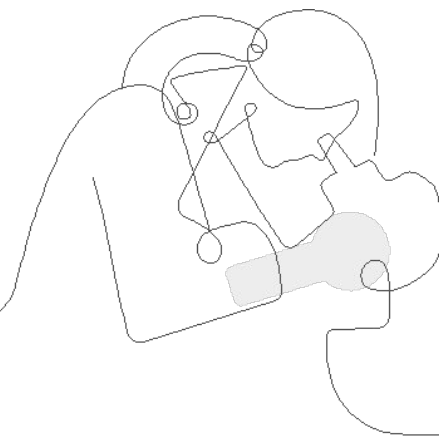


# Amplify Science

## Supporting Diverse Learners with Amplify Science

### Session 1: Exploring the resources

School/District Name  
Date  
Presented by Your Name



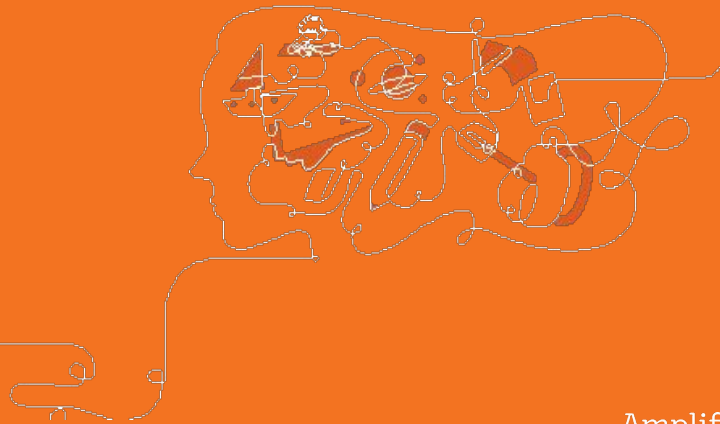
# Norms: Establishing a culture of learners

- **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.

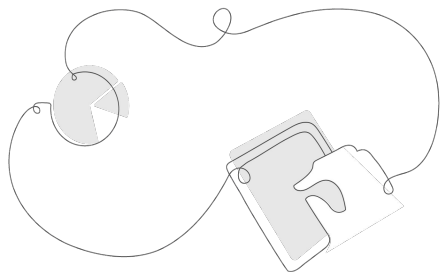
# Part 1

# Opening reflection

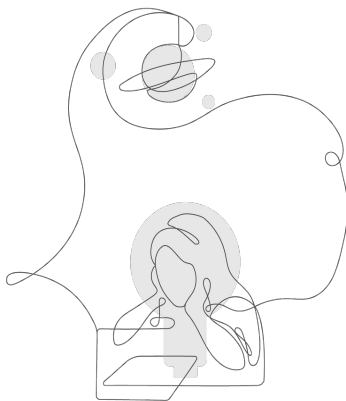
What does “diverse learners” mean to you?



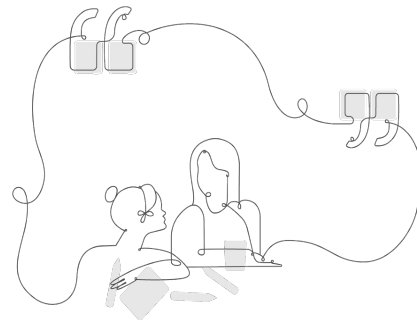
# Supporting Diverse Learners with Amplify Science



**Session 1:**  
Exploring the  
resources



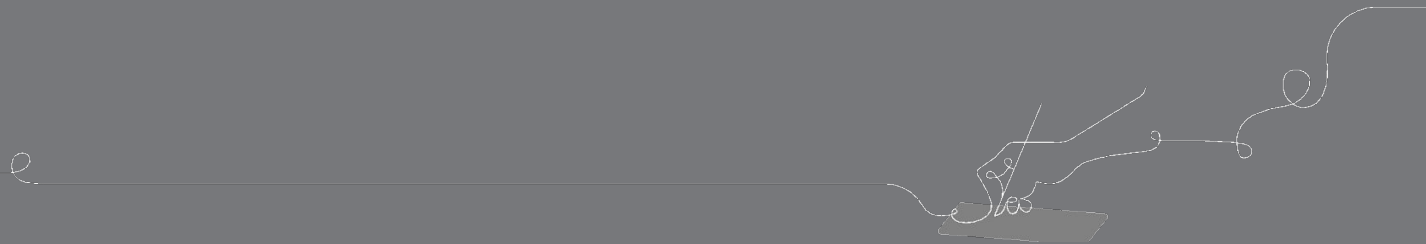
**Session 2:**  
Embedded  
supports A



**Session 3:**  
Embedded  
supports B

# Workshop goal - Part 1

Participants will be able to identify at least one new way they'll use the teaching resources in Amplify Science to support the diverse needs of learners in their classrooms.



# Teaching resources

1. Differentiation briefs
2. Formative assessments
3. Teacher support notes



# Differentiation brief

- Lesson-specific information and suggestions
- Targeted lesson modifications for specific student populations

The screenshot shows the AmplifyScience interface for Lesson 1.2: Earth and Stars in Space. The top navigation bar includes the AmplifyScience logo and the lesson title. Below this is a large header image of Earth from space with a full moon. The main content area is divided into a sidebar on the left and a main panel on the right. The sidebar contains a list of lesson components: Overview, Materials & Preparation, Differentiation, Standards, Vocabulary, and Unplugged?. The 'Differentiation' item is circled in red. The main panel displays the 'Overview' section, which introduces two models of Earth and the purpose of the lesson. On the right side of the main panel, there is a 'Digital Resources' section with links to Classroom Slides 1.2 in PowerPoint, Google Slides, and Zip formats, as well as All Projections. A 'RESET LESSON' button is located in the top left of the main panel, and a 'GENERATE PRINTABLE LESSON GUIDE' button is in the top right. A language selector for 'Español' is at the bottom left.

AmplifyScience > Patterns of Earth and Sky > Lesson 1.2

## Lesson 1.2: Earth and Stars in Space

Lesson Brief (4 Activities) | 1 TEACHER-LED DISCUSSION Modeling the Shape of Earth | 2 SIM Exploring a Simulation of Earth and Sky | 3 TEACHER-LED DISCUSSION Sharing What We Discovered | 4 STUDENT-TO-STUDENT DISCUSSION Ideas About Where the Stars Are

RESET LESSON

GENERATE PRINTABLE LESSON GUIDE

### Overview

Students are introduced to two different models of Earth and engage in an open exploration of the *Patterns of Earth and Sky* Simulation. Students are introduced to the question that will guide their work over the next few lessons. *Why don't we see a lot of stars during the daytime?* To start thinking about this question, students first consider Earth's shape and the purpose of using models by considering a globe and a map, two different ways of representing Earth. The lesson introduces the *Patterns of Earth and Sky*.

### Digital Resources

- Classroom Slides 1.2 | PowerPoint
- Classroom Slides 1.2 | Google Slides
- All Projections
- Classroom Videos 1.2 | Zip

Español



# Differentiation brief

- Lesson-specific information and suggestions
- Targeted lesson modifications for specific student populations

AmplifyScience > Patterns of Earth and Sky > Lesson 1.2

Beta

## Lesson 1.2: Earth and Stars in Space

< >

Assign Teach Help

GENERATE PRINTABLE LESSON GUIDE

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

Español

### Overview

Students are introduced to two different models of Earth and engage in an open exploration of the *Patterns of Earth and Sky* Simulation. Students are introduced to the question that will guide their work over the next few lessons, *Why don't we see a lot of stars during the daytime?* To start thinking about this question, students first consider Earth's shape and the purpose of using models by considering a globe and a map, two different ways of representing Earth. The teacher introduces the *Patterns of Earth and Sky*.

### Digital Resources

- Classroom Slides 1.2 | PowerPoint
- Classroom Slides 1.2 | Google Slides
- All Projections
- Classroom Videos 1.2 | Zip

# Embedded formative assessments

- On-the-Fly Assessments and Critical Juncture Assessments
- Embedded into lesson activities

## Patterns of Earth and Sky Teacher References

Embedded Formative  
Assessments



### Embedded Formative Assessments

On-the-Fly Assessments and Critical Juncture Assessments (listed below in lesson order) are embedded formative assessments designed to help the teacher monitor and support students' progress throughout the unit. These assessments represent the most opportune moments for a glimpse into students' developing conceptual understanding and their facility with the practices. Each assessment opportunity indicates the specific concepts and practices to look for or listen for as students engage with the learning experiences, followed by suggestions to the teacher of what to do, based on what was observed.

#### Lesson 1.2, Activity 1

##### On-the-Fly Assessment 1: Conception and Representation of Earth's Shape

**Look for:** As students consider Earth's shape, look to see if they are understanding the central idea: Earth is a sphere. This idea may be prior knowledge for some students; for those for whom it is not, listen for any preconceived ideas about the shape of Earth. Note those students who are still not convinced Earth is a sphere, based on their observations of the Earth images in this activity. Listen also for students who identify only the globe as a model or only the map as a model. Students may have a narrow notion about what qualifies as a model. For example, a student may think a physical setup, such as the globe, is a model, but not the map, even though they both represent and communicate some aspects of Earth.

**Now what?** If students are not sure that Earth is a sphere, or seem to think that Earth is both a sphere and flat, explain that there is lots of scientific evidence that Earth is, in fact, shaped like a sphere. Discuss with students that, although some images, such as the World Map that was projected in the previous lesson, might seem to suggest that Earth is flat in some ways, all the images do in fact support the claim that Earth is shaped like a sphere. Have students discuss why some people long ago believed that Earth was flat and how scientists now know that Earth is shaped like a sphere. Call attention to the shape of Earth as you use various models throughout the unit (Sim, Modeling Tool, globe, Classroom Model).

**NGSS connection:** This formative assessment reveals student knowledge and use of Practice 2, Developing and Using Models and Disciplinary Core Idea ESS1.B: Earth and the Solar System.

##### Additional 3-D Assessment Opportunities

To assess students on the crosscutting concept of Scale, Proportion, and Quantity, ask students why they think the constellations are not drawn into the System View of the Simulation, but instead only indicated with arrows. If students are able to say that the stars that make up those constellations are very far away, this is a step towards understanding the scale of the distance between the stars.

#### Lesson 1.3, Activity 2

##### On-the-Fly Assessment 2: Visualizing Size and Distance

**Look for:** This lesson serves as an introduction to the reading strategy of visualizing. It is also students' first opportunity to employ the strategy during reading as a tool to support comprehension. Students are encouraged to make a picture in their minds and to connect their own experiences with the sizes of objects and distances between

# Teacher support notes

- Activity-specific background information or suggestions

## Plant and Animal Relationships

### Lesson Guides

Lesson 2.4  
Activity 4



## Teacher Support

### Background

Science Practices: Conceptual Models

A model is a representation of a situation in the natural world. Scientists make or use models to figure out how some aspect of the world works. In the Amplify Science curriculum, two kinds of scientific models are regular parts of students' investigation and learning: functional models and conceptual models. Conceptual models are representations of how we think particular phenomena work; they show the objects and processes that lead to things appearing or happening as they do. These representations often include things that themselves are not directly observable, such as arrows representing forces acting on an object, or molecules that are individually too tiny to see. Conceptual models are also often revised iteratively, as scientists or students gather new evidence.

### Rationale

Pedagogical Goals: About the Dropping Seeds Body Model

Throughout the unit, students engage in variations on the same body model to support their growing understanding of what plants need to grow and how they get the things they need to grow. In the Dropping Seeds Body Model, students investigate how seeds fall from a tree and determine whether those seeds will be able to get what they need to grow. This activity supports students to deepen their understanding of plant needs and situations that might prevent plants from meeting those needs. It also helps to prepare students to ask questions that will lead to Chapter 3 content, such as, *Why aren't the chalta seeds getting to places where they can grow?*

### Instructional Suggestion

Providing More Experience: Home Investigation

This optional activity invites students to explore natural areas near their home to notice roots and leaves, and to wonder about how plants are able to get what they need in the places where they are growing. Home Investigations encourage interaction and discussion between students and their families about science concepts, which has been found to be beneficial for student learning. See Optional: Chapter 2: Home Investigation: Exploring Roots and Leaves copymaster (in Digital Resources). Make one copy for each student and review the instructions.

# Group jigsaw activity

**Together:** Assign roles

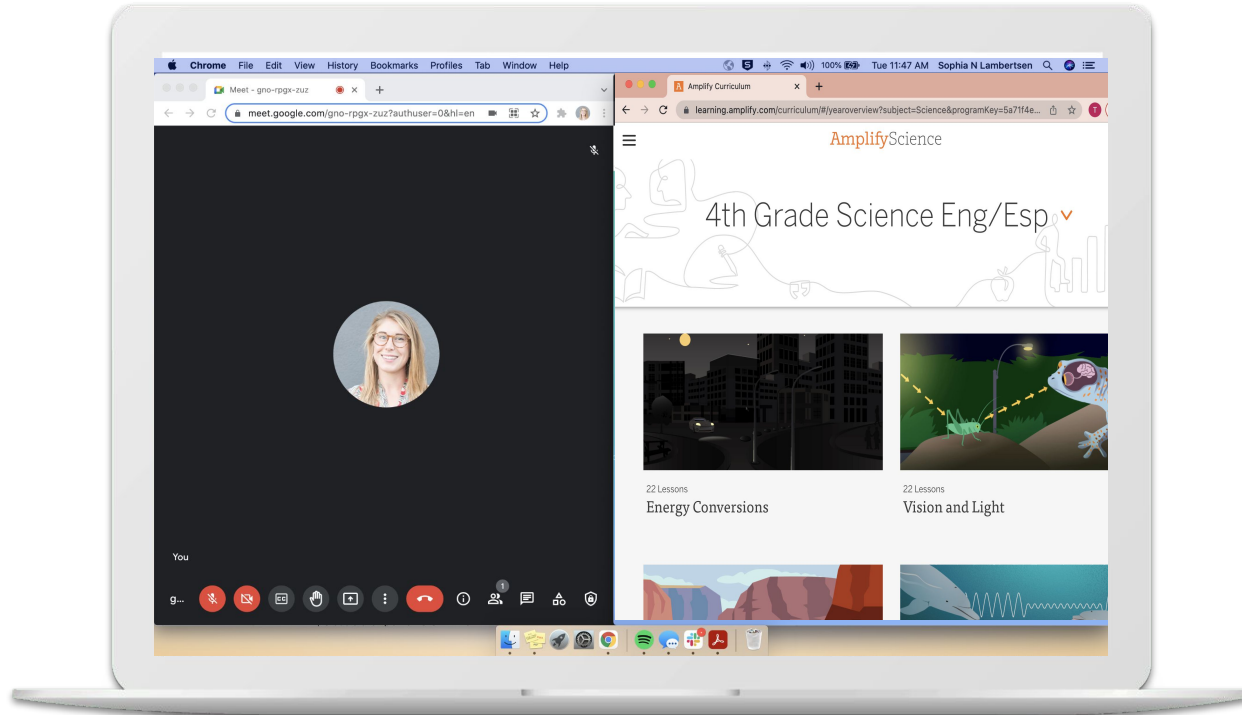
**Independently** (15 minutes):

- Preview your next lesson
- Explore your resource
- Make your slide

**Together** (10 minutes): Share slides and generate questions

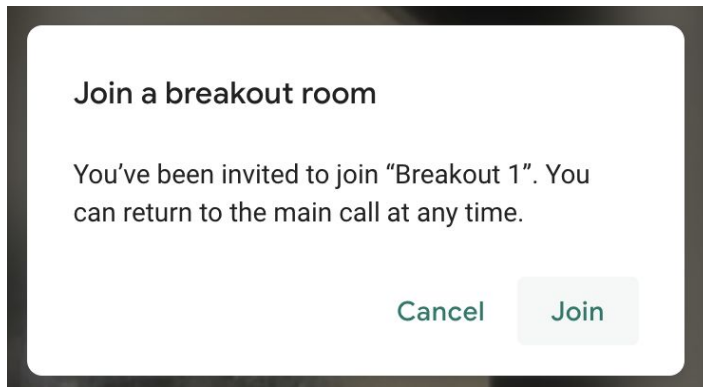
<b>Resource:</b> Differentiation brief		<b>Your Name</b>
<b>Describe your resource</b> <div></div>	<b>How could you use this resource in your instruction?</b> <div></div>	
<b>Expert tips for using this resource (how to locate it, additional details, etc.):</b> <div></div>		<div>Paste an image or .gif here that helps illustrate your slide</div>




# Screen setup



## Breakout rooms

### What to expect



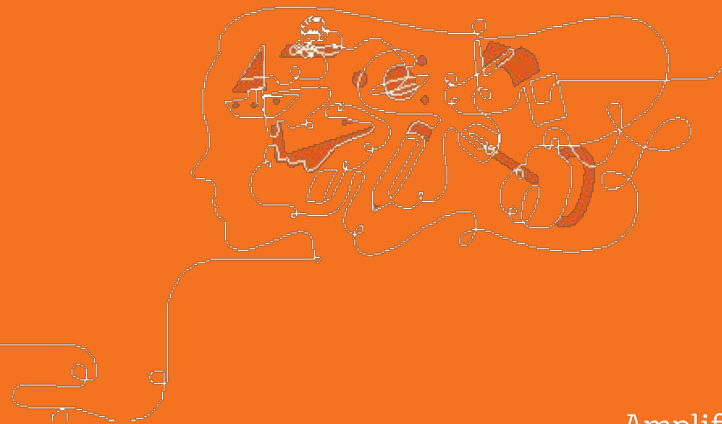
	You're invited to "Breakout 1"	Join
	In "Breakout 1"	Ask for help    Return to main call
	Breakout room is ending in 23 seconds	Ask for help    Return to main call

# Group reflection: Teaching resources

Please share a question you still have or something new you learned from the jigsaw activity.



# Additional resources for supporting diverse learners





# Additional resources for supporting diverse learners

## Pre-Unit Assessment Guide

- Found in Lesson 1.1 Digital Resources
- Outlines typical prior knowledge and potential preconceptions

AmplifyScience > Patterns of Earth and Sky > Lesson 1.1

### Lesson 1.1: Pre-Unit Assessment

Lesson Brief (4 Activities) | 1 TEACHER-LED DISCUSSION Introducing the Unit | 2 TEACHER-LED DISCUSSION Introducing the Artifact | 3 CLASS Pre-Unit Assessment | 4 READING Previewing the Reference Book

RESET LESSON

GENERATE PRINTABLE LESSON GUIDE

#### Overview

##### Students' Initial Explanations

This lesson introduces students to the scientific phenomenon that they will investigate in this unit: why we see stars at different times. Students are introduced to their role as astronomers who are being asked to help determine what the missing piece of an archaeological artifact might look like. They write initial explanations about why the sky depicted in the artifact looks different at different times. The explanations students provide in this lesson serve as a Pre-Unit Assessment for formative purposes, designed to reveal students' initial understanding of some of the unit's core content, both unit-specific science concepts and the crosscutting concept of Patterns, prior to instruction. As such, students' explanations offer a baseline from which to measure growth of understanding over the course of the unit. These explanations can also provide the teacher with insights into students' thinking as they begin this unit. This three-dimensional assessment will allow the teacher to draw connections to students' experiences and to watch for preconceptions that might get in the way of students' understanding. Students also receive their

#### Digital Resources

- Classroom Slides 1.1 | PowerPoint
- Classroom Slides 1.1 | Google Slides
- All Projections
- Pre-Unit Writing: Explaining the Discovered Artifact *copymaster*
- Assessment Guide: Interpreting Students' Pre-Unit Explanations About the Discovered Artifact**
- Partner Reading Guidelines
- Patterns of Earth and Sky Investigation Notebook
- Patterns of Earth and Sky Investigation Notebook, page 3

Español

# Additional resources for supporting diverse learners

## Flexextensions

- Additional hands-on investigations to accompany unit instruction
- Compilation available in Printable Resource section on the unit landing page

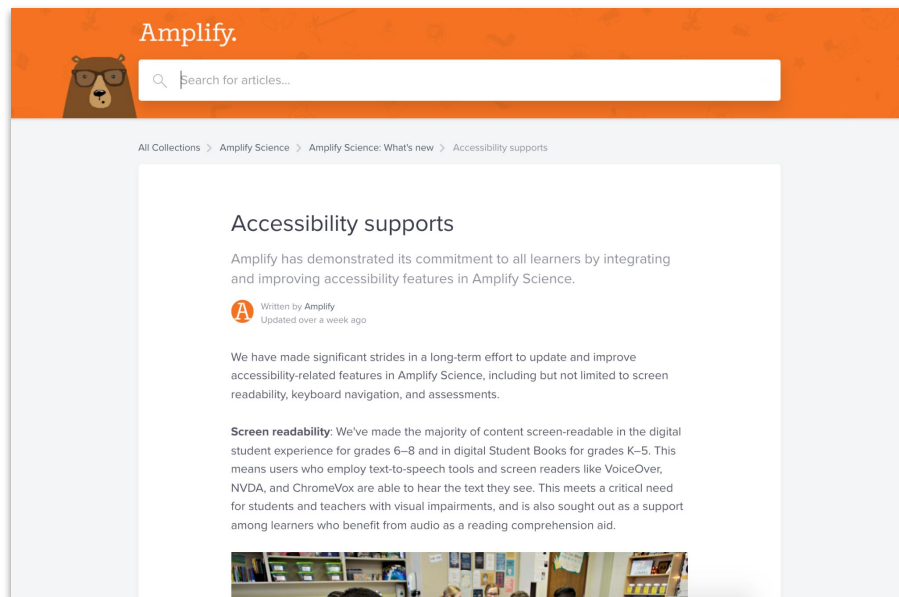
The screenshot displays the AmplifyScience website interface for the 'Rock Transformations' unit. On the left, a sidebar menu lists navigation options: Unit Overview, Chapters, Printable Resources (highlighted with a pink bar), Planning for the Unit, Teacher References, and Offline Preparation. The main content area is titled 'Printable Resources' and lists several downloadable documents: Article Compilation, Copymaster Compilation, Investigation Notebook, Print Materials (8.5" x 11"), Cokerence Flowchart (circled in red), Flexextension Compilation (circled in red), NCSS Information for Parents and Guardians, and Print Materials (11" x 17"). Below this list, the 'Unit Map' section provides an overview of the unit's focus on rock samples from the Great Plains and Rocky Mountains, with a 'Read more' link. The 'Progress Build' section explains the unit's structure and learning progression, also featuring a 'Read more' link. The 'Getting Ready to Teach' section offers advice on integrating hands-on activities and technology, with a 'Read more' link. The 'Before You Present the Lessons' section provides additional context, with a 'Read more' link. The 'Materials and Preparation' section includes a note about safety regulations. At the bottom left, there are links for 'BACK TO TOP' and 'Español'. A chat icon is visible in the bottom right corner.

# Additional resources for supporting diverse learners

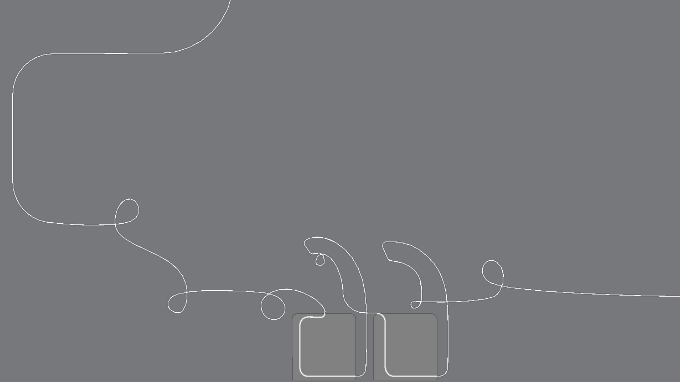
## Accessibility supports

- Detailed overview available on Amplify help site:

[bit.ly/ASaccessibility](https://bit.ly/ASaccessibility)



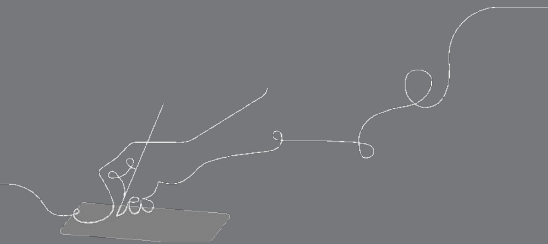
# Questions?



# Workshop goal

By the end of this session, participants will identify at least one new way they'll use the teaching resources in Amplify Science to support the diverse needs of learners in their classrooms.

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Timing Sample clock time	Part	Components
5 8:00-8:05	Part 1: Welcome	<ul style="list-style-type: none"> <li>• Icebreaker</li> <li>• Norms, session goal, and agenda</li> </ul>
20 8:05-8:25	Part 2: Model activity	<ul style="list-style-type: none"> <li>• Introduce and contextualize (2)</li> <li>• Teacher modeling (5)</li> <li>• Log in (3)</li> <li>• Partner work fishbowl (5)</li> <li>• Flex (5)</li> </ul>
15 8:25-8:40	Part 3: Reflection	<ul style="list-style-type: none"> <li>• Reflection 1: Teacher modeling (7)</li> <li>• Reflection 2: Partner discourse (8)</li> </ul>
15 8:40-8:55	Part 4: Resources and planning	<ul style="list-style-type: none"> <li>• Introduce Discourse routine resource and work time (3)</li> <li>• Looking ahead to an upcoming lesson (10)</li> <li>• Share out (2)</li> </ul>
10 8:55-9:00	Part 5: Wrap up	<ul style="list-style-type: none"> <li>• Reflection and closing</li> </ul>

# Prep

1. Review the Service Appointment in Salesforce to determine what materials the school has purchased (digital access, Investigation Notebooks, Spanish access, etc.), any previous training teachers have had, and look for any special notes.
2. Email the Point of Contact with the email template found in the Handbook. Note that there isn't a PN for this session so you can remove language referring to one in the email.
3. Make a copy of this deck then update and customize it for your audience:
  - a. Update title slide: update presenter name and school name. If you are **not** leading this session as part of a three-part series, update the session title as well.
  - b. Use the blue presenter notes throughout the deck for guidance on which slides to hide based on the curriculum edition your site is using.
  - c. Update survey slide: update presenter name
  - d. Add your PLS demo account to the login slide.
4. Practice navigating to the Discourse routines reference document on the Program Hub so you're prepared to model this process: Amplify Science curriculum -> Global Navigation -> Program Hub -> Professional Learning Resources -> Additional Support -> Supporting Diverse Learners card -> Discourse routines reference.pdf
5. On the day of the session, log in with your training demo account and open the following:
  - a. Scale Tool: [learning.amplify.com/scaletool](https://learning.amplify.com/scaletool)
  - b. Amplify Science Program Hub

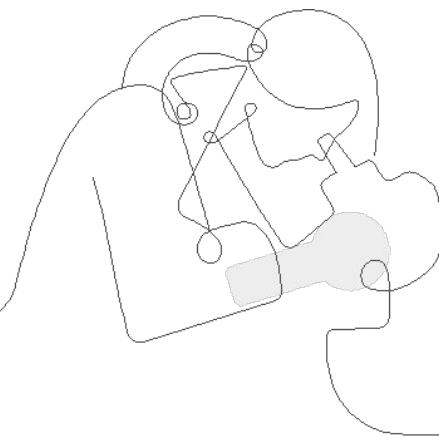
# Amplify Science

## Supporting Diverse Learners with Amplify Science

**Session 2:** Embedded Supports:

Teacher modeling and student discourse

School/District Name  
Date  
Presented by Your Name

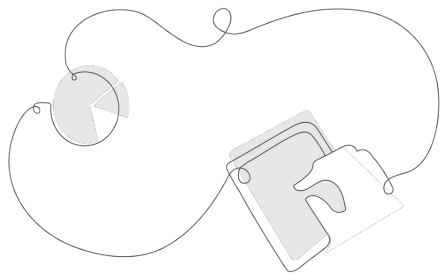




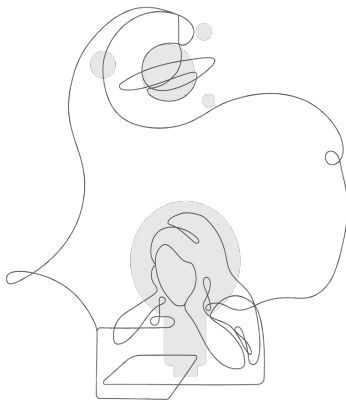
# Norms: Establishing a culture of learners

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- **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.

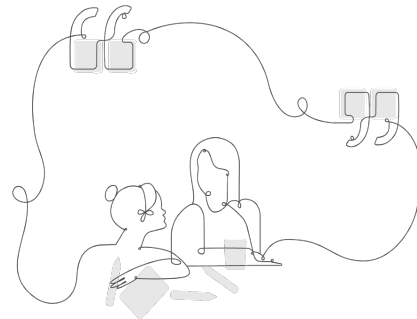
# Supporting Diverse Learners with Amplify Science



**Session 1:**  
Exploring the  
resources



**Session 2:**  
Embedded  
supports A



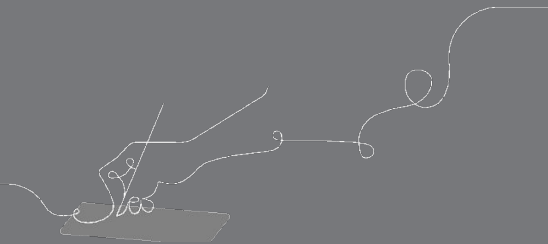
**Session 3:**  
Embedded  
supports B

# Part 2

# Workshop goal

By the end of this session, participants will have a plan to leverage teacher modeling and/or student discourse to support the diverse needs of learners in their classrooms in an upcoming lesson.

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# Example activity

## Grade 5: *Ecosystem Restoration*

### Key idea:

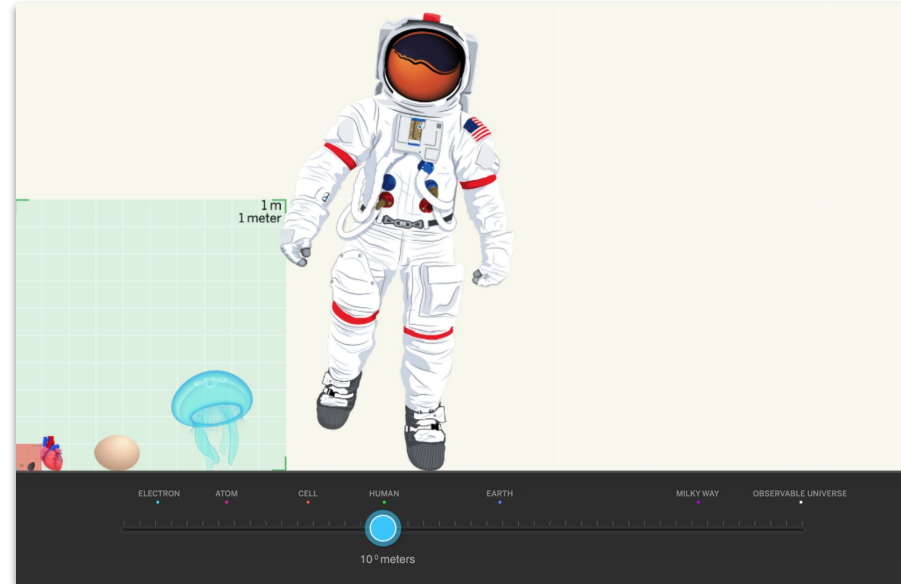
Animals grow by changing food molecules into body molecules that can build their bodies.



# Example activity

## Scale Tool

Pay attention to how **teacher modeling** and **student discourse** support all students to access this complex content.



# Log in

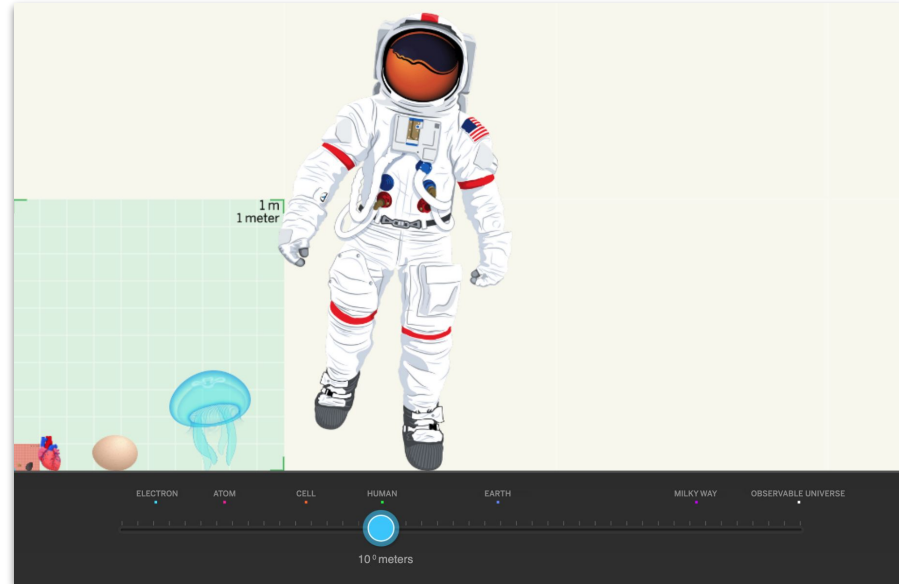
## Scale Tool

1. Open an Incognito or Private window.
2. [learning.amplify.com/scaletool](https://learning.amplify.com/scaletool)
3. Log in with a demo account:

Username:

**nationalsciX@pd.tryamplify.net**

Password: AmplifyNumber1



# Scale Tool fishbowl

Model student volunteers will:

- Compare familiar objects to ones they've never seen before
- Try to figure out which objects are too small to see with human eyes





# Reflection

How was **teacher modeling** supportive in the example activity?



# Leverage and build upon an embedded support

## Think-aloud modeling

Make expert thinking visible:

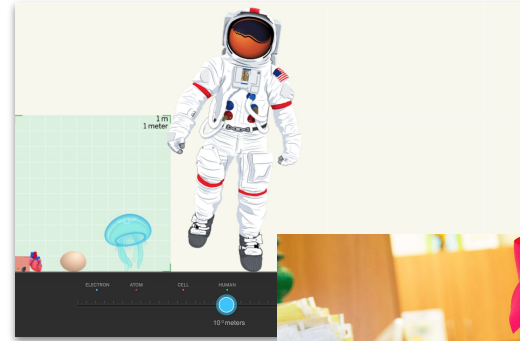
- Digital tools
- Reading
- Writing
- Puzzling and sensemaking
- Reflecting on learning
- Full class, small groups, or one-on-one discussions with students



# Reflection

How was **partner discourse** supportive in the example activity?

What can we do to make partner work **more** supportive and effective?



# Leverage and build upon an embedded support

## Partner and group work

### Guidelines:

- Partner reading guidelines (K-5)
- Active Reading guidelines (6-8)
- Guidelines for using apps
- Visual instructions for group work
  - Assign specific roles to group members

### Partner Reading Guidelines

1. Sit next to your partner and place the book between you.
2. Take turns reading.
3. Read in a quiet voice.
4. Be respectful and polite to your partner.
5. Ask your partner questions and help each other understand the text.



### Setting Up the Heating Experiment

#### Volunteer 1

Place Cup 2 over the rocks, let it sit for about a minute, and then read the temperature.

#### Volunteer 2

Hold Cup 1 in its area next to the table for about a minute and then read the temperature.

#### Class

Record the starting air temperature for each cup in your data tables.



# Leverage and build upon embedded supports

## Partner and group work

Discourse routines:

- Structured pair or small-group talk routines
- Low-stakes rehearsal for full-group discussion or writing
- Formative assessment opportunities

### Thought Swap



1

**Make two lines** so that you each have a partner directly across from you.



2

**Discuss the first question** with your partner.



3

**Switch partners** and discuss the next question.

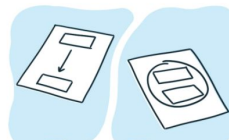
### Concept Mapping



Step 1

**Choose two or three word cards** at a time.

Talk about how the words are related.



Step 2

**Glue the words to a piece of paper.**

**Draw lines or circles, and write** to show how the words are related.



Step 3

You can **record more words** if you would like.

# Leverage and build upon embedded supports

## Discourse routine resources


Add discourse routines to lessons:

- To provide extra practice
- For sensemaking around challenging concepts
- Before full-class discussions or formal writing opportunities

Concept Mapping

Students are given sets of 3-6 cards with key unit vocabulary or science concept words. In small groups, they lay the cards out on relationships. Creating a story supportive for understanding.

Structured discourse routines reference



The table below lists key structured discourse routines that appear throughout the Amplify Science K-8 program. Each routine promotes student cooperation and provides a low-stakes environment for students to practice speaking and listening while working with complex science content. Consider adding structured routines like these to any lesson to provide additional practice and peer support for all students, particularly diverse learners in your class.

Use the [Discourse routine slide templates](#) resource to find discourse routine templates you can add to any Classroom Slides deck.

Shared Listening	In Shared Listening, students work in partnerships and discuss a pair of questions. Partner A answers the first question and Partner B answers the second question. The partner who is not answering the question is assigned a specific way to respond, for example, repeat what they heard their partner say, ask a question about their partner's answer, or agree or disagree with their partner and say why. <i>Though this routine only appears formally in K-1 units, teachers up to 8th grade have reported it's a useful way to structure partner talk!</i>
Think-Pair-Share Think-Write-Pair-Share Think-Draw-Pair-Share	This trio of routines follow the steps in their title. Students, working in pairs, are presented with a question then given time to think about it, and in some cases to draw an answer or jot some notes. When the teacher gives a signal, they turn to their partners and share their responses. After sharing in pairs, a few students are asked to share with the whole group, often prompting a longer class discussion.
Building on Ideas	Building on Ideas helps students activate prior knowledge and discuss science ideas. This routine is especially helpful for English learners as it allows students to hear models of language from their peers in a low-stakes setting before sharing with the whole class. One student answers a question while the other listens, then partner B repeats what they heard and agrees or disagrees with evidence. Partner A repeats what Partner B added and decides whether they have changed their mind or not.

explain themselves ideas shared by the other's ideas with the at the process with a litate this routine by er.

unit vocabulary on construct sentences their content

analyze pieces of which of multiple claims e Circles routine is a nstruct written

even a different piece of ie notes and write h their small group to te is conceived of so a larger content idea; th other and come to en interpreted

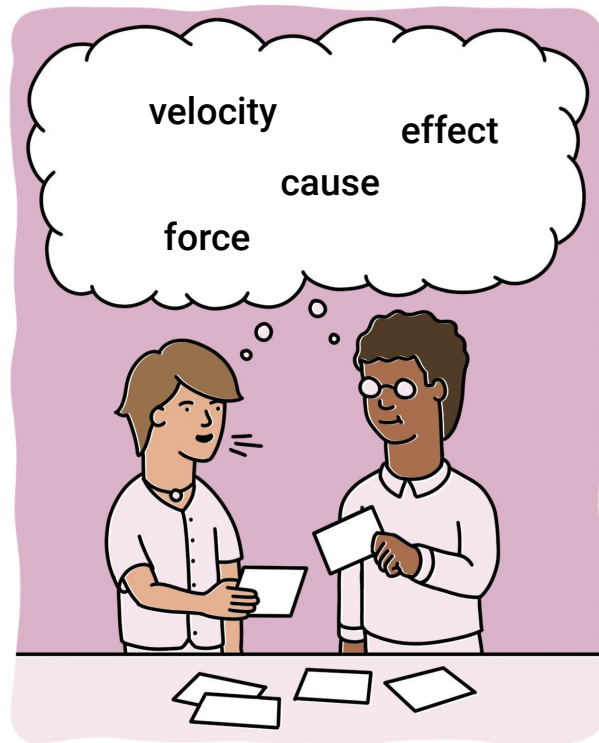
could be leveraged for ly.

# Leverage and build upon embedded supports

## Work time

In an upcoming lesson, plan when you can support diverse learners in your class by adding one of the following:

- Think-aloud modeling
- Partner or group work guidelines
- Structured discourse routine(s)



# Leverage and build upon embedded supports

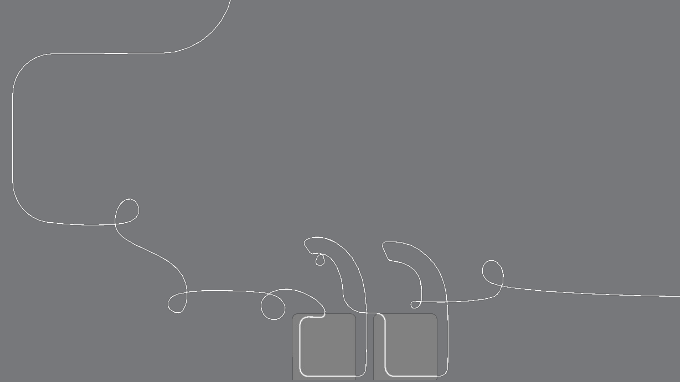
## Work time

Share your plan for leveraging and building upon think-aloud modeling and student discourse in an upcoming lesson!





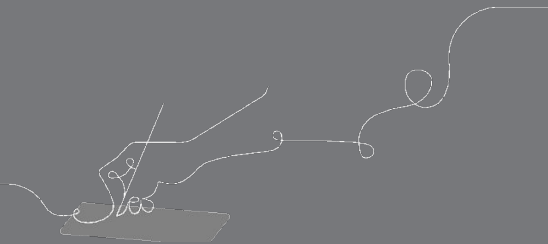
# Questions?



# Workshop goal

By the end of this session, participants will have a plan to leverage teacher modeling and/or student discourse to support the diverse needs of learners in their classrooms in an upcoming lesson.

e



# Additional resources and ongoing support

## Customer Care

Seek information specific to enrollment and rosters, technical support, materials and kits, and teaching support.



help@amplify.com



800-823-1969



Amplify Chat



Please provide feedback!

[surveymonkey.com/r/AmpSciPD](https://surveymonkey.com/r/AmpSciPD)

**Type:**

Strengthen

**Session title:**

Supporting Diverse Learners: Embedded  
Supports A

**Professional Learning Specialist name:**

Insert name

(insert email, if you would like)

