Advanced Functions – 3.4 Activities: Data Collection Name: Key (Sample)

The M and M Activity – Procedure:

1.) Each student will need to get a cup full of M and M's candies.

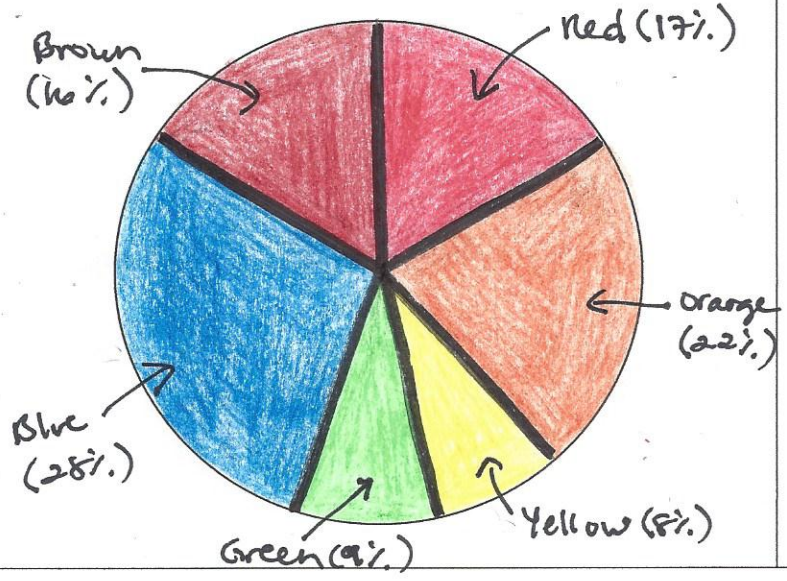
2.) Carefully, pour out your candies onto a paper plate. Divide your candies into various colors: red, orange, yellow, green, blue, and brown. You may use the "small cups" to divide your candies. If a "candy" is broken and you cannot tell what color it was, then remove it from your sample. DO NOT EAT ANY "CANDIES" UNTIL YOU ARE DONE WITH THE ACTIVITY!!

3.) Make a categorical display for the distribution of colors in your sample:
Data Display # 1 – Pie Chart and Data Display # 2 – Bar Graph
Make sure the colors in BOTH displays are represented with the same colors in your sample.

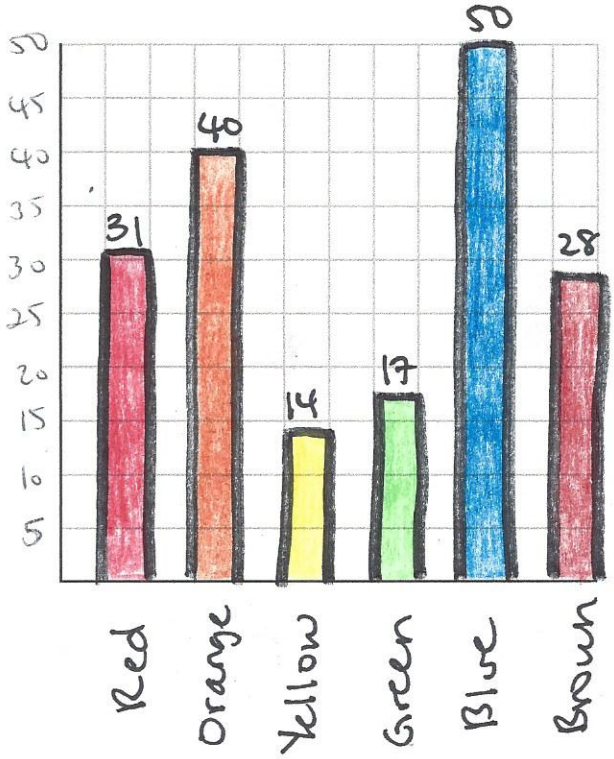
4.) Complete the questions at the bottom.

Data Display # 1 – Categorical: Pie Chart

Red	Oran	Yellow	Green	Blue	Brow	Totals
31	40	14	17	50	28	Total # = 180
17%	22%	8%	9%	28%	16%	Total % = 100%
61°	79°	29°	32°	101°	58°	Total Deg = 360°



Data Display # 2 – Categorical: Bar Graph



Questions: Answer each question appropriately.

1.) According to your sample, which color showed up the most? Blue → $\frac{50}{180} = 28\%$

2.) According to your sample, which color showed up the least? Yellow → $\frac{14}{180} = 8\%$

3.) In a 13.3 ounce bag as the following (normal) distribution of colors –
Red = 13%, Orange = 20% , Yellow = 14% , Green = 16% , Blue = 24% , and Brown = 13%
Was your sample close to this distribution? Explain. Pretty close, green + yellow off a bit...

4.) Why do you think the Mars Inc. chose to make blue the most distributed color? Explain answer.
Maybe because blue is a mellow color - makes you feel peaceful...

key Cont'd (Sample)

The National Basketball Association (NBA) Activity – Procedure:

1.) Before starting to collect and write down data, each student will randomly choose a piece of paper. Each paper has a name of a current NBA team.

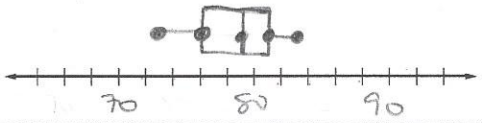
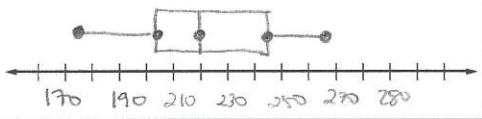
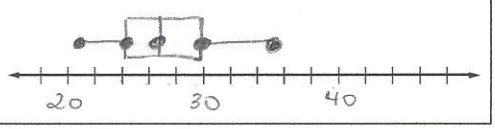
2.) Once you've selected your NBA team, place sticker in the box to the right →

3.) Go to the following website: www.rotoworld.com
   a.) Click on the NBA tab towards the top of the webpage
   b.) Click on Depth Charts tab towards the upper middle of the webpage
   c.) Scroll on the screen to find the name of your chosen team and click on the team's name
   d.) Click on Rosters to pull up your team's stats
   e.) Complete the chart below once you are the Roster page

Player's Name	Height (Inches)	Weight (Pounds)	Age (Years)
Pero Antic	83	265	32
Kent Bazemore	77	201	25
Elton Brand	81	254	35
DeMarre Carroll	80	212	28
Jerell Eddic	79	220	23
Al Horford	82	245	28
John Jenkins	76	202	24
Kyle Korver	79	212	33
Shelvin Mack	75	203	24
Paul Millsap	80	246	30
Mike Muscala	83	240	23
Dennis Schroder	73	172	21
Mike Scott	80	237	26
Thabo Sefolosha	79	220	30
Jeff Teague	74	186	26

4.) Make 3 quantitative displays (Box-Whisker Plots) of the spread of each player's height (inches), weight (pounds), and age. Make sure to check for any outliers!

5.) Complete the questions at the bottom.

Height Box-Whisker Plot	Weight Box-Whisker Plot	Age Box-Whisker Plot
5 Number Summary →	5 Number Summary →	5 Number Summary →
min = 73 max = 83	min = 172 max = 265	min = 21 max = 35
Q1 = 76 Q3 = 81	Q1 = 202 Q3 = 245	Q1 = 24 Q3 = 30
med = 79 IQR = 5	med = 220 IQR = 43	med = 26 IQR = 6
Outliers? LB = 76 − 1.5(5) = 68.5 UB = 81 + 1.5(5) = 88.5 NO	Outliers? LB = 202 − 1.5(43) = 137.5 UB = 245 + 1.5(43) = 309.5 NO	Outliers? LB = 24 − 1.5(6) = 15 UB = 30 + 1.5(6) = 39 NO
		

Questions: Answer each question appropriately.

1.) Referring to your team's "spread", which plot would a sports analysis use to make your team sound better than all the rest of the NBA teams? Probably Height since IQR is smaller meaning heights are close together

2.) How could an outlier effect a Box-Whisker Plot's information? Could bring down/up median or Q1 + Q3

3.) Which spread (height, weight, or age) really determines how well an NBA team will do for a season?
Height or Age for my team particular (Answers may vary)