Amplify Science

K/1 Supporting All Learners with Complex Texts

Strengthening workshop-Part 1



LAUSD March 2022 Presented by: Jolene Hori



Phenomena-based Instruction

Inquire like a scientist.Think like a scientist.Quantify like a scientist.

Read like a scientist.

Talk like a scientist.

Write like a scientist.
Critique like a scientist.
Argue like a scientist.

Figuring out phenomena like a scientist.

AmplifyScience



Participant Notebook

Supporting All Learners with Complex Texts Grades K-5

Make sure to have paper and pencil for note taking.



Amplify's Purpose Statement

Dear teachers,

You do a job that is nearly impossible and **utterly essential**.

We are in your corner – extending your reach, saving you time, and enhancing your understanding of each student.

Thank you for working with us to craft rigorous and riveting learning experiences for your classroom.

We share your goal of inspiring all students to think deeply, creatively, and for themselves.

Sincerely, Amplify

Ice Breaker! Navigation?

Question:

• On a scale from 1-5, 5 being the highest, how would you rate yourself on navigating the online curriculum?









Plan for the day

- Introduction
- Complex text: what and why
- Supporting students with complex text
- Closing

Workshop goal

How can we teach in a way that supports **all** students to meaningfully engage with complex text in Amplify Science?



Amplify

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.

Complex text in Amplify Science

What are the books like in Amplify Science units?



Complex text in Amplify Science

- 5 texts per unit
 - 1 title is a reference book
- 18 student copies of each title included in unit kit designed for partner reading
- (K-1) 1 big book copy of each title
- Digital copies available with interactive e-reader



Supporting All Learners with Complex Texts

- Use the Materials and Preparation document in the Unit Guide to see the lessons where the books are taught.
- Read the summary of each book in **"Books in this Unit"**to give you background information about each text.

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1	Planning for the Unit		Printable Resources
	Unit Overview	~	3-D Assessment Objectives
	Unit Map	×	Coherence Flowcharts
	Progress Build	~	Copymaster Compilation
	Getting Ready to Teach	~	Crosscutting Concept Tracker
	Materials and Preparation	×	Eliciting and Leveraging Students' Prior Knowledge, Personal
	Science Background	~	Experiences, and Cultural Backgrounds
	Standards at a Glance	~	Flextension Compilation
	Teacher References		Investigation Notebook
	Lesson Overview Compilation	~	🖾 Multi-Language Glossary
	Standards and Goals	~	NGSS Information for Parents and Guardians
	3-D Statements	~	Print Materials (8.5" x 11")
	Assessment System	~	Print Materials (11" x 17")
	Embedded Formative Assessments	~	Offline Preparation
	Books in This Unit	~	Teaching without reliable classroom
	Apps in This Unit	~	internet? Prepare unit and lesson materials for offline access.
	Flextensions in This Unit	~	Offline Guide
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Quantity in kit	Student books	Used in lesson
18	Arguing to Solve a Mystery	3.3
18	Clues from the Past	1.2, 1.3, 1.5
18	Fossil Hunter's Handbook	2.2, 2.3, 2.4, 2.5, 3.2, 3.4
18	Rocky Wonders	4.1, 4.2, 4.3
18	Through the Eyes of a Geologist	2.1







Plan for the day

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LHS

Dione, a moon of Saturn

NASA

What makes a science text complex?

Read "The Shape of a Moon's Orbit."

As you read, consider what could be **complex** or **challenging** about this science text.

THE SHAPE OF A MOON'S ORBIT

When is a circle not a circle? Many objects in the Solar System move in orbits that are very circular. For instance, Dione is a moon that moves around the planet Saturn in an orbit that is almost a perfect circle. It seems perfectly logical to say that the trajectory of Dione is circular. But is it really?

While Dione is circling around Saturn, Saturn is not sitting still. Saturn is moving around the Sun. The gravitational pull of the Sun affects Saturn and all its moons, so they all move around the Sun together. Saturn moves in an orbit that is almost a perfect circle, but what kind of trajectory does a moon like Dione follow?

The path of a moon around the Sun can be quite complicated. It depends on how fast the planet is moving, how fast the moon is orbiting, and how far away the moon is from the planet. Dione moves around the Sun in a wavy path that makes a little loop every time it orbits around Saturn. Every time Saturn orbits the Sun once, Dione orbits Saturn about 3,931 times, so the trajectory that Dione follows is an intricate path with thousands of waves and loops.



What makes a science text complex?

- Specialized vocabulary
- Sophisticated content that requires background knowledge
- Complex visual representations
- Sentence structure
- Density of content



Scientists and complex text

What types of texts do scientists use?

How do scientists engage with text?



Disciplinary literacy

The specialized reading practices and strategies required to make sense of the unique types of text found within a discipline.



Traditional model of literacy 'stages' in school

> **Disciplinary literacy:** specialized strategies to access discipline's texts

Intermediate literacy: comprehension strategies, building vocabulary, fluency

Basic literacy:

alphabetic principle, print concepts, high frequency words, decoding Early elementary

Problems with this model

- Gaps in students' basic and intermediate literacy in upper grades
- Lack of explicit disciplinary literacy instruction across subject areas



A new model

Integration of literacy stages

- Explicit disciplinary literacy instruction at all grade levels
- Sustained basic and intermediate literacy instruction at all grade levels



Integration of literacy stages



Complex text and disciplinary literacy Reflection

How did you leverage discipline-specific reading skills when you read "The Shape of a Moon's Orbit"?

How did you read like a scientist?

THE SHAPE OF A MOON'S ORBIT

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Dione, a moon of Saturn

NASA

Establishing connections among concepts





Questions?









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Instructional supports





Strategic text roles

Talking about reading

Sense-making strategies

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Inferences

Observations



Multimodal instruction

Instructional supports Text roles

- Model a scientific process or practice
- Deliver content
- Set context by situating science in the real world
- Provide data for students to interpret (secondhand investigation)
- Provide information for investigation (first hand investigation)



Instructional supports Talking about reading

- Teacher models expert science reading
- Partner reading
- Class discussion
- Discourse routines





Modes of Reading in Amplify Science



Read Aloud



Light and Sound- Grade 1

Teacher action: Read pages 4–5 out loud.

Suggested teacher talk:

I read a question here: *Is there any light in the theater?* I have another question because there is something I do not understand. I think there is light in the theater because I see light in the illustration. The thing I do not understand—or my question—is *Where is the light coming from?*

Suggested teacher talk:

I am going to keep reading to find an answer to my question.



Think of a movie theater. You walk in after the movie starts. It is hard to see, but you can still find a seat. You can see a little bit. Is there any light in the theater?

Shared Reading

K-1



Here is what a scientist or engineer would say:

The wagon and Faheem moved because Francis exerted a force on the wagon.

Pushes and Pulls- Grade K

Teacher action:

Read the first paragraph on page 7, and then pause to think out loud to model visualizing a pull. Talk about what you visualize and include a pulling hand motion in which you pull your hands toward your body. Ask students to gesture with their hands the movement of pulling a wagon.





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Read the book and mark

examples of forces you

find with sticky notes.



Activity 2

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Instructional supports

Sense-making strategies: <u>How</u> are students reading?

- Setting a purpose
- Visualizing
- Making predictions
- Asking questions
- Making inferences
- Synthesizing



Example Grade 1 Visualizing





What is **the same** about how you and a tortoise do what you need to do to survive?

- Plant and Animal Defenses-1st Grade
- Visualizing Structures
- ³⁵ Hands-on

Unit essentials reference cont. Student role Unit type eds of Plants and setting a scientist investigation systems explanation Animals purpose Pushes and Pulls inball engineer design visualizing explanation Sunlight and weathe making modeling cause and effect explanation Weather scientist Animal and Plant structure and function aquarium modeling visualizing explanation Defenses scientist 1 Light and Sound design cause and effect sking question explanation engineer making Spinning Earth sky scientist investigation patterns explanation prediction Plant and Animal setting a plant scientist investigation systems explanation Relationships DUIDOSE Properties of Materials making design 2 glue engineer design cause and effect predictions Changing scale, proportion, geologist modeling visualizing explanation Landforms and quantity setting a Balancing Forces scientist modeling stability and change explanation DUIDOSE Inheritance and vildlife biologist investigation patterns asking questions explanation Traits 3 Environments and biomimicry structure and making design explanation engineer function inference Weather and scientific meteorologist argumentation patterns visualizing Climate argument systems design Energy Conversion design systems synthesizing engineer argument structure and function conservation Vision and Light investigation asking questions explanation biologist 4 making scientific Earth's Features stability and change geologist argumentation information argument Waves, Energy, and marine scientist modeling natterns visualizing explanation Informa Patterns of Earth astronomer investigation explanation and Sky patterns visualizing scale, proportion, making Modeling Matter food scientist modeling explanation and quantity inferences 5 water resource The Earth System design systems synthesizing explanation engineer making Ecosystem Restoration scientific ecologist argumentation energy and matter inference and argument synthesizing

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Instructional supports Sense-making strategies

- 1 focal comprehension strategy per unit
- Used for reading and investigations

Questions?

Additional Support Differentiation- Reading Support

Additional supports

Lesson-specific differentiation

- Embedded supports
- Potential challenges
- Strategies for:
 - English Learners
 - Students who need more support
 - Students who need more challenge

Work Time: Differentiation K/1

- 1. Have paper & pencil ready.
- 2. Open the lesson indicated in the chart below.
- 3. Browse the book listed below
 - a. Open the slide deck and read the book and teacher notes below the slide.
- 4. Read the Differentiation section in the Lesson Brief.

Notes		
3		
S		

Grade K	Needs of Plants and Animals	Lesson 3.3	Handbook of Plants
Grade 1	Plant and Animal Defenses	Lesson 3.4	Parents and Offspring

Work Time: 10 minutes

Read the Differentiation Section of the lesson indicated below to answer the following questions:

1. What is the Sense-making Strategy for this unit?

- 2. What might be challenging about this text for some of your students?
- 3. How can you leverage and build upon the Amplify Science embedded supports to ensure all students in your class are accessing complex texts in Amplify Science?

Grade K	Needs of Plants and Animals	Lesson 3.3	Handbook of Plants
Grade 1	Plant and Animal Defenses	Lesson 3.4	Parents and Offspring

Additional supports **Accessibility features**

- Read-aloud function on digital books
- Read-aloud videos on Program Hub

Rodolfo Coria works with other scientists to study fossils.

By observing fossils, Coria and other scientists can make inferences about organisms from long ago. On the day he helped discover Argentinosaurus, Coria was out in the desert in Argentina, He was working with another scientist to dig up fossil bones.

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Additional supports K-1 reading approach

- Varied modes of reading:
 - Read-aloud
 - Shared reading
 - Partner reading
- Additional reading opportunities:
 - Co-constructed charts
 - Language Frames
 - Mini books
 - Classroom wall
 - Investigation Notebooks
 - Word rings (grade 1)

Explaining the connections among concepts in Amplify Science

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 - Write like a scientist.
 - **Critique** like a scientist.
 - Argue like a scientist.

Figuring out phenomena like a scientist. **Closing reflection**

Based on our work today, share:

Head: something you'll keep in mind

Heart: something you're feeling

Feet: something you're planning to do

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Additional resources and ongoing support

Customer Care

Seek information specific to enrollment and rosters, technical support, materials and kits, and teaching support, weekdays 7AM-10PM EST and weekends 10AM-6PM EST.

help@amplify.com

Amplify Chat

Program Hub

- Unit overview videos
- Planning tools
- Remote and hybrid learning resources.

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Amplify Science Program Hub		
Welcome Science Educato The Amplify Science Program Hub was created to p and advice for all stages of your implementation. Wa	rs! rovide you with resources, tools, ant a tour? Click <u>here</u> !	
Remote and hybrid learning resources Amplify Science@Home makes remote and hybrid learning easier.	Professional Learning Resources	
Additional Unit Materials Additional resources to complement the units you're teaching.		
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Thank You! End of Part 1

Presenter name: Jolene Hori

Workshop title:

K/1 Supporting All Learners with Complex Texts- Part 1 Modality:

Remote