Integrated lesson plan:

Physical Education and science (properties of water)

Age Level: **Fourth Grade**
Subject(s) Area: **Physical Education**
Materials Needed: **1 red sharkskin ball, 1 blue sharkskin ball**

Standards:

Code and description:

Science:

4.3.1. Identify the forms in which water appears when heated and cooled (i.e., water vapor, liquid, solid)

Physical Education:

S2.E5.4a & b Applies simple offensive strategies and tactics in chasing and fleeing activities. Applies simple defensive strategies and tactics in chasing and fleeing activities.

Objectives:

What will the students know or be able to do?: **Students will identify the forms in which water appears when heated and cooled while applying offensive and defensive strategies in chasing and fleeing activities through a game of tag.**

Cognitive Level of Lesson (Bloom's Taxonomy): **Applying and Identifying**

Learning Activities:

Opening Element: (Anticipatory set, setting a purpose for learning, assessment of background knowledge, Review, Etc.)

Hang three signs, each with a state of water on each end of the gym. (water vapor, liquid, solid)

Opening warmup: One song jog

Write name of tag on board: States of Water Tag

Reflective Questions:

- **Discuss how water can change states and what causes that change.**
- **Ask the students: "Tell me the different states of matter" Is this the same for the states of water?**
- **Explain to the students that they will be playing a tag game to show that they understand the properties of water and how they change.**

Technology: none

Required Vocabulary:

Water Vapor: Water in its gaseous state

Liquid: a substance that flows freely like water

Solid: the state in which matter in which matter maintains a fixed volume and shape

Instructional Methods:

Rules:

- **Two student will be taggers.**
- **The taggers will have 1 red sharkskin ball and 1 blue sharkskin ball.**
  - **Student with red ball will be heat, child with blue ball will be cold.**
- **Remaining students split evenly between the three signs: water vapor, liquid, solid**

The teacher will say one of the states of water and the children who are assigned to that matter must try to move across the gym avoiding the taggers. If they make it safely across without being tagged, they again stand beneath the sign indicating their state of matter.

If a child is tagged by the red ball and heat changes their state of matter, they must go stand under the sign which is titled for their new state of matter. If a child is tagged by the blue ball and cold changes their state of matter, they must go stand under the sign which is titled for their new state of matter.

If the state of matter would not change due to the cold or heat, the child remains with his/her same state and stands beneath that sign.

Water Vapor	Liquid	Solid
Heat: Water Vapor Cold: Liquid	Heat: Water Vapor Cold: Solid	Heat: Liquid Cold: Solid

Have the students who are tagged come tell me who tagged them (heat or cold) and how their matter would change prior to standing beneath a sign to assess whether they know how it changes when acted upon by heat or cold.

Switch taggers often so that all get a chance to decide how matter changes when acted upon by heat and cold.

Guided Practice Strategies: **After discussing the states of water, I will have some students help me demonstrate the game to the rest of the class.**

Independent Concrete Practice/Application: **Student plays game independently**

Differentiation:

- **Name the forms of water, rather than stating the matter outright. For example, water/ice cube/ condensation/dew/steam/**
- **Choose locomotor movement such as skipping, galloping, hopping instead of running.**

Wrap-Up: **Make sure all the students are able to be taggers. Make sure the students know the end of the game is coming up. Ask quick review questions about the different states of water.**

- **What are the three states of matter? (water vapor, liquid, solid)**
- **If a liquid is heated what form does it take? (water vapor)**
- **If water vapor is cooled what form does it take? (liquid/solid)**
- **If a solid is cooled what form does it take? (solid)**

Assessment:

Formative: **Assess knowledge by allowing the students to choose which sign to stand under when tagged by heat or cold, or by asking them what their matter changes into after being tagged.**

Individual Measurability: **Observe students when choosing which state of matter they turn into.**

Reflection: This lesson plan went really well. The students were engaged and were able to learn about the states of water. This was a standard that they had not covered in class yet. They studied the states of matter, which was helpful because the states of matter and

states of water are very similar. I was able to get to the school and set up and write my questions on the board before their warm-up was completed. They raised their hands and waited to be called on and I didn't have any trouble talking over them. I think the visual example of the game was really helpful to the students. They were able to see what I wanted them to do and how the game should be played. Part of the game involved coming over to me after they were tagged and telling me what they changed into. I didn't have full participation, but many came to tell me. Because I wanted to try and make sure everyone was understanding the game I paused the game to have the kids instead yell out the different state of water they turned into. This resulted in the same amount of participation. It was helpful for small groups to go separately because I was able to see if they switched correctly. If they didn't I was able to go over and ask them about their choice. The problem with small groups however was the kids were getting bored while waiting. What I could do next time was make each group where a colored penny and I would be able to visually see them change a state and I could easily keep track of who should be going where. If I wanted to keep the small groups I could add an activity that the students complete while waiting to cross the gym. I could also have more taggers, this way I wouldn't have to constantly stop the game to make sure everyone had a chance at being a tagger. It was a lot of fun to watch the students use different forms of movement to run across the gym. We used skipping, galloping, hopping, and running. In the future, I should stop the music more often so the students know to be quiet and listen to my new directions.

Water Vapor

Liquid

Solid