

Name: \_\_\_\_\_  
Algebra 1

Date: \_\_\_\_\_  
Band: \_\_\_\_\_

## Unit 12: Data Analysis & Probability Performance Tasks

*Instructions:* Choose one performance task. Write all your work on a separate clean piece of paper and attach it to this page.

### Big Idea: Data Collection and Analysis

When you collect data, you should use a sampling technique free of bias. You can use standard measures to describe data sets and make estimates, decisions, or predictions.

### Big Idea: Data Representation

You can use matrices, frequency tables, histograms, box-and-whisker plots, tree diagrams, and other representations to describe different types of data sets.

### Performance Task 1

You are writing an article on gaming systems for your school newspaper. You take a survey of 250 people ages 13 to 18 and ask whether they have a home gaming system, a portable gaming system, or no gaming system. The results of your survey are shown in the matrix at the right.

	Age					
	13	14	15	16	17	18
Home gaming	12	22	26	32	24	26
Portable gaming	5	5	4	9	7	6
No gaming	18	12	8	6	12	16

- A. Make a histogram that represents the number of students who have gaming systems, either home or portable. Is the histogram *uniform, symmetric, or skewed*?
- B. What is another way you could have drawn the histogram in part (a)? Explain.
- C. Display some or all of the data using a different representation. Explain your choice.
- D. If a person needed to know as much specific data as possible, what kind of data display would you shown the person? Why?
- E. What is the experimental probability that the next person you survey does *not* have a gaming system?

### Big Idea: Probability

You can find theoretical and experimental probabilities to make decisions or predictions about future events.

### Performance Task 2

The Web site at the right shows the results of an online survey that asks, “Would you rather go on a beach vacation, a city vacation, or stay at home?”

- A. Is the survey question biased? Why or why not?
- B. Based on the survey, what are the odds that a person will want to stay at home for vacation?
- C. Based on the survey, what is the probability that a person will travel for vacation?



**Performance Task Assessment: Analytic Holistic Scoring****Developing Autonomy—The student**

3	Persevered to complete the problem without help
2	Completed most of the problem without help
1	Needed key hints to complete the problem
0	Needed extensive guidance to work the problem

**The Solution Process—The student’s work showed**

3	A complete and appropriate solution process
2	An appropriate solution process that is almost complete
1	An appropriate process that is partially complete
0	An inappropriate process or no evidence of a process

**The Conclusion/Answer—The student’s answer is an**

3	Accurate conclusion, supported by valid evidence and reasons, appropriate to this problem and context
2	Inaccurate but logical conclusion, supported by evidence and reasoning but incorrect due to a minor factual error (in details of problem, in computation, recall a formula, etc.) or minor mistake in reasoning
1	Inaccurate but logical conclusion that overlooks, or gets wrong significant facts (about the problem, the rule, computation, etc.)
0	Inappropriate conclusion: not supported by facts and logic, or there is no conclusion

**Teacher Comments:**