Amplify Science

Unit 3: *Wondering About Puddles* & Assessment - Part 1

Grade TK





Presented by: JoAnna Chocooj, MA Ed UCB, & Amplify Professional Learning Specialist

Amplify Science -Transitional Kindergarten



AmplifyScience





Intro: JoAnna Chocooj

- 30 year veteran teacher in SF Bay Area = large Urban district in Vallejo, CA
 I got this wonderful water/sand table for my classroom from <u>Donorschoose.org</u> -use in all 3 Amplify Science TK Units but especially Wondering About Puddles
 FUN FACT: I grew up in tiny desert town of Trona, CA, just 65 miles south of Death Valley. Very few puddles!

Welcome!

 Please share your own "Fun Fact" with us!



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PN-TK Unit 3+Assessment	Partici TK, Wondering	pant Notebook	UNIT: 1 2 3 Unit: Wondering About Puddles EXPLORATION: 1 2 3 Use this organizer to record notes on how to structure & scaffold the Activities in your classroom for each Exploration. Decide where/how you will set up the stations (part of LA or Math, or general Learning Centers? Part of Free Choice Centers?), ideas for visual arts & music, extension & home opportunities Activity 1: Big Book Reading (whole class read aloud - rug area?) & Evidence from Pictures (whole class &/or small groups, language arts) Water Table for pouring/mixing/measuring play.
G	Unit Internaliza	ation for Hybrid Learning	Related literature for expanding students' background knowledge of topic (see unit playlists) Related songs for expanding students' vocabulary & concept development.
Exploration Note Catcher Unit Name: Prexible Implementation Structure: FOCUS AREAS Introductory Exploration #1 Exploration Science Question	Exploration #3 Culminating Activity	TK Planning Notebook	Activity 3: Observing & Recording How Water Flows - Teacher Demonstration & Science Notebooks (start with shared writing? Whole class or small group writing center or language arts centers? Individual "Science Notebooks" &/or individual pages to insert into SN later?) Activity 4: Investigating Puddles with Model (hands-on partners, small groups?) followed with Language Frame practice &/or Science Notebook entry pages) Related videos of puddles & rain (see unit playlists) Activity 4: Investigating Puddles with Model (hands-on partners, small groups?) followed with Language Frame practice &/or Science Notebook entry pages)
What will students learn? (objectives)		TK Unit Exploration Note Catcher (pg 1)	TK Activities Note Catcher (pg 6)

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.
- Takeaways: What is learned here, leaves here! ;-)

Ice Breaker

- Have you tried out the unit yet?
- Have you been integrating science lessons into your other subjects or as stand alone time?
- What has been a highlight so far?

Overarching Goals

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

- Outline the upcoming lessons in TK Unit 3, Wondering About Puddles
- Understand & plan for assessments and next steps

TK Curriculum Materials



Date

Home Connection: Observing Puddles

Home Connection: Observing Puddles (con

Part 1: Unit-level Internalization

Explain the Amplify Science Instructional Approach.





Wondering About Puddles

Analyze the unit structure document.

 What do you anticipate students will know and be able to do at the end of each Exploration?







Build increasingly complex explanations

Progress Build: A unit-specific learning progression



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TK Resource Reference Sheet



Earth Science Wondering About Puddles

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 resour	rces	
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	

PN pg 2

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Unit Overview ^{TG pg 2} PN pg 3



Transitional Kindergarten

Earth Science Wondering About Puddles

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Teacher's Guide

Unit Overview

Planning for the Unit

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.

Earth Science

Wondering About Puddles

Guided Unit Internalization Planner

Part 1: Unit-level internalization

Unit title: Wondering About Puddles

What is the phenomenon students are investigating in your unit?

There are puddles in some places but not in others along a girl's walk to school.

Exploration Questions:Student challenge:1. Why are there puddles on some parts of the sidewalk - but not on other parts?Why are there puddles on the sidewalk - but not on the path?2. Why are there puddles on the sidewalk - but not on the path?Where and why puddles do and do not form?3. Why are there puddles on the path sometimes?Student challenge:

What science ideas do students need to figure out in order to explain the phenomenon?

Students figure out that water flows down as far as it can, so puddles are likely to form at the bottom of slopes. Then they figure out that some ground types (like gravel) have spaces for water to flow down into, which initially keeps puddles from forming. While other ground types (like pavement) do not have spaces so puddles form. Finally, students figure out that more rain can cause water to fill the spaces in ground like gravel, causing puddles to form in places where they initially had not formed.

What evidence sources do students enage with across the unit?

The unit big book, pictures and illustrations models, indoor and outdoor hands-on investigations, discussions, drawing and writing, unit videos and related literature...

Exploration Note Catcher:



Unit Name: Wondering About Puddles

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Flexible Implementation Structure:

PN pg 7 FOCUS AREAS Introductory Exploration #1 Exploration #2 **Exploration #3** Culminating Activity Activity **Science Question** Intro students to ?: Why are there puddles Why are there Why are there What new ideas and 1) Why are there puddles questions do I have on some parts of the puddles on the path puddles on the in some places, but not in sidewalk but not on sidewalk but not on sometimes? related to what we other places? learned about other parts? the path? 2) Their role as scientists. puddles? Water flows down as far as it can What will **Engineers** make go. A puddle can form at the students learn? things to solve bottom of a slope. (objectives) problems. Scientists ask questions and Engineers learn as gather evidence to answer their questions. Scientists plan before they work to solve they investigate. problems. Scientists talk, draw & write to share ideas **Key Vocabulary** Scientist Evidence Flow Investigate Slope Observe Talking, Reading, Activity 1: Reading Big Book Multiple Visualizing Read, Talk, Visualize Modalities (Do. Act. 2: Outdoor Puddle **TK Unit** Talk, Read, Write, Investigation - Do, Talk Visualize) Act. 3: Indoor Observation of Water Flow Model - Visualize, **NoteCatcher** Talk, Draw/Write Act. 4: Puddle Investigation using Ground Model and Language Frame - Do, Talk Observations opportunities Act. 4 Formative Assessment Assessments for Concepts of Print, for Opportunity (step 16) and/or & Culminating Act.: comfort levels with Differentiation Shared drawing & writing, & participation, & for verbal Opportunities self-evaluation conversations expression. **Other Noticings**

Progress Build: A unit-specific learning progression



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Progression of Wondering About Puddles



Gathering Evidence

Wondering About Puddles

Unit Science Question: Something Puzzling About Puddles

(where and why puddles do and do not form?)

Exploration 1 Question: *Why are there puddles on some parts of the sidewalk, but not on other parts?*



Students learn that water flows down as far as it can go; a puddle can form at the bottom of a slope.



Questions? Concerns? Aha's! This reminds me...



Part 2: Exploration-level Internalization

Introductory Activity

Something Puzzling about Puddles

The teacher reads aloud the first few pages of *Puddles Almost Everywhere*, which begins the story of a young girl who works like a scientist as she observes puddles on her walk to school. Students are introduced to their role as scientists. They also share their initial ideas about why there are puddles in some places but not in other places. The purpose of this Introductory Activity is to introduce students to the unit phenomenon and to their role as scientists in order to motivate their learning throughout the unit.

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Puddles Almost Everywhere

by Chloë Delafield and Ashley Chase



Students learn

Scientists wonder about things and try to figure out more about them.

Vocabulary

- observe
- scientist

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TG pg 18

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Transitional Kindergarten



Earth Science Wondering About Puddles

Teacher's Guide

Exploration 1 Overview

Overview

Earth Science

Exploration 1 Overview

In this Exploration, students investigate Science Question 1: Why are there puddles on some parts of the sidewalk but not on other parts? Exploration 1 begins with the Kickoff Discussion in which students are introduced to Science Question 1 and share their initial ideas in response to this question. Four activities help students gather evidence about why puddles form in some places but not in other places. In Activity 1, students examine different puddles in a reference section of *Puddles Almost Everywhere* and on the Puddle Cards. In Activity 2, students plan and conduct an outdoor investigation of water on pavement. In Activity 3, students observe demonstrations of water flowing and pooling when it cannot flow down any farther, and then they record observations in their Science Notebooks. In Activity 4, students create and pour water over models of the ground and then observe and discuss where puddles form in their models. Exploration 1 ends with the Shared Drawing and Discussion in which the class summarizes and applies what they have learned. The purpose of Exploration 1 is for students to use science practices and ideas about cause and effect to figure out that a puddle can form at the bottom of a slope because water flows down as far as it can go.

Students learn

- · Water flows down as far as it can go.
- · A puddle can form at the bottom of a slope.
- · Scientists ask questions and gather evidence to answer their questions.
- · Scientists plan before they investigate.
- · Scientists draw, write, and talk to share ideas.

Activities at a Glance

Kickoff Discussion: Discussing Puddles on the Sidewalk

The teacher introduces Science Question 1: Why are there puddles on some parts of the sidewalk but not on other parts? to motivate the activities students engage in throughout Exploration 1.

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PN pg 6

Part 2: Exploration-level internalization

Exploration 1 Question: Why are there puddles on some po	arts of the sidewalk but not on other parts?
What do students learn in Exploration 1?	What is the purpose of Exploration 1?
 Water flows down as far as it can go. A puddle can form at the bottom of a slope. Scientists ask questions & gather evidence to answer them. Scientists talk, draw and write to share ideas. 	The purpose of Exploration 1 is for students to use science practices and ideas about cause and effect to figure out that a puddle can form at the bottom of a slope because water flows down as far as it can go.

Exploration 1 Kickoff Discussion: Puddles Almost Everywhere

What? The class reviews what happened in the first section of *Puddles Almost Everywhere.* Students are introduced to Science Question 1 and discuss their initial ideas in response to this question, which deepens their connection to the unit phenomenon. It encourages them to wonder more about puddles, & discussing Science Question 1 models how scientists approach a investigating a problem.



Wondering about Puddles Classroom Wall

Wondering about Puddles

Science Question 1:

Why are there puddles on some parts of the sidewalk but not on other parts?





Vocabulary

scientist

observe

cal Science: Wandeirng About Buildings—Vecatulary—Exploration 1—AMPC222EEGOSTK D The Regents of the University of California, Al rights reserved.



evidence

Summary of Exploration 1



The teacher leads a Read-Aloud from the reference section of *Puddles Almost Everywhere*. Students observe and discuss the puddles in the book and on the Puddle Cards to build background knowledge about puddles, and they gather initial evidence about why there are puddles in some places but not in other places.

Activity 2: Investigating Puddles Outside

Students plan and conduct an outdoor investigation of water on pavement to gather evidence about why puddles form on some parts of pavement but not on other parts.

Activity 3: Observing and Recording How Water Flows

Students observe three demonstrations of flowing water to gather evidence that water flows down as far as it can go and pools when it cannot go down any farther. Students record observations in their Science Notebooks to express their developing understanding of this idea.

Activity 4: Investigating Puddles with a Model

Students create models of the ground and pour water over them. They then observe and discuss where puddles form in their models in order to gather evidence and make sense of how puddles form at the bottom of slopes.

Shared Drawing and Discussion: Water Flows Down

The class participates in a shared drawing and an accompanying discussion to consolidate and apply their understanding of Science Idea 1: *Water flows down as far as it can go.*



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Summary of Exploration 1

Activity 1: Reading Puddles Almost Everywhere

The teacher leads a Read-Aloud from the reference section of *Puddles Almost Everywhere*. Students observe and discuss the puddles in the book and on the Puddle Cards to build background knowledge about puddles, and they gather initial evidence about why there are puddles in some places but not in other places.

Activity 2: Investigating Puddles Outside

Students plan and conduct an outdoor investigation of water on pavement to gather evidence about why puddles form on some parts of pavement but not on other parts.

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LAUSD Schoology TK Group Folder, Unit 3, Slide-decks of Puddle Cards to project images for better student viewing.



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Activity 1: Puddles Almost Everywhere

The girl in the book wonders about puddles on her walk to school.

• We are TK scientists, and when scientists wonder about things, they ask questions.



Puddles really make you wonder....

Why are there puddles in some places but not in others?

What do you **observe** about the photo?

What do you wonder?



What do you **observe** about the photo?

What do you wonder?



What do you **observe** about the photo?

What do you wonder?



Earth Science: Wondering About Pustilies – Puddle Cands: Fuddle 4 – AMP022020.09-TK ID The Regents of the University of California .All rights reserved.

What do you **observe** about the photo?

What do you wonder?



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What do you **observe** about the photo?

What do you wonder?



What do you **observe** about the photo?

What do you wonder?



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Puddle Card 14

What do you **observe** about the photo?

What do you wonder?



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Activity 2: Investigating Puddles Outside

- Whole class, small groups, partners?
- Staging materials
- What's the weather like outside?

Flowing Water Demonstrations

In Activity 3, you will conduct a demonstration with the three setups shown below—a slanted rectangular container propped up on one side on a book or wooden block, a large transparent bowl, and a large upside-down non-transparent bowl placed on a tray. You will pour water near the highest part of each setup so students can observe how water flows down as far as it can go and then pools when it cannot go down any farther.

PN pg 54 TG pg 34 Activity 3: Observing & **Recording How Water Flows**

This is the word **flow**.

Flow means to move smoothly, the way

water moves downhill.

Recording: Science

Notebook pages

- Whole class
- Small groups
- Writing Center •
- Partners •
- Tub of related puddle images & graphics for student inspiration

Extension Activities TG pages 56-57



What One Teacher Did: Providing Materials for Students to Explore

One teacher led the demonstration with the slanted tray and then, instead of demonstrating with the bowls, provided materials for students to explore. The teacher distributed trays with small bowls, cups of water, and droppers. Students first practiced sucking water from the cup into the dropper and releasing it back into the cup. Then they explored what happened to water when they released drops of water over the bowls. The teacher encouraged students to try releasing drops of water over the bowls when the bowls were right-side up and when the bowls were upside down. The teacher asked students where the water flowed when it stopped flowing and what happened when it stopped flowing

Another teacher set up exploration stations outside. Students poured cups of water onto the materials at each station and observed what happened to the water. The teacher set up the following stations:

- Pool-noodle ramps: The teacher created ramps out of pool noodles by cutting the noodles in half, lengthwise, and propping them up by attaching one end to a table and placing the other end in a bucket. Students poured water at the top of the ramps.
- · Funnels and tubes: The teacher attached plastic funnels to one end of clear plastic tubes and placed the other end of the tubes in a bucket. Students held up the funnels and poured water into them
- · Bowls and rain cups: The teacher collected an assortment of large bowls and placed rain cups (created for Activity 4) near the bowls. Students held the rain cups over the bowls and poured water into the rain cups

The teacher circulated while students explored and asked them where the water flowed. when it stopped flowing, and what happened when it stopped flowing.

This is the word *model*.

Scientists make *models* to show their ideas.

A model is similar to the real thing but not exactly the same.

This is the tree model from "Noisy Trees"

How can we make a model of a puddle?





Framing the student investigation:

We can use this waxed paper to make our own model of the ground.

The waxed paper will be similar to the real ground outside, but not the same.



Vocabulary introduction:

This is the word <u>slope</u>. **<u>Slope</u>** means ground that is slanted so one part is higher than another part.



down the slope

Earth Science: Wondering About Puddles—Language Frame Cards: Set 1—Exploration 1 © The Regents of the University of California. All rights reserved.

Setting up the student investigation:



The water flows down the **slope**, just like I roll down the slope when I ride my scooter.



I wonder what water will do on the slopes of the wax paper?

Rain Cup Model

Where do you think the biggest puddles will form in your model?

Why do you think big puddles will form there?



Keep the Conversation & Water Flowing:

- Where did the water flow?
- Did the water ever flow uphill?
- When did the water stop flowing?
- What happened to the water when it stopped flowing?

the slope



This place has a puddle because water flowed to the bottom of the slope.



This place does not have a puddle because water flowed away from the top of the slope.



- Where do you see puddles?
- Why do you think they are where they are?

Link to Activity Demonstration to replay and discuss: https:/oceans-lakes-and-rivers-activity -for-kids/



Science Notebook

Draw what you observed.



down the slope

Earth Science: Wondering About Puddles—Language Frame Cards: Set 1—Exploration 1
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to the bottom of the slope

Earth Science: Wondering About Puddles—Language Frame Cards: Set 1—Exploration 1 © The Regents of the University of California. All rights reserved.

We have figured out that there are puddles on some parts of the sidewalk but not on other parts because water flows down as far as it can go.

The sidewalk has puddles in some places, but

The sidewalk has puddles in some places, but not in other places. I step in all the puddles on the sidewalk.



Where should we draw a puddle in this picture?



Shared Drawing & Writing

How did the water get to the puddle?

It flowed down the sidewalk. It flowed down the slope.



Shared Drawing & Writing



Shared Speaking & Writing

• This place has a puddle because water flowed

This place a puddle because water flowed	
has	to the bottom of the slope
does not have	away from the top of the slope
	down the slope

• This place does not have a puddle because water flowed _____.

Use the Language Frame to summarize what students have learned so far. Then add info to the drawing.

Science Question 1: Why are there puddles on some parts of the sidewalk but not on other parts?

 We observed that water always flowed down.
 When the water got to the bottom, it had nowhere else to go, so it gathered there.

• We can say that the water made a pool, or puddle, at the bottom when it could not flow down anymore.

Exploration 2 Kickoff Discussion

Questions?

When scientists answer one question, that often leads them to ask more questions.

What new questions do you have about puddles?

TG pg 92





Puddles really make you wonder....

Why are there puddles in some places but not in others?

- The girl in our story is wondering about the puddles she sees as she walks to school.
- We are TK Scientists. When scientist wonder about things, they ask questions about them.
- What did the girl see on the sidewalk? What did she see on the path?
- I think we may have figured out a new question to help the little girl with her puddle mystery!

Science Question 2: Why are there puddles on the sidewalk but not on the path?

Wondering About Puddles: Gathering Evidence



Water flows down into spaces in the ground. There are different types of ground, such as gravel, sand and soil. Some types of ground have spaces in them, others do not. If a type of ground does not have spaces, water cannot flow down into it, so the water forms puddles.

Wondering About Puddles: Gathering Evidence



If the spaces in the ground are full, more water cannot flow down into those spaces. Puddles can form on types of ground with underground spaces if those spaces become full.

Interdisciplinary Connections

How can you connect to...

- Reading
- Language Development
- Writing

TK Planning Notebook

- Math
- Social Studies
- Art
- Dramatic Play/Music/PE/Socio-Emotional

Activity 1: Big Book Reading (whole class read	Activity 2: Investigating Puddles Outside
aloud - rug area?) & Evidence from Pictures	(hands-on, small groups? Whole class with
(whole class &/or small groups, language arts)	partners?)
Related literature for expanding students'	Water Table for pouring/mixing/measuring play
background knowledge of topic (see unit	& practice.
playlists)	"Water Painting" - use large & small paint
Related songs for expanding students' vocabulary	brushes to paint with water outside on patio,
& concept development.	sidewalk, other pavement areas.
Activity 3: Observing & Recording How Water Flows - Teacher Demonstration & Science Notebooks (start with shared writing? Whole class or small group writing center or language arts centers? Individual "Science Notebooks" &/or individual pages to insert into SN later?) Related videos of puddles & rain (see unit playlists)	Activity 4: Investigating Puddles with Model (hands-on partners, small groups?) followed wit Language Frame practice &/or Science Noteboo entry pages) Water Table for pouring/mixing/measuring play & practice.

Amplify Science TK ACTIVITY Center Notes

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TK Unit 3 Puddles -Songs

13 videos · No views · Updated today

Public V

Classic and engaging songs & chants about puddles & rain to build vocabulary & have fun!





TK Unit 3: Thematic children's songs, rhymes & chants, and classic video clips integrated with Wondering About Puddles.



Jump in the Puddles. Great song for teachers and parents to get kids active

ndyRock - Learning Songs for Kids



Jumping in Muddy Puddles 🎵 Peppa Pig My First Album 10# Peppa Pig - Official Channel



My Favorite Things (w/ lyrics) - The Supremes



The Sound of Music (3/5) Movie CLIP - My Favorite Things (1965) HD



Singin' in the Rain (Full Song/Dance - '52) - Gene Kelly - Musical Romantic Comedies - 195 Movies umar Classic Movies



Rain Rain Go Away | Nursery Rhymes for Kids | ELF Learning, The Singing Walrus The Singing Walrus - English Songs For Kids



Singing in the Rain Song J Original Kids Version J Kid Songs by The Learning Station & **Dream English** eLearningStation - Kids Songs and Nursery Rhymes



Weather Song for kids | "Sun, Rain, Wind, and Snow" | The Singing Walrus

The Singing Walrus - English Songs For Kids



La Canción 💢 La Cancion del Tiempo por Dr Jean (Espanol)



Jean Feldman - Topic



Jump In The Puddle" Feat. Jason Statham

cellent englishteachers



Puddle Jump Song irst Roots Music Studio



The Scientific Method | Songs For Kids | Sing Along | GoNoodle

oNoodle | Get Moving



This wonderful art project helps students examine what makes up different kinds of ground materials when they're dry. Once they've felt their different textures with their hands, looked at them with magnifying lenses, and created their art project, it's ready to put into cups See: Exploration 2, Especially Activities 1 & 4. Then just add water!

Rock: a solid made of different minerals Gravel made of small pieces of rock Sand: made of lots of tiny pieces of rocks and shells Soil: found under grass Wood chips: little pieces of wood from trees



This creative project makes a hands-on demonstration of puddle formation illustrating **unit vocabulary** of "*rain*," "*puddle*," "*slope*" and "**soil.**" **DIY Edible Soil Layers** - to accompany Unit 3, Exploration 2, especially Activity 4



- Let's see if we can figure out if the pieces are the same size or are they different sizes?
- Are there spaces between the pieces?
- What could fill up the spaces?

- Discuss: which pieces are bigger and which ones are smaller?
- Put big ones in first!
- Then gradually add smaller ones and GENTLY SHAKE CUP.
- The pieces should filter down.
- Then add the next smaller ingredients.
- What do we find out about the smallest sprinkles?
- Where do they go?
- We know that water always flows down as far as it can go. Do you think it will be more like the gummy worms? Or more like the sprinkles?



Art project where students explore different ingredients in sand. Use magnifying lenses for them to closely examine different particles, & then add water to see what happens (do puddles form?) before creating their picture. It accompanied a book from the pilot teacher's language arts curriculum, but it would complement any desert life story. Tie in with Unit desert "puddle pictures"

The same kind of "sand analysis" could be done creating a beach scene.

Integrated, thematic curriculum: how can we tie-in our science unit into language arts, art, cooking, music, pe?



After observing what happens to water when it's poured into the cups of sand/sandbox, Exploration 2, make this fun art project using Christmas tree ball ornaments, creates a beach scene with layers of sand and tiny shells.



Questions? Concerns? Aha's! This reminds me...



How are you feeling so far?

Overarching Goals

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

- Outline the upcoming lessons in TK Unit 3, Wondering About Puddles
- Understand & plan for assessments and next steps



l'm still not sure how this all works...



I understand it in general, but I'll need to dig deeper....



I'm ready to teach someone else about boo this!

Stretch Break

<u>5 minute timer</u> - or play some songs from playlist! <u>TK Unit 3 Puddles - Songs</u>



TK Unit 3 Puddles -Songs 13 videos • No views • Updated today Public ~ ズ & ...

Classic and engaging songs & chants about puddles & rain to build vocabulary & have fun!



Amplify Science

Unit 3: *Wondering About Puddles* & Assessment - Part 2

Grade TK

<mark>Fill in district and</mark> date



Welcome Back! How are you feeling so far? Overarching Goals

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

- Outline the upcoming lessons in TK Unit 3, Wondering About Puddles
- Understand & plan for assessments and next steps



I'm still not sure _how this all _____ works...



I understand it in general, but I'll need to dig deeper....



I'm ready to teach someone else about boo this!

Part 3: TK UNITs' Assessment Opportunities


Assessments Assessment in TK **Opportunities** Formative & **End-of Unit Embedded Culminating-Summative Assessments Assessments 1 per Exploration** (Unit 3: 1.4, 2.2, 3.2) Look for: Ability to answer Exploration Science Look for : Ο Questions Students ability to reflect on 0 Express understanding of Science Ideas and apply their learning 0

Demonstrate Science Practices \cap

Assessment System - Unit 3 Grade TK Key assessment types

- Embedded Assessment opportunities throughout the Activities (lessons)
- One Formative Assessment opportunity in each Exploration to assess students' progress toward answering the science questions & understanding the science ideas
- At end of 3rd Exploration, the Unit Culminating Activity has a paired **Self-Assessment** where students reflect on new ideas they have developed & encourages ownership of their learning.
- Students also create their own individual
 Student Page for the final classbook project of the Culminating Activity, where they draw & write (labels or dictation) their important takeaways of the Unit. Formative again, & also can be considered Summative.

Formative Assessments

Exploration One: Activity 4 (1.4)

Students create and pour water over their Ground Models. They make predictions & observations about where puddles form, and use language frames to explain their thinking. Teacher listens for their understanding & their development of the science idea.

Exploration Two: Activity 2 (2.2)

Students make and discuss observations about ground features in science big book. Teacher listens for students referring specific features of the pictures & forming connections between them to explain their thinking.

Exploration Three: Activity 2 (3.2)

Students use rain cups to model what happens to different types of ground & the puddles that form; & then record & discuss observations. Teacher listens for students' explanation of observations for showing understanding of the science idea.

Exploration 1:





Exploration 1: Why Are There Puddles on Some Parts of the Sidewalk but Not on Other Parts?

Science Question 1:

Why are there puddles on some parts of the sidewalk but not on other parts?

Science Question 2:

Why are their puddles on the sidewalk but not on the path?

Kickoff Activity 2: Activity 3: Activity 4: Activity 1: Shared Discussion: Reading Investigating Observing Investigating Drawing and Discussing Puddles Puddles and Puddles with Discussion: Puddles on Outside Water Flows Almost Recording a Model the Sidewalk Everywhere How Water Down Flows Exploration 2: Why Are There Puddles on the Sidewalk but Not on the Path?

Kickoff Discussion: Observing the Path →	Activity 1: Observing Different Types of Ground	Activity 2: Reading Puddles Almost Everywhere	Activity 3: Investigating Puddles on Different Types of Ground	Activity 4: Investigating Water Flowing into the Ground	Shared Drawing and Discussion: Water Flows into Spaces in the Ground
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Puddles Almost Everywhere

by Chloë Delafield and Ashley Chase



Exploration 3: Places have puddles when the spaces in their ground materials become full of water.

Exploration 2: Water flows down into spaces in the ground. Puddles can form on a surface when there are no spaces in the ground for the water to flow into.

Exploration 1: There are different reasons why puddles may form in some areas but not in others. Water flows down as far as it can go. A puddle can form at the bottom of a slope.

Science Question 3:

Why are there puddles on the path sometimes?

UNIT: #1 #2 #3 NAME:	EXPLORATION: #1 #2 # 3
What is the Formative Assessment i	n 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 co	onnections?
JNIT CULMINATING ACTIVITY = SU	MMATIVE ASSESSMENT OPPORTUNIT
Class Book - Individual Student Pages. What are the students doing?	What is the teacher looking for?
Student Conversations/Self-Assessments What are the students doing?	What is the teacher looking for?
What are the Embedded Asse	ssment opportunities in this Exploration?
Activity #	
Activity #	
Activity #	

Collaboration/Planning:

Assessments

TK Planning Notebook

& PN pg 57

Questions to answer:

-

- What is the formative assessment in this Exploration?
- What assessment opportunities are embedded in the Activity?
- What evidence can I collect of student progress and understanding?
- How could I use this information to inform my instruction?

Wondering About Puddles: Gathering Evidence



Students learn that water flows down as far as it can go; a puddle can form at the bottom of a slope.

Formative Assessment

Exploration 1 Activity 4

Look for

- Students who are developing an understanding of Science Idea 1 *Water flows down as far as it can go -- will point to puddles in the lowest areas of their models.*
- Students will be able to explain how water flows down to those places

What types of back pocket questions might you use to elicit this from students? What do you see puddles forming in the photos? Are they at the top of the slopes or the bottom of the slopes? Why do you think the water does that?

More About Puddles

Puddles are places where water has pooled on the ground. There can be puddles almost anywhere. Puddles are often at the bottom of a **slope**.



Let's take a look at your rain model again> Where does the water flow to on the wax paper when you make it rain?

TG pg 61 PN pg 41

Formative Assessment

Partner Discussions: Shared-Listening Routines EMBEDDED: Exploration 1, Activity 1, steps #9-10

- **Look for** how students **communicate** their ideas with their partners. Consider the following:
- Do students clearly share their ideas with their partners?
- Do students refer to specific features they observe in the pictures?
- Do students provide a rationale for their ideas?

Students who are **developing facility with communicating** *like a scientist will clearly share their ideas, refer to specific features of the pictures, and/or provide a rationale* for their thinking.



Water always flows down as far as it can go; so a puddle may form at the bottom of a slope.

Formative Assessment - tracking data

Partner Discussions: Shared-Listening Routines Embedded: Exploration 1, Activity 1, steps #9-10

Shared Listening: What do you observe in the puddle pictures? Where are the puddles? Where aren't there any puddles?

Look for how students **communicate** their ideas with their partners. Consider the following:

Do students clearly share their ideas with their partners?
Do students refer to specific features they observe in the pictures?

• Do students provide a rationale for their ideas? *Students who are developing facility with communicating like a scientist will clearly share their ideas, refer to specific features of the pictures, and/or provide a rationale* for their *thinking.*

What might you do to draw students' attention to details that they haven't noticed yet?

Grade 2: Plant and Animal Relationships Lesson 2.1: Activity 4 Debriefing Plant Parts (OTF)

Look for 1: A plant is a system made up of different parts (leaves, stems, roots). Look for 2: Each plant part has a unique role so that the plan can live and grow.

Student Name	Look for 1	Look for 2	Notes
Jennifer		X	Named roots as the only part that had a role in keeping the plant alive
Michael			
Trent	X	X	Didn't identify a plant as a system w/parts
Adelina			
Wanda		X	Didn't identify a plant as a system w/parts
Jonathan			
William			
Zena		X	Didn't identify a plant as a system w/parts
Chrisitne			
Dorothy	X	X	Didn't identify a plant as a system w/parts
Laura		X	Didn't describe parts as having unique roles
Shawn			
Anthony			
Tristian	X	X	Didn't identify a plant as a system w/parts

Language Frames Build Unit 1

Language Frame 2

On one or two sentence strips, write the language frame shown below. Place the

Language Frame 1

bat

On one or two sentence strips, write the language frame s frame in a pocket chart or attach it to a whiteboard with m pocket chart beneath the language frame. Make sure the are not revealed to students until you discuss them in Acti



monkey



On one or two sentence strips, write the language frame shown below. Place the language frame in a pocket chart or attach it to a whiteboard with magnets. Place the cards in the pocket chart beneath the language frame. Make sure the cards are turned over so they are not revealed to students until you discuss them in Activity 3.



Language Frames Build Unit 3

Language Frame 3

has

Language Frame 1

On one or two sentence strips, write the language frame show frame in a pocket chart or attach it to a whiteboard with mag pocket chart beneath the language frame as shown. Make su so they are not revealed to students until you discuss them in



On one or two sentence strips, write the language frame sho frame in a pocket chart or attach it to a whiteboard with may pocket chart beneath the language frame as shown. Make s so they are not revealed to students until you discuss them

a puddle because the spo This place _ are ____







grave!



Language Frame 2

On one or two sentence strips, write the language frame shown below. Place the language frame in a pocket chart or attach it to a whiteboard with magnets. Place the cards in the pocket chart beneath the language frame as shown. Make sure the cards are turned over so they are not revealed to students until you discuss them in Activity 4.





Look for: how might you use the Language Frames and Puddle Model Investigations as scaffolds to assess student learning across the Unit?

SDaces

Unit 1 Shared Drawing & Writing Build - Exploration 1

Science Question 1: Why are so many noises coming from the tree?





Science Idea 1:

Trees often have lots of animals in them. Animals make noises.

Unit 3 Shared Drawing & Writing Build - Exploration 1



<u>Science Idea 1</u>: Water flows down. It flows as far as it can go; so a puddle can form at the bottom of a slope.

Wondering About Puddles: Gathering Evidence



Water flows down into spaces in the ground. There are different types of ground, such as gravel, sand and soil. Some types of ground have spaces in them, others do not. If a type of ground does not have spaces, water cannot flow down into it, so the water forms puddles.

TG pg 102 Step 10

Formative Assessment Exploration 2 Activity 2

Shared-Listening Routine: Why are there puddles on the sidewalk but not on the path?

Look for students who relate the idea of spaces in the ground to whether or not a puddle forms on top of the ground.

Students are *not* expected to understand how spaces allow water to flow down into the ground, inhibiting puddles from forming. However, students may be starting to formulate a **connection between** the <u>type of ground</u> and <u>puddle formation</u>.

A useful analogy for students might be *what happens* to the milk when we pour it into the cereal in our bowls?



The ground next to the sidewalk has grass. I don't see any puddles on the grass.

There is a gravel path to the door of my school. I don't see any puddles on the gravel.

Students learn that some types of ground are made of pieces with spaces between them, other types of ground are not.

Unit 1 Shared Drawing & Writing Build - Exploration 2

Science Question 2: What are the animals doing in the tree that makes so much noise?



The

_ makes a <u>crunchy</u>

```
noise when it is getting leaves
```

```
to make a nest for shelter.
```



noise when it is getting food.

There is a woodpecker in the tree.

The woodpecker makes a tapping noise when it is getting food

There is a squirrel in the tree.

The squirrel makes a crunchy noise when it is getting leaves to make a nest for shelter.



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

Unit 3 Shared Drawing & Writing Build - Exploration 2



of ground doesn't have spaces, water can't flow down into it, so the water forms puddles.

Wondering About Puddles: Gathering Evidence



If the spaces in the ground are full, more water cannot flow down into those spaces. Puddles can form on top of different types of ground with spaces if the underground spaces become full.

Formative Assessment

Exploration 3 Activity 2

Shared-Listening Routine:

Why are there puddles on the path sometimes but not other times?

Look for

- Students who make the connection between the **type of ground material and puddle formation**.
- Students who relate the idea of spaces in the ground to whether or not a puddle forms on top of the ground.

What types of back pocket questions might you use to elicit this from students? What do you see on pages 10 & 11? How are the two ground surfaces different from each other?



In the playaround, the top of the swing is wet,

but there are no puddles on the wood chips.



TG pg 150 Step 16

There's a part of the blacktop at school that always has a big puddle when it rains. All the kids like to play there.



clay

Remember our ground surface materials? What happened to the water in che cups with the different materials? Did it flow in the same way? What could make it behave differently?

Formative Assessment - Water & Spaces Game

Partner/Class Discussions: Shared-Listening Routines <u>EMBEDDED</u>: Exploration 3, Activity 3, steps #4, 7-8

Look for how students **communicate** their ideas with their partners. Consider the following:

- Do students clearly share their ideas with their partners?
- Do students refer to specific features they observe in the pictures?
- Do students provide a rationale for their ideas?

Science Practices: Games as Models

Students who are **developing facility with communicating like a scientist will clearly share their ideas about** <u>Cause</u> <u>& Effect</u> and/or provide a rationale for their thinking.



TG Page 152

If the spaces in the ground are full, more water cannot flow down into those spaces. Puddles can form on types of ground with spaces if those spaces become full.

Unit 1 Shared Drawing & Writing Build - Exploration 3

Science Question 3:

Why is the tree a good place for the animals

to get food and make shelter?



There is a woodpecker in the tree.

The woodpecker makes a tapping noise when it is getting food

The woodpecker is getting food in the tree because the tree has bugs. crunc

There is a squirrel in the tree.

The squirrel makes a crunchy noise when it is getting leaves to make a nest for shelter.

The squirrel is in the tree because the tree has leaves.

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

Unit 3 Shared Drawing & Writing Build - Exploration 3



of ground doesn't have spaces, water can't flow down into it, so the water forms puddles.

Progression of Science Concepts in *Wondering About Puddles*

Exploration 3: Places have puddles when the spaces in their ground materials become full of water.

Exploration 2: Water flows down into spaces in the ground. Puddles can form on a surface when there are no spaces in the ground for the water to flow into.

Exploration 1: There are different reasons why puddles may form in some areas but not in others. Water flows down as far as it can go. A puddle can form at the bottom of a slope.

Prior knowledge

Deep, causal understanding

Culminating Activities - Summative Assessments

- Self-Reflection Student Conversations:
 - Work as Scientists
 - Unit Science Content
- Optional: Home Connection Minibooks (do in class &/or @ home, to share with families
- Classbook: Drawing & writing <u>Wondering About Puddles</u> classbook
 - Individual Student pages





TK Program Overview Website

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my.amplify.com/programguide/content/national/tk-resources/tk/

AmplifyScience

Transitional Kindergarten (TK)

Program overview

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Program developers

Program components and features

Access and equity

Resources



- Life Science Copymasters
- Earth Science Copymasters Earth Science Copy Masters Link
- Physical Science Copymasters

https://my.amplify.com/programguide/content/national/tk-resources/tk/ 99

Amplify Science CALIFORNIA

The Noisy Tree

Classroom resources for instruction



Printed Teacher's Guide

Our unit-specific Teacher's Guides are chock full of helpful resources, including scientific background knowledge, planning information and resources, detailed lesson plans, tips for delivering instruction differentiation strategies, additional classroom resources, and copymasters.

Big Books

Big Books contain vivid photographs and are used to introduce topics, facilitate group discussions, and support students' firsthand investigations. Each Big Book is an integral part of instruction and is used multiple times for multiple purposes across a unit.

Science Question 1: Why are so many noises coming from the tree?

AS CA Review TK

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Science Questions

Each unit includes three printed Science Question cards, one for each Exploration of the unit. The cards can be posted on classroom walls and support the class as they are introduced to and revisit the focus of their investigations over the course of an Exploration and, ultimately, the unit.

Teacher's Guide

Big Book

Amplify Science TK Program Hub Resources

Hub

Amplify Science TK Resources

Accessing Digital Books and Read Alouds

- 1. Go to learning.amplify.com
- 2. Click "Log in with Amplify"
 - a. Username: programhubTK@tryamplify.net
 - b. Password: Amplify Number1
- 3. Use the Global Navigation Bar to open the Science Program Hub
- 4. From the Program Hub> Open Additional Unit Resources
- 5. Click on Transitional Kindergarten
- 6. Explore the Read- Aloud videos and Digital Big Books

	Transitional Kindergarten 👻			
		Read-Aloud Videos Digita	I Big Books	
Welcome to Amplify.	Hello TK Teacher Program programhubtk@tryamplify.net	Digital Big Books		
G Log In with Google	Log Out Go To My Account 🔹	The Noisy Tree 🛛 🖸	How Engineers	Puddles Almost
C Log In with Clever	Tools	Digital Big Book	Make Buildings Digital Big Book	Everywhere Digi Big Book
A. Log in with Amplify	Additional Resources			
Scan QR Code	Science Program Help			

AmplifyScienceProgramHub

HELP CENTER

mplify Science Program Hub -> Additional Unit Materials -> Transitional Kindergarten

Digital PAGE-TURNER PDFs of unit big books that can be projected for lesson focus on images, vocabulary, etc.

learning.amplify.com/

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(1) TK TEACHER PROGRAM HUB

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Q Search

Collaborative Resources

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

If you find new books or songs to use with the unit, please email suggestions to jchocooj@amplify.com so she can add them to our collaborative playlists.

Resource	Description				
Read Alouds	Read-Aloud links for Fiction & Non-Fiction related literature to the Wondering about Puddles Unit.				
<u>Songs</u>	A playlist of songs that have connections to the themes in <i>Wondering</i> about Puddles.				
<u>Puddle Activity Videos</u> Water Activity <u>Video</u>	A playlist of videos involving activity that connects to Exp	A playlist of videos involving activities in and around puddles. Video activity that connects to Exploration 1, Activity 4.			
Art Project Examples	ldeas for related art projects.				
PLAYALL PLAYALL TK Unit 3 PUDDLES - Read Alouds 22 videos • 90 views • Updated today Public ~ >> >> >> TK mplify Science Unit 3: "Wondering About Puddies" Unit Read-Alouds of related fiction 8 non-fiction liferature and songs to download & share with your students.	TK Unit 3 Puddles - Songs 13 videos • No views • Updated today Public ~ > > Classic and engaging songs & chants about puddles & rain to build vocabulary & have fun!	PLAY ALL TK Unit 3 Puddles Activity Puddles & Rain Videos 11 videos · 54 views · Last updated on J 2021 Public \checkmark \Rightarrow \Rightarrow Rain and Puddle video links for Amplify Science TK Unit 3 "Wondering About Puddles" Exploration Activity lessons.	uli se uli se Lio Refer Construction Refer Construction Construct		

Collaborative Resources

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

If you find new books or songs to use with the unit, please email suggestions to <u>jchocooj@amplify.com</u> so she can add them to our collaborative playlists.

Unit 1: https://docs.google.com/document/d/1Jvrq-h18Np_Xo Aby0IRwlgUUxY5dELo1w0KpRVuN39c/edit

Unit 2:

https://docs.google.com/document/d/1RNt0q-YytXeFt 8NZwAQe07HUFKCPPTBXwm6VknxKjnE/edit

Unit 3 https://docs.google.com/document/d/1nJfKRkySydT9S PbtuQHG9KR7kplQjm4gvX2UxFJkNtY/edit

Resource	Description	Description			
Read Alouds	Read-Aloud links for Fiction & Non-Fiction related literature to the Wondering about Puddles Unit.				
Songs	A playlist of songs that have connections to the themes in <i>Wondering</i> about Puddles.				
<u>Puddle Activity Videos</u> Water Activity <u>Video</u>	A playlist of videos involving activities in and around puddles. Video activity that connects to Exploration 1, Activity 4.				
Art Project Examples	Ideas for related art projects.				
PUDDLES PLAYALL PLAYALL TK Unit 3 PUDDLES - Read Alouds 22 videos - 90 views - Updated today Public > >>	TK Unit 3 Puddles - Songs 13 videos - No views - Updated today Public > > > A - Classic and engaging songs & chants about puddles & rain to build vocabulary & have fun!	PLAY ALL TK Unit 3 Puddles Activity Puddles & Rain Videos 11 videos · 54 views · Last updated on J 2021 Public \checkmark \overleftrightarrow \overleftrightarrow Rain and Puddle video links for Amplify Science TK Unit 3 "Wondering About Puddles" Exploration Activity lessons.	Juir se		

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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Thank you for your feedback!

Session: TK Unit 3 & Assessment

Presenter: JoAnna Chocooj





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

