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| **Lesson Plan:** “Spheres of Influence!” | **Room Requirements & Arrangement:** Open space (if desk or chairs are in the way, these are to be moved to the walls of the room to create open space) |
| **Content Area & Arts Discipline:**  Science and Dance |  |
| **Overview of the Lesson:**  Introducing the Earth’s four spheres: biosphere, hydrosphere, lithosphere, and atmosphere. Teaching students the dance elements of level (low, middle, high) and movement qualities (sharp vs. light). | **Materials/Equipment:** CD, boombox, dry erase board and marker, dancing scarves, 20 handouts on Earth’s spheres (diagram and explanations)  **School:** Poplar Springs Elementary School, Meridian, MS |
| **Grade Level:** 5th Grade | **Date Lesson Created:** January 2018 |
| **Proposed Time Frame:** 60 minutes | **Lesson Author:** Julie White |

**Big Ideas & Learning Objectives**

1. The student will be introduced to the four Earth spheres of hydrosphere, lithosphere, atmosphere, and biosphere (and in this order) doing specific movements/activities that focus on the chief characteristics of each.
2. The student will correctly identify the water cycle (hydrosphere), the upper layers of the lithosphere, the five layers of the atmosphere, and then understand that these collectively comprise the Earth’s biosphere.
3. The student will clearly demonstrate an understanding of levels and given movement qualities used to represent the many Earth spheres.
4. The student will participate, practice, and perform movement individually and in group work with clarity, creativity, and confidence. The student will work cooperatively and respectfully with peers and the instructor throughout the class.

**Procedures**

***Affective Hook*:** Who thinks that living on Mars someday would be really cool? Who thinks it will happen sooner than later? Me too! To make this possible, scientists are working to create a “biosphere” on Mars that can sustain life. A biosphere is any closed system that supports life and includes a hydrosphere, lithosphere, and atmosphere. Earth is a biosphere and contains all of these spheres and that is what I am going to teach you about today.

***Relevance*:** It is important to know how the Earth’s different spheres are essential to the planet as a whole and to us as its caretakers. By learning about Earth’s spheres through movement, we get to use the arts to understand the chief characteristics of each, and like the Earth, move!

***Introduction of Participation Expectations:*** *This is a special kind of class. You need to give me your full attention and do your best to watch me as I teach. In a movement class, you follow-the-leader and what you see me do as much as you listen to what I am saying and follow spoken directions. You also want to be spatially aware and respectful of those around you. Keep your body to yourself and stay safe in your movement above all else. We will be working together in teams for part of this class, which is important to know how to do well, and I will be asking for volunteers to help me be leaders and demonstrators as well (define a good volunteer). Make it clear to me if this is you from the beginning of class so I notice you and ask you to help me teach! Finally, we have a special “cue” for attention in class because we are moving a lot (model call-and-response and have students practice it several times). Any questions? Now we are ready to go.*

***Warm-up*: *BrainDance***

Follow my lead but feel free to explore. We will be moving in all different kinds of ways in the warm-up. Do your best to do everything clearly. We will do the warm-up in place and it is designed to help you focus, get your body and brain talking to and working together, and get your muscles ready to do any kind of movement needed! This BrainDance focuses on levels and qualities of movement to preview the dance elements of the lesson.

* Breath (inhale and exhale four times). Perform this smoothly. Move the arms up with each inhale (high level).
* Tactile (brush the body, squeeze the body, pat the body, tickle the body). Do each a very different way…exploring “how” we do movement (qualities).
* Core/Distal (expand and contract – stretch into a big “X” and then contract into the belly button, repeat four times and attempt doing the last few expansions on one leg!). Alternate doing the expansions and contractions sharp/fast and soft/slow. Reach up (high level).
* Head/Tail (the bobble head and moving one part of the spine at a time and then altogether slow and fast). Keep the movement slow and smooth.
* Upper/Lower (paint the ceiling with feet planted and then hands on hips and move just the legs). Stress the movement happening at high (arms) and low (legs) levels and encourage students to move in sharp and smooth ways.
* Right/Left (sharp point with arm and leg on the right and soft point with arm and leg on the left; repeat 8 times each side working to make each one really distinct from the other). Qualities of movements and sharp vs. smooth.
* Cross Lateral (elbow to opposite knee, deepening the stretch by touching the opposite foot if desired). Point out being at low level.
* Vestibular (three spins to the right and jump to a freeze, breath and shake out the dizzies and then repeat to the other side). Focus on speed and a sharp big jump at the end. Always finish the BrainDance with three big breaths that return the students to a seated position where volunteer expectations can be briefly introduced/reviewed and the themes of the day can be verbally shared (both academic and dance).

***Activity One: Hydrosphere***

The teacher will briefly explain how the Earth is made up of many spheres and name them, giving a very brief explanation of each. She will then share that the hydrosphere is all the combined water found in the biosphere, and on Earth, this is the water under and above the surface of the planet. She will ask students to name the different types of water (ocean, river, stream, pond, puddle, etc.). She will then create a movement to represent several of them and ask for student volunteers to offer movement ideas for the rest of them. These will be added on and practiced one at a time until a sequence of “bodies of water” and their associated movements is created and memorized. She will then remind students of the water cycle and will draw a diagram of this on the white board including evaporation/transpiration, condensation, precipitation, and collection. She will tell students that for the “collection” part of the water cycle, they will choose to show one of the bodies of water they just performed as the example of what this can be. The teacher will then set a movement for evaporation (going from low to high with wiggling fingers and a smooth quality of movement, emphasizing the dance elements of the lesson and identifying these for the students as an aside in this moment), and for precipitation (moving from high to low and strong, fast, sharp movements). Finally, she will review the three different types of clouds for students – cirrus (high, light), cumulus (medium, puffy), and stratus (low, flat) and ask students to mimic these shapes with their arms while they change levels at the same time. When they practice, the students will also say the terminology for these types of clouds repeatedly in an effort to tie body and mind together in the retention and recall process of learning.

To review the hydrosphere before moving on to other spheres, the teacher will ask the students to “dance” the full water cycle, beginning with their chosen movement for a body of water, then evaporation, then a type of cloud and its associated movement (condensation), and pounding rain for precipitation. If possible, the students will be asked to find another way to show their chosen body of water, specifically but putting this movement into different body parts. This is a form of differentiating this activity for the more advanced learner. It also calls a greater degree of creativity into play.

***Activity Two: The Atmosphere***

The students will taught the first four levels of the atmosphere. The teacher will not instruct students on the fifth level (the exosphere) for the sake of time, but with more instructional time allotted, this could easily be included and it is highly recommended that it is. The students will again learn a movement that coincides with the defining characteristics of each layer in the atmosphere. They will also use scarves so that they can demonstrated extremes of qualities of movement (sharp and smooth) while remaining safe in a smaller space and spatially aware and respectful of their peers’ space. They will do this four times.

* ***Troposhere*** –lowest level, with movement done low to the ground. All weather occurs here. The students will make a “hurricane” with their scarf.
* ***Stratosphere*** – mid-level, with movement done at the waist. This is where the ozone layer exists and where strong horizontal winds (the jet stream exist). Students will do an arch with their scarves representing the ozone layer and alternate this with slashing side to side horizontally for the jet stream. They will repeat each of these eight times.
* ***Mesosphere*** – high level, with movement done at shoulder level and above. The students will toss and catch the scarf to represent meteors burning up in this layer of the atmosphere.
* ***Thermosphere*** – highest level, with movement done above the head. Students will be directed to do movement that looks like heat, as this level of the atmosphere has no protection from UV rays and is too hot to register on any thermometer.
* ***Exosphere*** (optional, if time allows) – This is where satellites orbit and the atmosphere is at its thinnest. Everything is very visible too. If leading a movement exercise in support of this, I would ask students to travel slowly and smoothly like there is no gravity as well as spin slowly in space pretending to be a satellite.

To review “atmosphere” the students will “dance” the different levels in the atmosphere. They will go in two groups so that they have an opportunity to watch their peers perform and also get to share themselves. The basic rules for audience and performer will be shared with students and reinforced, along with requesting peer feedback that focuses on creativity, clarity, and confidence (the three C’s that lead in this type of instruction).

***Activity Three: The Lithosphere***

The teacher will explain to students that the lithosphere has layers similar to the atmosphere but instead of going up into the sky, they go down into the Earth. She will mention the crust and the mantle and explain that these shift and change shape often depending on many influences in the biosphere. To represent this sphere, the teacher will ask students to shift side to side in some way (she will model how to do this in a body part, stepping side to side, or doing an isolation in place) and then make four interesting shapes to represent changes in shorelines, continents, tectonic plates. The students will shift four times and make four shapes with the teacher stressing size and confident performance.

***Activity Four (Culmination of Combined Academic and Movement Concepts): Dancing the Earth’s Biosphere!*** The teacher will culminate the lesson by reminding students that the Earth’s spheres comprise its biosphere and that all parts are a part of this. She will explain that the students will first perform the water cycle to represent the hydrosphere, then the different layers of the atmosphere, then shift and make shapes for the lithosphere. The class will again perform in two groups. Performers will take a bow and audience members will clap.

***Closure***

Today, the students learned about the Earth’s biosphere and the many spheres that comprise and contribute to this. The teacher will ask student volunteers to use terminology to name these and will also comment on the student performances/showings of the Biosphere Dance, specifically what was clear, creative, and confident and ask the students to do the same. Finally, she will thank the students for their focus and dedicated participation in class.