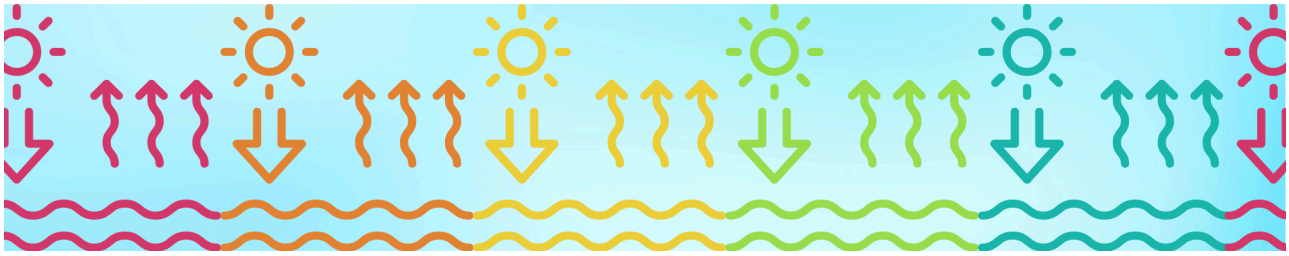
artsNOW
Integrated learning solutions

WATER CYCLE ACTIVATION
Grade Band: 4-5
Content Focus: Theatre & Science



LEARNING DESCRIPTION

Students will examine the parts of the water cycle through theatre. After a group of students demonstrates a tableau of the water cycle, the class will break up into groups to enact each part of the cycle and attach vocabulary inherent to each section. The room will be flowing with the water cycle coming to life!

LEARNING TARGETS

Essential Questions	"I Can" Statements
How can acting deepen understanding of the water cycle? How can I demonstrate my understanding of water conservation practices using pantomime?	I can work with others to enact the parts of the water cycle. I can demonstrate my understanding of water conservation methods using pantomime.

GEORGIA STANDARDS

Curriculum Standards	Arts Standards
Grade 4: S4E3. Obtain, evaluate, and communicate information to demonstrate the water cycle. b. Develop models to illustrate multiple pathways water may take during the water cycle (evaporation, condensation, and precipitation).	**Grade 4:** TAES4.3: Acting by developing, communicating, and sustaining roles within a variety of situations and environments.

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
EARTH AND HUMAN ACTIVITY (ESS3) 5-ESS3-1. Evaluate potential solutions to problems that individual communities face in protecting the Earth's resources and environment.	**Anchor Standard 3:** I can act in improvised scenes and written scripts.

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
• Clouds – Accumulations of particles of water or ice suspended in the air that are visible above the earth's surface • Collection – The process by which water that returns to the earth's surface as precipitation gathers in bodies of water; collection happens in oceans, lakes, rivers, and in accumulations of groundwater. • Condensation – The process by which a gas turns into a liquid; when vapor in the atmosphere gets cold it changes from gas back into liquid in clouds. • Conservation – Responsible and judicious use of a resource in a way that avoids waste.	• Act – To pretend; to play a role • Collaboration – Working together, teamwork • Pantomime – Pretending to hold, use or touch something that you are not really holding, using, or touching; a form of silent theatre • Tableau – A frozen picture created by actors (plural: Tableaux)

- Cycle – Something that happens over and over again in the same way
- Evaporation – The process by which a liquid becomes a gas; in the water cycle, liquid water evaporates and turns into water vapor.
- Gas – A substance that is able to expand freely to fill the whole of a container, having no fixed shape and no fixed volume; water in gas form is water vapor.
- Groundwater – Water held underground in the soil or in pores and crevices in rock.
- Liquid – A substance that flows freely without a firm or consistent shape, but of constant volume: water in liquid form is water.
- Precipitation – The process by which water returns to the surface of the earth in liquid or solid form; precipitation takes the form of rain, snow, sleet or hail.
- Solid – A substance that is firm and stable in shape; not liquid or fluid; water in solid form is ice.
- States of Matter – The forms in which matter can exist: solid, liquid, and gas
- Transpiration – The passage of water vapor from a living body into the atmosphere; plants transpire through their leaves; people transpire through sweat.
- Water Cycle – The sequence of processes by which water circulates between the earth's oceans, atmosphere, and land, involving precipitation as rain and snow, drainage in streams and rivers, and

return to the atmosphere by evaporation and transpiration.	

MATERIALS

- 10 sets of photos of the four stages in the water cycle (Condensation, Evaporation, Precipitation, Collection). These should each have two holes punched in top corners and a string through them so that students can wear each photo around their neck to allow their hands and body to move freely. The photos should have Velcro to attach the words below.
- 10 sets of paper strips with the following words: Condensation, Evaporation, Precipitation, Rain, Snow, Sleet, Hail, Groundwater, Transpiration, Vapor, Clouds. Each strip should have Velcro on the back so that they can be attached to the pictures above.
- Index cards with the conservation methods written on them. One method for each card.

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

WATER CYCLE MOVEMENTS

- Have students stand up in place. Teach and lead them through movement sequences for four stages of the water cycle, coordinated with articulating the words. Describe what each movement signifies:
  - Evaporation –
    "E" – arms out like a body of water circled in front of belly (water)
    "vap" – fingers intertwined and rolling like a body of water (liquid)
    "or" – palms flat out like the sun's rays (sun)
    "a" - fingers wiggles up in front of face (vapors)
    "tion" – fingers wiggle up above head to disappear (gas)
  - Condensation –
    "Con" – wiggly fingers above head (gas)
    "den" – shiver and hands above heads shake (cold)
    "sa" – hands wave fluidly above head (water)
    "tion" – hands grasp together above head (cloud)
  - Precipitation –
    "Pre" – arms circled above head like a cloud
    "ci" – wiggles fingers down like rain in front of face (rain)
    "pi" – hands blink open, closed like snowflakes (snow)
    "ta" – punch right fist down (sleet)
    "tion" – punch left fist down then left fist (hail)
  - Collection –
    "Col" – arms rounded out in front (lake)
    "lec" – hands out like waves (ocean)
    "tion" – hands moving down low (groundwater)

Work Session

ACTIVATING THE WATER CYCLE

- Introduce the concept of tableau – a frozen picture created by actors. Explain that the class will be creating tableaux of the water cycle.
- Invite four students to the front of the class. Work with the students, with suggestions from the rest of the class, to create a tableau that portrays the water cycle.
    - Remind the class that the water cycle is not linear, so the students should not be standing in a line.
    - Remind them that there is no proper beginning or end – it's a continuous cycle.
    - Encourage the students to be creative in determining how they can use their bodies to convey the cyclical nature of the processes. As appropriate to the class rules and culture, allow students to take positions up on chairs or down on the floor.
- Have students wear the photo that correlates with their part of the cycle.
- Ask other students to come up and velcro the appropriate vocabulary word to the appropriate part of the cycle where it belongs.
- Activate the cycle by having students adopt movements – heads, hands, arms, legs, full bodies – that convey what is happening in their part of the water cycle, and add in any appropriate sounds. Remind students of the motions they used at the beginning of class.

GROUP TABLEAUX

- Divide the class into groups of four. Have each group create and then activate their own tableau of the water cycle. Encourage them to find different ways, from what was modeled for the class, to position themselves and move for their parts of the water cycle, and to interact with others in their group as well.
- Give each group the photo visuals and ask each person to wear one part of the cycle. Then have them attach the appropriate vocabulary to their part.
- Have groups show their cycles to the rest of the class.
- Reflect on the different interpretations of the different groups, and how each conveyed concepts about the water cycle.

WATER CONSERVATION

- Ask the class: "Do you think that we will have water forever?" Explain: "Water does keep cycling but we can misuse and overuse water and some places are in danger of drought."
- Remind students that, "Water is one of our most important resources." Ask students:
    - "Why is it so important? What do we use water for? Is it important to other organisms as well?"
    - Be sure to discuss that we use water to produce and prepare food, clean our bodies, wash our dishes and clothes, process our waste, and manufacture and transport goods; we use it for recreation, and to produce hydroelectric power.
    - As individuals, we use large amounts of water: it is estimated that the average American uses around 180 gallons of water a day.
- Discuss Conservation – the responsible and judicious use of a resource in a way that avoids waste.
- Introduce and discuss the following list of water conservation practices:

1. Avoid watering the lawn or garden between 10 am and 6 pm.
2. Take shorter showers.
3. Wash the car over the lawn instead of the driveway.
4. Turn off the water when brushing teeth.
5. Use wastewater from cooking to water plants.

6. Run the dishwasher and clothes washer only when full.
7. Keep water in the refrigerator for cold water.
8. Fix leaky faucets and hoses.
9. Do not use the toilet as a garbage can.
   Brainstorm other ideas that the students might have. Put those on additional cards.

WATER CONSERVATION PANTOMIMES

- Introduce Pantomime - pretending to hold, use or touch something that you are not really holding, using, or touching; a form of silent theatre.
- Model and practice a simple pantomime activity (e.g., sweeping the floor, eating a sandwich, swinging a baseball bat, etc.).
    - Encourage students to think about the size, weight and shape of the objects in their pantomimes; to be specific with their movements; and to include facial expressions.
- Have students come up one at a time, or in small groups, and pick a card with a water conservation practice on it.
    - Have the individual or small group pantomime the action on their card. They should not speak during the pantomimes.
- Have other students guess which water conservation practice they are showing. After guessing, have the class describe the specific aspects of the pantomime that conveyed the water conservation practice.

Closing/Reflection

- Review the words and movements for the parts of the water cycle.
- Review the drama strategies used – Movement, Tableau, and Pantomime.
- Ask students to reflect on how their thinking about water and the water cycle has changed through the lesson.
- Ask students to discuss steps they might take in their lives to use water responsibly.

ASSESSMENTS

Formative

- Teacher will assess understanding of the water cycle and methods of water conservation through the opening activity, class discussion, and observation.

Summative

CHECKLIST:

- Students can accurately identify the key components of the water cycle and match vocabulary words with steps of the water cycle.
- Students can work together cooperatively to create tableaux.
- Students can use their bodies expressively, and create tableaus with a variety of angles, shapes, levels, and facial expressions.
- Students can pantomime water conservation practices silently and with detailed movements and facial expressions

- Have students draw a diagram of the water cycle, with each part labeled accurately.

- Have students draw a picture, using stick figures in particular poses, to portray their group's water cycle tableau.
- Have students write a paragraph about their own water use and how they plan to incorporate water conservation practices into their daily lives.

DIFFERENTIATION

Acceleration:

- Rather than using predetermined movements for the activator, have students collectively come up with the movements for each syllable.
- When adding movement to the tableaux, have students speak a sentence as their part of the water cycle (e.g., "I am precipitation – I love raining down on the mountains and plains, and on cities and towns and making everyone have indoor recess!")

Remediation:

- Encourage groups to come up with alternate ideas for the water cycle tableaux, but allow them to replicate what was done in the model tableau.
- Rather than have students guess each other's pantomimes, work together as a class to develop a short pantomime sequence for each water conservation practice card.

ADDITIONAL RESOURCES

**This integrated lesson provides differentiated ideas and activities for educators that are aligned to a sampling of standards. Standards referenced at the time of publishing may differ based on each state's adoption of new standards.*

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