The Taste of Yellow

Utah Secondary Mathematics Core Curriculum Standards
Displaying data, collecting and interpreting data, comparing graphs

GAISE Guidelines for Assessment and Instruction in Statistics Education

Level B Understanding – formulate questions, collect data, analyze data, and interpret the results

Teacher generated question – What factors are important in creating an experiment to discover how color affects taste?

Student generated questions – Which drink is perceived to taste better?

Learning Outcomes

- Students become interested in statistics
- Students understand how to collect and interpret statistical information
- Students create and conduct a statistical investigation

Specific Skills

- Students collect and record data
- Students chart results
- Students analyze results
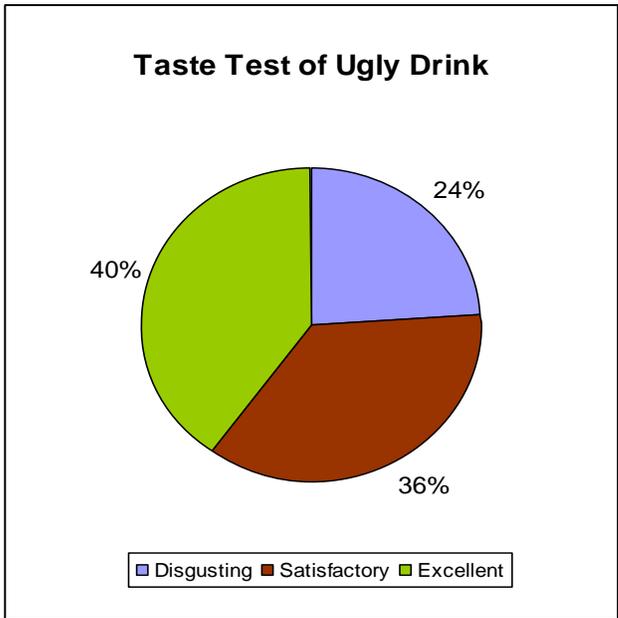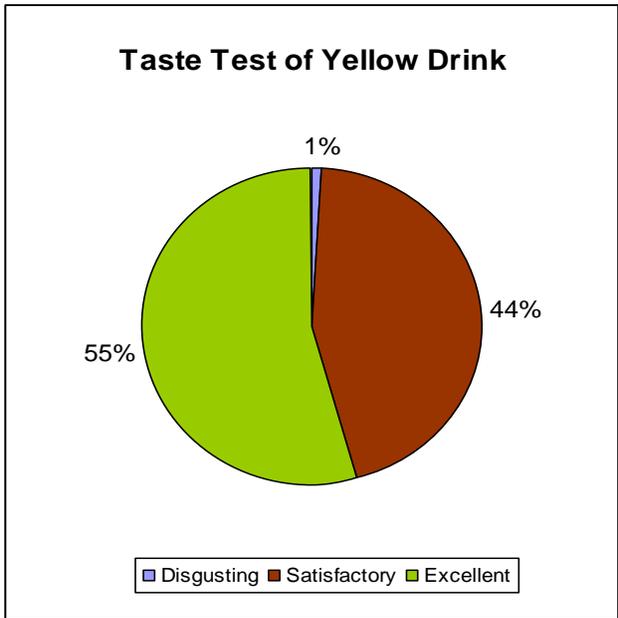- Students compare pie-charts

Materials Needed
- Yellow lemonade
- Food coloring
- Small paper cups

Directions
Confirm the conditions whereby the school's food safety policies will permit distributing food to students. Then, before the activity, prepare two batches of lemonade. Use food coloring to dye one of the batches to look as unappealing as possible. Tell the students they will be participating in a survey to see which kind of drink tastes better. Explain that they will be split into two groups and each group will taste and rate one of the types of drink. Have the students decide on a method to use to rate the drinks. A simple scale like "Disgusting", "Satisfactory" and "Excellent" works well. Ask the students what factors are important in carrying out this experiment (i.e., randomization, same rating scale, etc.) and then supervise the taste testing. Discuss ways to analyze and display the data. Afterwards, tell the students that the drinks were both lemonade and were actually the same except the ugly one contained food coloring. Discuss why the results may have turned out the way they did.

How Does This Taste?					
Yellow Drink			**Ugly Drink**		
Disgusting	*Satisfactory*	*Excellent*	*Disgusting*	*Satisfactory*	*Excellent*
1	39	48	18	27	30

Taste Test of Yellow Drink

1%

44%

55%

☐ Disgusting ☐ Satisfactory ☐ Excellent

Taste Test of Ugly Drink

24%

40%

36%

☐ Disgusting ☐ Satisfactory ☐ Excellent

Prompt the students to generate and answer data analysis questions.

How do the pie-charts differ?

Which drink appears to taste better?

Tell the students that the drinks were the same flavor: lemonade.

Are you surprised by the results? Why do you think the results turned out this way?

Are there other factors that might have affected the results?