Lesson Delivery Date: __/__/____
Lesson Delivered By: _____
Initial when complete:
Supplies Bought: _____
Materials Prepped: _____
Feedback Complete: _____

SCALED LEARNING™ LESSON PLAN - SACC

Review this lesson plan at least 3 days prior to leading.

LESSON NAME: (What is the name of the activity?)	**TIME REQUIRED:**	**AGES:**
Indoor Frost	20 – 30 minutes	K - 2

SCALED LEARNING FRAMEWORK ELEMENTS:
(STEM, Career Connected Learning, Arts, Literacy, Education, Diversity and Global Learning, etc.)

- STEM

STANDARDS ADDRESSED:
(Common Core State Standards; National Core Art Standards)

- Science: As a result of the activities in grades K-4, all students should develop an understanding of properties of objects and materials; Position and motion of objects; Light, heat, electricity, and magnetism.

LESSON OBJECTIVE: (What youth should get from this activity, what they should achieve?)
Youth will be able to:

- Explore the effects of ice and salt in creating frost and dew.

MATERIALS NEEDED:	**PREPARE AHEAD OF TIME:**
• Ice (crushed if possible) • Salt (rock salt or coarse salt if possible) • Cans	•

PART ONE:

SAY: Today we're explore the effects of salt when combined with ice.

ASK & CONNECT (prepare opening ideas to connect lesson to youth's prior experience or prior session)

- What do you think happens when salt combines with ice? (remind youth of Ice Fishing activity)
- What happens when ice is added to water without salt?

PART TWO: (What are the steps for youth to complete this activity?) Highlight steps when youth have a choice.	What key skills will I need to be prepared to model or teach?
1. In one tin can put a mixture of crushed ice about half full and about 4 tablespoons of salt. 2. Mix it well for about 30 seconds and then let sit.	•

3. In the other can put only crushed ice and cool tap water. Fill the can about half way full of ice and then put just enough tap water in the can to cover the ice.

4. Note the frost forming on the outside of the can with the ice and salt mixture. Compare this with the liquid moisture on the outside of the can which contains ice only.

5. EXPLANATION: Why does this happen? The salt wants to absorb water to make a salt solution. To do that, the salt has to melt the ice into water. The heat required to melt the ice comes from the ice itself. The strange effect is caused by the chemical reaction between the salt and the ice. Strange as it seems, melting the ice actually makes the mixture cooler. The salt water mixture inside the can gets below freezing, so the moisture from the air that collects on the outside of the can will freeze. This is why frost forms! On the other can, dew forms because the mixture of the melting ice and water is just at freezing and the temperature outside the can is warmer causing the dew to form.

ASK DURING (open-ended questions for during activity)

- What differences do you expect to see between the two cans? Why do you think that will happen?

SITE SPECIFIC (complete prior to lesson delivery)

Leadership (How can youth help lead?)	**Choices** (What content or process choices are there?)	How will I promote exploration? How will I nurture creativity?

PART THREE:

REFLECT

- How was this experiment similar to the ice fishing activity? What was different about it?

FAMILY AND PARENT ENGAGEMENT (Select how activity will be shared)

☐ Invitation: During activity, invite families to join as they are picking up their child

☐ Conversation: Draw parent's attention to their youth's contribution at pick up and explain their child's positive contributions to the final product or process

☐ Communication (written): Photos or written Staff or Youth recap for upcoming newsletter or parent email