

Chocolate Preferences Voting and Graphing Techniques

Grade Levels – 9-10

Standards –

Mathematics: 2.6.11.H, 2.7.11.B, 2.7.8.B

Materials Needed –

- At least 3 types of chocolate in sample sized pieces
- Graph paper
- Survey record sheets

Teacher Background –

This lesson is intended to enrich your students' visit to *The Hershey Story*. It seeks to use chocolate in a way that allows your students to practice sampling and graphing techniques. During this lesson, students will design a survey that will find the chocolate preferences of students in their class, grade level, or school. Students will also design graphs that visually represent their findings. This lesson will take approximately two -50 minute class periods to complete.

Lesson Plan

Essential Question –

What is the best way to determine the chocolate preferences of other students at school?

Vocabulary – (Have these words and their definitions posted in your classroom)

1. Survey
2. Pie chart, Line Graph, Bar Graph (Review)
3. Colored pencils, crayons
4. A Compass
5. Instructions on making pie charts and bar graphs

Activating Strategies –

Step 1 – Perform a test of three or more different types of chocolates for your class

Step 2 – Ask your students to vote by writing their choice on a slip of paper and turning it in.

Step 3 – Inform your students they just found the plurality vote winner. Tell your

students the plurality vote winner in any election is simply the item that receives the most votes.

Step 4 - Instruct your students they will use a different method called the Borda Count.

Step 5 - Have your student write down the names of the chocolate choices.

Step 6 – Now ask your students to number their top three choices.

Step 7 – Now, assign point values to each vote (a number 1 receives 5 points, a number 2 vote receives 3 points, a number 3 vote receives 1 point)

Step 8 – Now tally up the votes to identify the election winner

Step 9 – Ask your students to discuss the following question -

“Which balloting system is fairer? Why?”

Teaching Strategies –

Day 1

Step 1 – Ask your students to use what they learned during the activating strategy to design a system for testing the rest of the school or grade level.

Step 2 – Divide your class in half. Half of classroom will use the plurality method, and half of your class will use the Borda count method.

Step 3 – Each team should be responsible for designing all aspects of the survey, including ballots, record sheets, and samples if possible.

Step 4 – instruct your students to gather sample data from other students. (A free lunch period would be ideal)

Day 2

Step 1 – Allow each group to share the data they found on their data record sheets... Determine the winners using each election method.

Step 2 – Break each team up into smaller groups of 2-4 students

Step 3 – Ask the students to review their knowledge of pie and bar graphs by creating graphs to represent the data the found during the survey

Step 4 – Post the survey data in the room at the end of the class period.

Summarizing Strategies:

Ask your students to research the ways that head executives are determined in the United States, England, Israel, France, and Germany. Ask them to identify balloting techniques from each of these Democracies. Instruct students to write a short response to the following question – “Describe your opinion of the method the United States uses to elect it’s’ chief executive.”