

Amplify Science

New York City
Department of Education

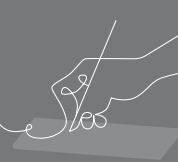
Grade K: Needs of Plants and Animals
Summer Institute: Day 1



Overarching goals

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

- Navigate program resources and describe how Amplify Science addresses 3-D Learning and NYSSLS/NGSS.
- Use Needs of Plants and Animals unit resources to plan lessons that support ALL learners.



Getting to know the unit

Day 1



Day 1 Objectives

By the end of today, you will be able to:

- Explain what students learn in the unit, and how they learn it.
- Navigate the Amplify Science curriculum.
- Recognize how lessons engage students in the three dimensions of NYSSLS/NGSS (as appropriate).
- Articulate how lesson activities support students in building complex explanations.

Norms: Establishing a culture of learners

Take risks: Ask any questions, provide any answers.

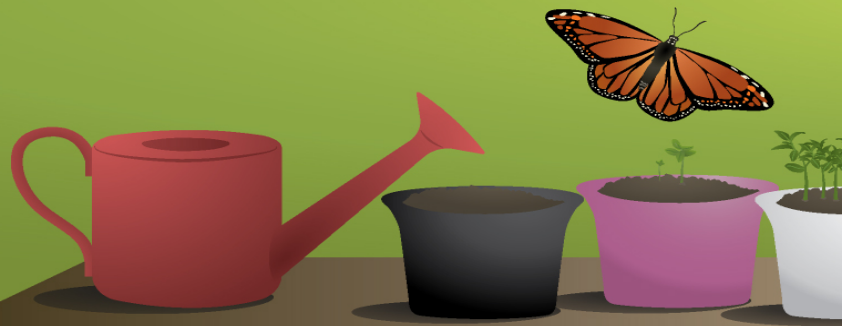
Participate: Share your thinking, participate in discussion and reflection.

Be fully present: Unplug and immerse yourself in the moment.

Physical needs: Stand up, get water, take breaks.

Needs of Plants and Animals

Plan for the day – Day 1



• Framing the day

- What is Amplify Science?
- Navigating the digital guide

• Experiencing the unit

- Amplify Science approach
- NYSSLS anticipatory activity
- Instructional sequence with model lesson
- Reflecting on the sequence

• Closing

- Amplify Science in NYC
- Reflection
- Questions

Needs of Plants and Animals

Plan for the day – Day 1



- **Framing the day**

- What is Amplify Science?
- Navigating the digital guide

- **Experiencing the unit**

- Amplify Science approach
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- **Closing**

- Amplify Science in NYC
- Reflection
- Questions

Framing the day

The purpose of this part of the day is for you to:

- Navigate the Amplify Science curriculum



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+

Amplify.

Amplify Science

Elementary school course curriculum structure

Grade K

- Needs of Plants and Animals
- Pushes and Pulls
- Sunlight and Weather

Grade 1

- Animal and Plant Defenses
- Light and Sound
- Spinning Earth

Grade 2

- Plant and Animal Relationships
- Properties of Materials
- Changing Landforms

Grade 3

- Balancing Forces
- Inheritance and Traits
- Environments and Survival
- Weather and Climate

Grade 4

- Energy Conversions
- Vision and Light
- Earth's Features
- Waves, Energy, and Information

Grade 5

- Patterns of Earth and Sky
- Modeling Matter
- The Earth System
- Ecosystem Restoration

AmplifyScience

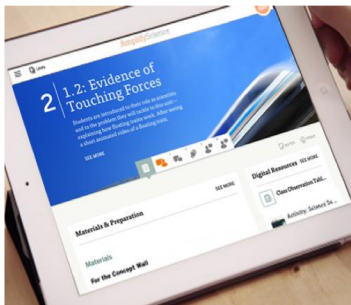
authored by



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Elementary school components



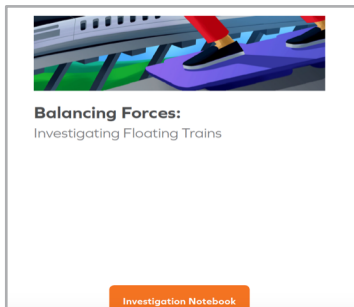
Digital Teacher's Guide



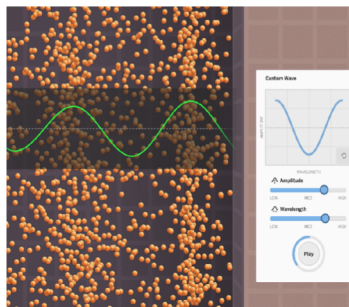
Hands-on materials



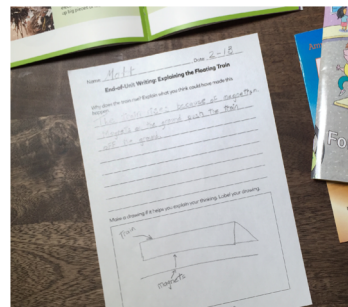
Student books



Investigation Notebooks

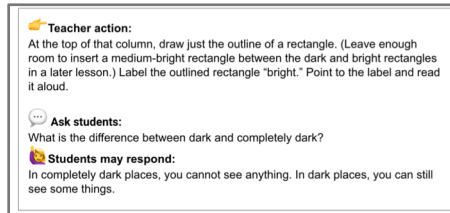
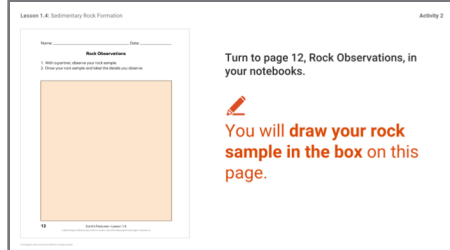


Digital applications (grades 2-5)

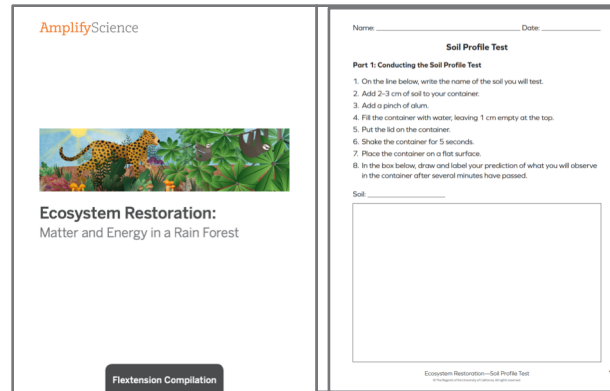


Assessments

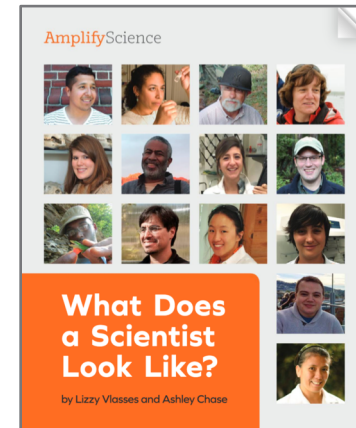
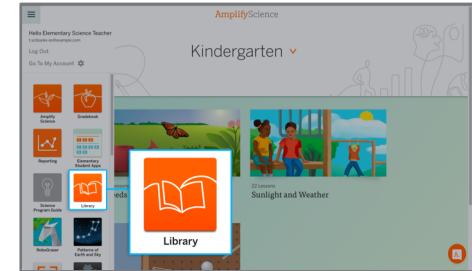
Amplify Science: What's new for 2019-2020



Classroom Slides

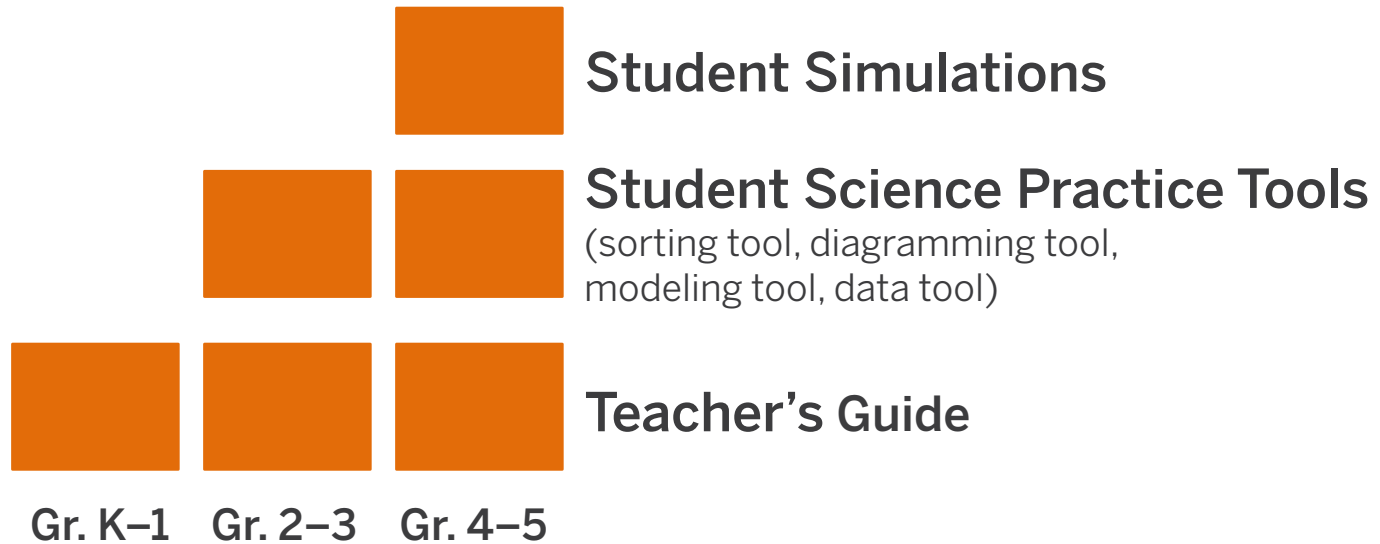


Hands-on
Flexextensions



New digital K–5
Student Books

What are the digital components of Amplify Science Elementary?



Teacher's Guide navigation

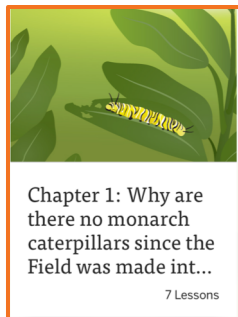


Unit

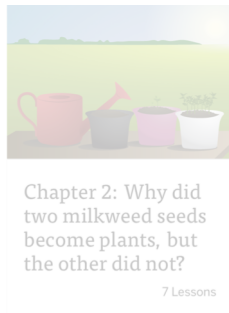


22 Lessons
Needs of Plants and Animals

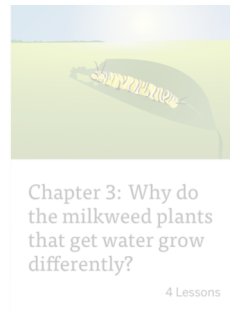
Chapters



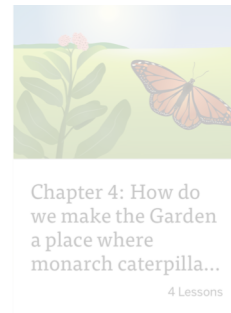
Chapter 1: Why are there no monarch caterpillars since the Field was made int...
7 Lessons



Chapter 2: Why did two milkweed seeds become plants, but the other did not?
7 Lessons



Chapter 3: Why do the milkweed plants that get water grow differently?
4 Lessons



Chapter 4: How do we make the Garden a place where monarch caterpilla...
4 Lessons

Lessons

Lesson 1.1:
Pre-Unit Assessment

Lesson 1.2:
Science Walk

Lesson 1.3:
Observing a Place

Lesson 1.4:
Exploring Animal Needs

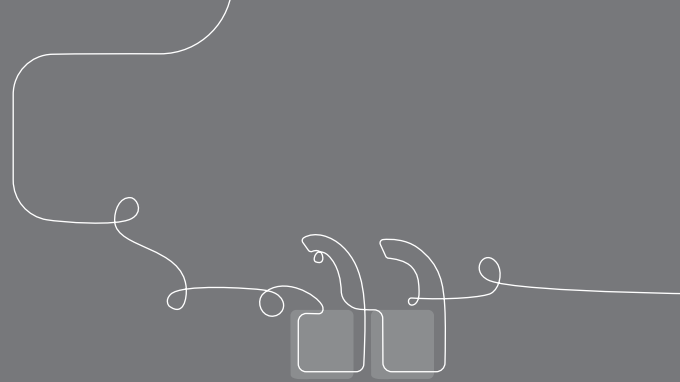
Lesson 1.5:
Investigating Animal Habitats

Lesson 1.6:
Explaining Why There Are No Caterpillars

Lesson 1.7:
Setting Up an Investigation

Activities

1	TEACHER-LED DISCUSSION Introduction to Observing		2	READING Partner Reading: Science Walk		3	TEACHER-LED DISCUSSION Comparing Living and Nonliving Things		4	STUDENT-TO-STUDENT DISCUSSION Discussing Plants and Animals
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Questions?

Needs of Plants and Animals

Plan for the day – Day 1



- **Framing the day**

- What is Amplify Science?
- Navigating the digital guide

- **Experiencing the unit**

- Amplify Science approach
- NYSSLS anticipatory activity
- Instructional sequence with model lesson
- Reflecting on the sequence

- **Closing**

- Amplify Science in NYC
- Reflection
- Questions

Experiencing the unit

The purpose of this part of the day is for you to:

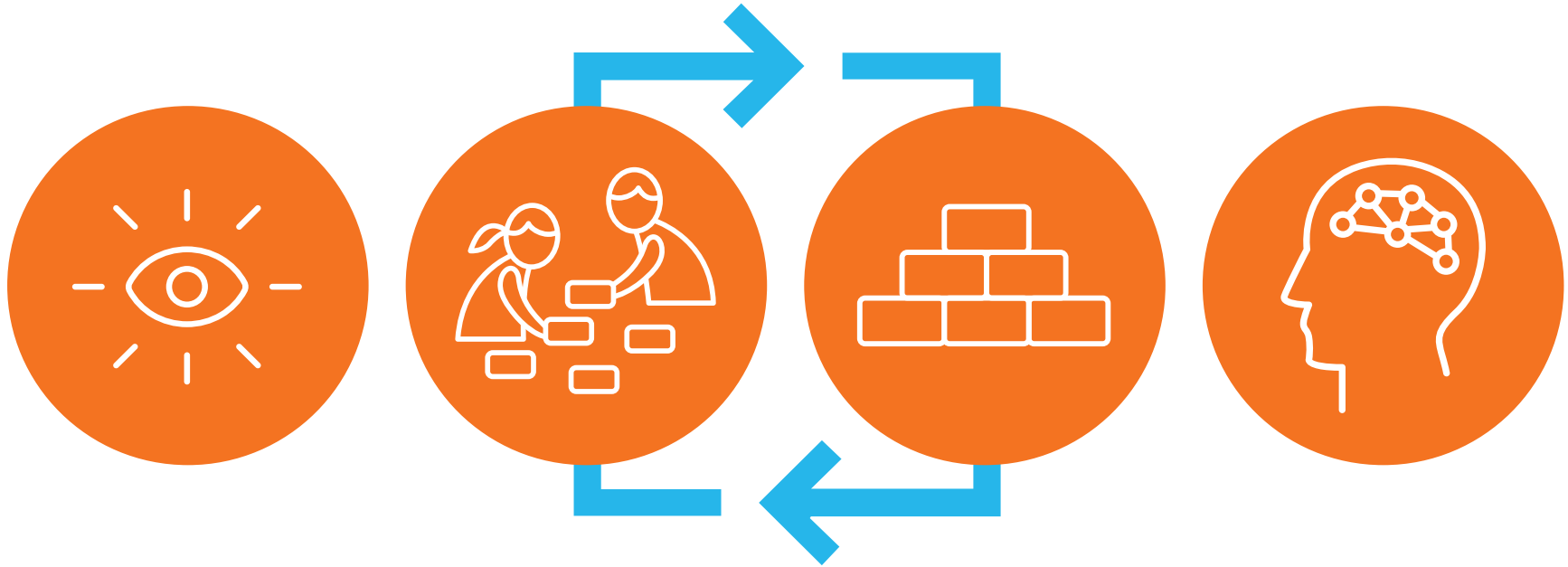
- Explain what students learn in the unit, and how they learn it.
- Recognize how lessons engage students in the three dimensions of NYSSLS (as appropriate).

Problem-based deep dives

Students inhabit the role of scientists and engineers to explain or predict phenomena. They use what they figure out to solve real-world problems.



Amplify Science approach



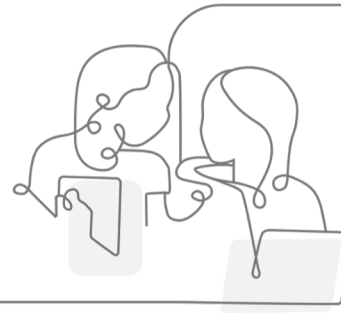
**Introduce a phenomenon
and a related problem**

**Collect evidence from
multiple sources**

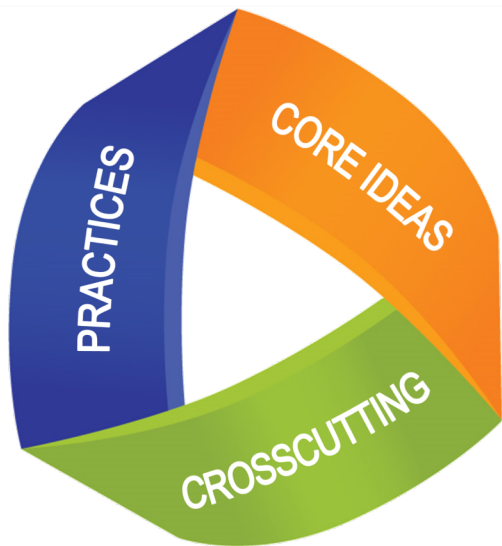
**Build increasingly
complex explanations**

**Apply knowledge
to a different context**

Figure out, not learn about



Three dimensions of NGSS and NYSSLS



Standards as three-dimensional performance expectations that integrate **disciplinary core ideas**, **science and engineering practices**, and **crosscutting concepts**

Needs of Plants and Animals

Instructional sequence



Chapter 1: Why are there no monarch caterpillars since the Field was made into the Garden?

▼ JUMP DOWN TO CHAPTER OVERVIEW

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Pre-Unit Assessment

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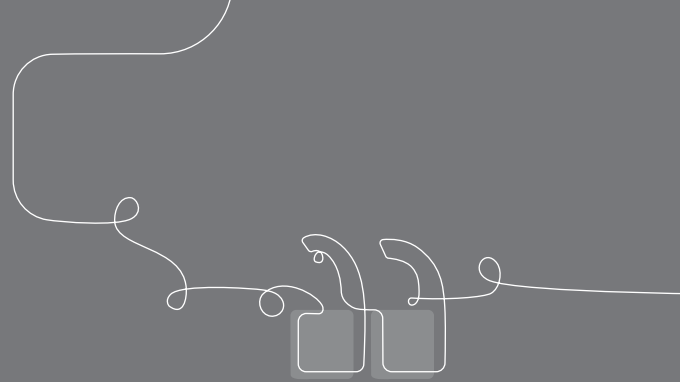
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Questions?

Needs of Plants and Animals

Plan for the day – Day 1



- **Framing the day**

- What is Amplify Science?
- Navigating the digital guide

- **Experiencing the unit**

- Amplify Science approach
- NYSSLS anticipatory activity
- Instructional sequence with model lesson
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- Amplify Science in NYC
- Reflection
- Questions

Self-reflection and closing

The purpose of this part of the day is for you to:

- Participants reflect on their ability to navigate the Teacher's Guide and their understanding of the Amplify Science Approach and how it supports three-dimensional learning.

New York State P-12 Science Standards Development, Adoption, and Implementation

Phase I
Raise Awareness & Build Capacity

Phase II
Transition & Implementation

Phase III
Implementation & Sustainability

Ongoing curriculum & professional development

Instruction aligned to NYS P12
Science Learning Standards begins...

...September 2019
for Grades P-3 and 6

...September 2020
for Grades 4 and 7

...September 2021
for Grades 5 and 8

September 2022
Continue Phase III transition toward full
implementation of the NYS 9-12 Science
Learning Standards at the local level

2016

2017

2018

2019-20

2021

2022-24

December 2016 adoption
of NYS P-12 Science
Learning Standards.

Standards Become
Effective July 1, 2017

March 2018
NYS P-12 Science
Roadmap
Released

June 2020
Last administration
of Grade 4 science
test aligned to the
1996 Standards

June 2021
No Grade 4 science test; these
students will take new science
test in grade 5 in 2022
Last administration of Grade 8
science test aligned to the 1996
Standards

June 2022
First administration
of new Elementary
Grade 5 and
Intermediate
Grade 8 science
tests

June 2023
First
administration
Biology, and Earth
and Space Science
Regents Exams

June 2024
First administration
Chemistry and
Physics Regents
Exams

State Level Science Assessment Development & Implementation

Elementary school course curriculum structure

Grade K

- Needs of Plants and Animals
- Pushes and Pulls
- Sunlight and Weather

Grade 1

- Animal and Plant Defenses
- Light and Sound
- Spinning Earth

Grade 2

- Plant and Animal Relationships
- Properties of Materials
- Changing Landforms

Grade 3

- Balancing Forces
- Inheritance and Traits
- Environments and Survival
- Weather and Climate

Grade 4

- Energy Conversions
- Vision and Light
- Earth's Features
- Waves, Energy, and Information

Grade 5

- Patterns of Earth and Sky
- Modeling Matter
- The Earth System
- Ecosystem Restoration

AmplifyScience

authored by



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Middle school course curriculum structure

Middle School Curriculum New York City Edition

Grade 6

- Launch:
Harnessing Human Energy
- Thermal Energy
- Populations and Resources
- Matter and Energy in Ecosystems
- Weather Patterns
- Ocean, Atmosphere, and Climate
- Earth's Changing Climate

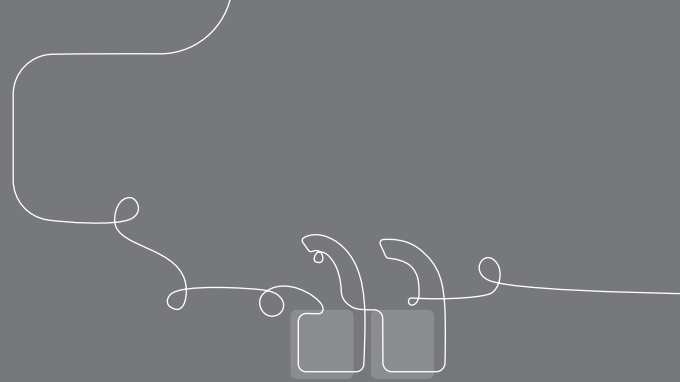
Grade 7

- Launch:
Microbiome
- Metabolism
- Phase Change
- Chemical Reactions
- Plate Motion
- Engineering Internship:
Plate Motion
- Rock Transformations
- Engineering Internship:
Earth's Changing Climate

Grade 8

- Launch:
Geology on Mars
- Earth, Moon, and Sun
- Force and Motion
- Engineering Internship:
Force and Motion
- Magnetic Fields
- Light Waves
- Traits and Reproduction
- Natural Selection
- Evolutionary History





Questions?

Day 1 Objectives

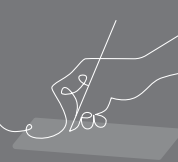
By the end of today, you will be able to:

- Explain what students learn in the unit, and how they learn it.
- Navigate the Amplify Science Curriculum.
- Recognize how lessons engage students in the three dimensions of NYSSLS/NGSS (as appropriate).
- Articulate how lesson activities support students with building complex explanations.

Overarching goals

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

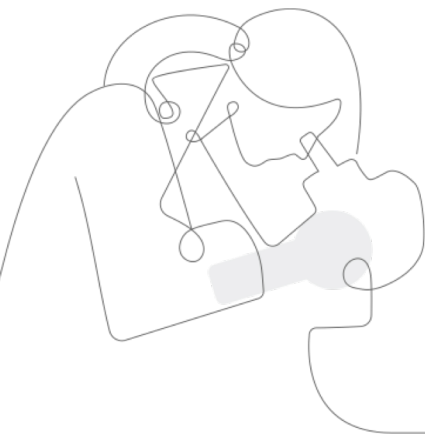
- Navigate program resources and describe how Amplify Science addresses 3-D Learning and NYSSLS/NGSS.
- Use Needs of Plants and Animals unit resources to plan lessons that support ALL learners.



Amplify Science

New York City
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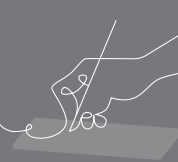
Grade K: Needs of Plants and Animals
Summer Institute: Day 2



Overarching goals

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

- Navigate program resources and describe how Amplify Science addresses 3-D Learning and NYSSLS/NGSS.
- Use Needs of Plants and Animals unit resources to plan lessons that support ALL learners.



Day 1 Objectives

After yesterday, you should be able to:

- Explain what students learn in the unit, and how they learn it.
- Navigate the Amplify Science Curriculum.
- Recognize how lessons engage students in the three dimensions of NYSSLS/NGSS (as appropriate).
- Articulate how lesson activities support students with building complex explanations.

Supporting all learners

Day 2



Day 2 Objectives

By the end of today, you will be able to:

- Understand strategies and resources for supporting all learners. Articulate how lesson activities support ALL students in building complex explanations.
- Identify the multiple types of assessments embedded within the Amplify Science curriculum.
- Apply program resources to plan to teach.

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.

Needs of Plants and Animals

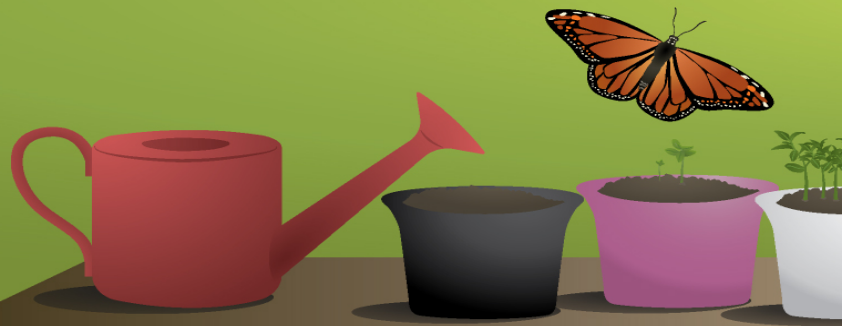
Plan for the day – Day 2



- **Opening the day**
 - Culture building
- **Story of the unit**
 - Unit Guide navigation
 - Build of conceptual understanding using Unit Guide resources
 - Progress Build
 - Coherence
- **Embedded supports for all learners**
 - Analyzing 3-D learning
 - Assessment System
 - Formative assessment
- **Considerations for an Amplify Science classroom**
- **Closing and reflection**
 - Reflection
 - Survey

Needs of Plants and Animals

Plan for the day – Day 2



- **Opening the day**
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- **Story of the unit**
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Needs of Plants and Animals

Plan for the day – Day 2



- **Opening the day**
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Story of the unit

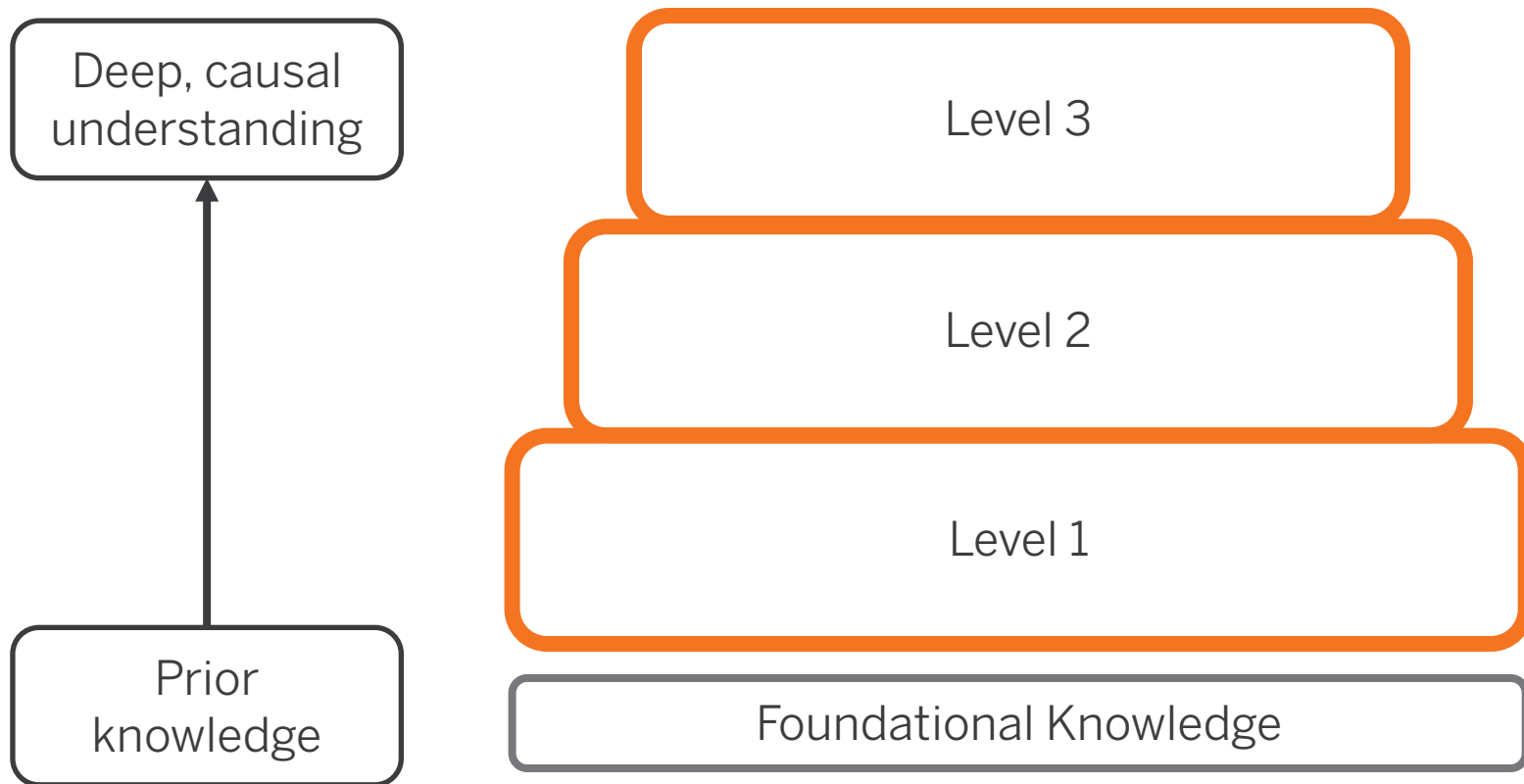
The purpose of this part of the day is for you to:

- Navigate the Amplify Science curriculum.
- Articulate how lesson activities support students with building complex explanations.

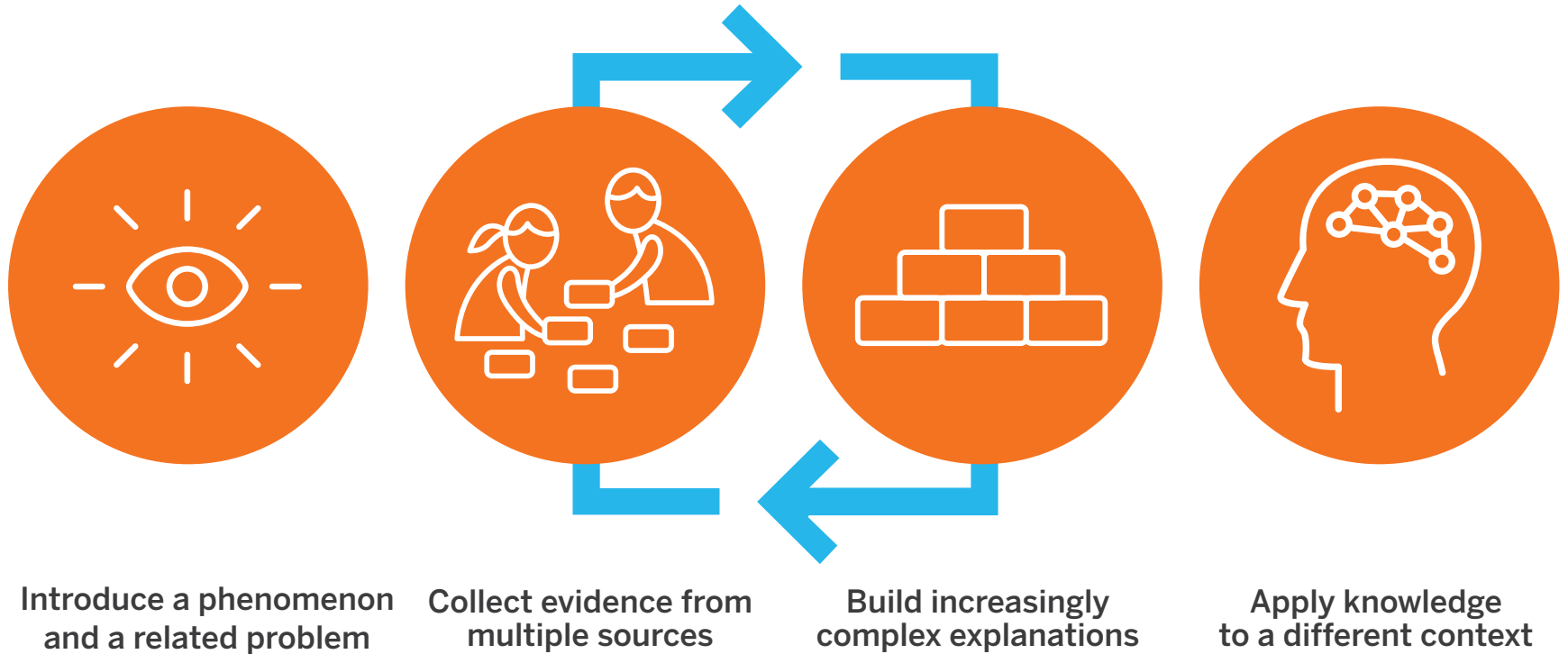
Progress Build: A unit-specific learning progression

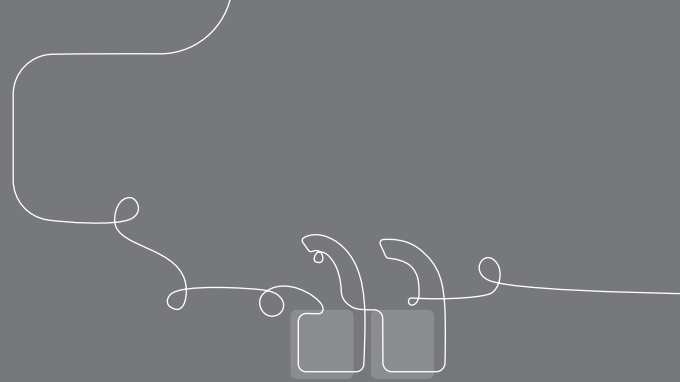


Progress Build: A unit-specific learning progression



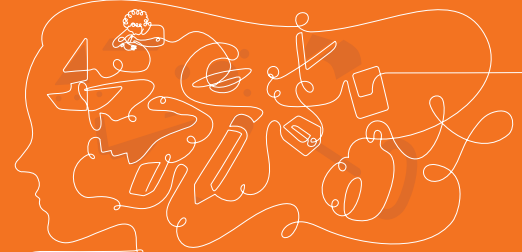
Amplify Science approach





Questions?

Coherence Flowchart



Coherence

from knowing a
list of ideas



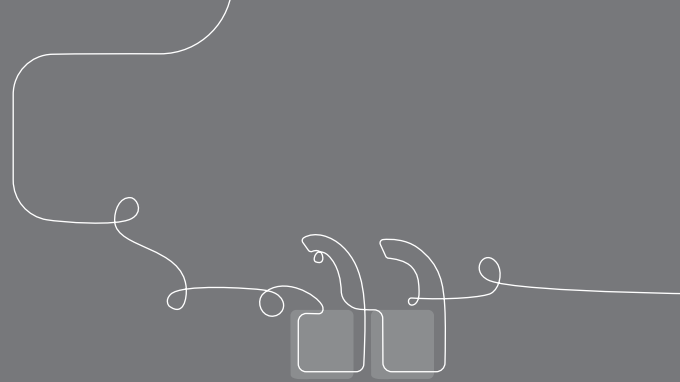
to knowing how
ideas fit together

Coherence

definitional
knowledge

versus

a rich network of
concepts that
builds over time



Questions?

Needs of Plants and Animals

Plan for the day – Day 2



- **Opening the day**

- Culture building

- **Story of the unit**

- Unit Guide navigation
- Build of conceptual understanding using Unit Guide resources
- Progress Build
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- **Embedded supports for all learners**

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- Assessment System
- Formative assessment

- **Considerations for an Amplify Science classroom**

- **Closing and reflection**

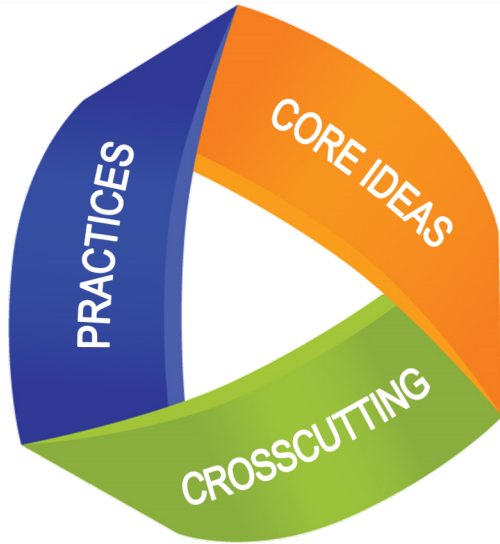
- Reflection
- Survey

Embedded supports for ALL learners

The purpose of this part of the day is for you to:

- Understand strategies to support all learners.
- Articulate how lesson activities support ALL students with building complex explanations.
- Identify the multiple types of assessments embedded within the Amplify Science curriculum.

Turn and talk: Thinking three dimensionally



Disciplinary Core Ideas
Science and Engineering Practices
Crosscutting Concepts

Needs of Plants and Animals



JUMP DOWN TO UNIT GUIDE



GENERATE PRINTABLE TEACHER'S GUIDE



From unit landing page, select "JUMP DOWN TO UNIT GUIDE" to access unit-level resources



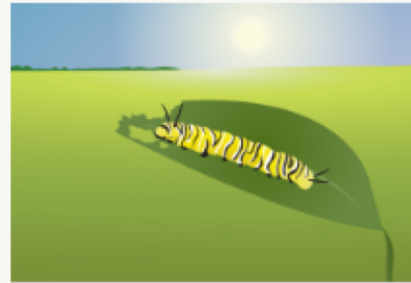
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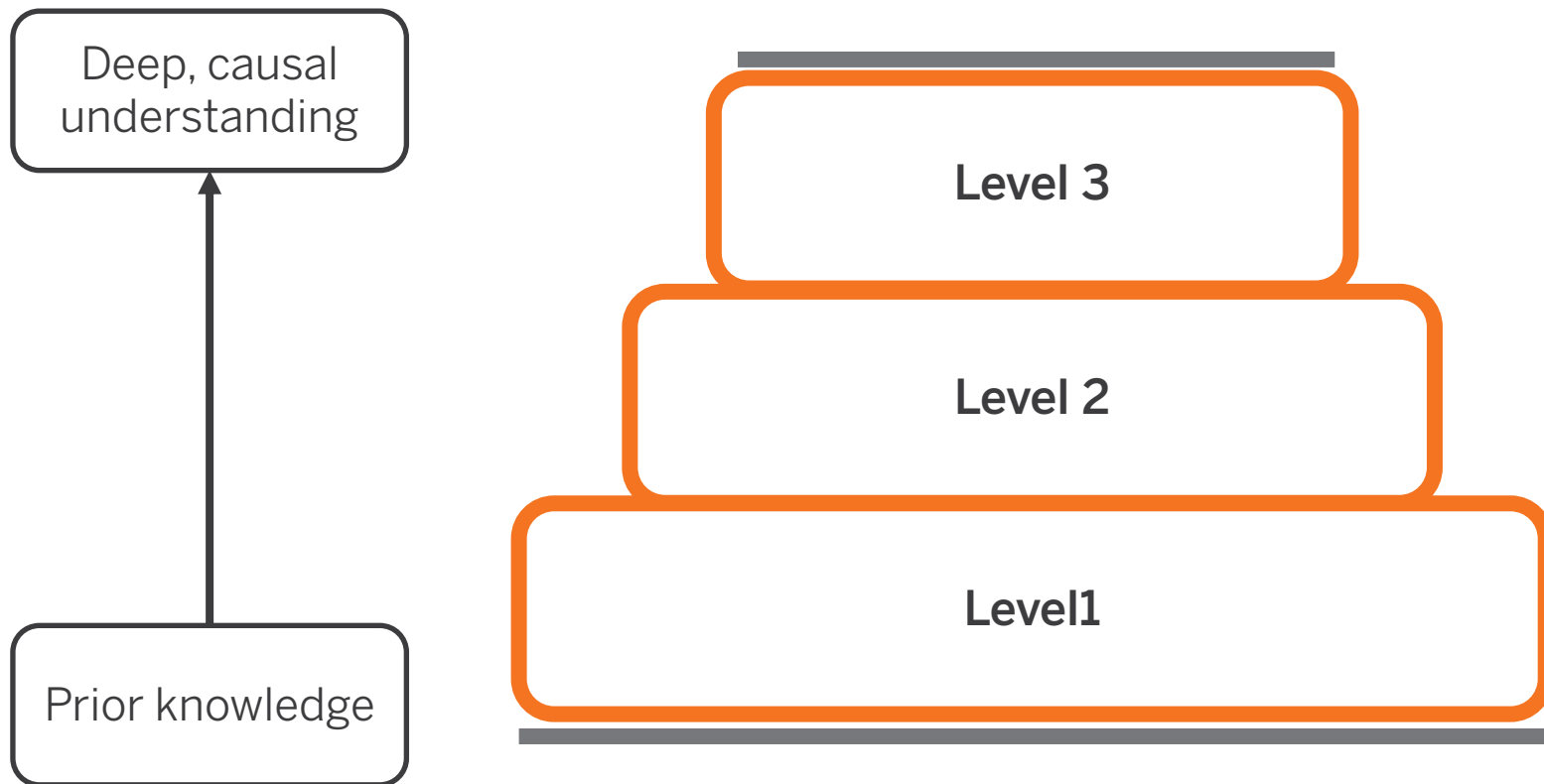


Questions?

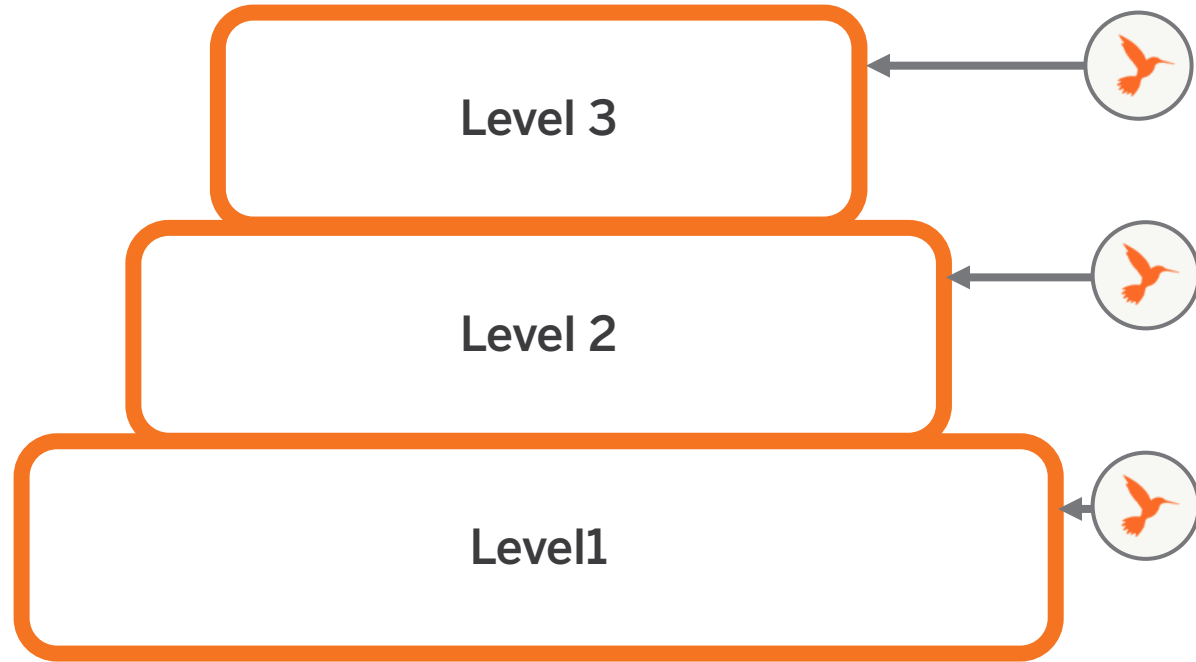
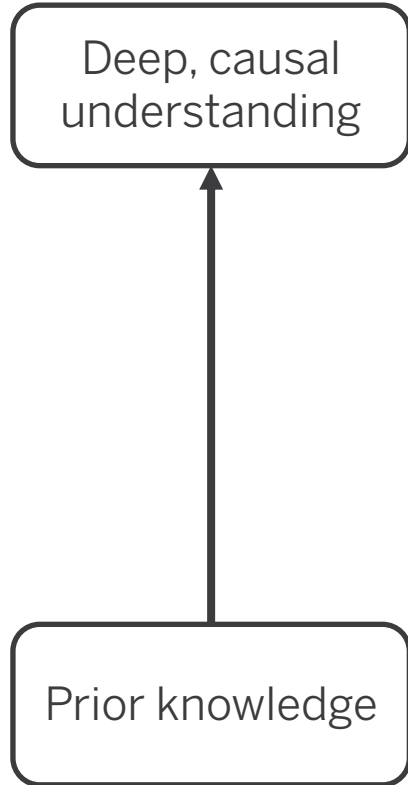
Amplify Science Assessment System



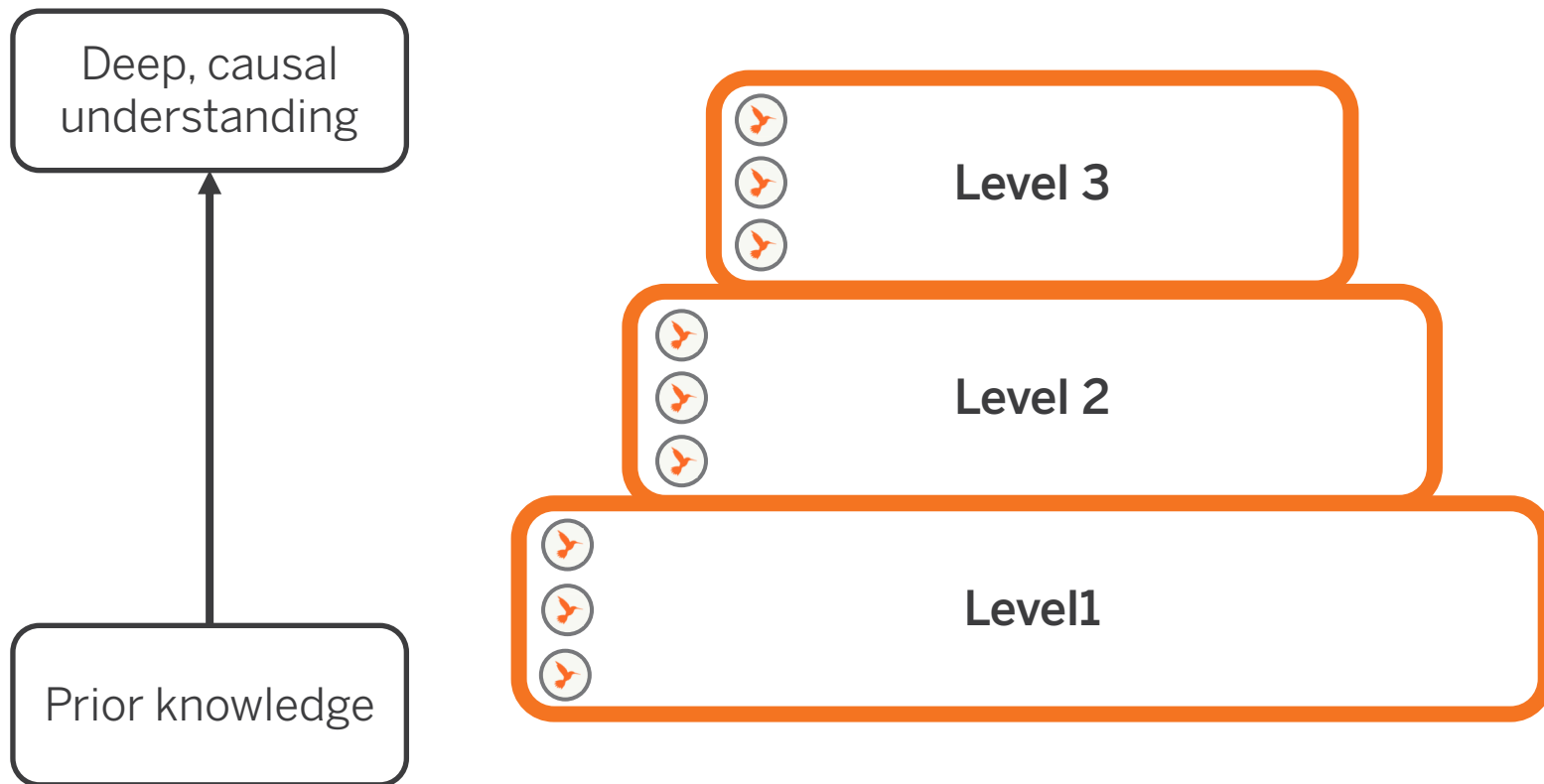
Pre- and End-of-Unit Assessments



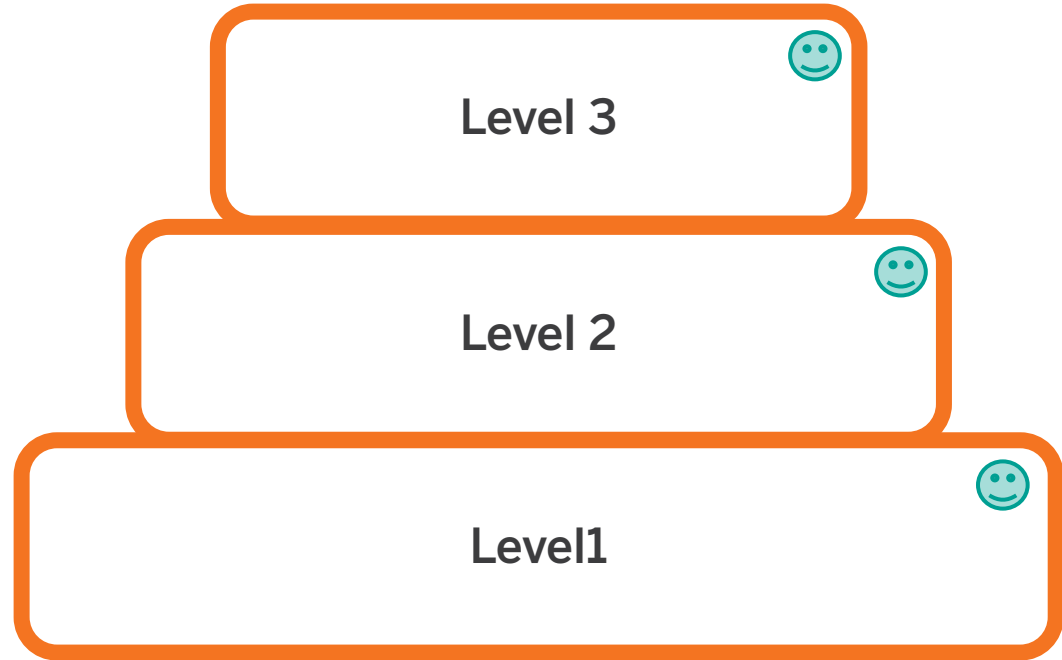
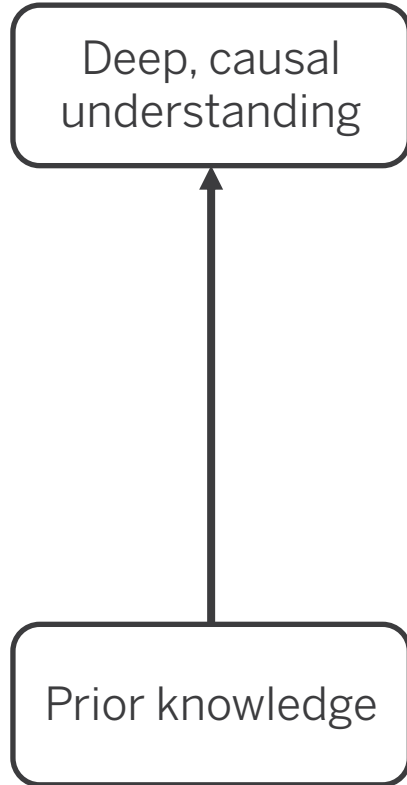
Critical Juncture Assessments



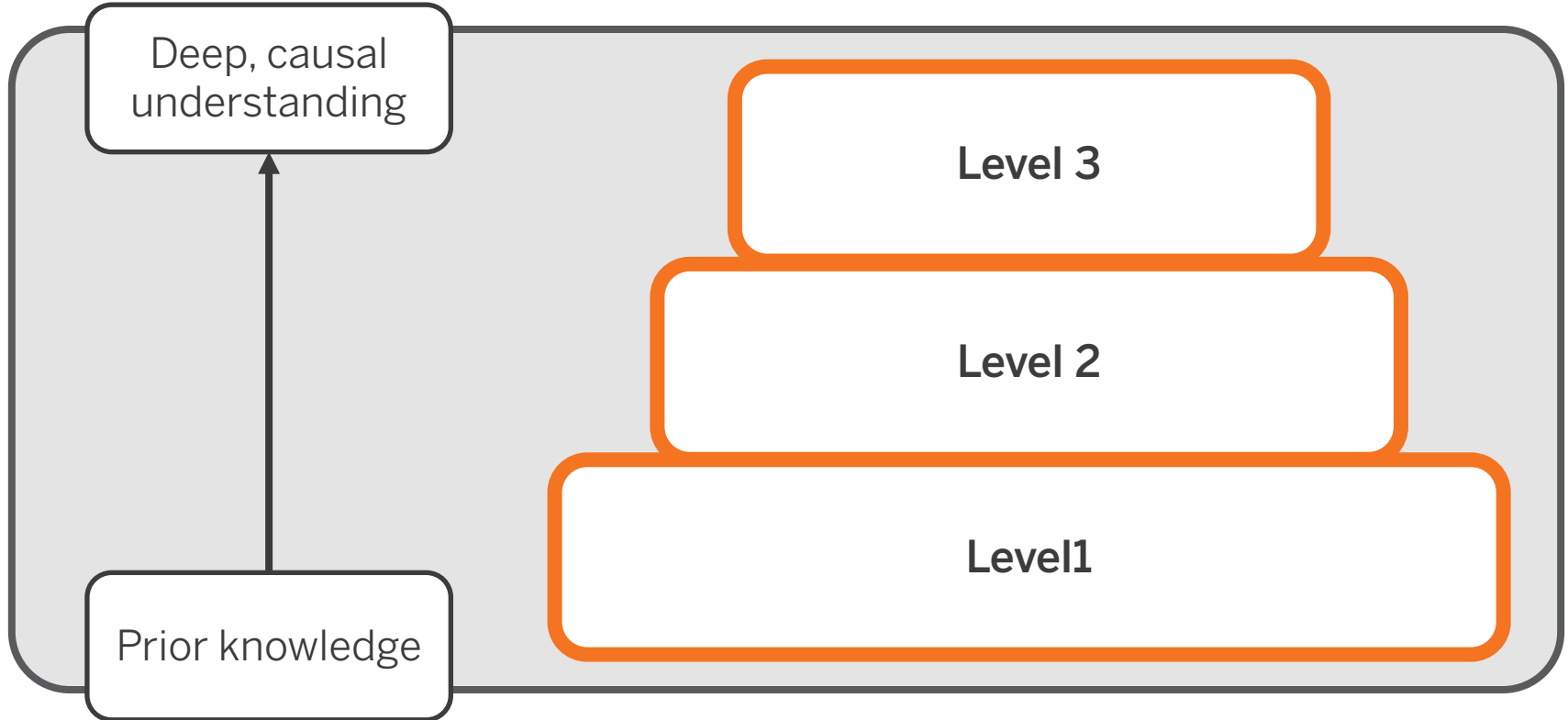
On-the-Fly Assessments



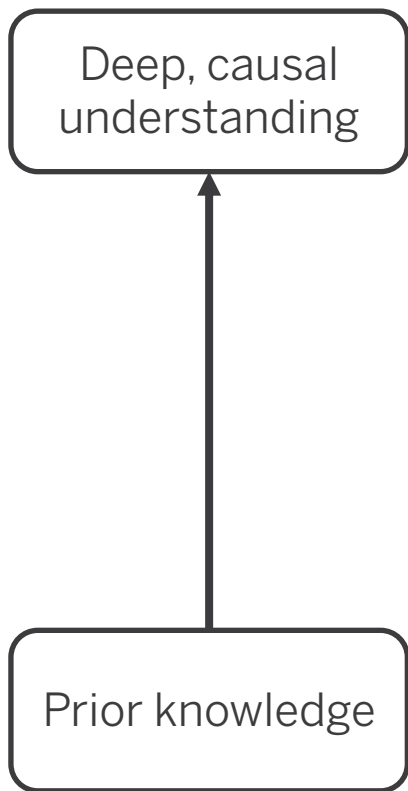
Student Self-Assessments



Portfolio Assessment



Investigation Assessment



Needs of Plants and Animals



✓ JUMP DOWN TO UNIT GUIDE



GENERATE PRINTABLE TEACHER'S GUIDE



From unit landing page, select "JUMP DOWN TO UNIT GUIDE" to access unit-level resources



Chapter 1: Why are there no monarch caterpillars since the Field was made int...

7 Lessons



Chapter 2: Why did two milkweed seeds become plants, but the other did not?

7 Lessons



Chapter 3: Why do the milkweed plants that get water grow differently?

4 Lessons

Amplify Assessment System

- Credible
- Actionable
- Timely



Formative assessment



Needs of Plants and Animals



✓ JUMP DOWN TO UNIT GUIDE



GENERATE PRINTABLE TEACHER'S GUIDE



From unit landing page, select "JUMP DOWN TO UNIT GUIDE" to access unit-level resources



Chapter 1: Why are there no monarch caterpillars since the Field was made int...

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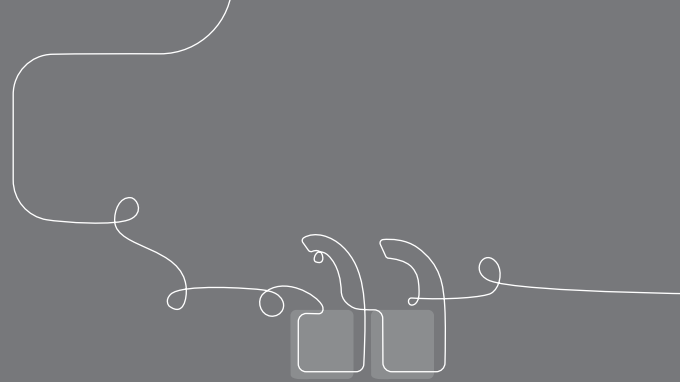
7 Lessons



Chapter 3: Why do the milkweed plants that get water grow differently?

4 Lessons

Questions?



Needs of Plants and Animals

Plan for the day – Day 2



- **Opening the day**

- Culture building

- **Story of the unit**

- Unit Guide navigation
- Build of conceptual understanding using Unit Guide resources
- Progress Build
- Coherence

- **Embedded supports for all learners**

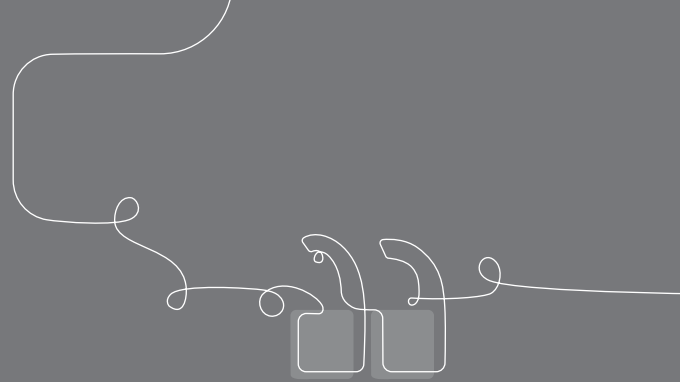
- Analyzing 3-D learning
- Assessment System
- Formative assessment

- **Considerations for an Amplify Science classroom**

- **Closing and reflection**

- Reflection
- Survey

Questions?



Needs of Plants and Animals

Plan for the day – Day 2



- **Opening the day**
 - Culture building
- **Story of the unit**
 - Unit Guide navigation
 - Build of conceptual understanding using Unit Guide resources
 - Progress Build
 - Coherence
- **Embedded supports for all learners**
 - Analyzing 3-D learning
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 - Formative assessment
- **Considerations for an Amplify Science classroom**
- **Closing and reflection**
 - Reflection
 - Survey

Closing and reflection

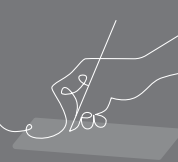
The purpose of this part of the day is for you to:

- Reflect on the learning for the day.

Overarching goals

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

- Navigate program resources and describe how Amplify Science addresses 3-D Learning and NYSSLS/NGSS.
- Use Needs of Plants and Animals unit resources to plan lessons that support ALL learners.



Questions?

