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Can the use of narrative writing increase student comprehension and retention of scientific concepts?

Personal Background: As a trained scientist, I came to teaching, thoroughly in love with facts. As a teacher of writing, I find myself still fact-focused. In my science classroom, students will write data tables, complete sentence frames, do a "Power Write" to show me what they know (or don't know), write in their journals, and various other ways of writing. In the past, all of our writing was factual. Although it is uncomfortable, I am evolving my teaching practices and introducing my students to this beast known as narrative writing. I call it imaginative writing! I implore my student scientists to communicate science in an engaging manner.

Objectives

1. Introduce students to science concepts (water cycle).
2. Practice understanding the scientific processes involved in the water cycle through an experience.
3. Connect the vocabulary with the scientific process and practice using the vocabulary correctly.
4. Write about the scientific processes using the narrative form.
5. Practice giving written feedback ("pointing").
6. Read our stories aloud to each other.

Standards

6.2E.1 Explain the water cycle and the relationship to landforms and weather.
6.W.3 Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.

Lesson

- Background knowledge: Prior to this lesson, students have studied the water cycle through readings, drawings, small group discussions, and peer presentations. Previous lessons have established an understanding of the vocabulary, knowledge of the states of matter (water as a liquid, solid gas), and an understanding of the forces working on water (gravity, heat energy).

- Vocabulary: evaporation, condensation, precipitation, sublimation, transpiration, respiration, melt, filter, absorb, saturate, excrete, urinate, incorporate, runoff, ground water, glacier, oceans, rivers, lakes

- Create a list on the board of water cycle vocabulary and ask for student input. *What have I left off that you think is important to the water cycle? Give students a chance to evaluate my list, compare with their mental list, and empower them to make suggestions. As a scientist, they need to learn how to question facts and contribute.*

- Today students will be the water molecule and be taking an incredible journey. *Previous lesson/activity, students illustrated and discussed the water cycle in table groups.*

- To focus our brains on water and to start thinking like a water molecule, listen to this poem, *When You See Water* by Alice Walker"

- Class input: What do you think the author is trying to tell us? *Hopefully, some ideas like the following will surface; water is everything, water is the essence of life, water does not stay in one place, water is just water, water is randomly here and there and everywhere.*

- Before starting the activity, discuss with students a couple of questions. What form of water do we see most often? (*Liquid*) When we are doing the activity. Where are most of the "water molecules" (students) gathered? Which station has the longest line?

- Prepare science journals for the activity. Copy the bead color key, so that you will have the information on your incredible journey.

Water Molecule Activity:

1. Around the room are places where we find water. There are 9 stations in all: clouds, plants, animals, rivers, oceans, soil, lakes, ground water, and glaciers.
2. You will start at one station, and move by following the instructions at each station.
3. At each station you will get a bead to place on your pipe cleaner. The beads you collect will record your incredible journey. The order of the beads will help you with the next activity.
4. When you arrive at a station, take one bead, and toss the dice. The top of the dice will instruct you where to go. Your movements will be demonstrating how a water molecule moves through the water cycle.
5. Read the instructions at each station and record in your journal, how you are moving. *(For a water molecule to move from a lake to an animal, an animal drinks the water.)*
6. When I "freeze" you, the game will end and we will go back to our desks.

Writing to Learn:

1. Using the beads you collected earlier, you will write a narrative about your water molecule.
2. The journey must follow the order of the beads. *(If first you have a brown bead followed by a green bead; then your water molecule was in the soil, and was absorbed by a plant).*
3. A water molecule does not choose when or where it goes; there are forces acting on the molecule. So a molecule may be in an ocean for a long time before it gains enough heat to evaporate.
4. Remember, it is your story to tell. Yes, you have a particular order in which your molecule traveled, but the colors, sounds, images are all waiting to be communicate from your mind to the paper.
5. Distribute a copy of the writing rubric and discuss.
6. Distribute the Water Cycle Table, and remind students to use as a reference sheet as they explain the "Incredible Journey".

Opportunity to "Point" and Edit

1. Introduce the idea of "Boss" of your writing, and "Assistant" of your writing.
2. The boss (writer) will be in control of the writing, and will receive help from the assistant,
3. The assistant (gentle reader) will be pointing out parts of your writing they enjoy.
4. Introduce the concept of "pointing", to share with the writer your thoughts about the written piece.
5. Allow time for students to point on the half-sheet.
6. Allow students to read what the gentle reader pointed out and make changes as desired.
7. Allow student to read passages from their writing.

References:

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