

## ANALYSIS OF PARTICIPATION IN SKILLS USA/VICA STATE CONTEST

### Performance Standard (10A/10B).J

Create a critical question and design an instrument to gather the needed data:

- *Mathematical knowledge*: create and conduct a survey and analyze data to draw conclusions.
- *Strategic knowledge*: follow systematic process to develop clear, unbiased survey and conclusions.
- *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:

- Present results and conclusions from a given data set using basic statistics.
- Interpolate, extrapolate and make predictions from given information.
- 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.

The ability to accurately gather data, analyze that data and make decisions based upon that data is critical for businesses to be successful. The survey technique is often used to gather such data from consumers. Career students wishing to own their own business or be involved in the management of a business need such skills to be successful in the workplace.

2. Students are given the task to be completed both inside and outside of class and results brought back for analysis and presentation.

Your school activities director wants to determine the anticipated per-student cost of Skills USA/VICA members participating in the state skills contest. Students will gather information pertinent to desired and anticipated transportation, lodging and contest fees. Students will determine the average cost per member based on projected cost information. Students will predict price variations that may occur due to changes in number of club members that qualify to participate in a contest. (This must be done because some costs are not related to the number of members participating.) Gather all required data. Write a report of the results with possible reasons for good or inadequate results for each data item. Make suggestions for improving questions that did not yield good data.

3. Evaluate the work using the mathematics rubric.
  - A 4 in mathematics knowledge would require the completion of the survey, accurate and appropriate summary of results and conclusions/predictions based on the data.
  - A 4 in strategy would require a clear, critical question and a set of unbiased questions that support the gathering of data relative to the critical question. A 3 may be awarded for strategy if the questions did not elicit the data desired but the student can describe how they should be changed to improve the quality of the data.
  - A 4 in explanation would require a detailed written summary of the results and analysis of the success of each question with suggestions for improvement of questions.

### Examples of Student Work

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

### Time Requirements

- One or more class periods devoted to developing the questions
- Two or three days to collect the data
- One week to analyze and present results and conclusions

### Resources

- Copies of the “Analysis of Participation in Skills USA/VICA State Contest” task sheet
- Access to a membership list to sample
- Information from activities director
- Mathematics Rubric

NAME \_\_\_\_\_ DATE \_\_\_\_\_

**ANALYSIS OF PARTICIPATION IN  
SKILLS USA/VICA STATE CONTEST**

Student Task Sheet

Your school activities director wants to determine the anticipated per-student cost of Skills USA/VICA members participating in the state skills contest. Students will gather information pertinent to desired and anticipated transportation, lodging and contest fees. Students will determine the average cost per member based on projected cost information. Students will predict price variations that may occur due to changes in number of club members that qualify to participate in a contest. (This must be done because some costs are not related to the number of members participating.) Gather all required data.

1. Develop a survey that determines what type of transportation and lodging club members wish to use. Research will be required so that the survey lists the types of transportation available and lodging arrangements that can be made.
2. Determine predicted costs for transportation, lodging and contests.
3. Based on the most popular choices for transportation and lodging, calculate what the cost per club member will be to participate in the state contest.
4. Write a report of the results with possible reasons for good or inadequate results for each data item
5. Make suggestions for improving questions that did not yield good data.

## 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)

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