Name: Key Date: _____ Period: _____

What Do You Expect Unit Test REVIEW Day 2

Standards

	7.SP.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. [1
	7.SP.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
	7.SP.7 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
	7.SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

1. Rachel rolled a die 10 times. It has landed on the number 6 ten times.

a. Is this possible? Explain.

Yes. Each time Rachel rolls, there is a 1/6 possibility of landing on 6

b. Is this likely? Explain.

No. There are many ways a die can land in 10 tosses. 10 sixes is only one possibility.

c. Which of the following statements is true about what will happen when Rachel rolls the die again? Why?

i. The die will land on 6.

ii. The die will not land on 6.

iii. The probabilities of the die landing on 6 is 1/6.

iv. The die is more likely to land on 6.

2. Mandy has a bag containing one green block (G), one brown block (B), and one yellow block (Y). She conducted 20 trials in which she drew one block from the bag and then flipped a fair coin. Here are the results of her experiment:

Color	G	Y	G	G	Y	Y	B	Y	G	Y	B	Y	B	Y	Y	B	G	G	Y	Y
Coin	T	T	H	T	H	T	T	H	T	T	T	H	T	T	T	T	H	T	H	T

a. What is the experimental probability of drawing the brown block and flipping heads? What is the theoretical probability?

Experimental = 0 (didn't happen)

G < H GH, T GT
Y < H YH, T YT
B < H BH, T BT

P(brown/heads) = 1/6

c. How would you explain the differences you found between the experimental and theoretical probabilities?

With so many possible outcomes, Mandy did not do enough trials to get a good estimate for the theoretical probability from the experiment.

3.

a. If a letter is randomly selected from the letters A, B, and C, what is the probability that the letter will be A? Explain your reasoning.

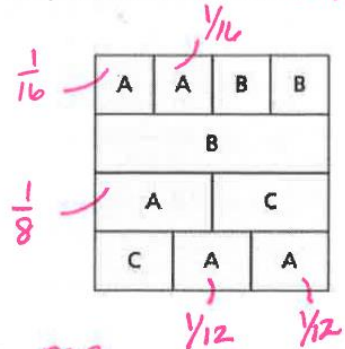
$P(A) = \frac{1}{3}$ Three equal possibilities, A is one of the 3.

b. If a letter is selected by spinning the square spinner below, what is the probability that the letter will be A? Explain your reasoning.

$A = \frac{1}{16} + \frac{1}{16} + \frac{1}{8} + \frac{1}{12} + \frac{1}{12} =$

$\frac{3}{48} + \frac{3}{48} + \frac{6}{48} + \frac{4}{48} + \frac{4}{48} = \frac{20}{48} = \frac{5}{12}$

$P(A) = 5/12$



c. Are your answers to parts (a) and (b) the same? Explain why or why not.

The answers are not the same. It is clear in part (b) that the probabilities are not equal

4. Suppose the Crawfords have four children. Assume that the probability of a boy or a girl is $\frac{1}{2}$ for each birth.

a. Draw a tree diagram to the right, and list the possible outcomes for the genders of the ~~three~~ children.

BBBB, BBBG, BBGB, BBGG, BGBB, BGBG, BGGB, BGGG, GBBB, GBBG, GBGB, GBGG, GGBB, GGBG, GGGB, GGGG

b. What is the probability that exactly two of the Crawfords' children are boys and the boys are born in a row?

P(2 boys in a row) = 3/16

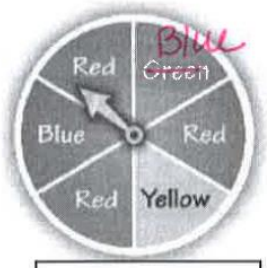
c. What is the probability that the Crawfords have at least two boys born in a row?

P(at least 2 boys in a row) = 8/16 = 1/2

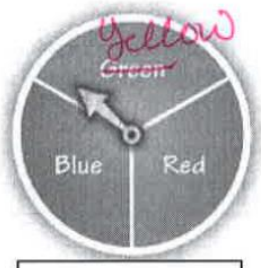
d. Explain why the answers to parts (b) and (c) are not the same.

Several outcomes have at least two boys, but not exactly 2 boys.

5. Tua has created a new game called Making Green. If the player gets blue on one spinner and yellow on the other, the player wins, because blue and yellow together make green.



Spinner A



Spinner B

	B	R	Y
R			
B			BY
R			
Y	YB		
R			
B			BY

a. Tua spins spinner A once and spinner B once. What is the probability she will get green? Use an organized list, table, or tree diagram to show how you got your answer.

P(BY or YB) = 3/18 = 1/6