SIOP Lesson Plan Template: Science

Name: Group C Grade/Class: Jackson Middle School 6t Grade Science

Date: November 14, 2012

Content Objectives (SOLs):

6.5 The student will investigate and understand the unique properties and characteristics of water and its roles in the natural and human-made environment. Key concepts include

b) the properties of water in all three phases

Language Objectives (WIDA):

Listening

- Follow multi-step oral commands/instructions [phase change dances]
- Identify information on charts or tables based on oral statements [zip-lock activity]
- Identify everyday examples of content-based concepts described orally. [Discussed during PowerPoint]

Speaking

- Ask for clarification [Why did the water change color at different rates?]
- Communicate in social situations. [Zip-lock activity in groups]
- Repeat words, short phrases, and memorized chunks.

Reading

- Make predictions based on illustrated text. [PowerPoint]
- Match cause to effect.
- Use pre-taught vocabulary.

Writing

- Label pictures and graphs. [Self explanation and zip-lock activity]
- Produce high-frequency words.

Materials and Resources:

Hot Plate	Beaker	Water
Food Coloring Dye	Zip Lock Bags	Glue
Glue Sticks	Paper	

Science Safety:

During the engagement, students will only observe the boiling of water from there seats. Students will not come in contact with the dyes or hot water. Teachers will role model good safety habits by wearing goggles.

Links to Student Experience and Learning:

The students will be able to relate to the evaporation and condensation of water. The students will also be able to relate to the properties of water.

Key Vocabulary:

Molecules	Solid	Liquid	Gas
Evaporation	Condensation	Melting	Freezing

SIOP Features (Check all that apply)

Preparation:
_x_ Adaptation of content
_x_ Links to background
_x_ Links to past learning
_x_ Strategies incorporated

Scaffolding:
_x_ Modeling
_x_ Guided practice
_x_ Independent practice
___ Comprehensible input

Group Options:
_x_ Whole class
_x_ Small groups
___ Partners
___ Independent

Integration of Process:
___ Reading
_x_ Writing
_x_ Speaking
_x_ Listening

Application:
_x_ Hands-on
_x_ Meaningful
_x_ Linked to objectives
_x_ Promotes engagement

Assessment:
___ Individual
_x_ Group
_x_ Written
___ Oral

Lesson Sequence (what teacher will do, what students will do, key concepts and process)

Engagement:

The teacher will engage the students by having three easily labeled beakers in front of the class. One beaker will be on hot plate with water, another with cold water, and the last one with ice cubes. The students will be asked what they think will happen when we add color dye to each beaker. Teachers will ask each other to demonstrate to the students what kind of response is expected. Next, the color dye will be added and the class will observe how quickly they each change color.

Exploration:

Students will be given some time to draw their own explanations for the differences in how the dye reacted with the different states of water.

Explanation:

The teachers will present in the form of a PowerPoint the different properties of water at the molecular level in all three states. The students will draw these three states correctly on the opposite side of the sheet they used for their own explanations. The students will discuss how their drawings differ from the teachers.

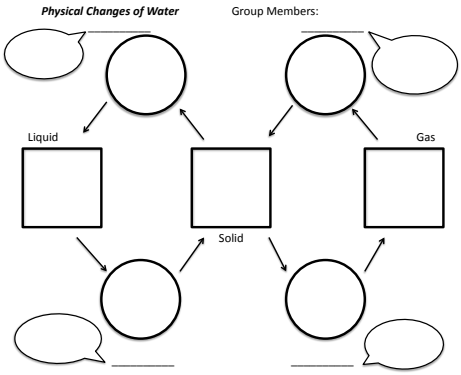
Elaboration:

The class will be divided into three different groups (solid, liquid, gas). The solid and group will dance really slowly. The liquid group will dance moderately. The gas group will dance extremely fast. We will introduce the terms evaporation, condensation, melting, and freezing. If a member of a group is chosen to experience one of these terms then they will have to switch to another group with the appropriate dance.

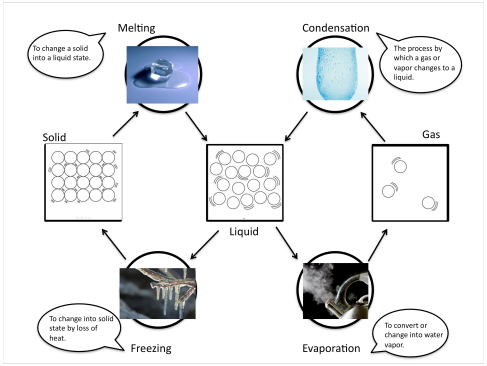
Evaluation:

The students will be evaluated in small group assessments (2-4 members). Each group will obtain a blank outline, zip-lock bag full of phase change clippings, and a glue stick. The groups will be expected to glue the clippings accurately on the outline [view Activity Sheet for Students].

Activity Sheet for Students:



Key:



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Water Phases Lesson Plan

Purpose: Use a 5-E Learning Model to have the students investigate the different phases of water. Upon completion of the lesson, the students will be able to identify the molecular structures of water in all the three phases. Students will also be able to use the appropriate vocabulary for the transitions between phases.

SOL's:

6.5 The student will investigate and understand the unique properties and characteristics of water and its roles in the natural and human-made environment. Key concepts include

b) The properties of water in all three phases.

Materials:

Hot Plate	Beaker	Water
Food Coloring Dye	Zip Lock Bags	Glue
Glue Sticks	Paper	

Safety / Accommodations:

During the engagement, students will only observe the boiling of water. Students will not come in contact with the dyes or hot water. On an as need basis, students with any physical disabilities preventing participation with the phase change dance will be able to participate through choosing a song for the class to dance to.

Procedure (1 day / 60 mins):

1. Engage (10mins): The teacher will engage the students by having three easily labeled beakers in front of the class. One beaker will be on hot plate with water, another with cold water, and the last one with ice cubes. The students will be asked what they think will happen when we add color dye to each beaker. Teachers will ask each other to demonstrate to the students what kind of response is expected. Next, the color dye will be added and the class will observe how quickly they each change color.

2. Explore (5mins): Students will be given some time to draw their own explanations for the differences in how the dye reacted with the different states of water.

3. Explanation (15mins): The teachers will present in the form of a PowerPoint the different properties of water at the molecular level in all three states. The students will draw these three states correctly on the opposite side of the sheet they used for their own explanations. The students will discuss how their drawings differ from the teachers.

4. Elaboration (20mins): The class will be divided into three different groups (solid, liquid, gas). The solid and group will dance really slowly. The liquid group will dance moderately. The gas group will dance extremely fast. We will introduce the terms evaporation, condensation, melting, and freezing. If a member of a group is chosen to experience one of these terms then they will have to switch to another group with the appropriate dance.

5. Evaluation (10mins): The students will be evaluated in small group assessments (2-4 members). Each group will obtain a blank outline, zip-lock bag full of phase change clippings, and a glue stick. The groups will be expected to glue the clippings accurately on the outline [view Activity Sheet for Students]. The teachers at this time will assist any students that need any clarification.

Zip Lock Assessment Rubric*		
Grade (%)	Criteria	Evidence
90-100	Students understand the three phases of water at the molecular level. Students accurately use key vocabulary and images for the phases and their transitions.	Complete zip-lock activity accurately.
80-89	Students understand the three phases of water at the molecular level. Students use key vocabulary and images for the phases and their transitions.	Complete zip-lock activity with minor errors.
70-79	Students understand the three phases of water at the molecular level. Students inaccurately use key vocabulary and images for the phases and their transitions.	Complete zip-lock activity many errors.
60-69	Students do not understand the three phases of water at the molecular level. Students inaccurately use key vocabulary and images for the phases and their transitions.	Complete zip-lock activity.
<59	N/A	Incomplete Assignment

- *Completing the zip-lock activity shows the students are using the English language appropriately and have an understanding on the phase changes vocabulary.*