

Post-trip Lesson for On a Roll

If It's Cold Out, Do Customers Still Buy Ice Cream?

Engagement

- Ask students to remember and discuss some of the models from The Discovery lab.
- Pose the questions to students:
 - a. Do you think you eat more ice cream when it is hot outside or when the weather is cold?
 - b. Who would be interested in this information?
 - c. How would they use the information?
- Making a correlation between two factors like ice-cream sales and the weather might allow an ice cream business to make a business model to improve overall sales. This is an example of how models are used in the real world.

What You Will Need:

- copy of data sheet for students (on page two)

Exploration

1. An ice cream company kept track of how much profit was made on ice creams sales on different days.
2. By comparing this to the weather on each day they can make a mathematical model of sales versus weather.
3. Use the ice cream data to make a model of how much earned income they will make based on the temperature.
4. NOTE: See page two for data.

Explanation

We can easily see that warmer weather leads to more sales, the relationship is good but not perfect.

Explanation

Discuss "Correlation Is Not Causation" with students, which says that a correlation does not mean that one thing causes the other. What could be other reasons the data has a good correlation?

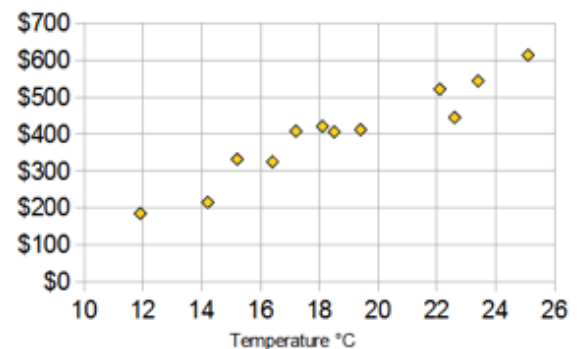
Other resources

Data and graph from <http://www.mathsisfun.com/data/correlation.html> Please visit this website for calculation of correlation.

Next Generation Science Standards:

Science and Engineering Practice - Developing and Using Models

Common Core: SL.(6-8).1



Sample Graph

Temperature Verses Ice Cream Profit Data

Temperature °C	Ice Cream Sales
14.2°	\$215
16.4°	\$325
11.9°	\$185
15.2°	\$332
18.5°	\$406
22.1°	\$522
19.4°	\$412
25.1°	\$614
23.4°	\$544
18.1°	\$421
22.6°	\$445
17.2°	\$408