Amplify Science

Navigating Program Essentials Grade TK

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.

Asking Questions

Participant Notebook

Materials

AmplifyScience

Participant Notebook

TK, Wondering About Noises in Trees Unit Internalization for Hybrid Learning



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



Plan for the day

- Introduction and framing
- Navigation and planning
- Teaching and learning in an Amplify Science lesson
- Instructional approach reflection
- Additional program resources
- Closing

Overarching goals

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

- Navigate the Amplify Science TK curriculum to understand resources at the unit and activity level.
- Describe what teaching and learning look like in Amplify Science.

Apply the program essentials to prepare to teach.



Introducing Amplify Science







Amplify Science

TK Scope and Sequence







Life Science: Wondering About Noises in Trees Student Role:Scientist Physical Science: Wondering About Buildings Student Role:Building Engineer

Earth Science: Wondering About Puddles Student Role:Hydrologist

Number of Lessons: 20 lessons per unit Time: 15 mins per lesson Instructional Time: 4 - 6 weeks per unit - Flexible Implementation

Materials in a TK Unit





Teacher's Guide Classroom Wall Materials AmplifyScience

The Noisy Tree

by Ashley Chase



Big Book

Card Sets

Amplify.

TK Curriculum Materials

- Printed Teacher's Guide
- Classroom Wall Materials
- **Big Book**
- Playlists of Songs/ Sounds
- Picture Cards
- Student CopyMasters
- Home Connections Copymasters
- Program Guide
- **Extension Opportunities**



investigate

I wonder why this beetle is on this flower. want to figure it out. My morn says scientists try to find evidence. They look and listen to

Amplify.

Providing a Foundation to the NGSS



- Phenomenon-based
- 3-dimensional
- Conceptual connections to K-5 NGSS



Amplify Science TK Units

Precursors & Linkages & between NGSS & CA PLFFs





Physical Science

Earth Science

Life Science



(from Scientific Inquiry Topic)

- Wondering
- Comparing and Looking for Patterns
- Describing what happened
- Collecting Evidence
- Talking, writing & drawing about what we know, read and learn about new discoveries

(from Scientific Inquiry Topic)

CCC's

(Science Topics)

Cause & Effect

(from MATH Topics)

- Patterns
- Classification



16

The TK Connection

Amplify Science TK

Students investigate & "figure out" a phenomena (What is making noises in trees?)

Students build increasingly complex explanations of the phenomena over the course of the unit through science, language development, literacy, math, movement, etc.

Students work to "solve a mystery" about trees (something familiar to kids)

CA Preschool Learning Foundations & Frameworks

Phenomena driven learning

driven learning

Centered around events in the natural or constructed world (phenomena)

CA NGSS

Coherent instruction across the curriculum

NGSS instruction aligned K-8

Learning relevant to students interest and community needs

Stress on human relationships with the natural world

Amplify.

*Sourced from CA Science Framework 2016, Chapter 2 - Curriculum Frameworks (CA Dept of Education) https://www.cde.ca.gov/ci/sc/cf/documents/scifwchapter2.pdf



Questions?



Phenomenon-based instruction





Next Generation Science Standards Phenomenon-based learning and teaching

A scientific phenomenon is an **observable event** that occurs in the universe that we can use science ideas to explain or predict.

Comparing topics and phenomena

Topic-based	Phenomenon-based
Ocean habitats	A sea turtle can survive in an ocean habitat where sharks live

Topic-based vs. Phenomenon-based Turn and Talk: What's the difference?

Topic-based	Phenomenon-based	
Animals in trees	Why are there noises coming from the tree in the park?	
All about buildings	How can we make a play city with stable buildings?	
Rocks and water	Why are there puddles in some places on the ground, but not in other places?	

Comparing topics and phenomena A shift in science instruction

from learning about

(like a student)



to figuring out

(like a scientist)

Previewing the unit Introducing the phenomenon

Amplify Science units are designed around complex phenomena that drive student learning through the unit.



Unit Experience



What are those noises coming from the tree?

AmplifyScience

The Noisy Tree

by Ashley Chase





Story of the Noisy Tree

I like to wonder about things. Then I try to figure out more about them. My mom says that makes me a **scientist**. Scientists try to figure things out.



I wonder why this beetle is on this flower. I want to figure it out. My mom says scientists try to find **evidence**. They look and listen to figure things out.

5

THIS BOOK IS THE PROPE STATE PROVINCE COUNTY PARISH SCHOOL DISTRICT OTHER		RTY OF: Book No Enter information in spaces to the left as instructed	
Voor		CONDITION	
ISSUED TO	Used	ISSUED	RETURNED
	••••••		

PUPILS to whom this textbook is issued must not write on any page or mark any part of it in any way, consumable textbooks excepted.

- Teachers should see that the pupil's name is clearly written in ink in the spaces above in every book issued.
- The following terms should be used in recording the condition of the book: New; Good; Fair; Poor; Bad.

The Noisy Tree

by Ashley Chase





Story of the Noisy Tree

I like to wonder about things. Then I try to figure out more about them. My mom says that makes me a **scientist**. Scientists try to figure things out.



I wonder why this beetle is on this flower. I want to figure it out. My mom says scientists try to find **evidence**. They look and listen to figure things out.

4



I looked very closely. I think I figured something out. The beetle is drinking from the flower. Its mouth has a part like a straw!

I listen closely, but I don't hear anything.



This is the biggest tree in the park. Its trunk is too big for my arms to go around. When I touch the bark, it feels rough.

I hear noises coming from way up in the tree. I'm going to close my eyes and listen very closely.



I hear a tap-tap-tapping noise from high in the tree. I hear crunchy noises, like crinkling paper.

I wonder why those noises are coming from the tree. What's going on up there?



I ask my mom about the noises in the tree. She says to find out more I should look around and keep listening. Using your **senses** like that is called observing.

I look up in the tree. I **observe** high branches and green leaves.

2

What ideas do you have about what is making the noises in the tree?



I hear a tap-tap-tapping noise from high in the tree. I hear crunchy noises, like crinkling paper.

I wonder why those noises are coming from the tree. What's going on up there?

Previewing the Unit

Driving Phenomenon

What are those noises coming from the tree?

Students take on the role of scientists in order to figure out noises coming from a tree. They investigate different animals that spend time in trees and figure out that the noises from the tree are likely coming from the animals. They think about why the tree is a good place for the animals to get what they need.

Framing our reflections Teacher lens and student lens

To synthesize our learning, we'll return to these questions throughout the session:

What is teaching like with Amplify Science?

What is learning like with Amplify Science?

Teaching	Learning



Plan for the day

- Introduction and framing
- Navigation and planning
- Teaching and learning in an Amplify Science lesson
- Instructional approach reflection
- Additional program resources
- Closing

Unit Structure

TRANSITIONAL KINDERGARTEN CURRICULUM STRUCTURE

Structure of a year of TK (includes three units)



Unit Architecture and Timing

Entire Unit 300 minutes (5 hours) **Introductory Activity** (15 minutes)

Exploration 1 (90 minutes)

Exploration 2 (90 minutes)

Exploration 3 (90 minutes)

Culminating Activity (15 minutes)

Exploration Timing





Kickoff

Explorations can be taught flexibly

- The four Activities in an Exploration can:
- be taught full-group, small-group, or in centers
- be taught in any order
- be supplemented by additional instruction



Navigation

In this section you will learn to:

- Explore resources to know how to plan for a unit
- Explore resources to know how to plan for a lesson




Resource Reference

Unit Resources

Lesson Level Resources

What resource are you excited to see?

Unit resources	
Unit overview	Brief description of the what, the why, and the how of the unit. It also gives an overview of the structure of the unit.
Instructional resources	Includes references, flexible implementation, description of routines, assessment opportunities, and supports.
Getting Ready to Teach	Snapshot of all the things you will need to prepare ahead of time that will save you time once you get going.
Materials and Prep	What materials you need and what is provided, as well as what you need to prepare before the start of the unit.
Preparation at a Glance	What you need to get ready broken down by activity as well as how long you can expect it to take.
Lesson-level resources	
Lesson Overview	Brief description of what the activity will cover, the how and the why
Materials and Prep	Detailed instructions on how to prepare for this specific activity.
Activity Notes	The what, the why, and the how, including all steps you will go through and recommended teacher talk.
Teacher support	Instructional suggestions including extension opportunities and home connections
Flexible Implementation	Notes on how to structure the activities in the classroom
Model set ups	Set-ups for investigation materials, shared writing and shared drawings
Formative assessments	How to perform the assessment and what to look for in student performance, one per exploration

TK Independent Exploration

Open your participant notebook to page 2.

Unit Overview

What is the unit about?

Planning for the Unit

Life Science Wondering About Noises in Trees

Unit Overview

In the Life Science: Wondering About Noises in Trees unit, students investigate the phenomenon of noises coming from a tree. They are challenged to solve the mystery of what's causing these noises and why. Students discover that many animals spend time in trees and that the noises from the tree are likely coming from animals. What are those animals doing in the tree to make so much noise? Students learn that animals can make noises in trees when they get food and make shelter for themselves or for their babies. For example, a woodpecker taps tree bark to get bugs to eat. Next, students investigate why the tree is a good place for the animals to get food and make shelter. They discover that trees have things that animals need, including food (fruit and nuts, seeds, leaves, and bugs), building materials, and places for shelter. In the course of solving the mystery of the noises from the tree, students are introduced to core ideas in life science, including needs of living things and dependence of animals on plants. The unit includes an emphasis on gathering evidence to construct and test students' ideas and sharing those ideas as scientists do. Students gather evidence for these ideas from a variety of sources: a book, photographs, sound recordings, and videos. They share their developing ideas through discussion, drawing, writing, movement, and use of the class Tree Model. Through the activities, students are exposed to the crosscutting concepts of Patterns and Cause and Effect. The context of noises from a tree provides a familiar and intriguing starting point for students to engage in doing science.

Structure of the Unit

Each unit in the Amplify Science Transitional Kindergarten (TK) curriculum begins with an Introductory Activity that introduces a phenomenon. The Introductory Activity is followed by a series of three Explorations—each Exploration is comprised of a Kickoff Discussion, four activities, and a Shared Drawing and Discussion—in which students investigate to collect evidence that will help them construct an understanding of the phenomenon. Each unit ends with a Culminating Activity that consolidates students' understanding. See the unit diagram on the next page for a visual representation of the flow of instructional activities.

Depending on your class schedule and configuration, each unit can be implemented in a variety of instructional formats. (For additional information about how to personalize a unit for your class, see Flexible Implementation in the Instructional Resources section on page 6.) Each instructional activity is designed to span approximately 15 minutes. Depending on the implementation options you choose, teaching the entire unit will take approximately 4–6 weeks.

Guided Unit Internalization Planner

Part 1: Unit-level internalization

Unit title: Wondering About Noises in Trees		
What is the phenomenon students are investigating in your unit?		
There are many noises coming from the tree.		
Exploration Questions:	Student challenge:	
 Why are so many noises coming from the tree? What are the animals doing in the tree that make so much noise? Why is the tree a good place for the animals to get food and make shelter? 	What's causing the noises and why?	
What science ideas do students need to figure out in order to explain the phenomenon?		
Students figure out that animals can make noises in trees when they get food and make shelter for themselves and their babies. Students discover that trees have things animals need, including food, building materials, and places for shelter.		
What evidence sources do students enage with across the unit?		
the unit big book, pictures and illustrations, mo and videos	dels, sound recordings,	

Page 41

Planning to Teach

Overview:

- Lesson Brief
- Students Learn
- Activities at a Glance
- Vocabulary

Exploration 1 Overview	
In this Exploration, students investigate Science Question 1: <i>Why are coming from the tree</i> ? Exploration 1 begins with the Kickoff Discussio listen to sound recordings of noises like those from the tree and shar in response to Science Question 1. Four activities help students gath trees and possible sources of noises from a tree. In Activity 1, studen	so many noises in in which students e their initial ideas er evidence about ts are introduced
ntroductory Activity Overview	students listen to each sound. In Activity 4, students e their observations.
his Introductory Activity introduces students to the <i>Life Science: Wondering About</i> <i>sizes in Trees</i> unit and sets the stage for the Explorations to follow. The teacher ads aloud the first few pages of <i>The Noisy Tree</i> , which begins the story of a young girl on works like a scientist as she observes nature in her park. She hears mysterious sizes from a tree and wonders what is going on. During the Read-Aloud, students are troduced to their role as scientists. After reading, students share their initial ideas about hat could be making the noises in the tree. The purpose of this Introductory Activity is introduce students to the unit phenomenon and to their role as scientists in order to otivate their learning throughout the unit.	the class summarizes pr students to use ten have a lot of
tudents learn Scientists wonder about things and try to figure out more about them. Scientists use their senses to figure things out.	tions.
ocabulary scientist	
	coming from the ation 1.
	standing of the nit.

Part 2: Exploration-level internalization Exploration 1 Why are so many noises coming from the tree? Question: What is the purpose of Exploration 1? What do students learn in Exploration 1? • Trees often have lots of animals in them. Animals The purpose of Exploration 1 is for students to use science practices and ideas about patterns to figure out make noises. • Trees have trunks, branches, and leaves. · Scientists ask questions and gather evidence to that trees often have a lot of animals in them and that answer their questions. . Scientists draw, write, and animals make noises talk to share their ideas.

PN Page 42

Planning to Teach

Materials and Preparation

Explore the Materials and Preparation section:

1. What types of cards will you need?

2. What flexible implementation suggestions are there for activity 1?

Materials and Preparation

Materials

For the Class

- The Noisy Tree
- Science Question 1: Why are so many noises coming from the tree?
- 3 vocabulary cards: evidence, observe, senses
- Tree Cards (24 cards)
- Language Frame Cards: Set 1 (11 cards)
- Science Notebook Cover copymaster
- Science Notebook Page copymaster
- 1 computer or other digital device*
- 2–4 sentence strips*
- 2 sheets of chart paper*
- 1 large cardboard box*
- 1 medium cardboard box*
- 1 small cardboard box*
- 3 (or more) cardboard tubes*
- box cutter or sharp scissors*
- paper cutter*
- stapler*
- tissue paper*
- pipe cleaners*
- colored markers*
- marker*
- masking tape*
- pocket chart or whiteboard with magnets*
- optional: 1 additional sheet of chart paper*

optional: Visual Directions Cards (8 cards)

For Each Student

- 1 set of crayons*
- 1 assembled Science Notebook

*teacher provided

Preparation

- Optional: Plan for flexible implementation. If you would like to use the flexible implementation option, refer to the teacher reference on pages 32–33 (Suggestions for Flexible Implementation: Exploration 1) to determine any adjustments you may need to make for planning and instruction. Activities 1, 2, and 4 can be implemented flexibly to incorporate a science center with an adult-led introduction and wrap-up. Activity 3 requires adult facilitation.
- Visual Directions Cards: Determine whether or not the Visual Directions Cards will be helpful if you choose to take advantage of the flexible implementation. This optional card set is provided as a Class Resource, located after the activities in Exploration 1. Make a copy of the card set (8 cards) and cut apart each card.

Exploring Materials

Let's take a look at some of the materials

Program Components and Features

Resources

AmplifyScience

Transitional Kindergarten (TK)

Program overview

Our approach

Content of the curriculum

Language and Rteracy

 A disciplinary literacy approach to learning Science

- Language and literacy in TK

Standards connections

Program developers

Program components and features

Access and equity

Resources

Program overview



Amplify Science TK is a suite of developmentally and pedagogically appropriate literacy-rich curriculum units designed to jump-start a lifelong love of science. Through a careful integration of the successful approaches found in the research-proven Amplify Science K–8 curriculum, the Amplify Science TK curriculum includes an emphasis on vocabulary and oral language skills essential for future

Support Amplify Help Center

1-800-823-1969

scihelp@amplify.com

Search Site ...

Planning to Teach: Lesson

Instructional Guide

- What
- 2. Why?
- 3. How? Step- by- step
- 4. Teacher Support

Activity 1 Activity 1: Getting to Know the Tree Model What? leaves to it. Why? students to the scientific practice of modeling.

Life Science Exploration 1

Students become familiar with the Tree Model by observing the model and making and adding

Interacting with the Tree Model helps students develop an understanding of the parts of a tree and prepares them to use the model in later Explorations. Discussing the Tree Model introduces

Teacher Support	
Instructional Suggestion	
Going Further: Embodying Tree Noises	is similar to
If you have additional time, you may want to invite pairs of students to work with the Tree	
Model to recreate the phenomenon introduced in <i>The Noisy Tree</i> . One student could use the	girl heard
Iree Model to recreate noises they read about in the book and heard in the sound recordings.	
nartners listen. After one nartner has had a turn embodying the noises, the two can switch	hare their
roles.	udents may
Instructional Suggestion	ach make a
Going Further: Thinking More About Models	of leaves
This activity engages students in the science and engineering practice of Developing and	
Using Models. Students' use of the Tree Model throughout the unit is authentic to one of the	in the second
ways scientists use models—to show their ideas. The Tree Model, like many scientific models,	er around a
is similar to the thing it represents in important ways and different in many other ways. While	pr ar cana a
explicit instruction on modeling is beyond the scope of this unit, there are opportunities for deeper discussion around modeling. For example, consider bringing in real leaves and having	Model is
students discuss the ways the leaves on the Tree Model are similar to and different from a real	th one
tree's leaves. Thinking about how models represent scientific ideas in this basic and concrete	the tree.
way prepares students to engage with more complex and abstract models in later grades.	

Framing our reflections Teacher lens and student lens

To synthesize our learning, we'll return to these questions throughout the session:

What is teaching like with Amplify Science?

What is learning like with Amplify Science?

Teaching	Learning



Questions?





Plan for the day

- Introduction and framing
- Navigation and planning
- Teaching and learning in an Amplify Science lesson
- Instructional approach reflection
- Additional program resources
- Closing

Model Lesson

Experiencing instruction as a student

During the model activity, you'll take on the role of a student.

However, we'll pause a few times to share insights about teaching the lesson.



Small Group Reflection Teacher lens and student lens

To synthesize our learning, we'll return to these questions throughout the session:

What is teaching like with Amplify Science?

What is learning like with Amplify Science?

Teaching	Learning



Break and Questions?





Plan for the day

- Introduction and framing
- Navigation and planning I
- Teaching and learning in an Amplify Science lesson
- Navigation and planning II
- Instructional approach reflection
- Additional program resources
- Closing

TK Instructional Approach



Find out about a phenomenon





Gather evidence to figure out science ideas Explain the phenomenon

Life Science: Wondering About Noises in Trees





Pg. 26-27

Exploration 2 What are the animals doing in the tree that makes so much noise?

Science Idea 2: Animals in trees can make noises when they get food and make shelter for themselves or their babies.

Exploration 2 What are the animals doing in the tree that makes so much noise?

The makes a
noise when it is



Amplify.

Exploration 3 Why is the tree a good place for the animals to get food and make shelter?

Science Idea 3: Trees are good places for animals to get food and make shelter because trees have things that animals need.

Exploration 3 Why is the tree a good place for the animals to get food and make shelter?





Tree Model

The model provides an opportunity for students to show their ideas throughout the unit. The base of the model consists of:

- Three stacked cardboard boxes with holes for a tree trunk
- Branches made of paper or cardboard tubes



Tree Model

Exploration 1



Exploration 2



Exploration 3



Culminating Activity

- Reflect on work as scientists
- Review learning throughout the unit
- Create a class book



Life Science: Wondering About Noises in Trees



Multimodal learning

Gathering evidence over multiple lessons



Do, Talk, Read, Write, Visualize

Evidence sources work together

Teacher tip: Every evidence source plays an important role in student learning. Be sure to teach every activity in order!





TK NoisyTree Unit Activity Audio & Video Links





Amplify Science TK Instructional Approach



Find out about a Mystery, a Phenomenon NGSS focus



Gather evidence to figure out science ideas California PLFF's & NGSS 3D Learning Explain the Mystery, the Phenomenon California PLFF Application to NGSS !

Developmental Considerations Turn and Talk

What did you notice during the unit experience that feels familiar to the way you already teach in your TK classroom?



Developmental Considerations

- Engaging, relatable context for learning
- Short activities
- Varied modalities
- Repeated routines
- Supportive teacher modeling and leading
- Experience and exposure to science



Questions?





Plan for the day

- Introduction and framing
- Navigation and planning
- Teaching and learning in an Amplify Science lesson
- Instructional approach reflection
- Additional program
 resources
- Closing

TK Program Overview Site

Resources

- Big Books
- TK Unit Read Aloud Videos
- Copymasters

Program Overview

Program Components

← → C	e/content/national/tk-resources/tk/
AmplifyScience Transitional Kindergarten (TK) Program overview Program developers Program components and features Access and equity Resources	 PROSENTITION FAQs Correlations DIG BOOKS Life Science (<i>The Noisy Tree</i>) read aloud Earth Science (<i>Puddles Almost Everywhere</i>) read aloud Physical Science (<i>How Engineers Make Buildings</i>) read aloud COPYMASTERS Life Science Copymasters Earth Science Copymasters Physical Science Copymasters

California TK Site

What Students Learn

Program Structure

How Teachers Teach



Resources

Collaborative Resources

Through working with real Amplify Science TK teachers, JoAnna, our TK expert, has put together some collaborative resources that connect to the unit!

Unit 1: Wondering about Noises in Trees

Resource	Description	
Audio & Video Playlist	Audio files and videos in the playlist format for Exploration Activity lessons on animal sounds and behaviors.	
Read Alouds	Read-Aloud links for Fiction & Non-Fiction related literature to the Noisy Tree Unit in a playlist format.	
Songs	"Tree" related songs, chants and poems in a playlist format for TK Unit 1 Wondering About Noises in Trees	
Digital Noisy Picture Cards	A folder of digital versions of the N receive in your kit to be used for re Note: if you have difficulty opening this I "incognito" window. Zip file will downloa files	
Leaf Templates Free Printable Templates & Coloring Pages -	Coloring pages related to content i <i>Trees</i> See, see, see, see, see, three birds are in a tree a number hand play Dany Rosevear Head Shoulder Knows and Teep for	
	Trees! 2242 WARR Way In Hinh in an Apple - Apple Son	
	13 United Song by The 13 Song Provide Song Song Song Song Song Song Song Song	
	Tree Song-Learn about Trees! Roots	

The Leaves On The Tree Are Falling Down - Songs For Kids
Planning Tools

• Unit Internalization Tools

• Resources for hybrid learning and remote learning

• Preparing to Teach Checklist

Part 1: Onit-level internalization						
Unit title:						
What is the phenomenon students are inve	estigating in your unit?					
Septoration Questions:			Student challenge:			
What science ideas do students need to	Exploratic	on Note Catch	er			
	FOCUS AREAS	Introductory Activity	Exploration #1	Exploration #2	Exploration #3	Culminating Activity
What evidence sources do students ena	Science Question					
	What will students learn? (objectives)					
	Key Vocabulary					
	Multiple Modalities (Do, Talk, Read, Draw/ Write, Visualize)					
	Assessments and/or Differentiation Opportunities					
	Other Noticings					

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

800-823-1969





Plan for the day

- Introduction and framing
- Navigation and planning I
- Teaching and learning in an Amplify Science lesson
- Navigation and planning II
- Instructional approach reflection
- Additional program resources
- Closing

Overarching goals

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

- Navigate the Amplify Science TK curriculum to understand resources at the unit and activity level.
- Describe what teaching and learning look like in Amplify Science.
- $\mathbf{\nabla}$ Apply the program essentials to prepare to teach.



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

Please provide feedback! surveymonkey.com/r/InitialAmplifySciPL

Presenter name:

XX

Workshop title:

Transitional Kindergarten Orientation

Modality:

Remote

