

## 8

## Family Letter

**Dear Parent or Guardian:**

In this chapter, your child will be studying combinations and probability. It is often useful to know how many different ways we can combine items. You can determine how many different sandwich choices you have. Knowing how to find probability can help you make choices when deciding what to do in a real-world situation.

In **Chapter 8, Probability**, your child will learn to count outcomes to find the number of permutations and combinations of objects, to find the probability of composite experiments, to find theoretical and experimental probability and how to solve problems by acting them out. Your child will also learn about simulations and how to predict the actions of a large group by using a sample. In the study of this chapter, your child will complete a variety of daily classroom assignments, activities, and possibly a chapter project.

By signing this letter and returning it with your child, you agree to encourage your child by getting involved. Enclosed is an activity you can do with your child that practices how the math we will be learning in Chapter 8 might be tested. You may also wish to log on to **www.msmath3.com** for self-check quizzes and other study help. If you have any questions or comments, feel free to contact me at school.

Sincerely,

Signature of Parent or Guardian \_\_\_\_\_ Date \_\_\_\_\_

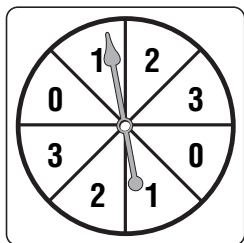
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## Family Activity

## State Test Practice

Fold the page along the dashed line. Work each problem on another piece of paper. Then unfold the page to check your work.

1. Callyn is using the spinner shown below in a probability experiment.



Which of the following is *not* true of the spinner shown above?

- A There are four outcomes.  
 B The probability of spinning a 0 is  $\frac{1}{4}$ .  
 C There are eight outcomes.  
 D None of these are false.

*Fold here*

## Solution

1. *Hint: The number of outcomes is equal to total number of DIFFERENT possibilities in a probability experiment.*
- A There are four possible outcomes: 0, 1, 2, or 3, so this statement is true.  
 B The probability of spinning a 0 is 2 out of 8 because there are two 0 spaces and 8 total spaces. 2 out of 8 can be reduced to 1 out of 4, so this statement is true.  
 C Since there are two of each outcome, there are only 4 possible outcomes, so this statement is not true.  
 D Since we determined that option C is not true, this statement does not apply.

The answer is C.

2. A breeder is making a waiting list of good homes for puppies that are to be born in June. All of the customers on the list wish to purchase a female puppy.

If the dog has five puppies, what is the probability that they will all be female?

- A  $\frac{1}{32}$   
 B  $\frac{5}{32}$   
 C  $\frac{1}{5}$   
 D 0

## Solution

2. *Hint: The probability of each puppy being female is 1 in 2, or  $\frac{1}{2}$ .*

When you are calculating the probability of compound events, or multiple things happening, you multiply the probabilities of all of the individual events. In this case, the probability that each puppy will be female is one out of two, so the probability that they will all be female is:

$$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{32}.$$

The answer is A.