Acquisition Lesson Plan
Magical Science Day 2-Ice Cream

Name	Teacher/Planner	Subject	Magical Science	Date	Tuesday

9:30 Supervisor checks in students and takes attendance. Puts names in "Random Drawing" bucket for prizes later in week.

9:30 – 9:45 Breakfast Snack

Essential Question: Is ice cream a solid or a liquid?

9:45 – 10:00 Activating Strategy/Arrival Activity:

Teacher read aloud of the book "Ice Cream: The Full Scoop" by Gail Gibbons. Discuss the story by asking students about something interesting they heard, something they didn't know before, something they liked, something they have a question about, etc.

Connect to the previous lesson by asking if they think ice cream is a solid or liquid. Share some of the responses about the oobleck question the day before, and discuss how ice cream is similar or different. Explain that today the students will be making their own ice cream and observing how it changes from one state to another throughout the process.

10:00 – 11:00 Teaching Strategies:

Continue with a discussion about how ice cream changes states (melting, refreezing). Have students think of other foods that are similar (popsicles, ice cubes, soup etc.).

Explain that when you make ice cream, you use salt and ice to turn the milk into ice cream. Ask them if they can think of another example of when you mix salt and ice together (salting roads/sidewalks). Explain that adding salt to ice causes a chemical reaction that lowers the temperature at which water freezes. When we salt roads, we are helping to lower the temperature so that the ice can turn to water so that cars and people won't slip.

Demonstrate this with the Melting Ice Science Experiment (indoor or outdoor):

1. Make The Ice: For fun, and for experiment's sake, fill many different sizes of bowls with water and left them to freeze overnight. (Be sure to do this the day before!)

2. Set Up Your Melting Station: Loosen the ice from the bowls with a little warm water and set them on a baking sheet (or on the ground if done outside).

3. Add Salt: Sprinkle (don't dump) the rock salt over the tops of the ice domes. Watch the salt start to melt the ice.

4. Add Color To The Melted Ice: Once the ice starts to melt, add a few drops of food color and watch as the color spreads through the ice. Do this with a few different colors. The color is beautiful on its own, but the real reason for adding the liquid watercolors is to highlight the ravines, crevasses, and tunnels that are forming in the ice as the salt melts it. Try turning the ice over and adding more salt to the other side. Once students are finished observing, take the ice outside and find a place to leave it so that the students might see it on their way home.

Next, explain that they will now use ice and salt to make ice cream. Because of the salt, the temperature for the milk to freeze lowers and they will be able to watch it turn into a more solid form (ice cream!)

ICE CREAM IN A BAG INGREDIENTS(PER CHILD IF POSSIBLE)

- ½ cup half and half
- ¼ tsp vanilla
- 1 TBSP sugar
- 3 cups ice
- ⅓ rock salt
- Gallon size zip top bag(s)
- Quart size zip top bag(s)
- Sprinkles, chocolate sauce, fruit (optional but really "the best part" ingredients!)

MAKE HOMEMADE ICE CREAM

- In a gallon size bag place ice and salt; set aside.
- In a smaller bag mix together half and half, vanilla and sugar, close tightly.
- Place smaller bag inside gallon size bag.
- Shake for about 5 minutes.
- Use gloves as the bag gets very cold. (Teachers/helpers may need to assist younger children)

As students are shaking their ice cream, talk about how homemade ice cream changes states of matter because it starts as a liquid but changes to a solid, and it can even change back to a liquid if they let it melt. Once ice cream is solid enough, enjoy!

As students are eating their ice cream, teacher will read aloud from the following book or books:

Cocoa Ice by Diana Appelbaum

Should I share My Ice Cream? By Mo Willems

I Scream, Ice Cream: A Book of Wordles by Amy Krouse Rosenthal & Serge Bloch

**Extra activity if time permits

Ice Cube Meltdown: Bring in a bag of ice for your students. Divide the students into small groups or pairs and have them find the fastest way to melt an ice cube. Remind your students that heat can change matter and adding more heat might make matter change faster. They may want to put the ice cubes in a sunny spot, warm them up in their hands, or just put them in a cup on their desks. Have students time how long each method takes. Which method was best? Have groups discuss and share their observations and findings with the class.

Formative Assessments: Classroom helpers sit near children during reading aloud or partner reading to help them attend to story. Questions posed throughout the activity will serve as a way to gauge student participation and understanding.

11:00 – Summarizing: As a wrap up for the ice cream activity, have students respond to the following writing prompt (on worksheet): You have been asked to invent a new ice cream flavor. Draw a picture of your creation and write a tempting description. As students are working on their drawing/writing, have them revisit the essential question "Is ice cream a solid or a liquid?" and share their thoughts. If time allows, have students share their ice cream flavors when finished.

11:15 Bathroom break and hand washing

Wash hands and enjoy lunch together. Teachers and adult leaders model appropriate table manners and encourage children to taste foods. Children and adults throw their own trash away.

11:50 - After lunch, prior to dismissal:

Culminating Activity: Invite children to choose a used book to take home and encourage them to do some reading tonight.