Name: _____ Date: _____

Chick-fil-A

For a kid's meal, you have a choice of 2 meals (nuggets or filet strips), 2 sides (fries or fruit cup), and 4 drinks (soda, lemonade, milk, or juice). You want to eat a different kid's meal every day. How many days can you order a different meal?

2 · 2 · 4 = 16 different days

Coins

To decide on punishments, Mrs. Stewart flips a coin (Heads- ISS, Tails- OSS). She flipped a coin 3 times on the first day of school.

Number of Outcomes 8 $2 \cdot 2 \cdot 2 = 8$ outcomes

P(all ISS) $\frac{1}{8}$ $\frac{1}{2}_{ISS} \cdot \frac{1}{2}_{ISS} \cdot \frac{1}{2}_{ISS} = \frac{1}{8}$ 3 days ISS

P(all OSS) $\frac{1}{8}$ $\frac{1}{2}_{OSS} \cdot \frac{1}{2}_{OSS} \cdot \frac{1}{2}_{OSS} = \frac{1}{8}$ 3 days OSS

Outfits

Your outfit can be made up of 3 shirts (red, black and white) and 2 pants (jeans and khakis).

$3 \cdot 2 = 6$ outfit combos

→ Number of Outcomes 6

→ P(red shirt and khaki pants) 1/6 $\frac{1}{3}_{red} \cdot \frac{1}{2}_{khaki} = \frac{1}{6}$

P(jeans) 1/2

P(not black shirt) 2/3

Passwords

You make a 3-letter password; you can use letters more than once. How many different outcomes are there for your password? Do you think it's reasonable for teenagers to say that someone just happened to figure out their password?

26 · 26 · 26 = 17,576 different passwords

You make a password using letters (A-Z) and numbers (0-9). How many codes can be created for a 3-space password? Why do some websites require you to use numbers in your passwords? 26 letters + 10 digits = 36

36 · 36 · 36 = 46,656 passwords

46,656 > 17,576 so including numbers increases password strength