

# BALTIMORE COUNTY PUBLIC SCHOOLS

## OFFICE OF MATHEMATICS

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SAMPLE PERFORMANCE TASK

### CRISPY CRUNCHIES CONTEST

Written by:

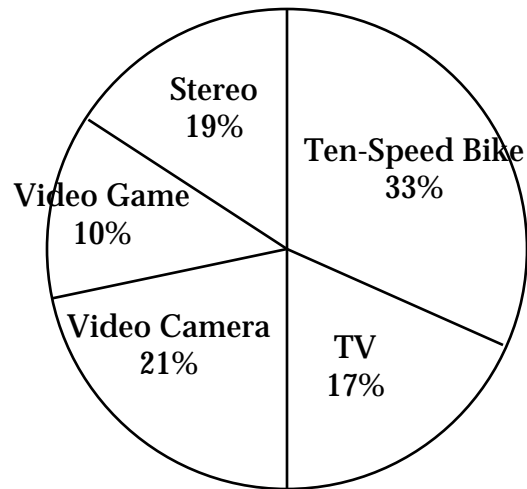
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## CRISPY CRUNCHIES CONTEST

### ACTIVITY 1

Crispy Crunchies Cereal is sponsoring a contest and the company decided to survey 1500 middle school children to determine what item should be selected as the grand prize of their contest. The results of the survey are shown in the space below.

### GRAND PRIZE SURVEY RESULTS



A. What percentage of students selected a ten-speed bike as the grand prize?

\_\_\_\_\_

B. How many of the 1500 students selected the ten-speed bike as the grand prize?

\_\_\_\_\_

C. Explain how you arrived at your answer to 1B.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## ACTIVITY 2

In order to win the ten-speed bike, you will need to collect seven game cards. Each cereal box contains one random game card. You have asked your parents to buy you enough cereal to guarantee that you will have all seven game cards.

You decide to simulate the contest to predict how many boxes of cereal your parents will need to buy.

- A. Predict how many boxes you think your parents will need to buy in order for you to win the ten-speed bike and explain how you arrived at your answer.

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- B. Circle the tool you would use to simulate the contest.

Coin   Die   Spinner   Random-Number generator   Other \_\_\_\_\_

Explain your choice and remember to include:

- why your choice works
- why the other choices may not be the best tool to use for this simulation.

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- C. Write the steps you will follow to simulate the contest. Remember to include:

- how you will use the tool you selected
- how you will collect and record your data
- how you will know that your simulation is over.

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D. Perform your simulation. Make a table to record and display your results.

E. Now that you have completed the simulation, how many boxes of cereal will your parents need to buy in order for you to win the ten-speed bike. Use the results of your simulation to explain and support your answer.

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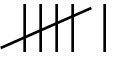



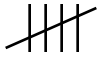

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### ACTIVITY 3

Corey collected the data below when he did his simulation. Use this data to answer the following questions.

CARD NUMBER	1	2	3	4	5	6	7
TALLY							

A. What is the probability that Corey got card #1?

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B. Explain how you arrived at your answer to 3A.

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C. What percent of the boxes contained card #2?

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D. Look at Corey's chart. How many boxes did Corey's parents need to buy in order to get all seven cards?

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## SCORING GUIDE FOR CRISPY CRUNCHIES CEREAL TASK

### ACTIVITY 1

- |     |   |                              |
|-----|---|------------------------------|
| 1A. | 1 | Correct Answer               |
|     | 0 | Incorrect Answer             |
| 1B  | 1 | Correct Answer               |
|     | 0 | Incorrect Answer             |
| 1C  | 2 | Explanation correct          |
|     | 1 | Explanation somewhat correct |
|     | 0 | Explanation incorrect        |

### ACTIVITY 2

- |    |   |   |
|----|---|---|
| 2A | 1 | Prediction given  |
|    | 0 | No prediction given   |
| 2B | 2 | Tool circled and explanation includes two bulleted items  |
|    | 1 | Tool circled and explanation includes one bulleted item   |
|    | 0 | Tool circled and explanation incorrect or missing   |
| 2C | 3 | Explanation includes three bulleted items   |
|    | 2 | Explanation includes two bulleted items   |
|    | 1 | Explanation includes one bulleted item  |
|    | 0 | Explanation incorrect or missing  |
| 2D | 1 | Results of simulation reasonable and recorded in table or chart   |
|    | 0 | Results not reasonable or missing   |
| 2E | 2 | Explanation includes number of boxes to be purchased based on the results of the simulation and how this answer was determined through the use of the simulation. |
|    | 1 | Explanation includes only one of the above items  |
|    | 0 | Explanation incorrect or missing.   |

### ACTIVITY 3

- |    |   |                                  |
|----|---|----------------------------------|
| 3A | 1 | Correct answer                   |
|    | 0 | Incorrect answer                 |
| 3B | 2 | Explanation correct              |
|    | 1 | Explanation somewhat correct     |
|    | 0 | Explanation incorrect or missing |
| 3C | 1 | Correct answer                   |
|    | 0 | Incorrect answer                 |
| 3D | 1 | Correct answer                   |
|    | 0 | Incorrect answer                 |

### ACTIVITY 4

- |    |   |   |
|----|---|---|
| 4A | 1 | Correct answer                                  |
|    | 0 | Incorrect answer                                |
| 4B | 1 | Choice circled                                  |
|    | 0 | Choice not circled                              |
| 4C | 3 | Letter includes all bulleted items              |
|    | 2 | Letter includes two of the three bulleted items |
|    | 1 | Letter includes one of the three bulleted items |
|    | 0 | Letter missing or incomplete                    |