

Grade 2nd grade

Topic Physical Science

Title Which Freezes First?

Standards:

2.2.5 – Draw pictures and write brief descriptions that portray key features of an object.

2.1.3 – Describe, in both writing and verbally, objects as accurately as possible and compare observations with those of other people.

2.6.3 – Describe that things can change in different ways, such as in size, weight, color, age, and movement.

2.3.5 – Investigate that things can be done to materials, such as freezing, mixing, cutting, heating, wetting, etc. to change some of their properties and observe that not all materials respond in the same way.

Objectives:

Cognitive

The learner will predict which form of water will freeze first.

The learner will observe the water freezing and the ice melting.

Affective

The learner will respond to their observations in their science notebooks.

Psychomotor

The learner will display a picture of what they observed.

Materials:

Paper cups

Children’s science notebook

Plastic cups

Pencil

Ice

Freezer

Salt

Water

Procedures:

1. Teacher will ask, “Have you ever wondered why lakes and ponds freeze in winter, but not the ocean?”
2. Have an oral discussion about why they think this might be.
3. Tell the students that we are going to try and see if plain water freezes first or if salt water freezes first and see whether our predictions were correct.
4. Before we do this, have the kids write in their notebooks their own predictions about which water will freeze first.
5. Depending on the weather, put the cups right outside your classroom window or you could use a freezer and assign a student to go and observe about every 10 minutes.
6. Have the two paper cups filled with the same amount of water in them and then put about a teaspoon of salt in one of the cups and label the cup.
7. Ask the students if they think they would get the same results if they changed a variable. (Could they use a different type of cup, liquid, or temperature?)

8. We chose to use a different cup. We did the same experiment using plastic cups with the same amount of water and one teaspoon of salt in one cup.
9. Before we put it in the freezer we made oral predictions about whether or not we thought it would have the same result.
10. I wanted to give them something else they could try with salt so I gave each pair of student's two cups with two ice cubes and a teaspoon of salt.
11. I asked them to tell me what they thought would happen if I put salt on one of my ice cubes. We talked about why they put salt on the roads when it snows or when we have freezing rain. We discussed that when salt is mixed with water it lowers the freezing point.
12. They put the salt on one of their ice cubes and observed which ice cube melted the fastest.
13. They drew their observation results in their notebooks.

Assessments:

Pre – I will assess them strictly on observation.

I will listen to their responses to my questions at the beginning of my lesson.

Post – I will look at their science notebooks and see if they participated in making a prediction and making an illustration on their observation.

There will be no formal rubric.

They will earn points for participation.

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