

CONSUMING TRENDS

Performance Standards (10A/10B).J

Create and administer a survey, analyze and present results:

- *Mathematical knowledge:* create and conduct survey to obtain accurate conclusions based on data and population.
- *Strategic knowledge:* determine sampling techniques to elicit information.
- *Explanation:* explain completely what was done and why it was done.

Procedures

1. ***In order to organize, describe and make predictions from existing data (10A) and formulate questions, design data collection methods, gather and analyze data and communicate findings (10B)***, provide students with sufficient learning opportunities to develop the following:
 - Interpolate, extrapolate and make predictions from given information.
 - Present results and conclusions from given data using basic statistics (e.g., measures of central tendencies, standard deviation).
 - Create a survey from a critical question and decide which sampling technique to use for the survey.
 - Evaluate surveys for clarity, bias, return rate and specialized audiences.
 - Describe how sample statistics reflect the values of population parameters and use sampling distributions as the basis for informal inference.

Family and Consumer Science classes frequently include information about consumer trends in order to more fully integrate material from the text/lecture with daily consumer choices in the marketplace. Creating a survey to study a current trend among other students in order to interpolate, extrapolate and make predictions from given information would more closely relate the current class topic with current consumer trends. This assessment will also address the consumer education objective requiring a curriculum to help students understand the interdependent roles of the consumer, the worker and the citizen in our economy.

2. Students are given the task sheet to design and carry out a survey, analyze and present results. High school students are responsible for collectively spending thousands of dollars each day. This section of the consuming population is of great interest to companies who produce products that would be of interest to teens. Do your students see a “Consuming Trend” among the students at your school? Students in small groups are to create a set of questions that would elicit important information to guide the consumer spending/choices of other students on a topic that is important to teens and represents current class focus. Students will decide upon a sampling technique and how many responses will be needed to get a representative sample. Each team will describe in words how and why the sampling technique was chosen, what portion of the population will be sampled and how. The proposed survey proposal will be submitted to the teacher for approval.

After submission of the proposal, students will carry out the sampling and evaluate it for clarity, bias, return rate if not done orally and specialized audiences. Results and conclusions from the data will be presented in an organized form. Students will make predictions and describe how the sample statistics reflect the population parameters. It is assumed that the students have studied and discussed sampling techniques and their advantages and disadvantages.

3. A 4 in mathematics knowledge would require a completed survey that gathers usable data and a presentation with accurate conclusions based on the data and the population. A 4 in strategic knowledge would require a sampling technique that appropriately elicits the desired information. A 3 may be awarded if the sampling technique was appropriate but, for a reason the student can explain, did not work well. A 4 in explanation would require a complete explanation of the choice of sampling technique, analysis, conclusions and predictions.

Examples of Student Work

- [Meets](#)
- [Exceeds](#)

Time Requirements

- One or more class periods may be required to create a critical question and write the survey questions, deciding which sampling technique to use
- Two or three days may be required outside of class to administer the survey
- Several days will be needed to analyze and present results

Resources

- Copies of the “Consuming Trends” task sheet
- Access to a population to sample
- Mathematics Rubric

NAME _____ DATE _____

CONSUMING TRENDS

Student Task Sheet

High school students are responsible for collectively spending thousands of dollars each day. This section of the consuming population is of great interest to companies who produce products that would be of interest to teens. Do you see a “Consuming Trend” among the students at your school? Create a set of questions that would elicit important information to guide the consumer spending/choices of other students on a topic that you feel is important and represents current class focus. Decide upon a sampling technique and how many responses will be needed to get a representative sample. Describe in words how and why you chose your sampling technique, what portion of the population will be sampled and how. Include your proposed survey. Submit your proposal.

After submission of your proposal, carry out the sampling and evaluate it for clarity, bias, return rate if not done orally and specialized audiences. Present results and conclusions from the data in an organized form. Make predictions and describe how the sample statistics reflect the population parameters.

Upon completion of the survey, submit a final report that includes:

- a description in words of how and why you chose your sampling technique, what portion of the population was sampled and how and a post-analysis of the effectiveness of your sampling technique,
- a copy of the survey,
- a presentation of all the data gathered,
- a summary of your data analysis, justifying any techniques used, and
- a written summary of your conclusions and any predictions or inferences your data supports.

MATHEMATICS RUBRIC

NAME _____ DATE _____

- Exceeds standard (must receive a 4 in each area)
- Meets standard (must receive all 3's or a combination of 3's and 4's)
- Approaches standard (must receive all 2's or any combination which may include a 3 or a 4)
- Begins standard (has no 3's or 4's but not all 1's)
- Absent (has all 1's and 0's)

	Mathematical Knowledge	Strategic Knowledge	Explanation
4	<ul style="list-style-type: none"> • Wrote the right answer. • Used math words correctly to show understanding of how math works. • Worked it out with no mistakes. • Used the right math words and labeled the answers. 	<ul style="list-style-type: none"> • Identified all the important parts of the problem, and knew how they went together. • Showed all the steps used to solve the problem. 	<ul style="list-style-type: none"> • Wrote what was done and why it was done. • If a drawing was used, all of it was explained in writing.
3	<ul style="list-style-type: none"> • Knew how to do the problem, but made small mistakes. 	<ul style="list-style-type: none"> • Identified most of the important parts of the problem. • Showed most of the steps used to solve the problem. 	<ul style="list-style-type: none"> • Wrote mostly about what was done. • Wrote a little about why it was done. • If a drawing was used most of it was explained in writing.
2	<ul style="list-style-type: none"> • Understood a little, but made a lot of big mistakes. 	<ul style="list-style-type: none"> • Identified some of the important parts of the problem. • Showed some of the steps used to solve the problem. 	<ul style="list-style-type: none"> • Wrote some about what was done or why it was done but not both. • If a drawing was used, some of it was explained in writing.
1	<ul style="list-style-type: none"> • Tried to do the problem, but didn't understand it. 	<ul style="list-style-type: none"> • Identified almost no important parts of the problem. • Showed almost none of the steps used to solve the problem. 	<ul style="list-style-type: none"> • Wrote or drew something that didn't go with the answer. • Wrote an answer that was not clear.
0	<ul style="list-style-type: none"> • No answer attempted. 	<ul style="list-style-type: none"> • No strategy shown. 	<ul style="list-style-type: none"> • No written explanation.
Score			