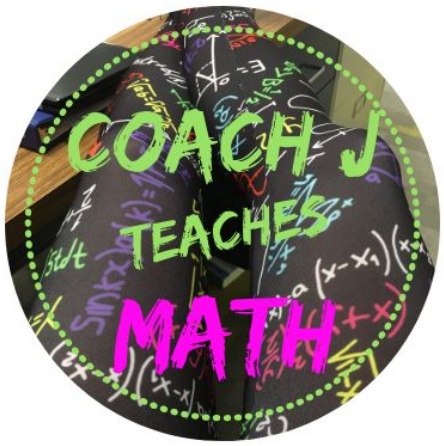

Fundamental Counting Principle, Combinations, and Permutations Card Sort

Algebra 2 Resource

How to use this Card Sort:

1. Print off the next three pages single-sided. (I like doing each page in a different color to make sure students put one of each color together.)
2. Cut apart the cards (or have the students do it).
3. Students work individually, in pairs, or in small groups to match the correct situations to the notation and correct number of ways.
4. Have students check the answer key provided on page 6.

12 Selecting which eight players will be in the batting order on an 11 person team.	1 There are 10 applicants for two Computer Programmer positions.
11 The batting order for eight players on an 11 person team.	2 A team of 9 basketball players need to choose two players to refill the water cooler.
10 A group of 20 students are going to run a race. The top 3 finishers advance to the finals.	3 A group of 20 people are going to run a race. The top three runners earn, gold, silver, and bronze.
9 There are 10 applicants for two jobs: computer programmer and software tester.	4 A team of 9 lacrosse players needs to choose a captain and co-captain.
8 A basketball player attempts ten free throws. Each attempt results in a score or a miss.	5 A math quiz has twenty multiple choice questions. Each question has three options: A, B, and C.
7 Eleven rooms in a house need to be painted. Each room can be painted yellow, purple, green, white, red, gray, blue, or pink.	6 A spinner can land on either red or blue. You spin the spinner 9 times and then roll a 6-sided die.

A

$_{11}C_{8}$

B

$_{11}P_{8}$

C

$_{10}P_{2}$

D

$_{10}C_{2}$

E

$_{20}P_{3}$

F

$_{20}C_{3}$

G

$_{9}P_{2}$

H

$_{9}C_{2}$

I

FCP

2^{10}

J

FCP

3^{20}

K

FCP

8^{11}

L

FCP

$2^{9}(6)$

165	1140
45	36
3,486,784,401	8,589,934,592
1024	3072
90	72
6840	6,652,800

Card Sort Key

Situation Card	Notation	Number of Ways
1	D	45
2	H	36
3	E	6840
4	G	72
5	J	3,486,784,401
6	L	3072
7	K	8,589,934,592
8	I	1024
9	C	90
10	F	1140
11	B	6,652,800
12	A	165