Topic:	**Mock Ice Cream Lesson Plan** **By the Little EINSTEINs Leadership Team 2020 - 2021**	Day/Date	*November 12th*
Objective(s)	**Students will grasp an understanding of the concepts of temperature and how heat flows within a system.** **Students will identify properties of salt and how it affects the temperature.** **Students will be able to understand basic concepts of temperature, freezing point and states of matter through an interactive presentation that aims to create ice cream while being assisted by a team of science ambassadors.** **Students will obtain a greater understanding of these concepts and how they apply to large scale scenarios.**		
Materials, Texts & Reminders	● Half- full cup of heavy whipping cream or half and half ● 1 Tablespoon white sugar ● 1 tsp vanilla extract ● Ice to fill up 3⁄4 of a large plastic bag ● 1 Big ziplock bag ● 1 Small ziplock bag ● 4 Tablespoons of salt * Note: Can substitute whipping cream for other alternatives of milk if needed.	**Key Points**	● The properties of ice and salt. ● The basic concept of temperature and how heat moves in an environment. ● The understanding of freezing point. ● The use of salt and how it affects temperature. ● The importance of how salt affects freezing points in large scale situations.
Big Questions	What is ice and how can we transform water into ice? What is salt and where have we seen salt being used in everyday life? What is a freezing point? What happens when ice and salt are mixed together? What is heat and what is temperature? Does temperature move from hot to cold or cold to hot?		
Assessment	Interactive experiment, guided by a science ambassador Interactive assessment- quiz like structure		

Do First	**Warm-up: Brainstorming - Introduction to Ice and Freezing Point** (5 minutes) What is a freezing point? What is salt? Where have we seen salt being used in everyday life?

	For this short introduction, we will distinguish between the three states of matter. Once concluded we will brainstorm with the students about how we can make ice from water. This will then lead up to the concept of freezing point and how this tells us when a liquid can freeze.
Lesson Execution	**Introduction to Temperature and Salt :** (10 Minutes) What is temperature? What does it mean to be hot and cold? Does temperature move from cold to hot or hot to cold? What is salt? Where have we seen salt being used in everyday life? What happens when we mix ice and salt together? Are there any instances where we have seen salt being used with water? **Group Practice/Discussion/Assessment:** (<50 Minutes) **Interactive Demonstration: Lets Make Ice Cream!** (25 minutes) Discuss safety precautions, make sure students do not have any allergies to ingredients being used, let students know what we are making and start the demonstration. Students will be placed into breakout rooms and will be assigned to a single science ambassador. The science ambassador will then perform a step by step demonstration of how to make the ice cream by providing specific measurements. They will also show what to put inside each bag to get desired results. Here are step by step instructions each science ambassador must follow: 1. Put cream, sugar and vanilla extract into the small ziplock bag 2. Ice and salt into large ziplock bag 3. Close the small bag, open the large bag and put the small bag into the large and close the large bag. 4. Shake large bag (caution it will get cold) 5. After about 10-15 min of constant shaking, take the small bag out of the large and behold! you have just just made your own homemade ice cream. During this time, it is important that the science ambassadors are engaging the students and making sure that they follow the directions layed out. Science ambassadors should also be applying the big concepts learned to the student while demonstrating and even come up with questions that challenge

	students and potentially guardians as well to fill in the time when all the students are shaking their bags. It is important that the science ambassadors are constantly quizzing the students on the concepts learned in order for them to retain the information and understand how these apply to the ice cream being made.
Closing and Assessment	**Overview:** (10 Minutes) How does water turn into ice? What is salt and when can we use it? How does heat flow in a system? Discuss large scale examples of how salt affects temperature such as why we put ice on icy roads and why do we put salt in our water when we boil it. **Brief Assessment:** (5 minutes) Allow all science ambassadors to ask the questions that were required to make before coming to the event. **Closing:** Answer all last minute questions, comments or concerns. Make sure everyone has a great time!