

DAILY LESSON PLAN – Water as a Solid

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Date: 3-10-14 & 3-11-14

Grade Level: 1st

Unit Topic (Science): Water's the Matter!

Lesson Focus: Lesson 5: Water as a Solid

Standard/Benchmark/Objectives:

GLCEs (Grade Level Content Expectations)

S.IP.E.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.

S.IP.01.11 Make purposeful observation of the natural world using the appropriate senses.

S.IP.01.12 Generate questions based on observations.

S.IP.01.13 Plan and conduct simple investigations.

P.PM.E.2 States of Matter- Matter exists in several different states: solids, liquids and gases. Each state of matter has unique physical properties. Gases are easily compressed but liquids and solids do not compress easily. Solids have their own particular shapes, but liquids and gases take the shape of the container.

P.PM.01.21 Demonstrate that water as a solid keeps its own shape (ice).

Motivation/Assessing Prior Knowledge: (on carpet or sitting in a circle on the floor) (materials needed: frozen water balloon, clear plastic container, plastic tarp)

- Ask students . . . *Who can spy a solid?* **Take 5 answers.**
- Again, select a lab assistant (*Note: This may be a good way to motivate positive hallway manners. Tell students that you will need a lab assistant this afternoon and that you are looking for someone who knows how to follow the school and classroom expectations without being reminded.*)
- Have lab assistant hold up the frozen water balloon (balloon should have something underneath it in case it leaks or breaks).
- Ask students . . . *What happened to our water balloon?* **it is frozen; it is a solid**
How do you know? **When you touch it, its shape doesn't change**
- Tell students that we are now going to do an experiment . . . *Are you ready?*
- *We are going to cut away the balloon! What do you think is going to happen?*
Let's make a prediction. **The water is frozen and will hold its own shape—it does not take on the shape of the container as when water is a liquid**
- *Let's find out. Lab assistant . . . are you ready?* The lab assistant will cut away the balloon and place the solid ice into the container beneath it.

- What happened? What does the water look like today? What shape is the water? *the shape of the ice (water as a solid) has not changed!*
 - Is this frozen ice ball matter? *Yes, everything is matter!*
 - What is the state of this matter? *solid*
 - What will happen if we leave this frozen ball out in our classroom all night? *It will melt; warm-up and become a liquid, just like the ice in our baggie; heat is being added*
 - What will happen if we put our melted ice baggies back in the freezer? *The liquid water will turn back into ice (solid), this time taking the shape of the baggie (remind students that liquids take the shape of the container, before the water becomes a solid it is a liquid).*
 - Why? *it is below freezing (32°); heat is being taken away*
 - Put the baggies in the freezer (or outside if cold enough) overnight.
 - Discuss how in solids, molecules are held tightly together.
 - Discuss how in liquids, molecules flow more freely (show waving motion with arm).
- (Assessment occurs by listening to student answers and observing participation.)

Learning Activities/Assessments: (on carpet or in circle) (materials needed: laminated *Solids* card from Waterford Room; Solids Poster – words prewritten on a large piece of paper)

1. Read laminated *Solids* card and discuss.
(Assessment occurs by listening to student answers and observing participation.)
2. Read *Solids* poem on large paper and discuss.
(Assessment occurs by observing student engagement.)

Closure: (start at carpet or circle, then return to seats) (materials needed: 26 copies of *Water is a solid* worksheet; magazines)

- Explain directions for *Water is a solid* worksheet.
- Tell students that when they finish their worksheet, they should raise their hands and a teacher will come over to check it.
- Once checked, students will turn in their papers and get a magazine to look for pictures of *solids* to cut and glue nicely on our *Solids* poster. (*Note: Tell students to not cover up any words on the poster.*)
- Hand out worksheets and students return to their desks.
(Assess by observing completed worksheets and by viewing the magazine pictures being attached to the poster.)

Reflections: