## Welcome to Amplify Science!

Follow the directions below as we wait to begin.

1. Please log in to your Amplify Account.

2. Sign in using link dropped in chat.

3. Open your Participant Notebook.

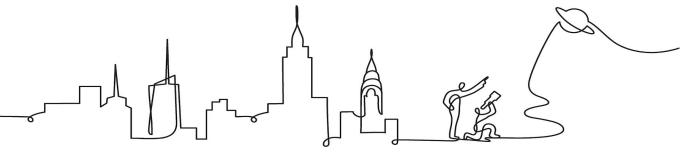


# Amplify Science New York City

The Amplify Science Approach: Practicing Multiple Modalities & 3-D Learning Grade 5

Date xx

Presented by xx



## Remote Professional Learning Norms



Take some time to orient yourself to the platform

• "Where's the chat box? What are these squares at the top of my screen?. where's the mute button?"



Mute your microphone to reduce background noise unless sharing with the group



The chat box is available for posting questions or responses to during the training

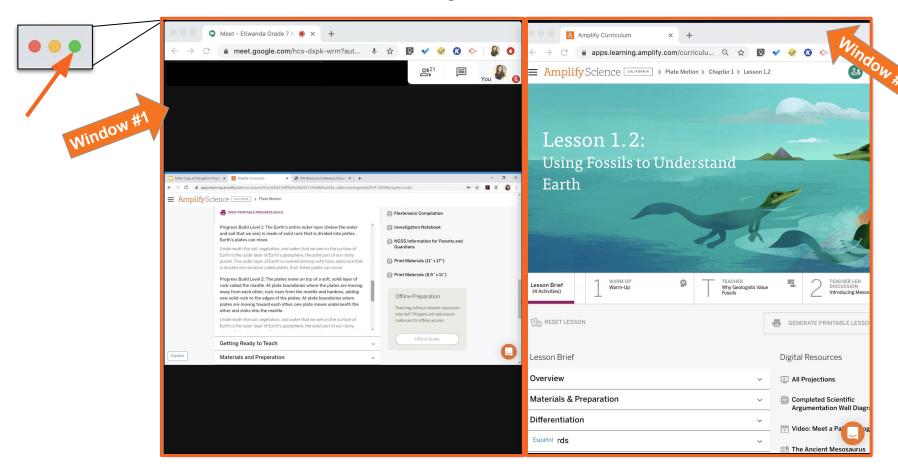


Make sure you have a note-catcher present



Engage at your comfort level - chat, ask questions, discuss, share!

## Use two windows for today's webinar



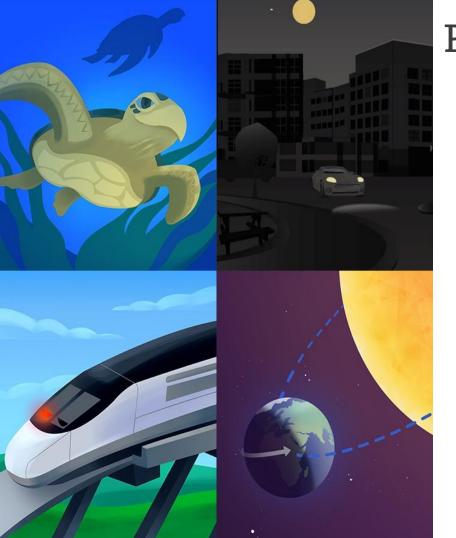
# Objectives

By the end of this 1-hour workshop, you will be able to...

- Analyze the role of multimodal and 3-dimensional learning in a coherent @Home lesson activity sequence.
- Adapt multimodal and 3-dimensional instructional routines to your learners' particular instructional contexts.
- Support caregivers as partners in practicing multiple modalities and 3-dimensional learning at home.







## Plan for the day

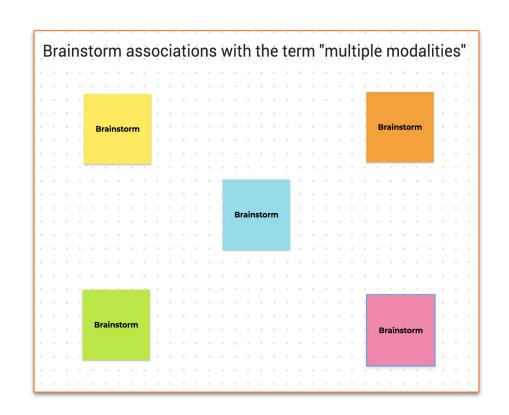
- Framing the day
  - Welcome and introductions
  - Anticipatory activity
- Overview of Amplify Science Approach
  - Multimodal, phenomenon-based learning
  - 3 dimensions of NYSSLS
- @Home Resources review
  - o @Home Units
  - o @Home Videos
- Multimodal & 3-D Learning: @Home lesson
  - Coherent activity sequence analysis
  - Adaptations of multiple modalities
  - Classroom wall
- Caregivers as partners
  - Family overview resource
  - Caregivers' site
- Closing
  - Reflection & additional resources
  - Survey

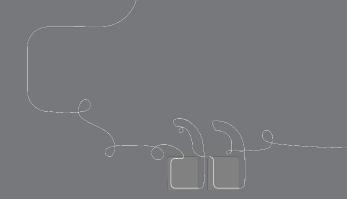
Amplify.

### Anticipatory activity

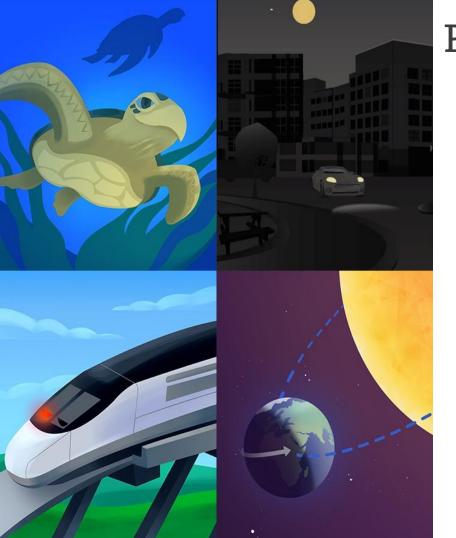
### On the Jamboard "post"....

- Your associations with these terms:
  - "Multiple modalities"
  - "3-Dimensional learning"
  - "Amplify Science approach"





# Questions?



## Plan for the day

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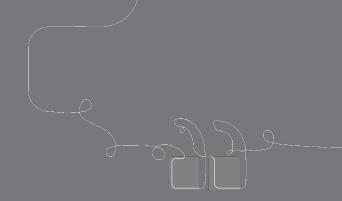
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## Multimodal, phenomenon-based learning

In each Amplify Science unit, students embody the role of a scientist or engineer to figure out phenomena.

They gather evidence from multiple sources, using multiple modalities.



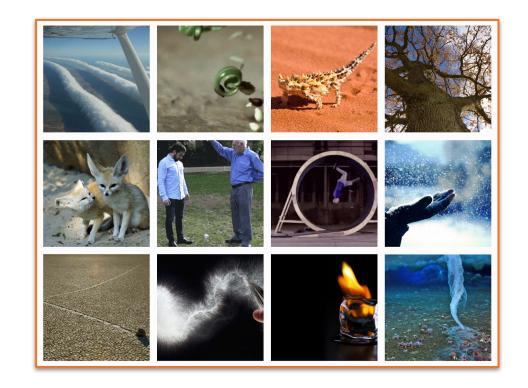


# What are PHENOMENA?

#### Phenomena are observable occurrences.

 These occurrences stimulate curiosity or pose problems to for students to solve.

 Students are motivated to ask science questions or design solutions that drive learning.



## Amplify Science units focus on phenomena

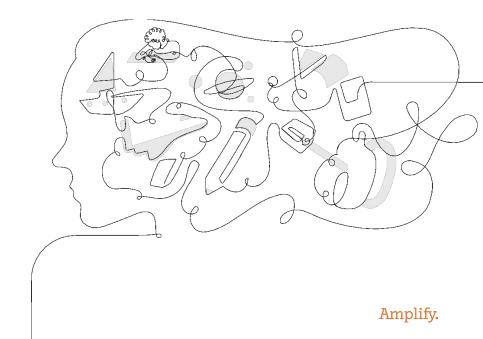
#### **Topics** Phenomena How do sea turtles defend themselves from all about sea turtles sharks? How do organisms get inheritance and traits their traits? How can an ecosystem be restored to its original ecosystem restoration healthy state?

### Shifts called for in the NRC\* framework

Learning about topics Figuring out phenomena Listing or classifying facts Understanding interrelatedness of ideas devoid of context Complex causal Simple observations explanations

<sup>\*</sup>National Research Council of the National Academy of Sciences, 2011

# Figure out, not learn about



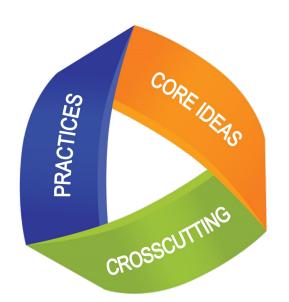
# Problem-based deep dives

Students inhabit the roles of scientists and engineers to figure out solutions to real-world problems and how the natural world works.



### Three dimensions of NYSSLS





#### Disciplinary Core Ideas

 Describe core ideas in the science discipline (DCI)

#### Science and Engineering Practices

 Describe behaviors scientists and engineers engage in (SEP)

#### **Crosscutting Concepts**

 Describe concepts linking the different domains of science (CCC)



### Disciplinary Core Ideas

#### The foundational concepts lessons are based on

#### **Physical Science**

PS1 Matter and Interactions

PS2 Motion and Stability: Forces and Interactions

PS3 Energy

**PS4** Wave Properties

#### Earth & Space Science

ESS1 Earth's Place in the Universe

ESS2 Earth's Systems

ESS3 Earth and Human Activity

#### Life Science

LS1 From Molecules to Organisms: Structure and Properties

LS2 Ecosystems: Interactions, Energy, and Dynamics

LS3 Heredity: Inheritance and Variation of

**Traits** 

LS4 Biological Evolution: Unity and Diversity

#### Earth & Space Science

ETS1 Earth's Place in the Universe

## Science and Engineering Practices (SEP)

### How students engage as scientists

- 1. Asking questions (for science) and defining problems (for engineering)
- 2. Developing and using models
- 3. Planning and carrying out investigations
- 4. Analyzing and interpreting data
- 5. Using mathematics and computational thinking
- 6. Constructing explanations (for science) and designing solutions (for engineering)
- 7. Engaging in argument from evidence
- 8. Obtaining, evaluating, and communicating information

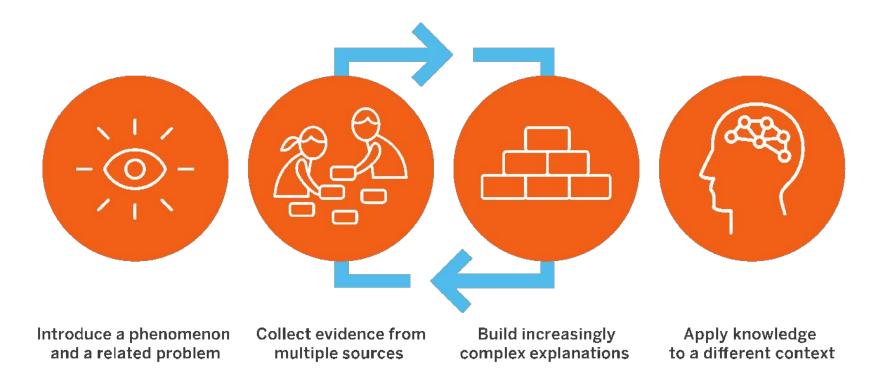
# Crosscutting Concepts (CCC)

### How students makes sense of phenomenon

- Patterns
- Cause and Effect
- Scale, Proportion and Quantity
- Systems and System Models
- Energy and Matter
- Structure and Function
- Stability and Change



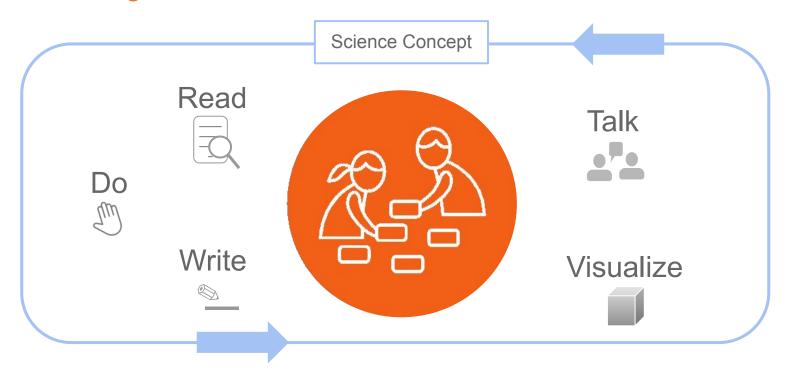
## Amplify Science approach



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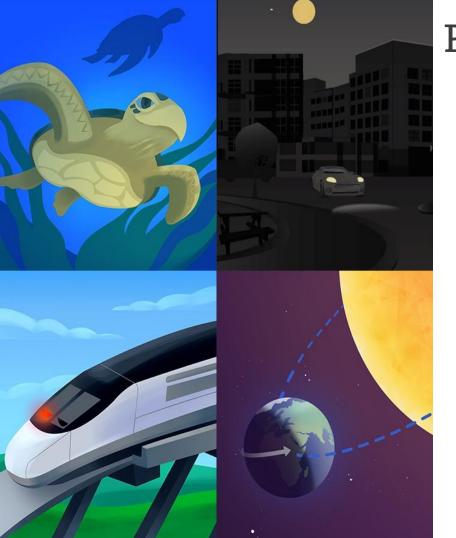
## Multimodal learning

### Gathering evidence from different sources





# Questions?



## Plan for the day

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#### • @Home Resources review

- o @Home Units
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- Coherent activity sequence analysis
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#### • Caregivers as partners

- Family overview resource
- Caregivers' site

#### Closing

- Reflection & additional resources
- Survey

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## Temperature Check

Rate your comfort level accessing and navigating the Amplify Science @Home Resources

- 1 = Extremely Uncomfortable
- 2 = Uncomfortable
- 3 = Mild
- 4 = Comfortable
- 5 = Extremely Comfortable

# AmplifyScience@Home

A suite of new resources designed to make extended remote and hybrid learning easier for teachers and students.





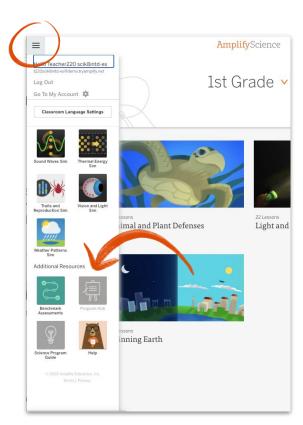




## Accessing Amplify Science@Home

### Amplify Science Program Hub

- Contains Amplify Science@Home and additional PL resources
- Accessible via the Global Navigation menu
- First unit for each grade level is now available
- Additional units rolling out throughout back-to-school



## AmplifyScience@Home

### Two different options:

#### @Home Units

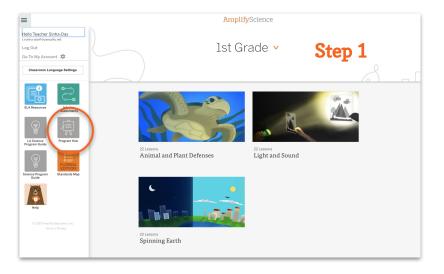
 Packet or slide deck versions of Amplify Science units condensed by about 50%

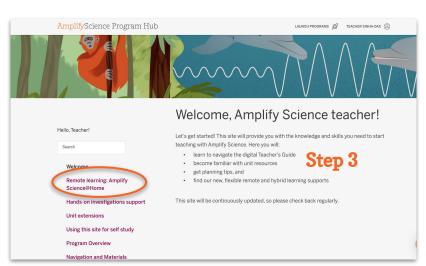
#### @Home Videos

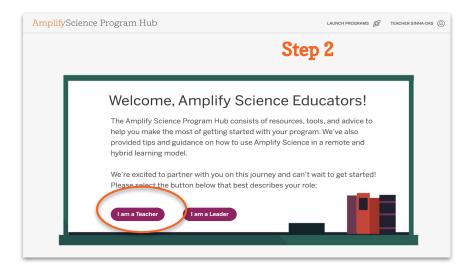
Video playlists of Amplify
 Science lessons, taught by real
 Amplify Science teachers

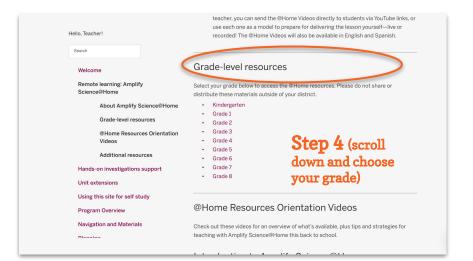










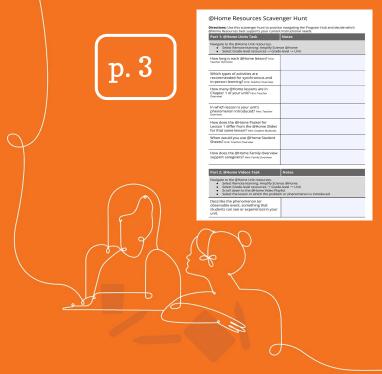


# Review your @Home Unit

Navigate to your unit on the Program Hub and explore (if you this is your first time).

OR,

Complete scavenger hunt (if you explored these resources before)





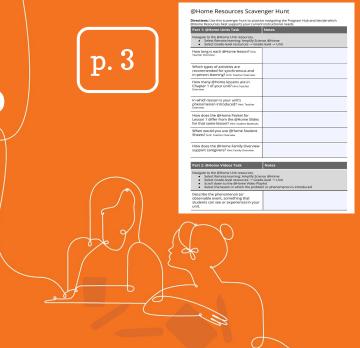
# Questions?

Review your @Home Video

Navigate to your unit on the Program Hub and explore (if you this is your first time).

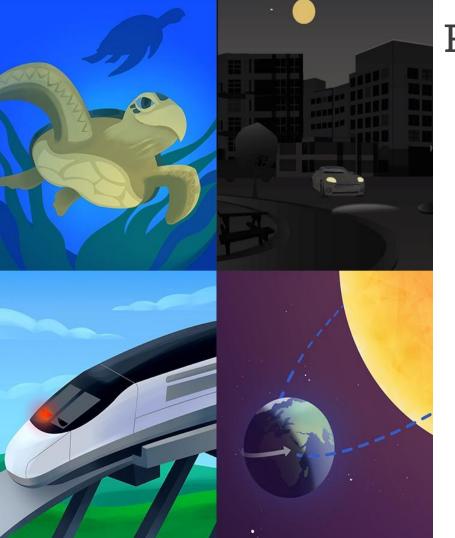
OR,

Complete scavenger hunt (if you explored these resources before)





# Questions?



## Plan for the day

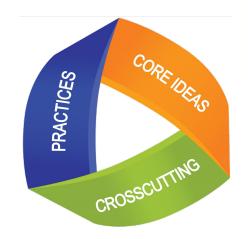
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## @Home Units

### Reduced set of prioritized activities

- Preserves a coherent instructional build
- Retains a multi-modal &3-D learning approach
- Adapted versions of doing, talking, reading, and writing





## @Home Lesson

### A coherent activity sequence

Observe lesson

 Note modalities and science & engineering practices that were utilized



#### Amplify Science multimodal approach & 3-dimensional learning

#### Coherent activity sequence analysis

In Amplify Science units, students figure out phenomena by using science and engineering practices. They gather evidence from multiple sources and make explanations and arguments through multiple modalities: doing, talking, reading, writing, and visualizing. While we have retained this core approach in the @Home Lessons, enacting it at home will require adaptations.

Based on the **coherent activity sequence** you've just observed, circle the modalities and science & engineering practices that were utilized in order to promote an **authentic and purposeful context for inquiry**:

Multiple Modalities	
Doing? □	Talking? □
Notes:	Notes:
Writing? □	Reading? □
Neteri	Nexes
Notes:	Notes:
Science & Engineering Practices	
Asking questions and defining problems?	Developing and using models?
Notes:	Notes:
Notes.	Notes.

**Patterns of Earth and Sky** 

@Home Lesson 11

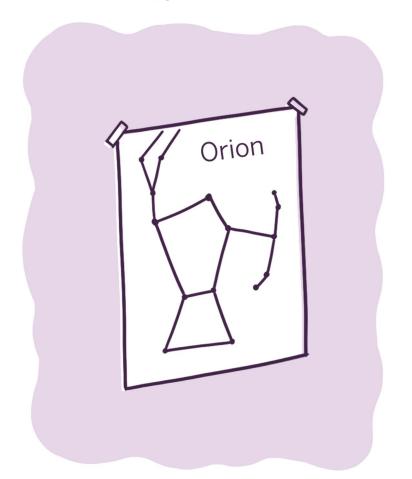


### Remember, we figured out this **key concept**:

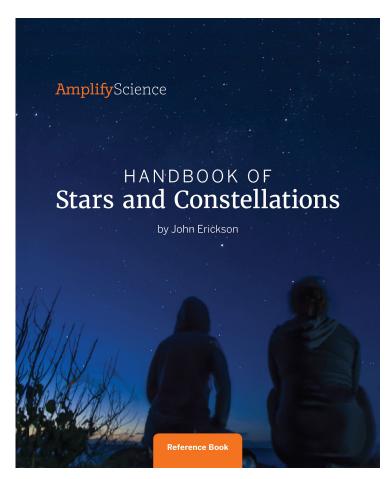
Throughout the year, we see different stars. But every year on the same date, we see the same stars.

Today, we are going to investigate this question:

What causes the yearly pattern of stars that we see?



To investigate why the stars we see change throughout the year, we will add to the Mount Nose Model by making a poster for each of the constellations in System View of the Sim.



You can look up information and pictures of the constellations in this book.

Hint: You can find the constellations by using the table of contents on page 3.

**Optional:** You can access a digital version of the book <u>here</u>.

### **Making Constellation Posters**

Get **eight blank pieces of paper**. Make a poster for each of these constellations:

OrionOphiuchus

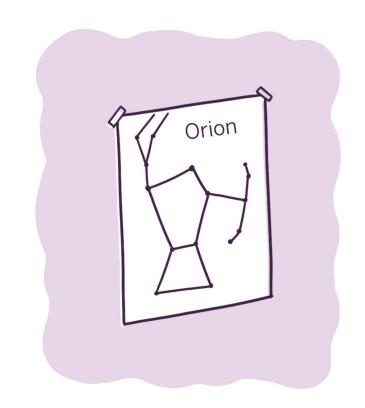
CetusVirgo

PegasusLeo

AquilaMonoceros

#### For each poster:

- Write the constellation name in large, bold print.
- **Draw a large diagram** of the brightest stars in the constellation. Distances between stars don't need to be accurate, but you might want to sketch in pencil before going over your drawings in dark pen.



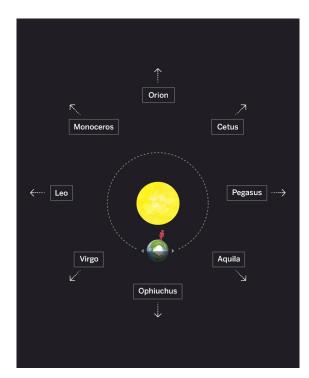
### Adding Posters to the Mount Nose Model

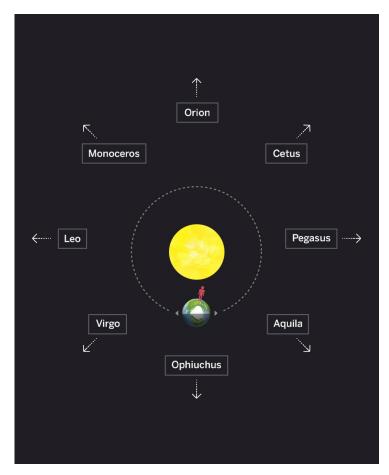
Get the medium-sized ball or other object you have used to represent the sun. Place your model sun in the middle of an open space where you can walk around.

Use System View of the Sim as a guide for the positions of your constellation posters.

Place the constellation posters on the ground in a circle around your model sun, with space to walk between the model sun and the posters.

Check that the posters are in the right places. Look down on the model sun and the posters and make sure the constellations match the positions in System View.

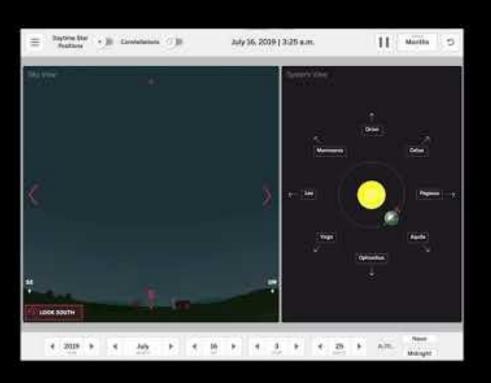


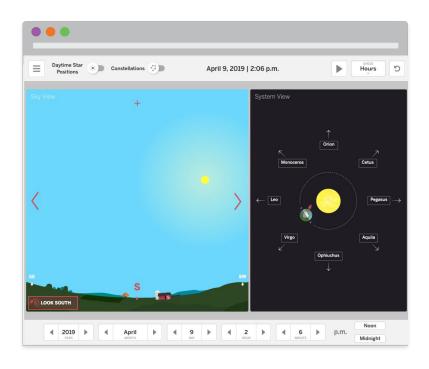


Our model has the sun and eight constellations. Now let's make careful observations of the Sim to understand what we need to add to our model.



Focus on what is happening with Earth, in System View (on the right side of the Sim).







As you watched the Sim, what did you observe moving or changing?

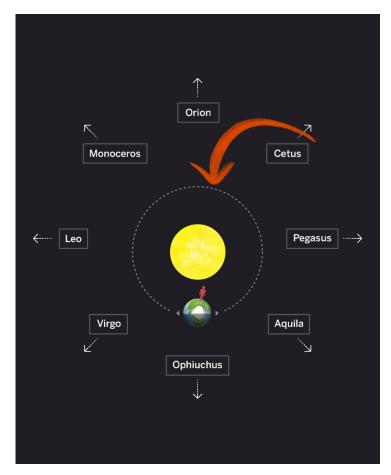
You probably observed that Earth was moving in two ways.

Earth was **spinning**, and it was moving **around the sun**.

## We can use this word to describe the path that Earth follows around the sun:



to move in a regular path around something



Earth's **orbit** is marked as a **dashed circle** in the Sim. Moving along that path is called orbiting.

As Earth in the Mount Nose Model, let's orbit the sun.

#### **Mount Nose Model with Constellations**

#### **Stand near the Orion poster**

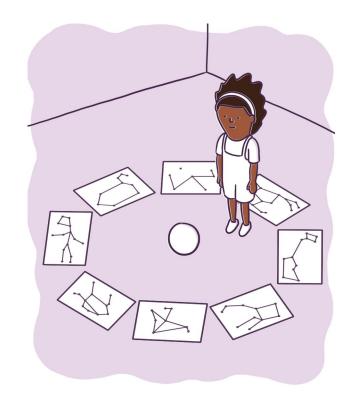
between the **ball** that represents the **sun** and the poster.

#### Imagine a ring

around the model sun, which represents Earth's orbit around the sun. The **posters** represent **constellations** in different directions.

#### Your head

represents **Earth** at a particular position in its orbit around the sun. Your **nose** represents Mount Nose (a mountain on Earth).



Visualize to help you imagine that you are an Earth orbiting the sun.



Turn so it is **midnight** on Mount Nose. Remember that you see what a person on Mount Nose would see.

Hint: You should be facing away from the sun and towards the Orion constellation poster.

Turn so it is noon on Mount Nose.



What are you facing?

What would a person on Mount Nose see?

Hint: Remember that the person on Mount Nose would NOT see the constellations on the far side of the sun because the sun is too bright.

### **Orbiting Around the Sun**

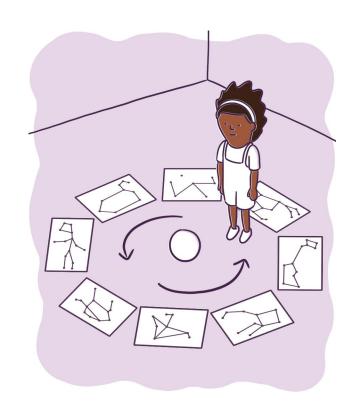
You will orbit in a counter-clockwise direction around the model sun, like the student in the illustration.

#### Step 1

Take a few steps to your right.

#### Step 2

Stop when you are in front of the next poster.



Now, spin slowly and stop when it is daytime on Mount Nose.



What are you facing?

When you visualize the sun at the center of Earth's orbit, what **picture** do you make in your mind?



# What would a person on Mount Nose see? What would they **not** be able to see?

Hint: Remember to visualize the brightness of the sun.

Now, spin slowly and stop when it is nighttime on Mount Nose.



What would a person on Mount Nose see **now?** 

### Making a Full Orbit Around the Sun



Step 1

**Walk** around the sun until you are standing near the **next poster**.



Step 2

**Spin slowly** and stop when it is **daytime** on Mount Nose. Visualize what a person on Mount Nose would see.



Step 3

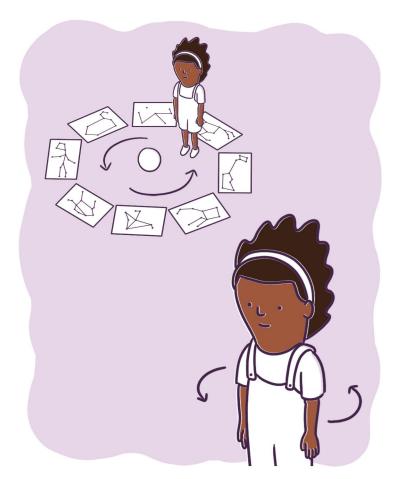
**Spin slowly** and stop when it is **nighttime** on Mount Nose. Visualize what a person on Mount Nose would see.

Repeat steps 1-3 until you return to the Orion constellation poster.

Discuss this question with a partner.



How does the model that you created help to answer what causes the yearly pattern of stars that we see?



In the model, you **moved** in two ways: you orbited and you spun.

Earth orbits the sun and it spins.

# We can describe Earth's movement with this new key concept:

Earth orbits the sun at the same time as it spins.

In the next lesson, we'll return to the Mount Nose Model to continue thinking about the yearly pattern of stars that we see. So make sure to **hold on to your constellation posters**.

## End of @Home Lesson



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### Reflection

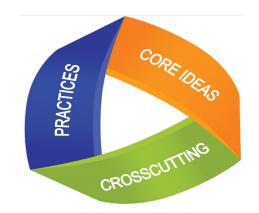
### Coherent activity sequence analysis

 Which multiple modalities were students in engaged in? How were they adapted?

 Which science & engineering practices were students engaged in? How were they adapted?

### Crosscutting concepts

- The "big ideas" that cut across all the domains
- Serve as useful lens to integrate new ideas
- Open next @home lesson
- Identify the cross-cutting concepts collaboratively



#### Crosscutting Concepts Analysis

Navigate to the next @home lesson. Make note of which crosscutting concept(s) scaffold students' understanding and connect it to other ideas about the natural world that they have learned thus far in this particular lesson.

Notes:
System & System Models? □
lotes:

### Adaptations of multiple-modalities

### Specific routines & additional supports

 How would you adapt different aspects of the Amplify Science approach for your learners' particular contexts?



### modalities in remote/hybrid instructional contexts but you may need to set up expectations for specific routines or provide additional support to your students. Let's brainstorm ideas for how different aspects of the Amplify Science approach might be adapted for your learners' particular contexts. Modality Adaptation Doing Talking Reading Writing

Adaptations of multiple modalities

The @Home Lessons provide general guidance for these adaptations of the multiple

### Suggestions for synchronous time

### Using the resources

- Leverage synchronous time for live teaching
  - Lots of time? Teach full lessons
  - Less time? Revisit and preview (see table)

Synchronous time	
In-person	Online class
• Discourse routines	<ul> <li>Online discussions</li> </ul>
<ul> <li>Class discussions</li> <li>Hands-on investigations (option for teacher demo)</li> <li>Physical modeling activities</li> </ul>	<ul> <li>Sim demonstrations</li> <li>Interactive read-alouds</li> <li>Shared Writing</li> <li>Co-constructed class charts</li> </ul>

### Classroom wall

### Re-imagined as @Home science wall

- Chapter Questions, key concepts,
   and vocabulary that have been introduced
   so far are provided in the last lesson of each chapter.
- How would you enhance students' experience of the Classroom wall in a remote/hybrid setting?



### @Home science wall

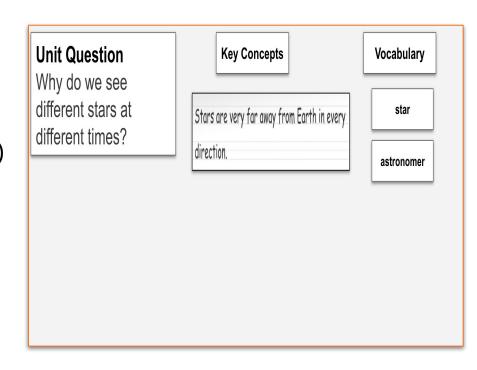
To enhance students' experience of the @Home Science Wall, you could have them:

- Draw a picture or write their ideas on their @Home Science Wall pages.
- Highlight or color in each question, key concept, or word that is introduced.
- Cut out each question, key concept, or word. These can be then posted on a wall, large sheet of paper, or refrigerator at home.
- Illustrate each word that is introduced to create a picture glossary.
- If you are meeting with your class remotely, you could create a virtual
   @Home Science Wall.

### Creating a virtual @Home science wall

### If meeting remotely

- Screenshot chapter questions, key concepts, vocabulary from @Home Student sheets
- Screenshot (from teacher's guide)
   or create own unit &
   investigation questions
- Animate new additions
- Now try yourself on Google slides!



### Classroom Wall

#### **Unit Question**

Why do we see different stars at different times?

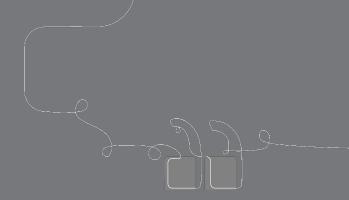
#### **Key Concepts**

Stars are very far away from Earth in every direction.

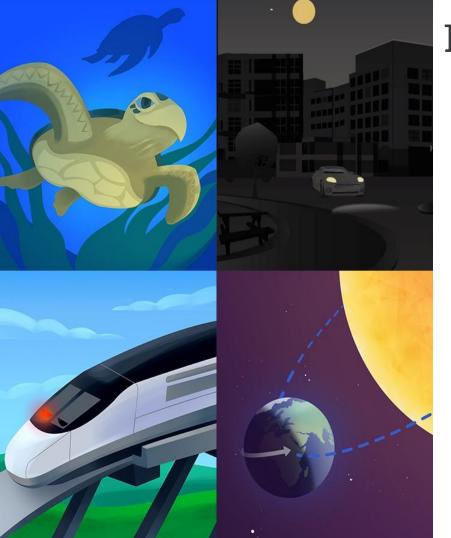
#### Vocabulary

star

astronomer



## Questions?



# Plan for the day

### Framing the day

- Welcome and introductions
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### Overview of Amplify Science Approach

- Multimodal, phenomenon-based learning
- o 3 dimensions of NYSSLS

### • @Home Resources review

- o @Home Units
- o @Home Videos

### Multimodal & 3-D Learning: @Home lesson

- Coherent activity sequence analysis
- Adaptations of multiple modalities
- Classroom wall

### • Caregivers as partners

- Family overview resource
- Caregivers' site

### Closing

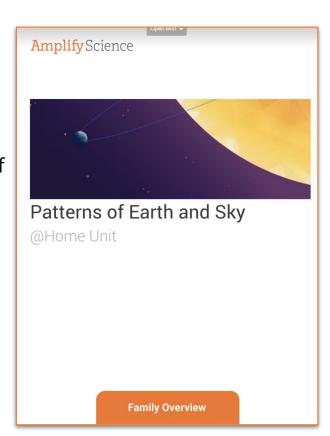
- Reflection & additional resources
- Survey

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# Caregivers as partners

# Supporting practicing multiple modalities & 3-D learning at home

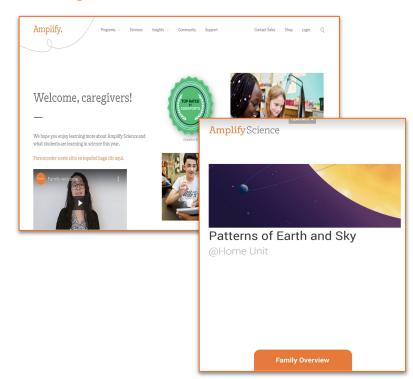
- Editable letter that introduces the unit and the kinds of activities students will be doing
- Ideas about what parents and guardians can do to support their student at home.
- Unit summary, Chapter Questions, key concepts, unit vocabulary and definitions, and information about books & hands-on materials.



# Caregivers' site

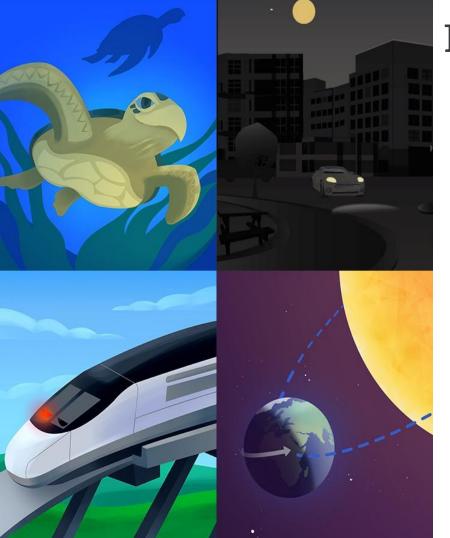
### amplify.com/amplify-science-family-resource-intro/

- Provides your students' families information about Amplify Science & optional extension activities.
- Explore and reflect:
  - How will you utilize these resources to support caregivers?





# Questions?



# Plan for the day

### Framing the day

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- o @Home Units
- o @Home Videos

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# Revisiting our objectives

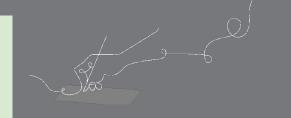
Do you feel ready to to...

- Analyze the role of multimodal and 3-dimensional learning in a coherent @Home lesson activity sequence?
- Adapt multimodal and 3-dimensional instructional routines to your learners' particular instructional contexts?
- Support caregivers as partners in practicing multiple modalities and 3-dimensional learning at home?

**1-** I'm not sure how I'm going to do this!

**3-** I have some good ideas but still have some questions.

**5-** I have a solid plan for how to make this work!



## 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 Schave access to the many updates and upgrades in or your regular credentials to login and begin your surcurriculum until late August/early September whe rosters from STARS.

### **Site Resources**

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

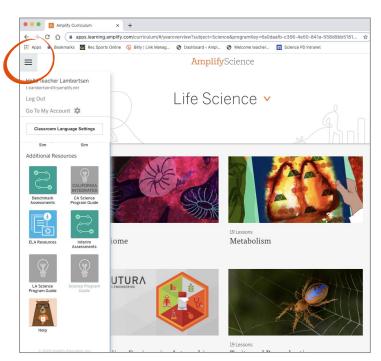
Any schools or teachers new to Amplify Science in 20/21 are encouraged to contact our Help Desk (1-800-823-1969) for access to your temporary login for summer planning.

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

## Amplify Science Program Hub

### A new hub for Amplify Science resources

- Videos and resources to continue getting ready to teach
- Amplify@Home resources
- Keep checking back for updates



# Additional Amplify resources



### **Program Guide**

Glean additional insight into the program's structure, intent, philosophies, supports, and flexibility.

https://my.amplify.com/programguide/content/national/welcome/science/

### **Amplify Help**

Find lots of advice and answers from the Amplify team.

my.amplify.com/help

# Additional Amplify Support

### **Customer Care**

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



scihelp@amplify.com



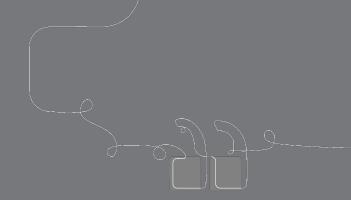
800-823-1969



**Amplify Chat** 

# When contacting the customer care team:

- Identify yourself as an Amplify Science user.
- Note the unit you are teaching.
- Note the type of device you are using (Chromebook, iPad, Windows, laptop).
- Note the web browser you are using (Chrome or Safari).
- Include a screenshot of the problem, if possible.
- Copy your district or site IT contact on emails.



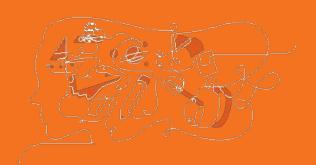
# Final Questions?

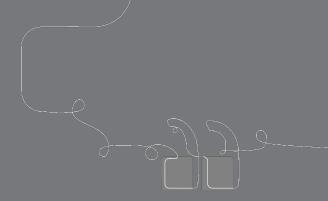
# Please provide us feedback!

URL: <a href="https://www.surveymonkey.com/r/BY56SBR">https://www.surveymonkey.com/r/BY56SBR</a>

**Presenter name:** XXX







# 30 minute open office hours to follow...