food and Air

All the cells of the body take in molecules from food and air—including glucose, amino acids, and oxygen—in order to both release the energy the cells need and to provide the raw materials for growth and repair. Although molecules are tiny, they still vary immensely in scale. Protein molecules and starch molecules are larger molecules that must be broken down into smaller molecules to enter the circulatory system and thus the cells. Glucose, amino acids, and oxygen molecules are much smaller molecules.

### Molecules from Food

The food we eat is primarily composed of varying proportions of carbohydrates, proteins, and fats. These components of food play an essential role in human metabolism. Fiber, another component of food that aids in digestion, is also represented in this unit through the *Metabolism* Simulation.

**Carbohydrates.** Carbohydrates can be classified as simple or complex. Sugars, such as glucose, are relatively small molecules composed of one or two carbon rings. Starch and fiber are long chains of sugar subunits connected by chemical bonds. When we eat foods containing starch, such as grains or certain vegetables, the digestive system breaks down the chains into glucose molecules that the cells can then use for energy. In contrast, fiber refers to the part of plant matter that is indigestible because humans do not have the digestive enzyme required to break down fiber. As a result, fiber leaves the body as waste. Fiber aids in defecation and has many other health benefits. Researchers have recently discovered that fiber plays an important role as a nutritional source for a healthy gut microbiome.

**Proteins.** Proteins, found in foods such as beans, eggs, and fish, are comprised of long chains of amino acids. Enzymes in the digestive system break down proteins from the food we eat into amino acids. Cells use amino

Spanish Standards at a Glance

6-8 NPE 2 x Amplify C x Science B x Progress E x K-5 Remo x +

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## Metabolism

### Planning for the Unit

Science Background

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### Molecules from Food

# Unpacking the Progress Build

## Work time

The purpose of this work time is to understand what the levels of the Progress Build are and reinforce your understanding of the science concepts in the Progress Build.

Next, you'll work with a group to think about how the Progress Build drives students to deeper learning.

### Unpacking the Progress Build: Tracking deeper learning through the unit

Read the Progress Build. Make notes in the left-hand column about the key ideas at each level. Pay particular attention to new ideas or vocabulary at each level. Consider how new levels build on or relate to the level(s) before.

Key ideas	
Preconceptions	
Level 1	
Level 2	
Level 3	
Level 4*	

\*Most units only have three Progress Build levels.

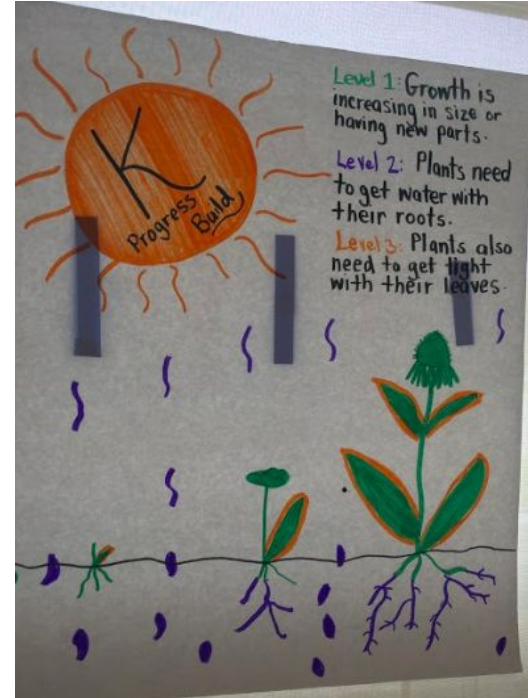
Review the key ideas in the table. Circle any words or content that seem tricky or that you'd like a refresher on. Search the Science Background document for more information on the words you circled. Make notes below.

# Unpacking the Progress Build

## Small group work: Create a visual

In small groups, share your independent work then create a visual representation of the Progress Build.

Your visual should represent all levels of the Progress Build and illustrate how the different levels relate to one another.



# Deeper learning

- Conceptual knowledge that moves past the what to the why or how
- Analysis, reasoning, communication, and other skills
- Beyond retention, an ability to transfer and apply knowledge and skills to new contexts





# Unpacking the Progress Build

## Reflection

How does the Progress Build drive students to deeper learning of the science concepts in your unit?



# Synthesizing our reflections

The Progress Build gives us a roadmap for how students' conceptual understanding grows deeper and more complex through the unit.

## Tools for Deeper Learning

- *Progress Build*



## Plan for part 2

- **Framing the day**
  - Welcome
- **Unit Exploration**
  - Unpacking the Progress Build
- **Unit Coherence**
  - Unpacking unit coherence in your first unit
- **Planning for CR-SE**
  - Unpacking - Eliciting and Leveraging Students' Prior Knowledge
- **Closing**
  - Final Questions & Feedback



# Gathering evidence

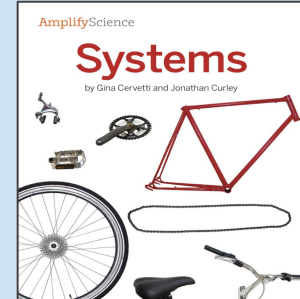
## Energy Conversions Lesson 1.2

Chapter Question: What happened to the electrical system the night of the Ergstown blackout?

Investigation Question: What is a system?



Cherry Pitter System				
Part	handle	cherry cup	poker	spring
Function	to hold and squeeze	to hold the cherry in place	to push the pit out of the cherry	to open the handle after you squeeze it closed
System function: <u>To take the pits out of cherries.</u>				

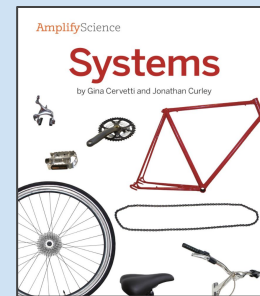


# Evidence sources work together

## Observing the cherry pitter and reading *Systems*

How do these activities **work together** to support understanding of what a system is?

Investigation Question: What is a system?



# Gathering evidence

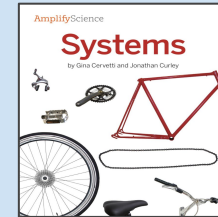
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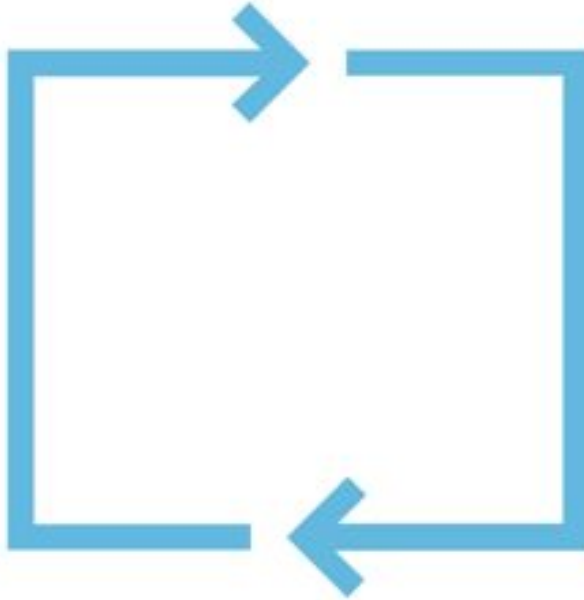
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Part	handle	cherry cup	poker	spring
Function	to hold and squeeze	to hold the cherry in place	to push the pit out of the cherry	to open the handle after you squeeze it closed
System function: To take the pits out of cherries.				



What have students figured out so far?

# Multimodal learning

Gathering evidence over multiple lessons



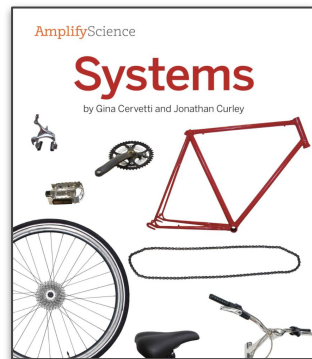
**Do,  
Talk,  
Read,  
Write,  
Visualize**

# Evidence sources work together

**Teacher tip:** Every evidence source plays an important role in student learning. Be sure to teach every activity in order!

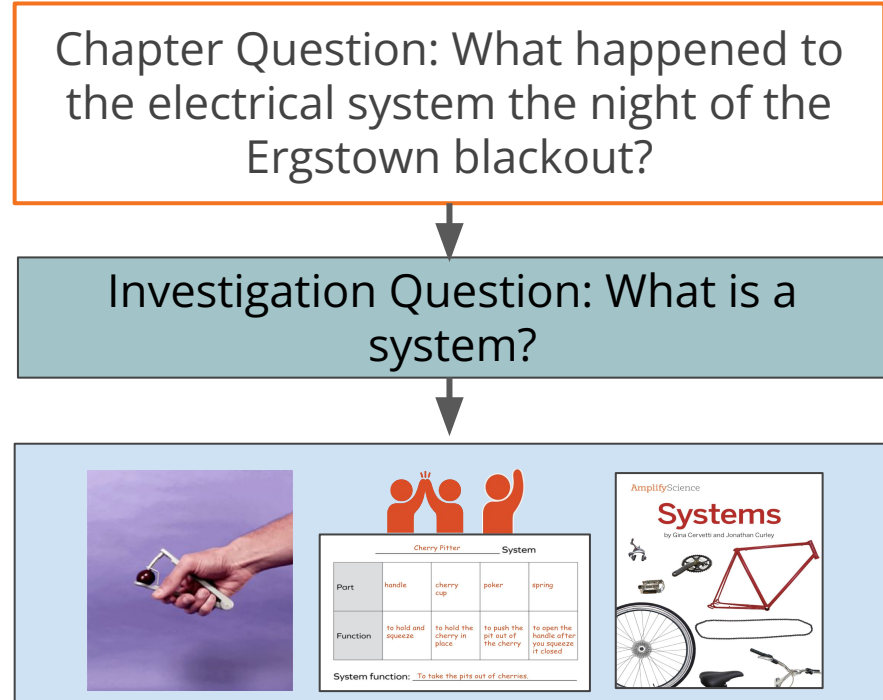
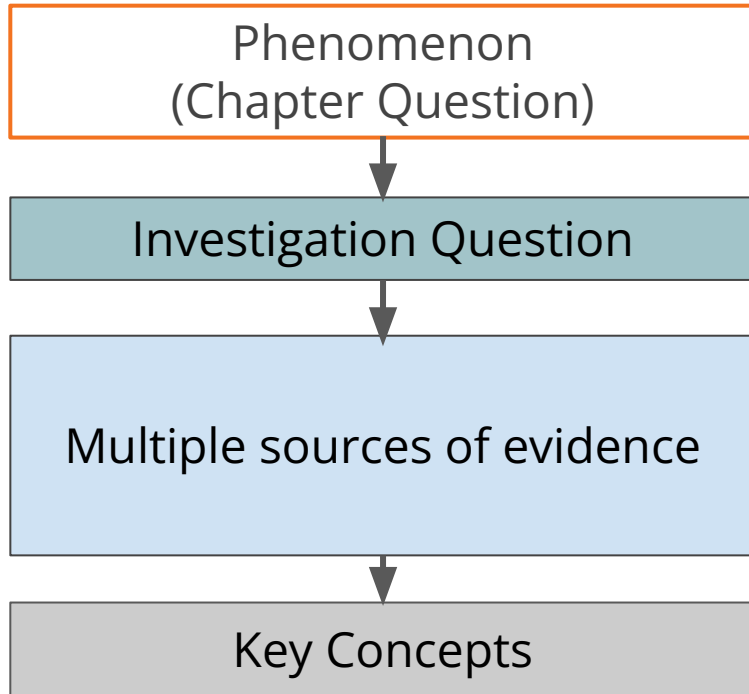


Cherry Pitter System				
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Function	to hold and squeeze	to hold the cherry in place	to push the pit out of the cherry	to open the handle after you squeeze it closed
<b>System function:</b> To take the pits out of cherries.				



# Coherence Flowchart

## A diagram of student learning



# Coherence Flowchart

## Energy Conversions Lesson 1.2-1.3

Chapter Question: What happened to the electrical system the night of the Ergstown blackout?

Investigation Question: What is a system?

Evidence: Observe a simple system (cherry pitter) (1.2)

Evidence: Read *Systems* (1.2)

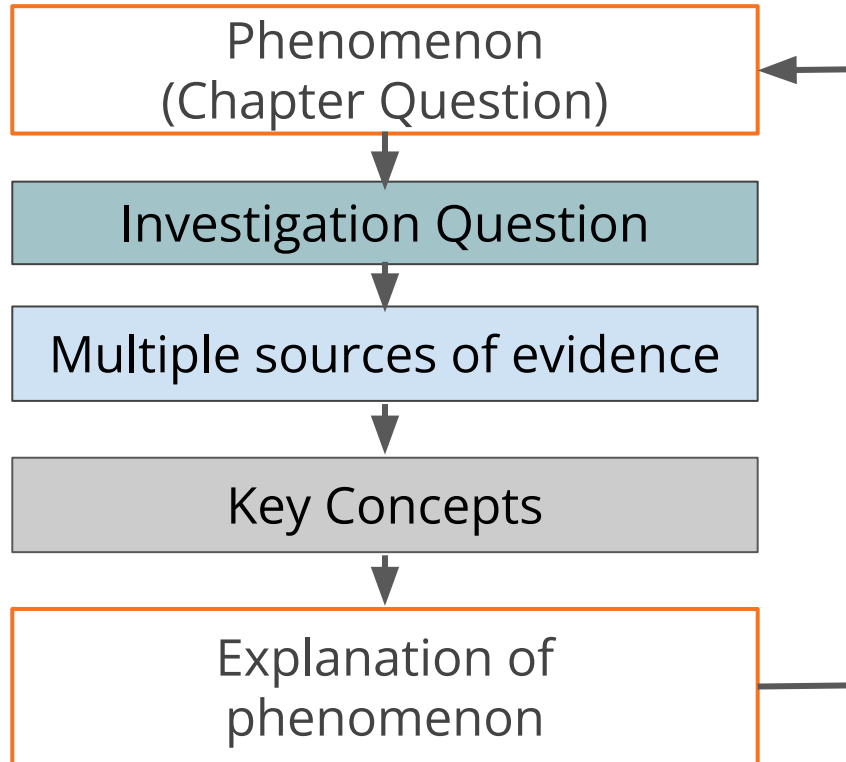
**Evidence: Build a simple electrical system (1.3)**

**Evidence: Discuss parts and functions of a system (1.3)**

Key Concept: A system is a collection of interacting parts that work together. Each part in the system plays a role to perform an overall function. (1.3)

# Coherence Flowchart

A diagram of student learning





# Coherence Flowchart

## Energy Conversions Lesson 1.2-1.3

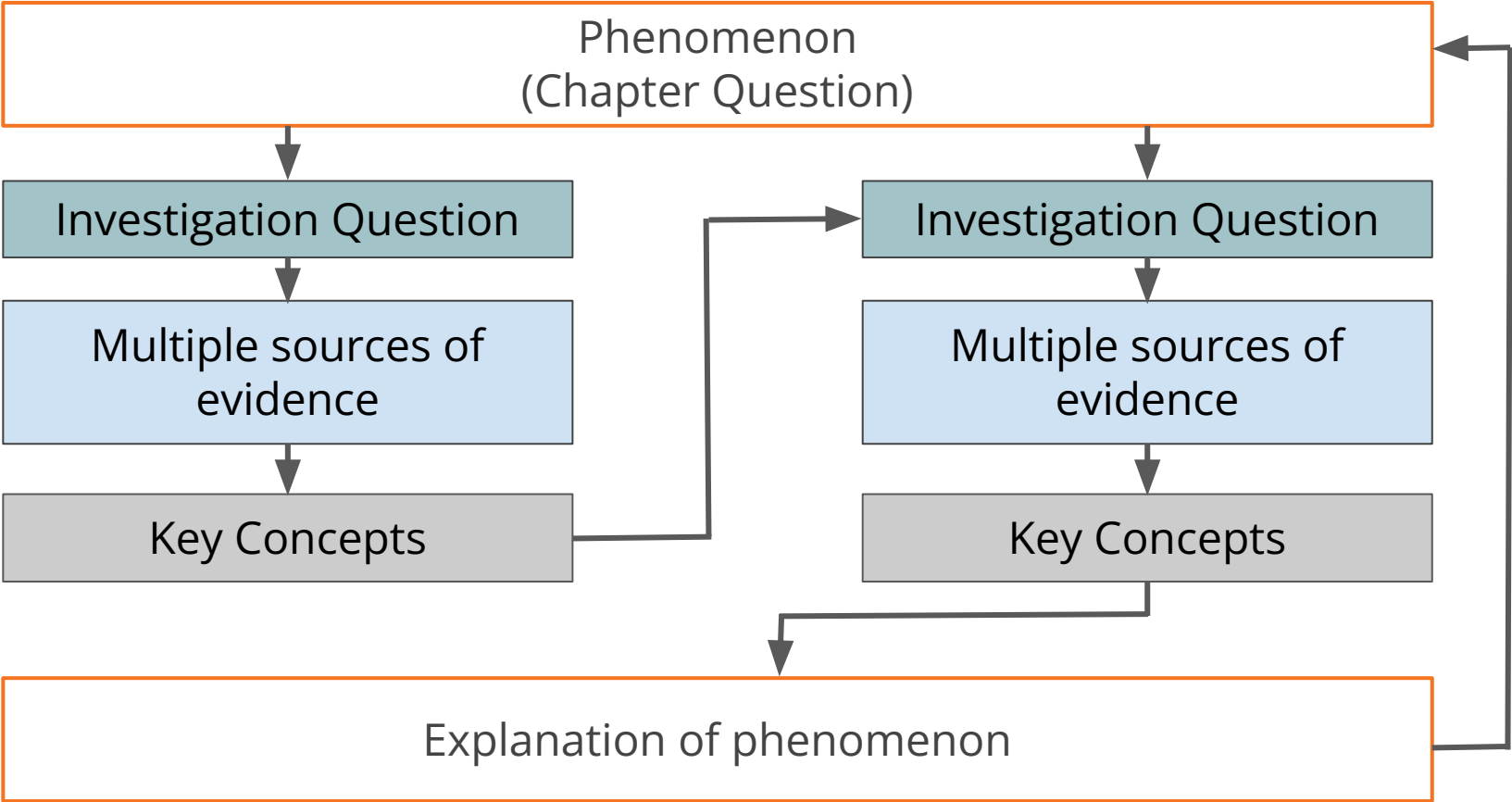
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Evidence: Observe a simple system (cherry pitter) (1.2)  
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Evidence: Build a simple electrical system (1.3)  
Evidence: Discuss parts and functions of a system (1.3)

Key Concept: A system is a collection of interacting parts that work together. Each part in the system plays a role to perform an overall function. (1.3)

# Coherence Flowchart



# Energy Conversions: Blackout in Ergstown

## Unit Anchor Phenomenon

*Problem students work to solve*

## Chapter-level Anchor Phenomenon

*Chapter 1 Question*

## Investigative Phenomena

*Investigation Questions*

Evidence sources and reflection opportunities

Key concepts

Application of key concepts to the problem

Explanation that students can make to answer the Chapter 1 Question

Ergstown has frequent blackouts.  
*Why does Ergstown keep having blackouts?*

There was a blackout in Ergstown.  
*What happened to the electrical system the night of the Ergstown blackout?*

Cities have electrical systems.  
*What is a system?* (1.2, 1.3)

- Observe a simple system (1.2)
- Read *Systems* (1.2)
- Build a simple electrical system (1.3)
- Discuss parts and functions of a system (1.3)

• A system is a collection of interacting parts that work together. Each part in the system plays a role to perform an overall system function. (1.3)

Cities have electrical systems.  
*What can electrical energy in a system be used for?* (1.4, 1.5)

- Find electrical energy in the Sim (1.4)
- Build simple electrical systems and observe various types of energy outputs (1.5)
- Read about forms of energy in *It's All Energy* (1.5)
- Write about ideas from the reading and hands-on investigation (1.5)

• Light, motion, sound, and thermal energy are all forms of energy. You can observe evidence of these different forms as outputs of electrical devices. (1.5)

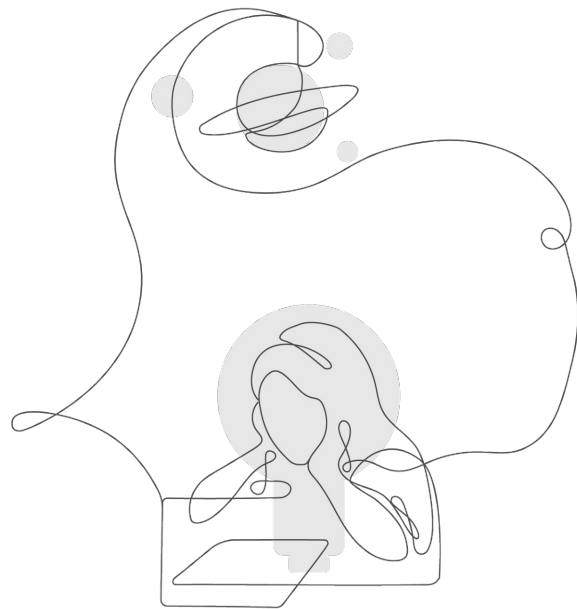
- Observe and write about forms of energy in the Ergstown subway (1.6)

The devices stopped working in Ergstown because they weren't able to get electrical energy from the electrical system. When devices work, they output light, heat, motion, or sound. These are forms of energy. During the blackout, the devices weren't getting electrical energy.

# Explore the Coherence Flowchart

Skim the Chapter 1 Coherence Flowchart.


Think about how you might use the Coherence Flowchart to summarize learning throughout Chapter 1.



# Reflection

## Coherence Flowchart

After looking over the Coherence Flowchart, what new insights do you have about teaching and learning with Amplify Science?

<i>Teaching</i>	<i>Learning</i>
	

# Questions?



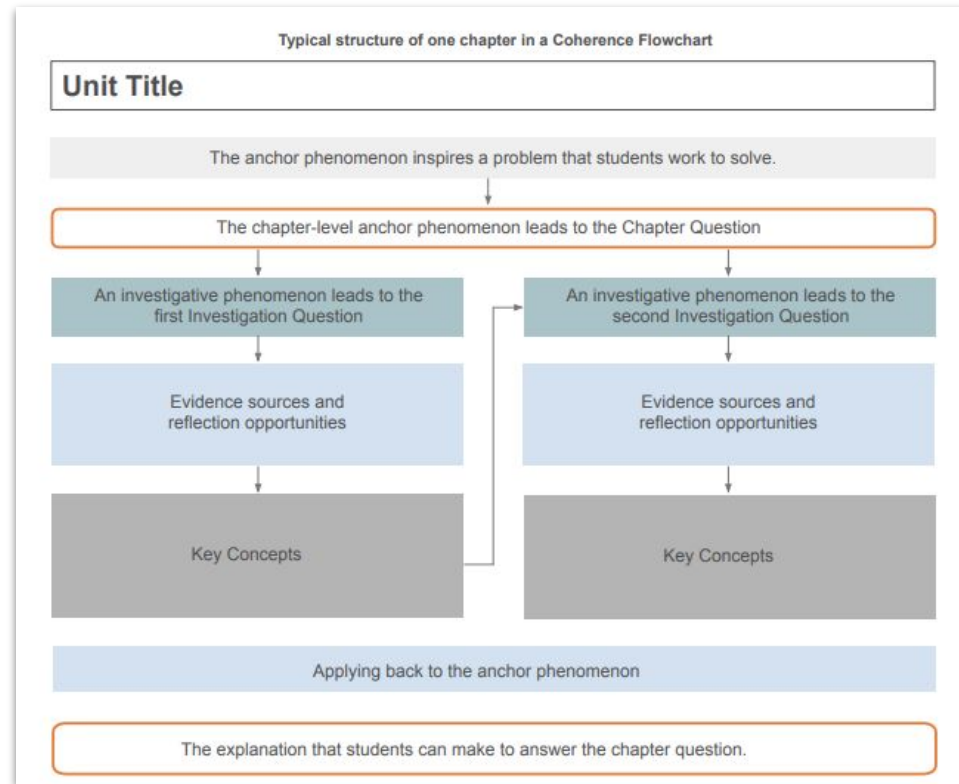
# Break



# Coherence Flowchart

First, read over the Chapter 1 Coherence Flowchart.

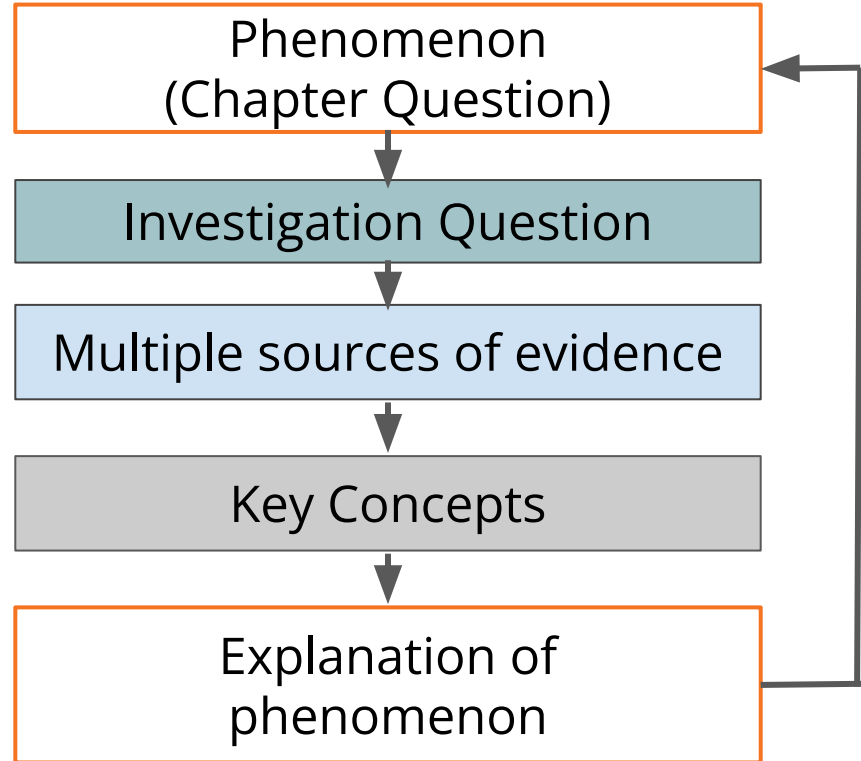
Then try to find which part of the Coherence Flowchart seems connected to Level 1 of the Progress Build.






# Coherence Flowchart

Key Concepts can be seen as building blocks to the Progress Build levels.



# Coherence Flowchart

How do students figure out Key Concepts?

<i>Teaching</i>	<i>Learning</i>
	

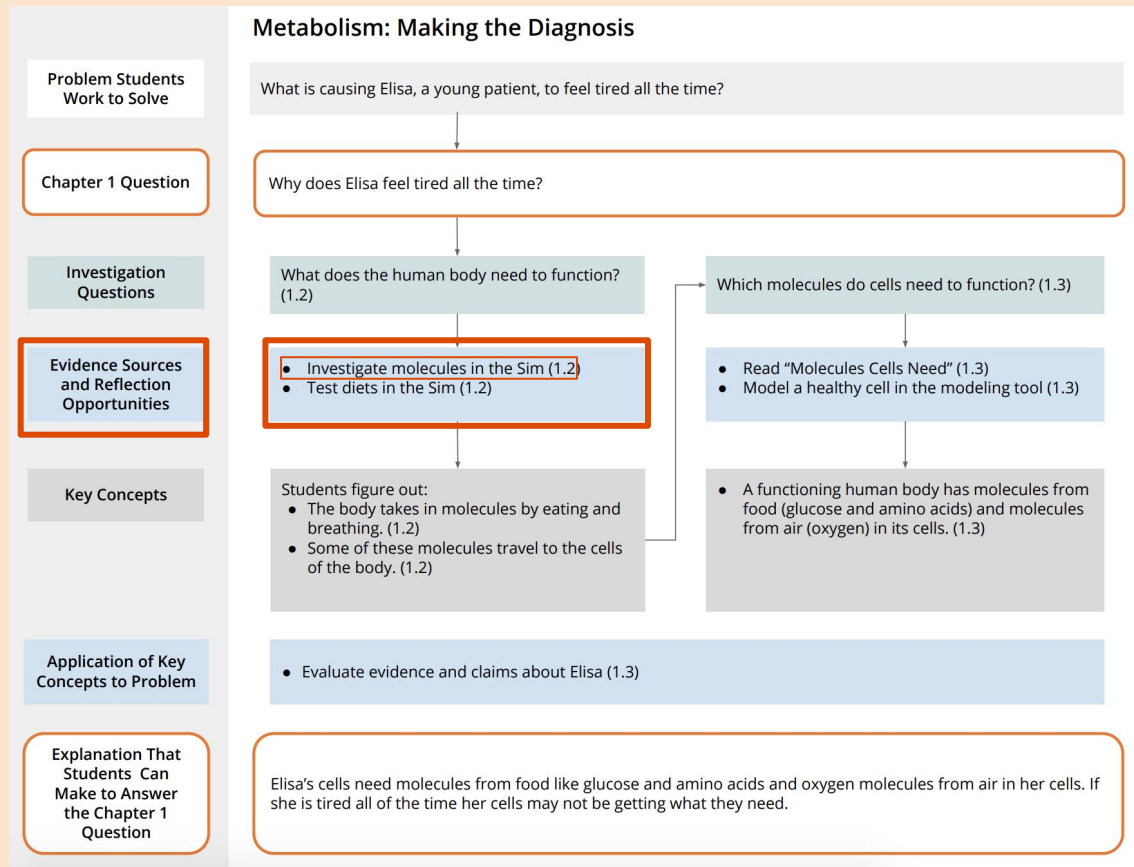
# Grade-level jigsaw

Each group member of each grade will become an expert on a Chapter 1 evidence source then report back to the group:

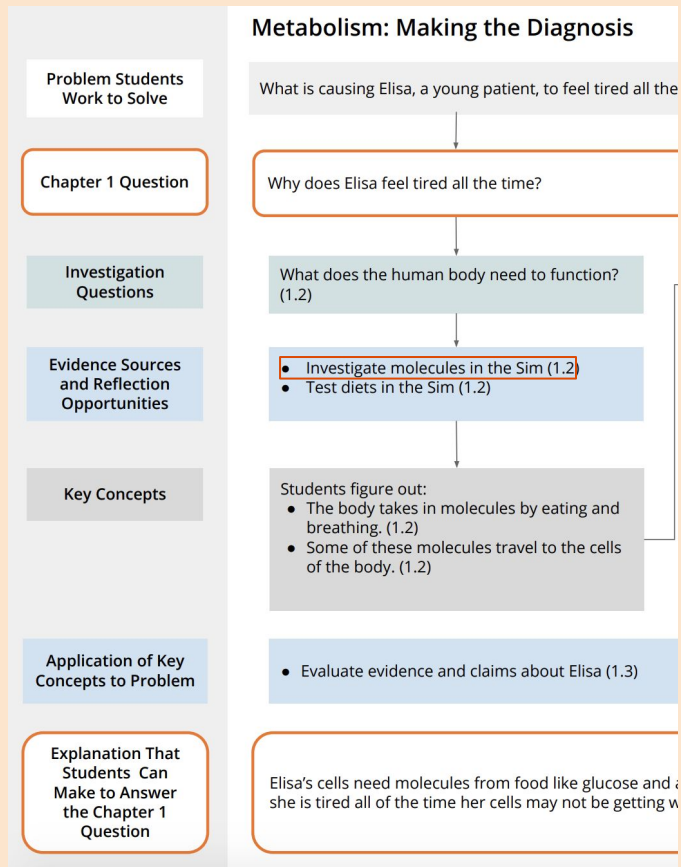
- What science concept(s) are students working to figure out?
- What are students doing?



# Hidden slide: Evidence sources in Coherence Flowchart



# Hidden slide: Navigating to an evidence source in the teacher's guide



AmplifyScience > Metabolism > Chapter 1 > Lesson 1.2

- Some of these molecules travel to the cells of the body.

**Overview**

- Materials & Preparation
- Differentiation
- Standards
- Vocabulary
- Unplugged?

**Lesson at a Glance**

(Teacher Only) **Introducing Medical Student Role** (5 min.)  
An introductory video plunges students into their new role as medical students and introduces them to their patient, a teenager who feels tired all the time.

**1: Warm-Up** (5 min.)  
Writing and discussing ideas about their new role provides students a chance to access and share background knowledge about how bodies function.

(Teacher Only) **Generating Claims About Elisa** (5 min.)  
The teacher helps students frame their initial ideas as possible claims to investigate. This whole-class share provides a sense of the ideas that students bring to this topic.

**2: Introducing the Metabolism Simulation** (20 min.)  
Students familiarize themselves with the Sim, and focus on thinking about and observing how a healthy body functions; this prepares them for later investigations into what happens when body systems fail.

**3: Returning to the Patient** (5 min.)  
Students connect their observations of the Sim to the term *metabolism*, and relate this to their ideas about their patient's problems.

**4: Homework**  
By experimenting with different diets in the Sim, students observe the relationship between food intake and molecules getting to the cells.

BACK TO TOP

Español

We'd love to hear from you! Submit your feedback [here](#).

# Jigsaw

Each group member will become an expert on a Chapter 1 evidence source then report back to the group:

- What science concept(s) are students working to figure out?
- What are students doing?



# Jigsaw

## Share your work

First, each group member shares:

- What science concept(s) are students working to figure out?
- What are students doing?

Next, the whole group discusses:

- What new understanding(s) do you have about how students figure out Key Concepts in your unit?

### Coherence Flowchart jigsaw cont.

Step 3: Jigsaw. Each group member shares about their evidence source or reflection opportunity for 1-2 minutes. Other group members take notes in the table below and ask questions.

#### Coherence Flowchart jigsaw: How do students figure out key concepts?

Step 1: As a group, look at the evidence sources and reflection opportunities on the Chapter 1 Coherence Flowchart. Each group member chooses a different evidence source or reflection opportunity to learn and present back to the group. Record the evidence source or reflection opportunity you chose in the table below.

Step 2: Become an expert. First, navigate to the lesson listed next to your evidence source or reflection opportunity. Look over the Lesson Brief to determine which activity contains that evidence source (the names won't match up exactly). Then, carefully read the activity. You can use the Instructional Guide or Classroom Slides. Make notes in the table below.

Evidence source or reflection opportunity:

Lesson and activity:

What science concepts are students working to figure out?


- Consider the key concept they're working towards
- Look at "Students learn" in the Lesson Brief

What are students doing?

- Consider the modality or modalities (do, talk, read, write, visualize)
- Consider the different science skills students are using (e.g. students who are sorting cards may be observing and analyzing images and data)

# Jigsaw

What new ideas do you have about how students figure out Key Concepts?

<i>Teaching</i>	<i>Learning</i>
	



# Phenomenon-based teaching and learning

## A shift in science instruction

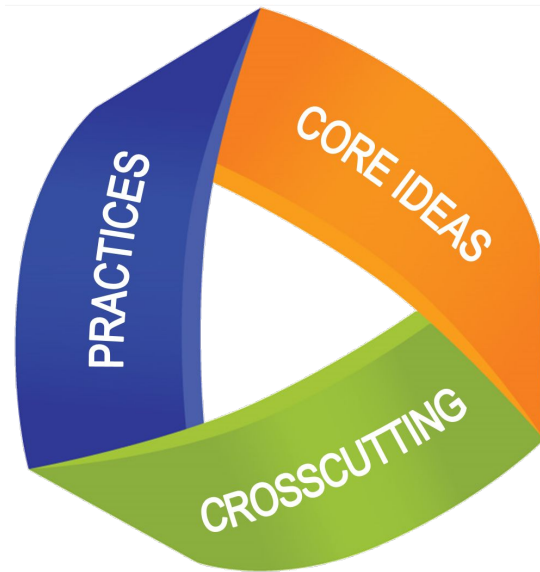
from learning about  
(like a student)



to figuring out  
(like a scientist)

# 3-D Learning

## Figuring out like a scientist, using all three dimensions



### Science and Engineering Practices

1. Asking Questions and Defining Problems
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 and Designing Solutions
7. Engaging in Argument from Evidence
8. Obtaining, Evaluating, and Communicating Information

### Disciplinary Core Ideas

#### Earth and Space Sciences:

ESS1: Earth's Place in the Universe  
ESS2: Earth's Systems  
ESS3: Earth and Human Activity

#### Life Sciences:

LS1: From Molecules to Organisms  
LS2: Ecosystems  
LS3: Heredity  
LS4: Biological Evolution

#### Physical Sciences:

PS1: Matter and its Interactions  
PS2: Motion and Stability  
PS3: Energy  
PS4: Waves and their Applications

#### Engineering, Technology and the Applications of Science:

ETS1: Engineering Design  
ETS2: Links among Engineering Technology, Science and Society

### Crosscutting Concepts

1. Patterns
2. Cause and Effect
3. Scale, Proportion, and Quantity
4. Systems and System Models
5. Energy and Matter
6. Structure and Function
7. Stability and Change

# 3-D Learning in Chapter 1

Return to your Jigsaw notes about the different evidence sources in Chapter 1.

How do students figure out like scientists, using all three dimensions?

## Coherence Flowchart jigsaw cont.

Step 3: Jigsaw. Each group member shares about their evidence source or reflection opportunity for 1-2 minutes. Other group members take notes in the table below and ask questions.

### Coherence Flowchart jigsaw: How do students figure out key concepts?

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What are students doing?

- Consider the modality or modalities (do, talk, read, write, visualize)
- Consider the different science skills students are using (e.g. students who are sorting cards may be observing and analyzing images and data)

Evidence source or reflection opportunity:

Lesson and activity:

Lesson and activity:

# Hidden slide: Navigate to a lesson's 3-D statement

AmplifyScience > Metabolism > Chapter 1 > Lesson 1.2

Overview  
Materials & Preparation  
Differentiation  
**Standards**  
Vocabulary  
Unplugged?

## Standards

### 3-D Statement

Key

Practices [Disciplinary Core Ideas](#) [Crosscutting Concepts](#)

Students [use a model](#) of the human body to make observations at the molecular scale (scale, proportion, and quantity) in order to [investigate where the molecules that the body takes in through eating and breathing go once they are in the body.](#)

### Next Generation Science Standards (NGSS)

#### NGSS Practices

- Practice 2: Developing and Using Models
- Practice 3: Planning and Carrying Out Investigations
- Practice 7: Engaging in Argument from Evidence

#### NGSS Disciplinary Core Ideas

- LS1.A: Structure and Function:
  - In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions. (MS-LS1-3)
- LS1.A: Structure and Function:

## Digital Resources

- Classroom Slides 1.2 | PowerPoint
- Classroom Slides 1.2 | Google Slides
- All Projections
- Classroom Videos 1.2 | Zip
- Video: Elisa's Condition
- Completed Scientific Argumentation Wall Diagram
- Metabolism Investigation Notebook, pages 5–8
- Printable Metabolism Glossary
- Printable Metabolism Multi-Language Glossary
- Metabolism Glossary
- Metabolism Multi-Language Glossary

## 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
- Articles in This Unit
- Apps in This Unit
- Flextensions in This Unit

## Printable Resources

- Article Compilation
- Coherence Flowchart
- Copymaster Compilation
- Flextension Compilation
- Investigation Notebook
- 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.

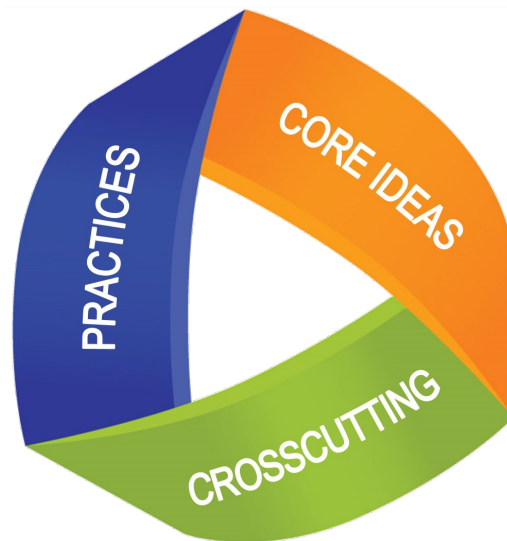
Offline Guide

# Connecting 3-D learning to deeper learning

## How can 3-dimensional science lead students to deeper learning?

Deeper learning:

- Conceptual knowledge that moves **past the what to the why or how**
- Analysis, reasoning, communication, and other skills
- Beyond retention, an ability to **transfer** and apply knowledge and skills to new contexts



# Synthesizing our reflections

When students work as scientists and learn using the 3 dimensions, they focus on explaining why or how rather than memorizing facts.

This makes them more able to remember ideas and transfer them to new context.

## Tools for Deeper Learning

- *Progress Build*
- *3-D learning*

# Synthesizing our reflections

The Coherence Flowchart gives teachers an at-a-glance diagram of the connections among evidence sources, questions, and Key Concepts.

It's a great planning tool for deeper learning.

## Tools for Deeper Learning

- *Progress Build*
- *3-D learning*
- *Coherence Flowchart*



## Plan for part 2

- **Framing the day**
  - Welcome
- **Unit Exploration**
  - Unpacking the Progress Build
- **Unit Coherence**
  - Unpacking unit coherence in your first unit
- **Planning for CR-SE**
  - Unpacking - Eliciting and Leveraging Students' Prior Knowledge
- **Closing**
  - Final Questions & Feedback



# Culturally Responsive-Sustaining Education

Pg.27

## Principles of the framework



**Welcoming  
and affirming  
environment**



**High  
expectations  
and rigorous  
instruction**



**Inclusive  
curriculum and  
assessment**

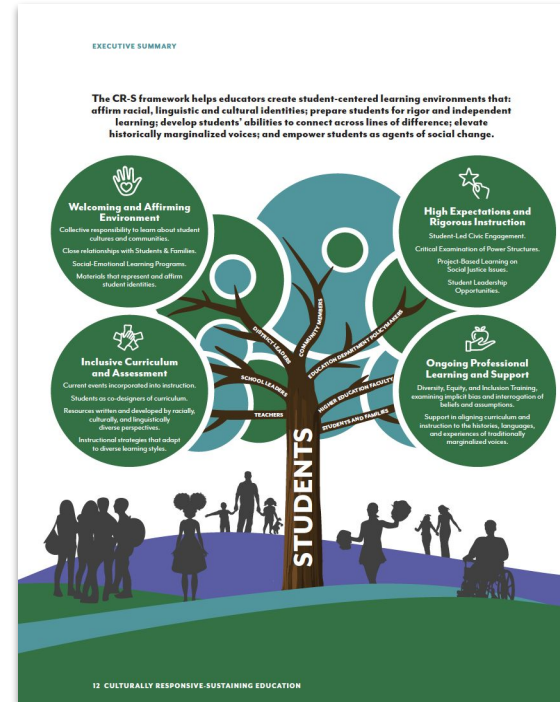


**Ongoing  
professional  
learning**

# Read, reflect, & discuss

## 4 principles of CR-SE

- ❑ Take a few moments to review these principles.
- ❑ Reflect on how you already incorporate these principles into your regular practice.
- ❑ Share in the chat!



# Culturally Responsive-Sustaining Education in Amplify Science

## Collaborate in break-out rooms

- ❑ Each group will be randomly assigned 1 common element of equitable teaching & learning.
- ❑ Read respective blurb.
- ❑ Prepare a slides with words & images that best summarizes how Amplify Science supports each element. Be creative!



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

## Unit-specific document

### Animal and Plant Defenses

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

#### Overview

An important element of promoting learning and equity in the science classroom is to elicit and build upon students' prior knowledge, personal experiences, and cultural and social backgrounds. This practice fosters more robust and durable conceptual understanding and higher engagement, helping students to:

- feel that science learning is purposeful and useful.
- know that their personal experiences and expertise, and experiences and expertise from their families and communities, are valued in the classroom.
- embrace the idea that their personal experiences and expertise are assets to be used in their scientific investigations.
- feel confident in their identity as science learners and their ability to contribute in the science classroom.

Eliciting these connections from students helps teachers to:

- leverage students' experiences and ideas as resources during teaching.
- formatively assess students' understanding of concepts and familiarity with contexts.

When students engage with new questions and with new evidence sources such as physical materials and texts, their prior knowledge and experiences (both in life and in the classroom) are important resources they can leverage to help construct their initial scientific explanations, arguments, and models. As students build on and refine their ideas, they can continue to leverage their knowledge and experiences to provide additional evidence for key concepts, generalize and apply the concepts, revise their own alternate conceptions, apply science ideas to their own lives, and generate new questions.

#### How to Use This Guide

This guide and the Amplify Science lessons themselves provide the support needed to effectively elicit and leverage students' prior knowledge, experiences, and backgrounds over the course of this unit. This guide is divided into two sections:

- **Part 1: Eliciting Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds.** This section describes where in this unit there are opportunities to elicit students' prior knowledge and experiences, how this information is recorded, prompts to use during these discussions, and examples of what students might say.
- **Part 2: Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds.** This section describes where in this unit there are opportunities to leverage students' prior knowledge and experiences, prompts to use during these discussions, and examples of how to leverage funds of knowledge students may have shared.

## Planning for the Unit

Unit Overview



Unit Map



Progress Build



Getting Ready to Teach



Materials and Preparation



Science Background



## Printable Resources



3-D Assessment Objectives



Coherence Flowcharts



Copymaster Compilation



Crosscutting Concept Tracker



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





## Plan for part 2

- **Framing the day**
  - Welcome
- **Unit Exploration**
  - Unpacking the Progress Build
- **Unit Coherence**
  - Unpacking unit coherence in your first unit
- **Planning for CR-SE**
  - Unpacking - Eliciting and Leveraging Students' Prior Knowledge
- **Closing**
  - Final Questions & Feedback

# 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

# New York City Resources Site

<https://amplify.com/amplify-science-nyc-doe-resources/>



Amplify.

## 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

UPDATE: Summer 2020

**Account Access:** It's an exciting time for Amplify Science! We have access to the many updates and upgrades in our curriculum until late August/early September when we will update our rosters from STARS.

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!

## Site Resources

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

# 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.



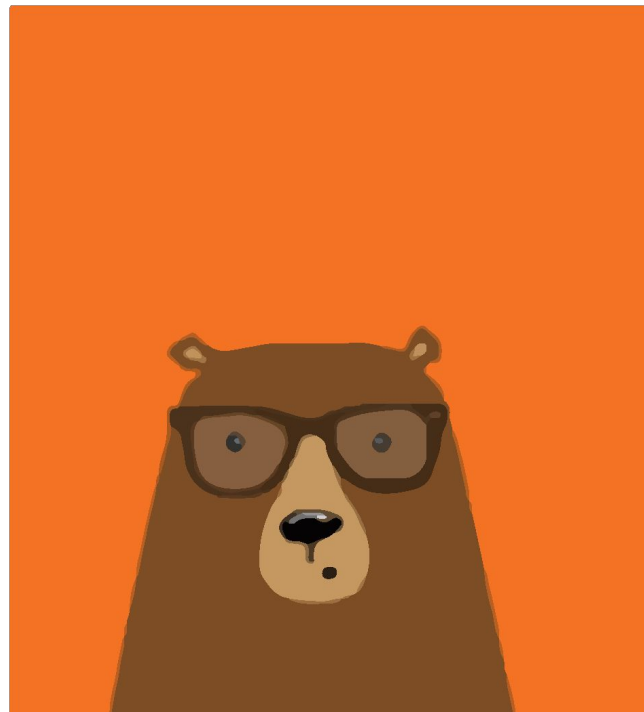
[help@amplify.com](mailto:help@amplify.com)



800-823-1969



Amplify Chat





# Hidden slide: Amplify Chat



Overview

Materials & Preparation

Differentiation

Standards

Vocabulary

## Differentiation

### 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

## Digital Resources

Classroom Slides 1.2 | PowerPoint

Classroom Slides 1.2 | Google Slides

What Scientists Do Chart—Completed

BACK TO TOP

Español



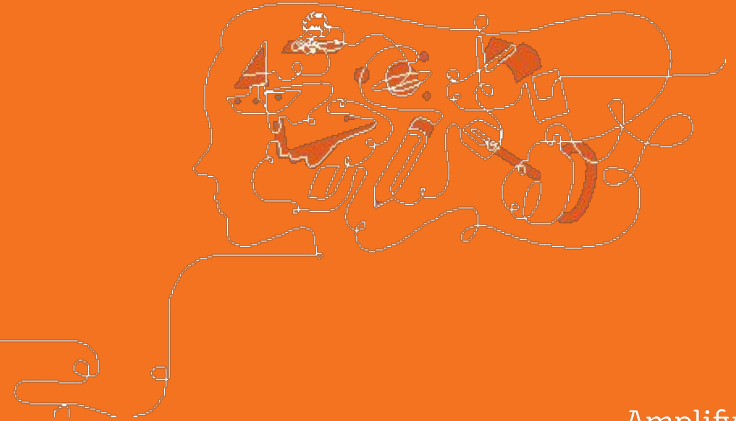


**Final Questions?**

# Please provide us feedback!

**URL:** <https://www.surveymonkey.com/r/5DQW2T6>

**Presenter name:**



Amplify.

Thank you & be well!

