Amplify Science

Guided Unit Internalization New York City
With @Home Resources



Who's in the Room? Represent for your Borough!



Share your name, role, borough.

- 1- Brooklyn North
 2- Brooklyn South
 3- Queens North
 4- Queens South
 5- The Bronx
- 6- Staten Island

Workshop Norms



• Please keep your camera on, if possible.





 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



 Be an active participant - chat, ask questions, discuss, share!

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Workshop Goals

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

- Make instructional decisions about remote or hybrid learning
- Develop a plan for using @Home resources within your class schedule and instructional format.



Amplify Science New York City

Guided Unit Internalization With @Home Resources



| uided Unit Internalization | |
|--|---------------------------------|
| art 1: Unit-level internalization | |
| Init title: | |
| HSAVE-72 | |
| What is the phenomenon students are investigating in | Years weigh |
| mac is the phenomenon students are investigating in | your unit: |
| | |
| | |
| | |
| Init Question: | Student role: |
| | |
| ly the end of the unit, students figure out | |
| y the end of the drift, students figure out | |
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| | |
| What science ideas do students need to figure out in o | rder to explain the phenomenon? |
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Participant Materials

AmplifyScience@Lesson Adaptation Tool (Remote/Hybrid)

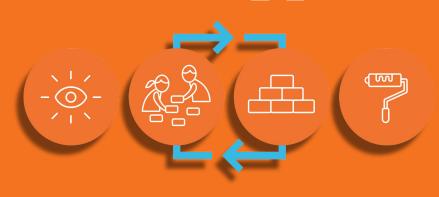
| Lesson: | Date: |
|---|--|
| Lesson purpose: (Lesson Brief: Overview) | 3-D connections and formative assessment opportunities: |
| | |
| | |
| | |
| | |
| What the students will learn in this lesson and potential challenges. | How will the students be practicing the multiple modalities during this lesson? |
| | |
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Plan for the day

- Framing the day
- Unit Internalization
- Amplify Science @Home
- Planning to teach using @Home resources
- Reflection and closing



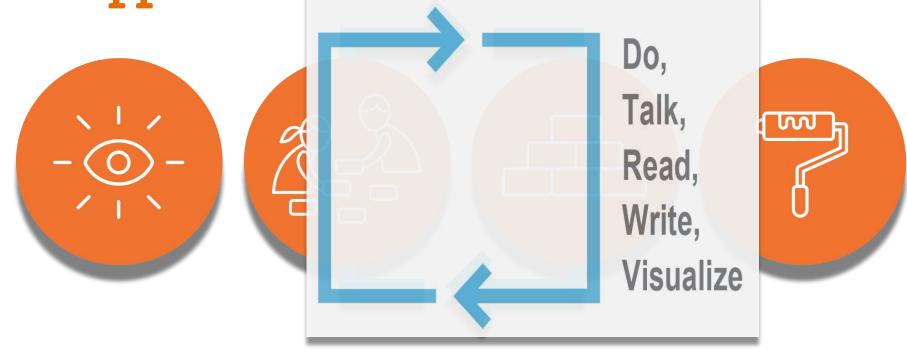
Revisiting the Amplify Science approach





| Questions Reflections Connections | Unit 2 Planning Notes |
|---|--|
| | Amplify Science Approach Review: |
| | Note Taking Opportunities A version of this presentation will be available to you. |
| | However, you may want to record some of the |
| | presenter's comments and suggestions from your colleagues! |
| | |

The approach



Introduce a phenomenon/real world problem

from multiple sources

Build increasingly complex explanations

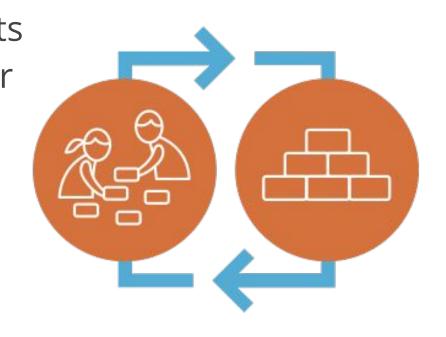
Apply knowledge to solve a different problem

Amplify.

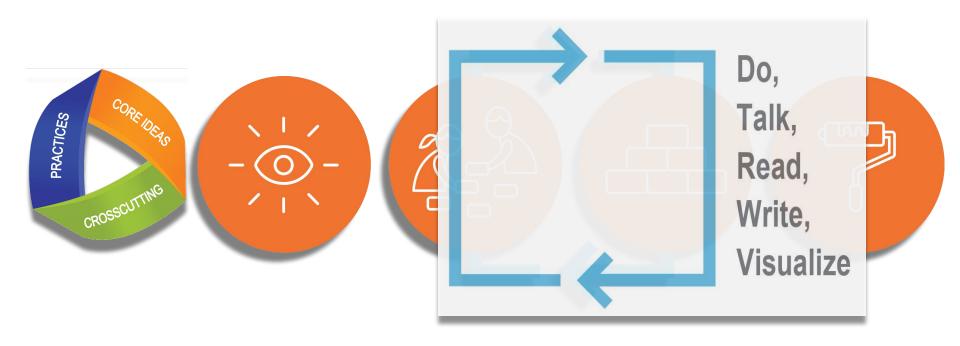
Multimodal Phenomenon-based approach

The anchor phenomenon drives instruction through a whole unit

Taking on the **roles** of scientists and engineers, students gather evidence and use it to build increasingly complex explanations about a rich, real-world anchoring phenomenon.



Using three dimensions to figure out



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Amplify Science Chat Race Type the letter for your answer to the questions you see here in chat!

A Type letter A in Chat

B Type letter B in Chat

Type letter C in Chat

Type letter D in Chat

What are the multiple modalities?

Do, talk, read, write, visualize

Read, write, google search

C Do, visualize, hands-on projects

P Reading, writing, math

What is the first step to the Amplify Science Approach?

A Collect evidence from multiple sources

B Introduce a Phenomenon and/or real world problem

Apply knowledge to solve different problem

Build an increasingly complex explanation

Where can you find login information and NYC scope and sequence?

A On the NYC Resource Site

B The Program Hub

C In the offline preparation guide

The TG on the Unit Level

Plan for the day

- Framing the day
- Unit Internalization
- Amplify Science @Home
- Planning to teach using @Home resources
- Reflection and closing



Unit Design Problem

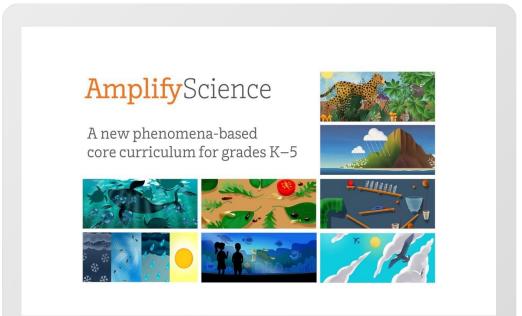
We want to make light and dark scenery for a puppet theater.



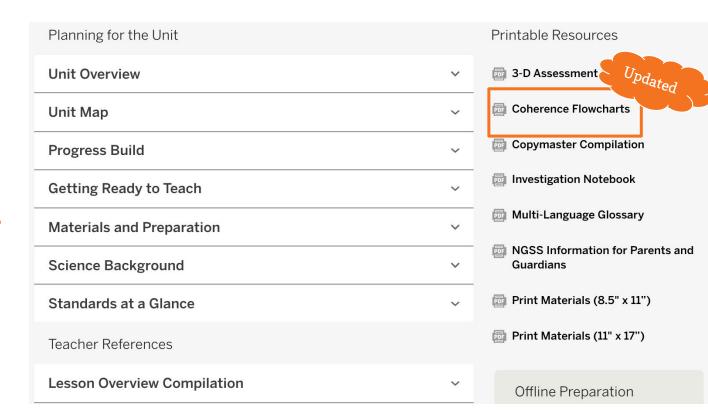
your unit 2?

AmplifyScience

Amplify Science Unit Two Internalization Notes with Digital Teacher's Guide



Where do you find all of the Unit Phenomena listed with Unit questions?



Unit Design Problem

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 problem

Explanation that students can make to answer the Chapter 1 Question

Light and Sound: Puppet-Theater Engineers

We want to make light and dark scenery for a puppet theater. How can we use light to design shadow scenery for a puppet theater?

Puppet show scenes have brighter and darker areas. How do we make brighter or darker areas?

Some places are dark. Some places are bright.
What makes something look bright or dark? (1.2)

- Browse Engineering with Light and Sound reference book (1.1)
- Explore how to make the classroom completely dark (1.2)
- Observe a video of a very dark cave (1.2)
- Read Can You See in the Dark? (1.2)
- Light makes things look bright. (1.2)
- You need some light to see. (1.2)

Some surfaces are bright. Some surfaces are dark.

Where does the light come from that makes surfaces look bright or dark? (1.3-1.4)

- Search for light sources around the school in a Light Source Hunt (1 3)
 - Write about light sources (1.4)
 Revisit Can You See in the Dark? (1.4)
- Practice using cause and effect to explain everyday scenarios (1.4)
- Use Explanation Language Frame to explain bright areas in Can You See in the Dark? (1.4)
- All light comes from a source. (1.4)

Some surfaces are bright. Some surfaces are dark.

What makes a surface look bright or dark? (1.5) (Revised from 1.2)

- Investigate how to make surfaces look bright (1.5)
- Diagram light making a surface bright (1.5)

 When light from a source gets to a surface, the surface looks bright. (1.5)

Use Explanation Language Frame to explain bright and dark areas (1.5)

Shared Writing to explain the Chapter 1 Question (1.5)

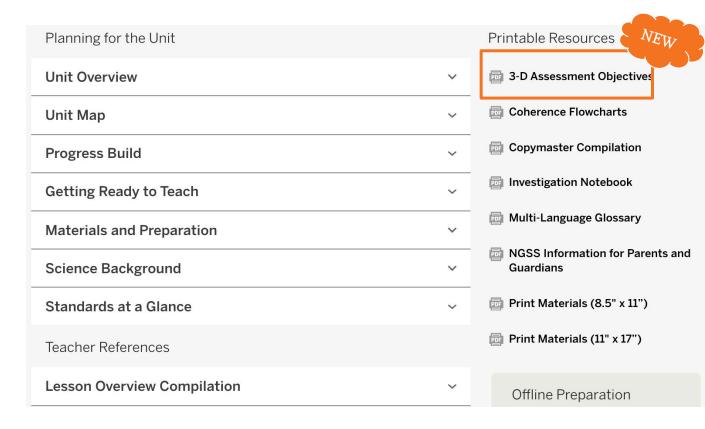
Without light, we cannot see. Light comes from a source and travels to a surface. Light from the source must be getting to the surface in order to make some parts of the surface look bright. If there is no light source, a surface looks dark.

Phenomena Coherence Flowcharts

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Note: New 3-D Assessment **Objectives Overview** Now Available





New 3D Assessment Objectives Overview

Light and Sound

3-D Assessment Objectives Overview

The NGSS Performance Expectations specify three-dimensional learning objectives for Grade 1 as well as for the K–2 grade band. The tables below include the focal Performance Expectations for this unit and identify the locations of summative and formative assessments that reveal student knowledge and use of the three dimensions to support progress toward these Performance Expectations.

Each table includes the Disciplinary Core Ideas (DCIs), Science and Engineering Practices (SEPs), and Crosscutting Concepts (CCCs) included in that Performance Expectation and specifies the location of assessments associated with these three dimensions. Note that SEPs and CCCs build across the grade and grade band, so we list relevant assessments across grades K-2. Also, in cases in which a DCIs is addressed in multiple units at a grade, we list assessments in the additional unit(s).

Key:

- Summative assessments are noted with (S);
 if not so labeled, the assessment is designed to be formative.
- OTFA = On-the-Fly Assessment
- CJ = Critical Juncture
- PRE = Pre-Unit Assessment
- EOU = End-of-Unit Assessment
- TS = Teacher Support Note
- INV = Investigation Assessment
- . CW = Chapter Writing Assessment

See the Assessment System overview document for more information.

1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.

DCI: PS4.A: Wave

Light and Sound (Grade 1)

INV: Lesson 4.1. Activity 3 (S)

OTFA 10: Lesson 4.2, Activity 2

OTFA 11: Lesson 4.2, Activity 3

OTFA 13: Lesson 4.3, Activity 4

OTFA 14; Lesson 4.5, Activity 3

CI 4: Lesson 4.4. Activity 2

Properties

SEP: Planning and Carrying Out Investigations

Needs of Plants and Animals (Grade K)

OTFA 7: Lesson 2.3, Activity 3 OTFA 10: Lesson 3.1, Activity 2 Pushes and Pulls (Grade K) PRE: Lesson 1.1, Activity T

OTFA 4: Lesson 2.1, Activity 2

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

Light and Sound (Grade 1)
OTFA 2: Lesson 1.3, Activity 3
OTFA 7: Lesson 3.1, Activity 2
INV: Lesson 4.1, Activity 3 (5)

Spinning Earth (Grade 1)

OTFA 7: Lesson 3.1, Activity 2 OTFA 8: Lesson 3.3, Activity 4 OTFA 11: Lesson 4.1, Activity 2

Plant and Animal Relationships

OTFA 4: Lesson 1.6, Activity 4
OTFA 9: Lesson 3.3, Activity 3
OTFA 12: Lesson 4.1, Activity 4
OTFA 13: Lesson 4.2, Activity 4
INV: Lesson 4.3, Activity 4 and
Lesson 4.3, Activities 1–4 (5)
OTFA 14: Lesson 4.3, Activity 3

CCC: Cause and Effect

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

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

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

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

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

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

Printable Resources



3-D Assessment Objectives

Coherence Flowcharts

Copymaster Compilation

Flextension Compilation

Investigation Notebook

Multi-Language Glossary

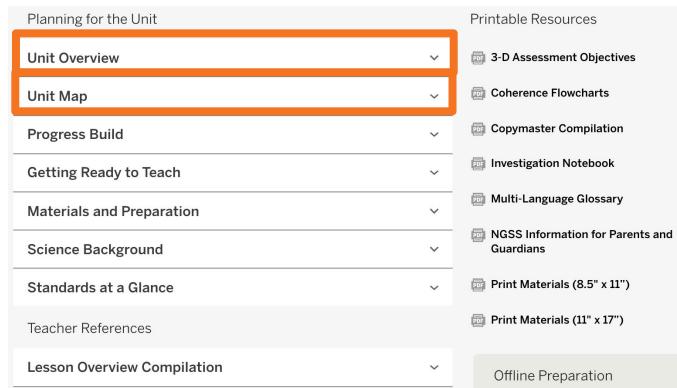
NGSS Information for Parents and Guardians

| Unit title: | | |
|---|-------------------------------------|--|
| What is the phenomenon students are investigatin | ng in your unit? | |
| Unit Question: | Student role: | |
| Du the end of the unit students faure out | | |
| By the end of the unit, students figure out | | |
| | | |
| What science ideas do students need to figure out | in order to explain the phenomenon? | |
| | | |
| | | |

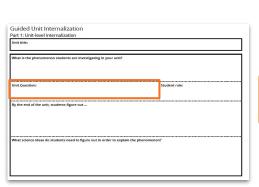
Guided Unit Internalization Document

What is the student role? What will students figure out in Chapter 1?

| Guided Unit Internalizat Part 1: Unit-level internalization | | | |
|--|-----------------------------------|-----------------|--|
| Unit title: | | | |
| What is the phenomenon students a | e investigating in your unit? | | |
| Unit Question: | | Student role: | |
| By the end of the unit, students figur | e out | | |
| What science ideas do students need | to figure out in order to explain | the phenomenon? | |

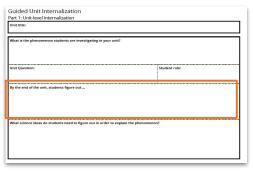


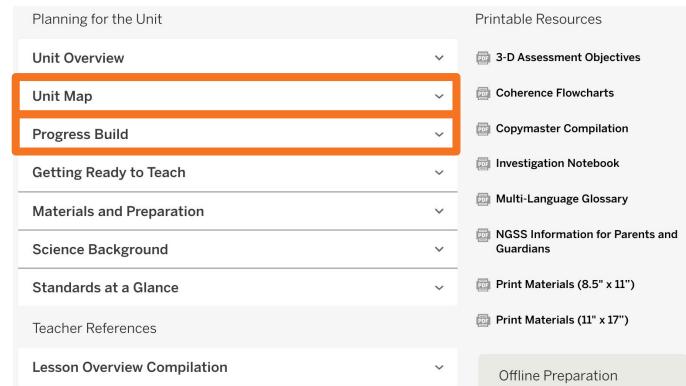
What are the Unit and Chapter Questions unit two?



| Planning for the Unit | Printable Resources |
|-------------------------------|--|
| Unit Overview ~ | 3-D Assessment Objectives |
| Unit Map | Coherence Flowcharts |
| Progress Build v | Copymaster Compilation |
| Getting Ready to Teach | Investigation Notebook |
| Materials and Preparation V | Multi-Language Glossary |
| Science Background V | NGSS Information for Parents and Guardians |
| Standards at a Glance ~ | Print Materials (8.5" x 11") |
| Teacher References | print Materials (11" x 17") |
| Lesson Overview Compilation ~ | Offline Preparation |

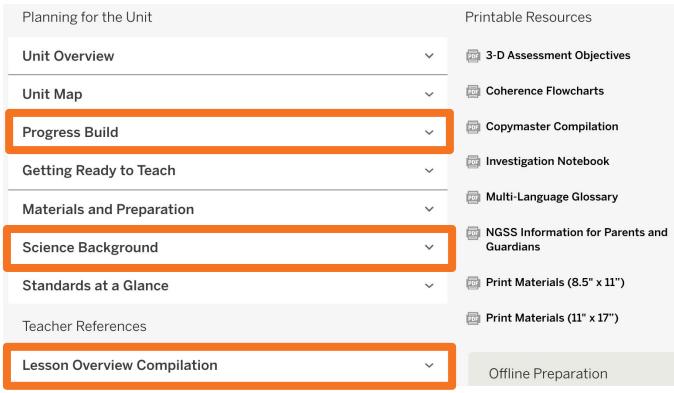
By the end of the unit what will the students figure out?





What science concepts do students need to figure out in order to build an explanation of the unit phenomena?

| Unit title: | | |
|---|-----------------------------------|--|
| Unit title: | | |
| | | |
| What is the phenomenon students are investigating | ş in your unit? | |
| | | |
| | | |
| Unit Question: | Student role: | |
| onit question. | Juden Tok. | |
| | | |
| By the end of the unit, students figure out | | |
| , | | |
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| What science ideas do students need to figure out i | | |
| what science ideas do students need to rigure out i | n order to explain the prenomenon | |
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Guided Unit Internalization Part 1: Unit-level internalization Unit title: What is the phenomenon students are investigating in your unit? **Unit Overview** Unit Ouestion: Student role: **Unit Overview Lesson Overview Compilation** By the end of the unit, students figure out ... Unit Map, See also **Progress Build** What science ideas do students need to figure out in order to explain the phenomenon? Unit Map, Progress Build, Science Background Document

Where to Look!

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Where do you find a table listing the books and the in-class lessons they are used for?

A Science
Background

B Lesson Overview Compilation

C Progress Build

Materials and Preparation

Where do you find possible student preconceptions?

A Science
Background

B Lesson Overview Compilation

Progress Build

Materials and Preparation

In Chat • What is the Unit Anchor Phenomenon? • What is the Unit Question?

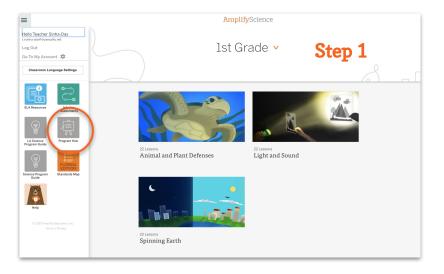


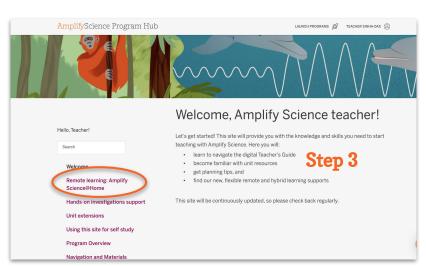
Plan for the day

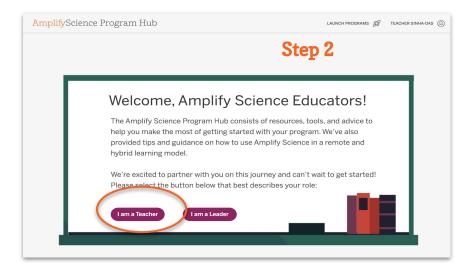
- Framing the day
- Unit Internalization
- Amplify Science @Home
- Planning to teach using @Home resources
- Reflection and closing

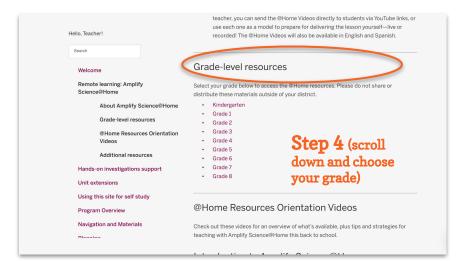


Questions Reflections Unit 2 Planning Notes Connections Global Program Hub Self Study Navigation









Navigate to your unit on the Program Hub locate and record planning notes on:

- 1. Self-Study Resources
- 2. @Home Videos for Unit 2

Explore your
Unit 2
@Home



Reminder!

AmplifyScience@Home

@Home Units

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

@Home Videos

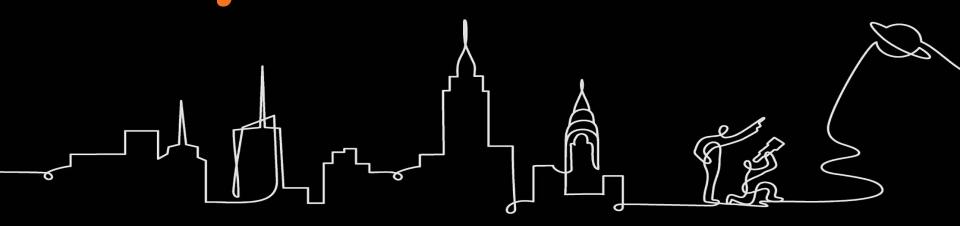
Video playlists of Amplify Science lessons, taught by real Amplify Science teachers





In Chat What are some possible uses for the @Home Videos

Reflect-Type-Chat! Share and Learn
Which self-study resource on the
Program-Hub will you use most often
and why?



Lesson Adaptation Considerations

While planning consider the information below to select the appropriate resources:

- O Do you have more, less, or the same time as last year for Science?
- Your classroom instructional model (Hybrid or Remote)
- Student's access to technology (packet or slides/sheets)
- The 3rd party applications will you pair with Amplify resources (if any)?
- Do I want to add a hands on component? (model via video? Or complete during in person synchronous instruction)

AmplifyScience@Lesson Adaptation Tool (Remote/Hybrid)

| Lesson: | Date: | |
|---|---|--|
| Lesson purpose: [Lesson Brief: Overview] | 3-D connections and formative assessment opportunities: | |
| | | |
| | | |
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| | | |
| | | |
| What the students will learn in this lesson and potential challenges. | How will the students be practicing the multiple modalities during this lesson? | |
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Amplify Science sample lesson planning template cont. Part 2: Getting ready to teach

Look at the Classroom Slides, digital tools, and books, as well as the Step-by-Step, Teacher Supports, and Possible Responses tabs in the Instructional Guide.

| | Teaching notes | Remote/Hybrid Adaptation notes |
|------------|--|--|
| | Consider: | Consider: |
| | What will the students experience in each activity? How does each activity support students in achieving the purpose of the lesson? What do you feel comfortable with? What do you feel comfortable with? What challenges might you encounter in teaching this lesson, and how might you address these challenges? | Materials will you need to prepare Differentiate Time for lesson Your classroom instructional model Student's access to technology 3rd party applications Add a hands on component? (model vivideo O' complete during in person synchronous instruction) |
| Activity 1 | | |
| Time: | | |
| Activity 2 | | |
| Time: | | |
| Activity 3 | | |
| Time: | | |
| Activity 4 | | |
| Time: | | |
| Activity 5 | | |
| Time: | | |

Lesson Adaptation Tool for Remote and Hybrid Learning

Grade 1 | Light and Sound

Lesson 1.1: Pre-Unit

Assessment



Leading a
Pre-Unit-Assessment
Conversation



We will start learning about **light and sound**.

We will be **engineers** who work with light and sound. Today we will learn what light and sound engineers do.

Let's get ready by **observing** some pictures and describing what we notice.

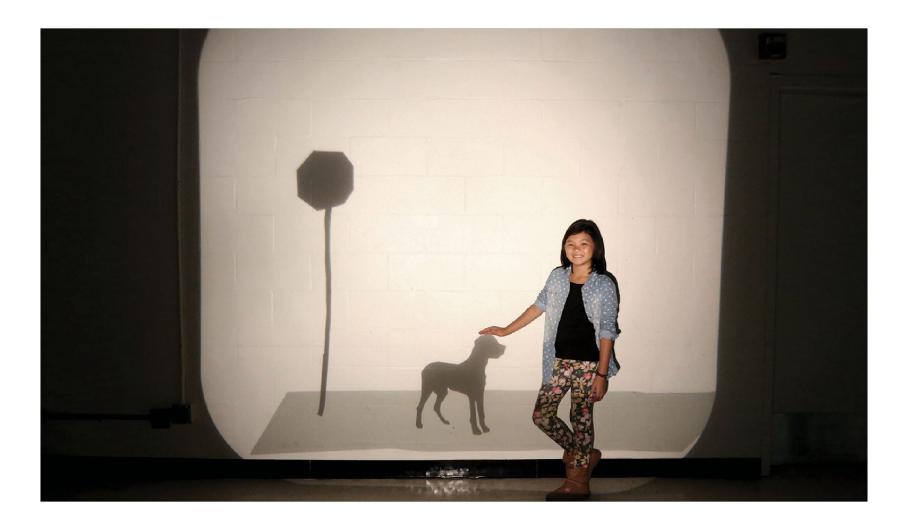






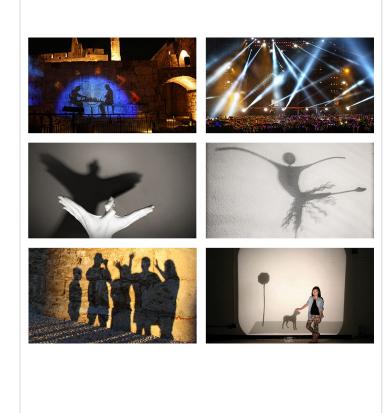






Lesson 1.1: Pre-Unit Assessment

Activity 1





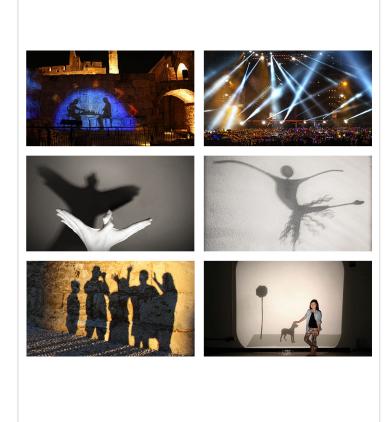
What was the **same** in all of the pictures we just observed?

Scientists and engineers **ask questions**. Sometimes, new questions come from their **observations**.

The **bright areas** and **dark areas** in each picture make me wonder something new: Why do some areas look bright and other areas look dark?

Lesson 1.1: Pre-Unit Assessment

Activity 1

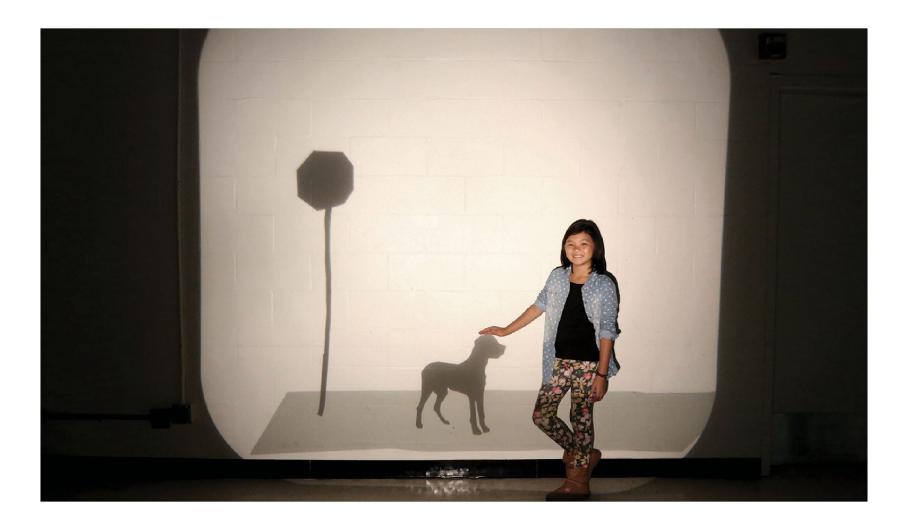




What do you wonder about these images? What questions do you have about them?

Let's think about what we know about how **brighter** and **darker areas** on a surface might be made.

We will look at one of the pictures again. It shows brighter and darker areas on a wall. We will **discuss our ideas** about why some areas are brighter and some areas are darker.



We looked at **brighter** and **darker areas** in a picture and talked about how they were made.

Let's look around our classroom and think about **why** some areas are bright and some areas are dark.



Walk around the room and look for **bright** and dark areas.

Talk to your partner about **why** the areas you find are bright or dark.



Introducing the Context of the Unit



A puppet-theater company has come to us with a problem that they think we can solve by using light and sound.

Their puppet shows use many heavy parts that are difficult to carry around. They are hoping that we can figure out how to **use light to make a picture on a wall** instead.

Let's look at a picture of their puppet shows and talk about what we notice.



Lesson 1.1: Pre-Unit Assessment

Activity 2



A **scene** is the **background** of a play or a puppet show.

The puppet-theater company wants us to create a scene using light.



Puppet Scene Design Goals

 The scene should have a bright area.



 The scene should have a dark area.



 The scene should have a medium bright area, between bright and dark



This chart shows our **design goals**.

The puppet-theater company asked us to make scenes that create **three different areas** on the wall.

Lesson 1.1: Pre-Unit Assessment

Activity 2



How do we make different parts of a surface brighter or darker?

People depend on the **solutions** engineers make, like the examples we saw today. Engineers are people who use what they know to make things to solve problems.

We will work like **engineers** as we help the puppet-theater company solve their problem.

End of Lesson



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Suggestions for Online Synchronous Time







Online synchronous time

Online discussions: It's worthwhile to establish norms and routines for online discussions in science to ensure equity of voice, turn-taking, etc.

Digital tool demonstrations: You can share your screen and demonstrate, or invite your students to share their screen and think-aloud as they use a Simulation or other digital tool.

Interactive read-alouds: Screen share a digital book or article, and pause to ask questions and invite discussion as you would in the classroom.

Shared Writing: This is a great opportunity for a collaborative document that all your students can contribute to.

Co-constructed class charts: You can create digital charts, or create physical charts in your home with student input.

Plan for the day

- Framing the day
- Unit Internalization
- Amplify Science @Home



Reflection and closing



Sample instructional scenario

Hybrid pod model

Select 1-2 lessons for the week and decide the best instructional format for the different parts of the lesson

In class



Remote online class







Remote



- Hands-on investigations (option for teacher demo)
- Discourse routines
- Class discussions
- Physical modeling activities

•

- Sim demonstrations
- Read-alouds
- Shared Writing
- Co-constructed class charts

- @Home video lessons
- @Home Unit activities
- Reflective writing
- Independently review

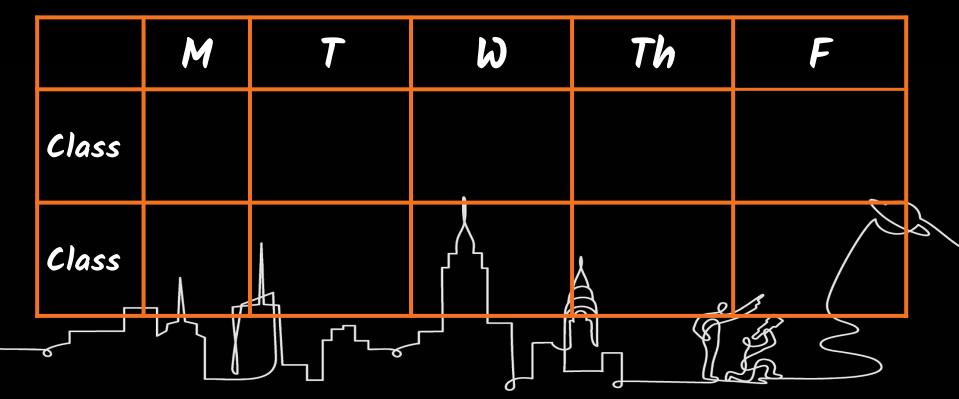
Sample instructional scenario

Hybrid pod model

| | M-T | W | Th-F |
|-------|----------|--|----------|
| Pod 1 | In class | Remote online class | Remote |
| Pod 2 | Remote | AND THE RESERVE TO TH | In class |

Think-Type-Chat Share and Learn

Take a moment to think about your current instructional model. Please share in chat!



@Home Resources example use case

Hybrid Model: Teach live during in-person/synchronous time





Day 2







Day 1

In-person

live

Synchronous

Day 4

Remote

Day 5

In-person

Assign: Lesson 1.1 @Home Video

Remote

Teach: Lesson 1.2

Teach: Lesson 1.3 using clips from @Home Video

Day 3

Assign: Lesson 1.4 @Home Packet/Slides Revisit: hands-on or discourse-based activities the week's lessons

@Home Resources example use case

Remote Model: with synchronous & asynchronous learning



Days 1 & 2
Asynchronous

Assign: Lesson 1.1 @Home Video and sheets for students to work through on their own



Day 3

Synchronous

Teach: Lesson 1.2 using clips from the @Home Video



Day 4

Asynchronous

Assign: Lesson 1.3 @Home Packet or @Home Slides for students to work through on their own



Day 5

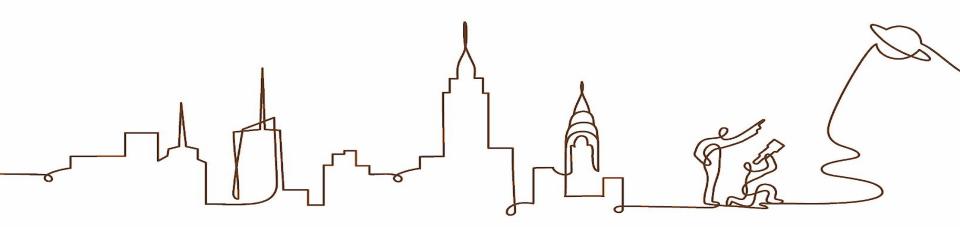
Synchronous

Revisit: hands-on or discourse-based activities from the week's lessons

75

Differentiation

Quick Review of Lesson Level Brief



Guided Planning

Objectives

- Use the resources we have explored to compare@Home lessons w/ in-class lessons.
- Use the lesson adaptation tool to adjust an in-class lesson for remote and hybrid learning.



AmplifyScience@Lesson Adaptation Tool (Remote/Hybrid)

| Lesson: | Date: |
|---|---|
| Lesson purpose: [Lesson Brief: Overview] | 3-D connections and formative assessment opportunities: |
| | |
| | |
| | |
| | |
| | |
| What the students will learn in this lesson and potential challenges. | How will the students be practicing the multiple modalities during this lesson? |
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| | |

Lesson Adaptation!

Choose a lesson and use the Lesson **Adaptation Tool to** begin recording planning information about the lesson.

Amplify Science sample lesson planning template cont.

Part 2: Getting ready to teach

Look at the Classroom Slides, digital tools, and books, as well as the Step-by-Step, Teacher Supports, and Possible Responses tabs in the Instructional Guide.

| | Teaching notes | Remote/Hybrid Adaptation notes | |
|------------|---|--|--|
| | Consider: | Consider: | |
| | What will the students experience in each activity? How does each activity support students in achieving the purpose of the lesson? What do you feel comfortable with? What challenges migh; you encounter in teaching this lesson, and how might you address these challenges? | Materials will you need to prepare Differentiate Time for lesson Your classroom instructional model Student's access to technology 3rd party applications Add a hands on component? (model via video Or complete during in person synchronous instruction) | |
| Activity 1 | | | |
| Time: | | | |
| Activity 2 | | | |
| Time: | | | |
| Activity 3 | | | |
| Time: | | | |
| Activity 4 | | | |
| Time: | | | |
| Activity 5 | | | |
| Time: | | | |

Lesson Adaptation!

With the Lesson
Adaptation Tool
begin adjusting the
lesson for remote
and hybrid learning.
Note begin with in-class slides

Lesson Adaptation Considerations

While planning consider the information below to select the appropriate resources:

- O Do you have more, less, or the same time as last year for Science?
- Your classroom instructional model (Hybrid or Remote)
- Student's access to technology (packet or slides/sheets)
- The 3rd party applications will you pair with Amplify resources (if any)?
- Do I want to add a hands on component? (model via video? Or complete during in person synchronous instruction)

Plan for the day

- Framing the day
- Unit Internalization
- Amplify Science @Home
- Planning to teach using @Home resources
- Reflection and closing



Where do you locate the new 3-D assessment objective overview?

Unit Level
Materials and
Prep

B Unit Level 3-D statements

C Unit Level
Printable
Resources

Unit Level
Assessment
Systems

Where are differentiation notes for Unit 2 lessons?

Unit Level
Materials and
Prep

B Unit Level Science Background Digital TG Lesson Level

Teacher Overview

In Chat What are the focal performance expectations for your unit?

Where can you find assessment recommendations for @Home units?

@Home Videos

B @Home Student Sheets

@Home Student Slides

D @Home Teacher Overview

In Chat What is the Chapter 4-level Phenomenon?

What does this Image represent?







Amplify Science Approach

B How students build a complex explanation

How students deepen their understanding

D

All of these

Did We Meet Out Workshop Goals?

- 1. Make instructional decisions about remote or hybrid learning
- Develop a plan for using @Home resources within your class schedule and instructional format.

YES! yes but still working No not quite





NYC Program Guide

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

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

Amplify Help

Find lots of advice and answers from the Amplify team.

my.amplify.com/help



Customer Care

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



scihelp@amplify.com



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Amplify Chat