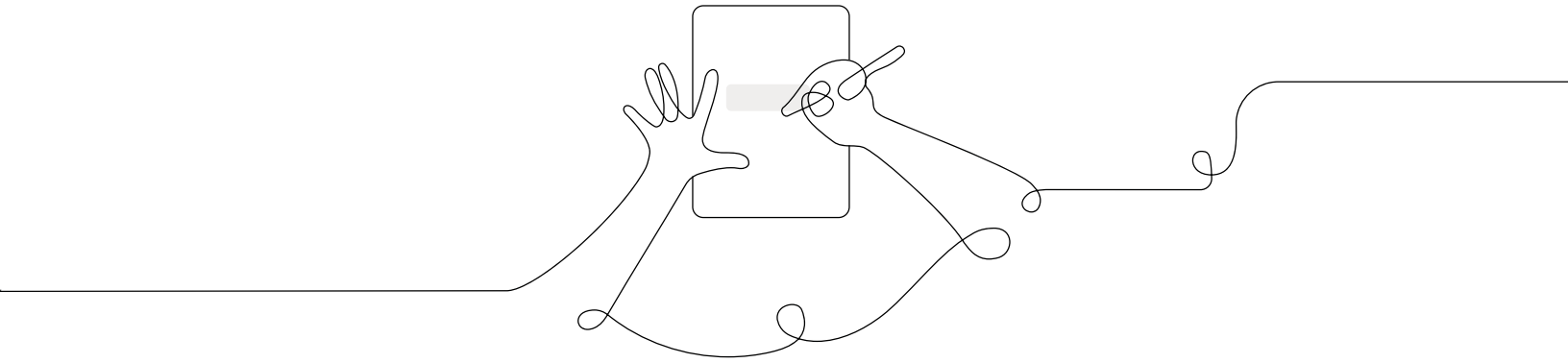
AmplifyScience

Participant Notebook

TK, Wondering About Puddles
Unit Internalization



Unit Resources guide

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

Unit Overview

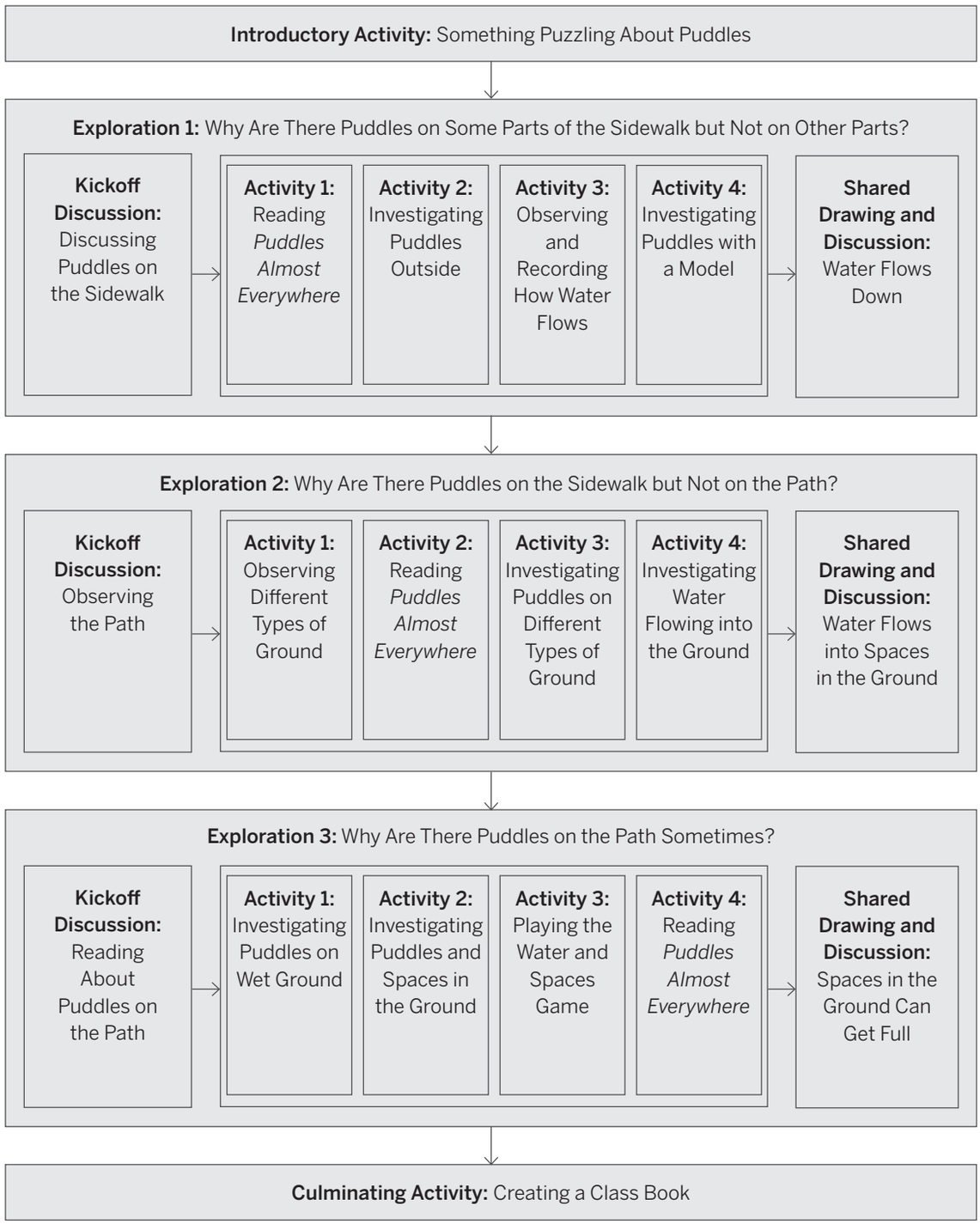
In the *Earth Science: Wondering About Puddles* unit, students investigate the phenomenon of puddles existing in some places but not in other places along a girl's walk to school. Students are challenged to solve the mystery of where and why puddles do and do not form. First, students figure out that water flows down as far as it can go, so puddles are likely to form at the bottom of slopes. Next, students investigate how certain types of ground can have puddles, while other types of ground do not have puddles. They figure out that some types of ground, such as gravel, have spaces for water to flow down into, which initially keeps puddles from forming. Meanwhile, other types of ground, such as pavement, do not have spaces for water to flow down into, so puddles form. Later in the unit, students figure out that more rain can cause water to fill the spaces in types of ground such as gravel, causing puddles to form in places in which they initially had not formed. In the course of solving these puddle mysteries, students are introduced to core ideas in Earth science and physical science, including types of earth materials and properties of materials, as well as the interaction of water and earth materials. The unit also includes an emphasis on planning and carrying out investigations, sharing ideas as scientists, and generating questions after learning new ideas. Students gather evidence for these ideas from a variety of sources: a book, pictures and illustrations, models, and indoor and outdoor hands-on investigations. Students share their developing ideas through discussion, drawing, and writing. Through the activities, students are exposed to the crosscutting concepts of *Cause and Effect* and *Scale, Proportion, and Quantity*. The context of puddles along a walk to school provides a familiar and puzzling starting point to inspire students' investigations both inside and outside the classroom.

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.

Earth Science: Wondering About Puddles



Guided Unit Internalization Planner

Part 1: Unit-level internalization

Unit title:

What is the phenomenon students are investigating in your unit?	
Exploration Questions:	Student challenge:
What science ideas do students need to figure out in order to explain the phenomenon?	
What evidence sources do students enage with across the unit?	

Part 2: Exploration-level internalization

Exploration 1 Question:	
What do students learn in Exploration 1?	What is the purpose of Exploration 1?

Exploration Note Catcher

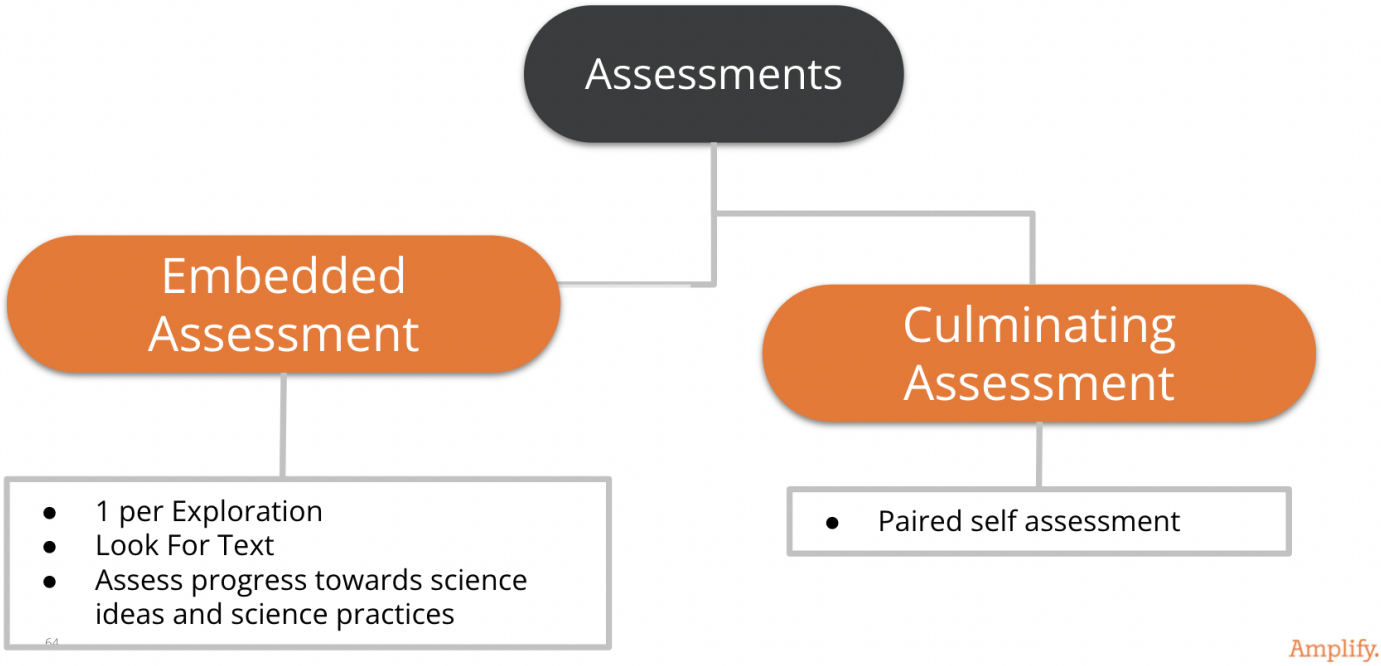
Unit Name:

Flexible Implementation Structure:

FOCUS AREAS	Introductory Activity	Exploration #1	Exploration #2	Exploration #3	Culminating Activity
Science Question					
What will students learn? (objectives)					
Key Vocabulary					
Multiple Modalities (Do, Talk, Read, Write, Visualize)					
Assessments and/or Differentiation Opportunities					
Other Noticings					

Assessments in this unit

TK: Wondering about Puddles



Assessments at a glance

Exploration	Assessment Information
Exploration 1, Activity 4	Students create and pour water over their Ground Models. They make predictions and observations about where puddles form and use language frames to explain their thinking. The teacher can formatively assess their understanding by listening in to student conversation.
Exploration 2, Activity 2	Students make and discuss observations about ground features in the science Big Book. Teachers can formatively assess students with explaining their thinking and making connections through listening in.
Exploration 3, Activity 2	Students use rain cups to model and explore formation of puddles on different ground surfaces. Teachers can listen in to hear students making observations and explaining their ideas about puddle formation.

Culminating Assessment

The purposes of this Culminating Activity are to review the main ideas of the unit and to highlight the process of how learning new ideas can lead scientists to ask new questions. Students engage with a reflection around *What Scientists Do* and complete an individual page to contribute to a Class Book.

Amplify Science TK ASSESSMENTS

UNIT:_____ NAME:_____ EXPLORATION: _____

What is the **Formative Assessment** in this Exploration?

Activity Title:

What are the students doing?

What is the teacher looking for?

What can you do if students aren't making the connections?

What are the **Embedded Assessment** opportunities in this Exploration?

Activity #	
Activity #	
Activity #	

UNIT CULMINATING ACTIVITY

Class Book - Individual Student Pages. What are the students doing?	What is the teacher looking for?

Notes