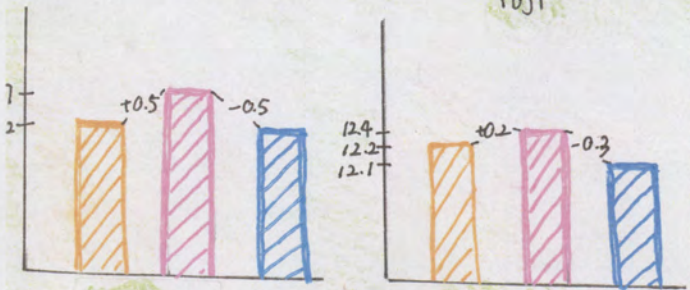
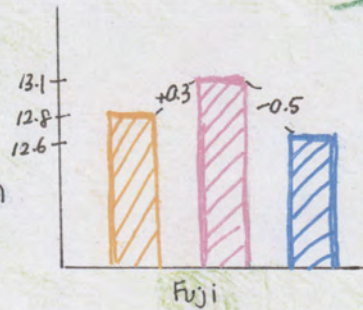


# At The Hirosaki Research Institute

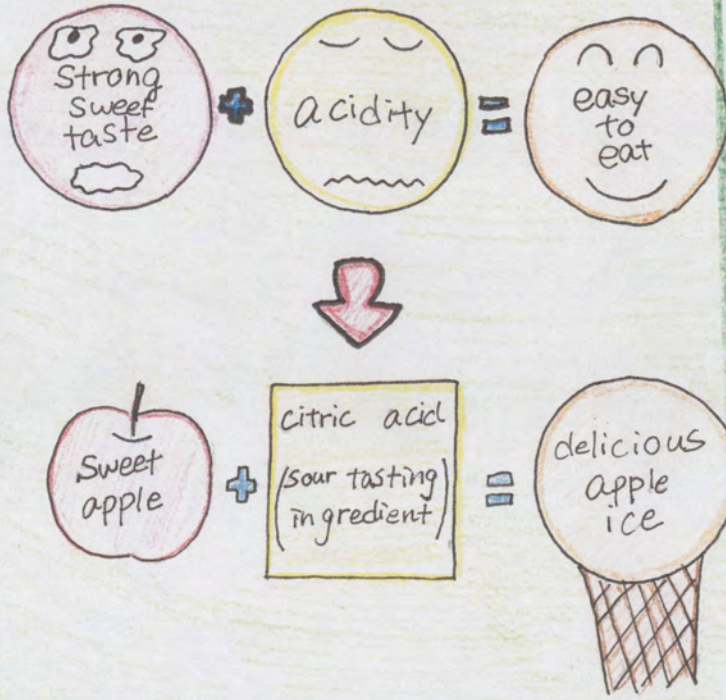
We did an experiment using a liquid freezer. We froze three types of apple juice and checked the sugar content at room temperature, when it was cold, and after it was frozen. In the experiment, the sugar content changed. But according to the researchers, even if the temperature changes, the sugar content won't. In our experiment, the saccharimeter didn't show the right sugar content when the temperature changed.

## Results

- room temperature
- cold
- completely frozen



## Observation



## Next Movement

We will make the apple ice cream again with different kinds of apples and have some students taste it, and take a survey to see which apple makes the best ice cream.

# Apples (juices)

# Sugar Content and Ice Cream

Hirosaki Minami High School  
1<sup>st</sup> grade class 6 group 8



# Purpose

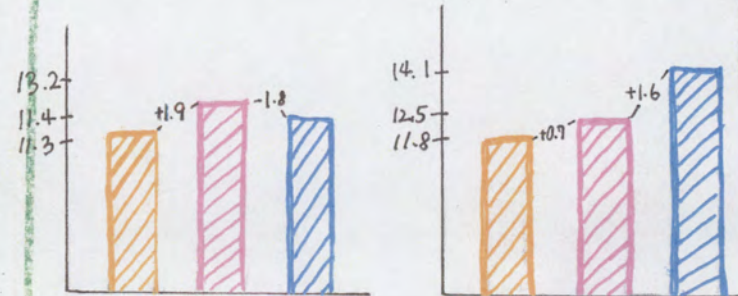
- ~ promote Hirosaki's Special product, apples by making sweets that are easy to make
- ~ Find the type of apple that has the best sugar content to make icecream.

# What We Used

- apples (100% apple juice)
- Saccharimeter
- Micropipette
- freezer
- ziplock
- ice
- Salt

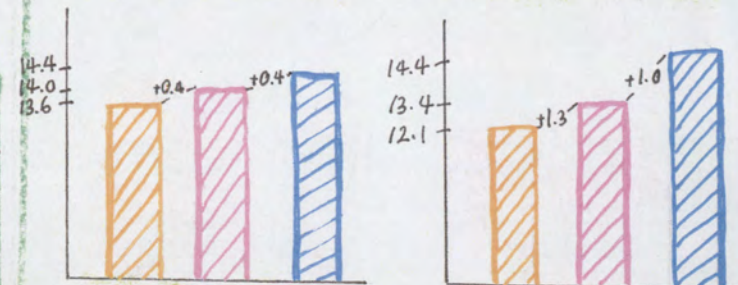
# Results

- room temperature
- Sherbet
- Completely frozen



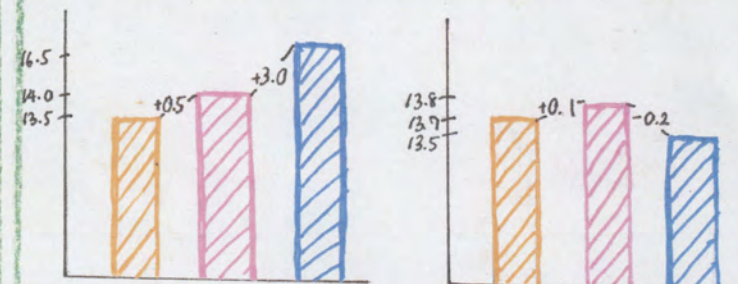
Sour type apple juice

regular type apple juice



Sweet type apple juice

Blue nebuta apple juice



Red nebuta apple juice

Orin apple juice

# Research Content

- ~ check the apple juices sugar content
  - ① when its at room temperature
  - ② when its cold
  - ③ when its frozen
 and see how it changes
- ~ With an apple with a high sugar content, and a low sugar content, check the sugar content of the different types.

# How We Did Our Experiment

1. Put ice and some salt into a big ziplock bag
2. Put the apple juice into separate bags.
3. Put the juice bags into the bag of ice
4. Shake the bag until the juice inside is completely cooled and is turning into Sherbet.
5. check the sugar content for each bag
6. Freeze the juice until its completely frozen
7. Check the sugar content