

**Q405: Saturday Science
Lesson Plan 2**

Lesson Topic: Puddles

Grade level(s): K-1

Instructor Names: _____

Desired Results	
Overarching Focus Question for the Session (<i>the phenomenon being explored across the 3-weeks</i>) <ul style="list-style-type: none">• How do puddles change?	
Central Focus/Topic for today: Students will understand: <ul style="list-style-type: none">• Puddles disappear over time• Puddles disappear more quickly in some instances Therefore, the guiding question for today's learning is: <ul style="list-style-type: none">• How do puddles change based on their environment?	Relationship that this central focus has to the overarching big idea/question for the unit <ul style="list-style-type: none">• The central focus will allow students to build upon their knowledge base from last week and apply what they learned. The students now know where puddles come from and how they form, so now they will be able to explore how they change over time. This will set them up for the final lesson where they will learn what happens when 'puddles disappear'.
Student objectives (outcomes): <i>(Remember, this is like the performance expectation statement in the NGSS, so you need to be incorporating Science Practice in this/these statement(s).</i> Students will be able to: <ul style="list-style-type: none">• Plan and carry out an investigation on what type of soil absorbs water the quickest.• Develop and use models to show where water goes when puddles disappear.	
Timeline of Activities for the Day	

**Provide a breakdown of how long each activity will take, who will lead the segments of the activities, when breaks will occur or other transition points, etc.*

Identify by **highlighting in blue the portion of the lesson you team wants video-recorded each week. This should be ~45 mins*

Inside

9:30-9:45: Review expectations (chart we made Week 1).

9:45-10: Review what we did in Week 1.

10:00-10:15: Check water jars. Have the students make observations of what happened to the jars over the week.

10:15-10:30: Brain break activity (name game or Go Noodle).

10:30-10:40: Bathroom break.

Outside --

10:45-10:50: Split up into small groups. Each teacher takes 3-4 kids.

10:50-11:15: Each small group gets 4 cups (one with humus, one with gravel, one with clay, one with cement). The teachers will assist the students when pouring the four different materials into the cups.

Inside --

11:15-11:30: Conclusion and final observations

11:30-12:00: Snack/bathroom break

Learning Plan (First three E's of the 5E model)

Any of these phases can be repeated should you have more than one activity to describe OR a complex activity with multiple iterations of some phases.

ENGAGE -

- We will start with our lesson by asking students what they remember about last week.
We can ask:
 - What do you remember from our observations last week?
 - Can someone tell us what we did?
 - What did you guys learn from our activity outside?
 - Who can tell me where puddles come from?
- We will have the students look at the jars from last week that were filled with water.
 - They will talk in small groups about what they observe about the water levels.
We will ask them:
 - What do you notice about the water level?
 - How did the water level change?
 - Where did the water go?
 - Why do you think the water level changed?
 - If the water isn't completely gone, how long do you think it will take to completely disappear?

- ***Where else does the water go? (segway question into our activities for the day)

EXPLORE:

- We will go outside and students will observe if their puddles from last week are still there.
- We will split the students into four groups. Each group will sit in a circle (we will make clear circles using chalk so that the students will stay in particular areas). We will first give each student a cup and tell them to pour “**cement.**” in it. We will have them each pour water in the cup and observe what happens. The students will do the same thing with **sand, pebbles, humus, and clay.** Before the students pour the water into the substances, we will ask them to make a prediction of what they think will happen.
- We will give each student a clipboard and a chart to record their predictions and observations. They will record their observations after each substance they pour water into. They can draw pictures of what happened to each substance in the cup when they poured water in it.
- We will ask students:
 - What do you notice about how fast the water soaks through the cement, sand, pebbles, humus, and clay?
 - Does the water “change” how the substances look or feel? If so, how does it look or feel different? Why do you think this?
 - Do you think the water in each substance completely disappeared? If so, where did it go?

EXPLAIN -

- The teacher will ask the students to talk about what they observed from their experiments:
 - Which material did the water move through the quickest? Why?
 - Which material did the water move through the slowest? Why?
 - What does this tell us about where puddles go? Why?
 - What material would form a puddle? Why?
- Read a book about the water cycle after it rains: “Rain” by Marion Dane Bauer
 - After reading the book, the teacher will ask the following questions: (While students are giving their ideas, the teacher will record their ideas on the board.)
 - What does this book tell me about where water goes when puddles change?
 - Where does the water go when it raises into the air?
 - What happens to water when it sinks into the ground?
 - How come the water flows quickly through some materials but not others?

- During this discussion, the teacher will be writing their ideas on the board. The teacher will then turn their 'kid language' into scientific statements to reinforce new vocabulary.
 - The teacher will say/write: when water changes form and goes from a liquid to a gas it is EVAPORATING
 - The teacher will say 'echo evaporating' (the kids will repeat the word evaporating)
 - The teacher will say/write: when water sinks into the soil it is ABSORBING into the ground
 - The teacher will say 'echo absorbing' (the kids will repeat the word absorbing)
 - The teacher will say/write: when the water flows quickly through a type of soil it is POROUS (and vice versa)
 - The teacher will say 'echo porous' (the kids will repeat the word porous)

ELABORATING/EXTENDING Understanding -

- Direct students to start creating conceptions of a water cycle.
 - We will start by drawing a picture on the board of a puddle
 - We will ask students: What are the different options for the water to do?
 - Draw arrows to represent evaporation and absorbing
 - Where do we think the water that evaporates would go next?
 - Illicit response of the sky or clouds
 - And what do clouds do?
 - And when it rains what forms on the ground? (create one loop of the water cycle)
 - What happens to the water that is absorbed into the soil?
 - They will likely not be able to predict: groundwater -> river/lake/ocean -> evaporation or used by trees -> transpiration
 - Just plant this idea with a question, do not explain this or linger on this topic if students are stuck.
 - After exploring and developing a water cycle diagram we will inform them that it is called a water cycle
 - Why is it called a cycle? (if needed ask and explain the term cycle)
 - If it is a cycle, do you think water every truly disappears?
 - Finish off by explaining that we will be exploring the full water cycle next week.

Assessment Evidence (*This is the Evaluation Phase of the 5E approach)

Performance Task(s):

- Students will answer questions showing their formative knowledge about where puddles go after it rains.
- Students will draw pictures of what they observe in the experiment and form conclusions based upon their observations.

Other Evidence:

- Students might ask questions that engage with the inquiry and push their concepts about where puddles go after it rains.
- Students might apply their knowledge of evaporation, absorbing, and porous items to outside experiences.

Materials + Quantity:

- 15 32-oz see-through cups
- Enough soil (humus) to fill the 15 cups
- Enough gravel to fill the 15 cups
- Enough clay to fill the 15 cups
- Enough plaster of paris "cement" to fill the 15 cups
- Enough sand to fill the 15 cups
- 15 funnels
- 15 clipboards
- 15 Graphic organizers
- 15 pencils
- Tub of markers and crayons containers
- 2 sheets of chart paper (with sticky back)
- 6 containers/cups large enough to hold crayons

Required Accommodations/Modifications:

- Write words on the board and use pictures as visual aids to help ELL students.
- Find ways to incorporate more hands-on activities to keep the class focused.

Additional Modifications for Individual Students: