Subject: Science
Grade: 4
Topic: Matter in the Real World
Lesson: 8 of 10
Time: 40 Minutes

Curriculum Connections:

Big Ideas

- Matter has mass, takes up space, and can change phase.

Curricular Competencies

- Demonstrate curiosity about the natural world
- Identify questions about familiar objects and events that can be investigated scientifically
- Transfer and apply learning to new situations

Content

- Phases of matter

First Peoples Principles of Learning

- Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place)

Cross-Curricular Connections:

This lesson incorporates the Physical Education curriculum by promoting daily physical activity and building a connection to the community and outdoors. In addition, it uses principles of Art as a form of documentation and exploration of learning to create visual representations of what students find outdoors. Finally, the lesson encompasses aspects of Language Arts, through writing strategies and the read aloud; students will develop critical and creative thinking and processing strategies.

Rationale:

This is lesson number eight of a ten lesson unit on Matter for grade four students. This lesson focuses on recognizing matter in the real world. To create significant learning experiences for students, they must be able to make connections to their everyday life outside of the classroom. By providing interactive learning opportunities in the natural world, students will be

able to remember and engage with their learning long after the lesson is over. In this lesson, students will engage in daily physical activity and connections with the local community by going for a nature walk. On their nature walk students are asked to observe their surroundings and use what they know about solids, liquids, and gases to recognize them in the natural environment. This will prompt a discussion about the importance of the three phases to everyday life, and the effects they have on living environments; for instances, weather and energy changes.

Key Questions:

• What is a Solid?
• What is a Liquid?
• What is a Gas?
• Where can we find matter in the natural world?
• Why is it important to have different phases of matter?
• Can matter in the natural world exist in more than one phase?

Learning Objective:

Through the incorporation of prior knowledge, individual observations of the natural world and collaborative discussions students will be able to recognize solids, liquids, and gases in the natural world, a class read aloud, and describe the factors that cause matter to change phases.

Materials:
• *What is the World Made of?* by Kathleen Weidner Zoehfled
• Pencils
• Erasers
• Blank Paper

Hook: Read Aloud (10 minutes)

The teacher will start the class by reading the book *What is the World Made of?* by Kathleen Weidner Zoehfled and facilitating a review of the three phases of matter.

Adaptations for Open Learning:

- If a student is hard of hearing, they can sit beside the teacher, or the teacher will use a speaker system to increase the volume of their voice.

- If a student has a loss of vision, the teacher will either provide the student with a copy of the book, project the book on a screen, or describe the book and pictures in additional details.
- If a student has an exceptionality that makes it hard for them to sit still, they will be provided with flexible seating, create a signal for taking a walk, or be given a fidget.
- If this is an online class, the teacher will photo-copy the pages of the book following proper copy-right regulations, and send it to students. The teacher may also chose to record a video or audio of themselves reading the book for students to watch and re-watch or read it over a real-time conference call.

Body: Nature Walk (20 minutes)

The class will participate in a nature walk around the school grounds or a local trail if it is accessible from the school. During this walk students are asked to look for things in the natural world that are in any of the three phases of matter. Students will bring a pencil, eraser and notebook with them to record findings. At the end of the walk, students should have at least one visual representation of something they saw that represents each of the phases.

Adaptations for Open Learning:

- If a student is in a wheelchair, the teacher will ensure that the walk occurs on a flat, smooth ground.
- If a student has an exceptionality that makes them nervous in new surroundings, they will be accompanied by a buddy of their choosening, teacher, parent, or Educational Assistant (E.A.).
- If a student has low written output, they will either bring an iPad to record their findings, or pair up with a classmate who can document for them both.
- If a student has an exceptionality that is triggered by sunlight, they will be encouraged to wear a hat and/or sunglasses.
- If this is a virtual class, students will be encouraged to go spend time outside in their surroundings and find things that represent the three phases of matter.

Safety Considerations:

The teacher will need to review class expectations and guidelines when going outside. If the class goes on a walk down a trail, additional support from another teacher or Educational Assistant may be required. The teacher will need to bring a first aid kit on the walk and have a copy of the class attendance.

Closure: Think, Pair, Share and Whole Class Reflection (10 minutes)

Back in the classroom after the walk, students will be asked to think of a question that came up for them during the walk. They will write it down, find a partner and share it with them. The teacher will then facilitate a whole class reflection, where students will share questions, observations, and inquiries they have from the lesson.

Adaptations for Open Learning:

- If a student has low written output, they can either share orally, work with a partner, use a device for the talk to text tool, or draw a picture.
- If a student has social anxiety, they can pick the partner they share with, share to just the teacher, to choose to work individually and write down their reflection.
- A student may choose to participate by sharing written, oral, or visual reflection.
- If this is a virtual class, the teacher can facilitate this reflection over a whole class conference call, or in a small group or partner call, asking students to reflect on what they found in their environment.

Assessment: Documentation and Think, Pair, Share

Students will participate in a peer-assessment; they will conduct a think, pair, share where every student will have one question from the day's lesson to share. At the end of class students will hand in their documentation from the walk and their question from the end of class should be written on it. The teacher will mark the documentation for completion and provide feedback to help answer students' questions.

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- If a student has social anxiety, they can pick the partner they share with, share to just the teacher, to choose to work individually and write down their reflection.
- A student may choose to participate by sharing written, oral, or visual reflection.
- If this is a virtual class, the teacher can facilitate this reflection over a whole class conference call, or in a small group or partner call, asking students to reflect on what they found in their environment.
- Assessment may be conducted using Google Classroom, a Discussion forum online, Freshgrade, or over a conference call (e.g., Zoom).
- Evaluation will be based on participation and quality of reflection to ensure it is an equitable and successful experience for all.