Name: ____________________

Let’s Review

Complete the table listing outcomes when finding the sum of two dice.

+	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						

Write the probabilities as fractions, decimals, and percents.

1. P (7)

2. P (odd)

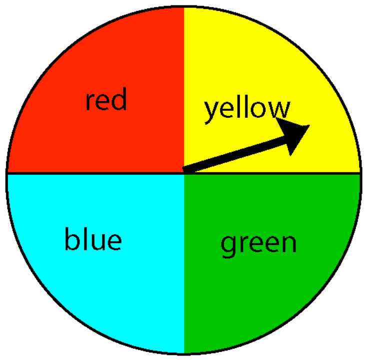
3. P (more than 6)

4. P (more than 6 **or** even)

5. P (more than 6 **and** even)

Name: ____________________

Make and complete a table listing outcomes when finding **the product of two spins**.
(red = 1, yellow = 2, green = 4, blue = 5)



Write the probabilities as fractions, decimals, and percents.

6. P (1)

7. P (odd)

8. P (more than 10)

9. P (more than 2 **<u>or</u>** odd)

10. P (more than 3 **<u>and</u>** even)

Name: ____________________

Biology rules!

Complete a tree diagram and a sample space chart for problems 1 and 2.

1. What is the probability that a family will have two boys if they have two children?

2. What is the probability that a family will have two boys and a girl (in no particular order) if they have three children?

3. What is the probability that a family with three children will have a boy first, then a girl, and finally a boy? Clue: Use the chart from problem 2 to answer this.

4. How many possible outcomes are there for a family of four children?

5. What is the probability that the first child in any family will be a girl?

Name: ____________________

I could be a biologist!

Key terms:

<u>phenotype</u>: physical appearance (example: eye color)
<u>genotype</u>: genetic makeup (examples: BB, Bb, bb)

<u>homozygous</u>: same (example: BB or bb)
<u>heterozygous</u>: different (example: Bb)

<u>dominant</u>: uppercase letter (B)
<u>recessive</u>: lowercase letter (b)

To determine the phenotype (physical appearance) of someone, you can cross traits of potential parents to find the *theoretical probability* of a certain trait being passed on to the offspring. Using a Punnett square is an easy way to do this by using the genotypes (genetic makeup) of the parents.

Complete the Punnett square to determine the probability of each event:

Cross: (cat) homozygous dominant – black-haired
homozygous recessive – white-haired
black (BB) White (bb)

	B	B
b		
b		

1. P (BB) 2. P (bb) 3. P (Bb)

Cross: (human) heterozygous dominant – curly-haired
homozygous recessive – not curly-haired
Curly (Cc) Not curly (cc)

	C	c
c		
c		

4. P (curly) 5. P (not curly)

Name: ____________________

Create Punnett squares for the following problems:

What if you looked at a second-generation offspring (homozygous recessive = cc) and crossed it with a person with the same genotype (cc)? What would be the theoretical probability for the following:

6. P (Cc) 7. P (CC) 8. P (cc)

9. A widow's peak hairline is dominant; a straight hairline is recessive. If the mother is heterozygous for the widow's peak and the father is homozygous recessive, what is the probability that their offspring will have a widow's peak? Show your work.