4th Basic

5th Advanced

Helping With Math

USA GRADES

Dot Plots/Line Plots with Fractional Units

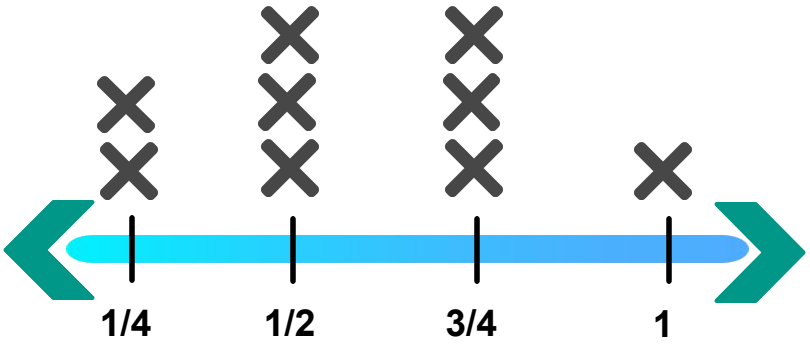
Suitable for students **aged 8-10**

This pack is suitable for learners aged 8-10 years old or 4th and 5th graders (USA). The content covers fact files and relevant basic and advanced activities involving line plots/dot plots with fractional units.

REMINDER:

- A line plot is often confused with a line graph.
- A line plot is different from a line graph.

- A ***Line plot*** is a graphical display of data along a number line with dots or X's recorded above the responses to indicate the number of occurrences a response appears in the data set.
- The dots or X's represents the ***frequency***.



- An ***outlier*** is a data value that is much greater or much less than the other data values. Outlier can affect the mean of a group of data and how you interpret your data.
- It is important for a line to have a title and a label of the x-axis to provide the reader an overview of what is being displayed.

STEPS ON HOW TO CREATE A LINE PLOT

STEP 1: Draw a horizontal line and label the axis.

STEP 2: Create a number line that includes all the values in the data set.

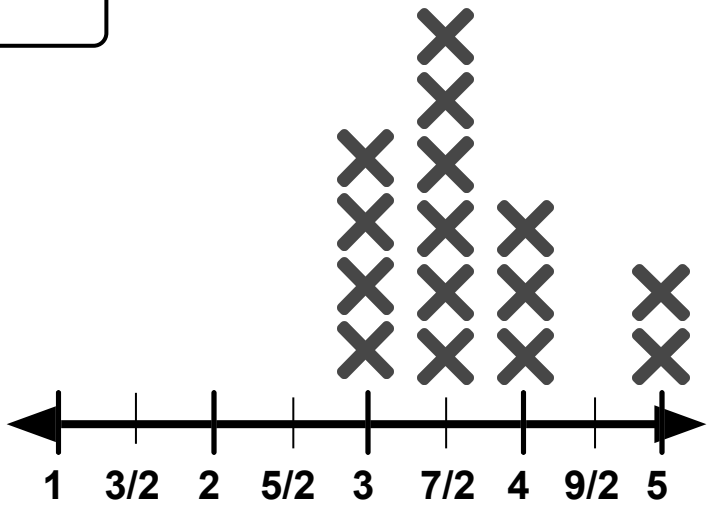
STEP 3: Place an X or dot above each data value on the number line depending on how many times the data value occurs.

EXAMPLE:

Make a line plot based on the given data below:

Length of cake (in.)	No. of Cakes
3	4
7/2	6
4	3
5	2

Line Plot

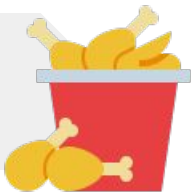


1. Most of the cakes has a length of ___ inches. Answer: **7/2 inches**

2.) How many cakes are there in all?
Answer: **15 cakes**

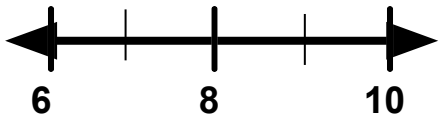
LET'S PRACTICE!

Create a line plot based on the given data on the table below.

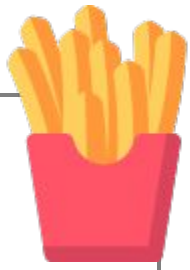


1

Length of Chocolate Stick (in.)	No. of Chocolate Sticks
6	8
8	10
9	2
10	3

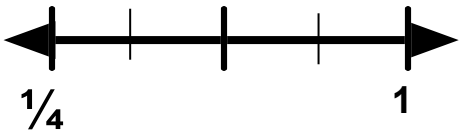


Length of Chocolate Sticks (in.)



2

Length of Gummy Worms (in.)	No. of Gummy Worms
¼	7
½	5
¾	6
1	1



Length of Gummy Worms (in.)

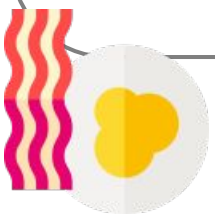


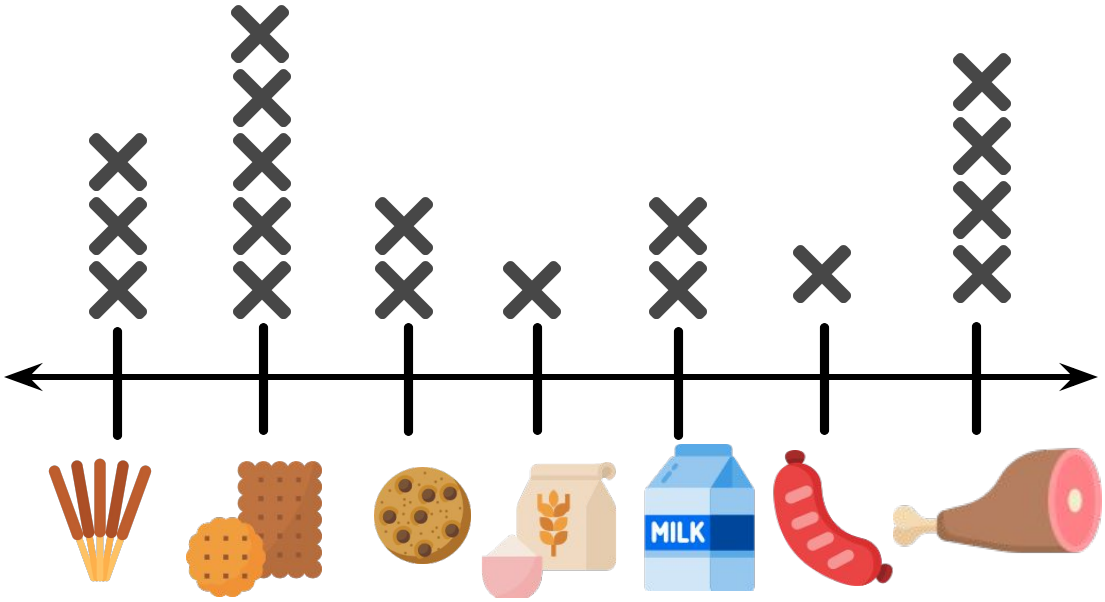
TABLE OF ACTIVITIES

Ages 8-9 (Basic)		4th Grade
1	Food Supplies	
2	Fruity Loops	
3	Best-Seller Dish	
4	Lunch Box	
5	Cupcakes for Everyone	
Ages 9-10 (Advanced)		5th Grade
6	Drinks for the Party	
7	Fruits for your Body	
8	Fine Dining	
9	Dessert Time!	
10	Pasta and Burger	

FOOD SUPPLIES

G4 Basic

Gina is in a hurry to buy food supplies for her family. Help her count the things that she needs to buy by answering the following. Count the number of products on the line plot. Write your answers on the box provided.



1 Chocolate Sticks

2 Ham

3 Milk

4 Cookies

5 Biscuits

6 Sausage

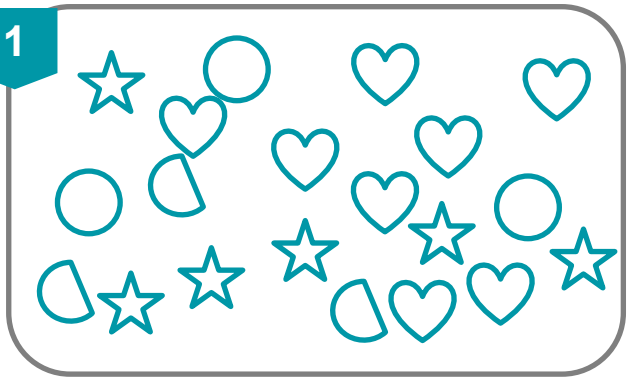
7 Oatmeal

FRUITY LOOPS

G4 Basic

You will have your favorite Fruity Loops if you managed to count the number of fruity loops in different shapes below and create a line plot. Put (X) on the line plot below to represent as the number of shapes.

1



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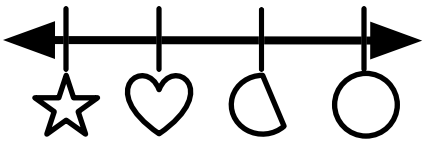
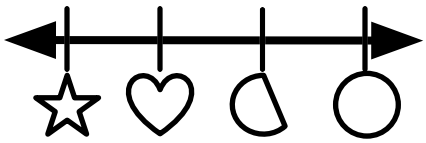
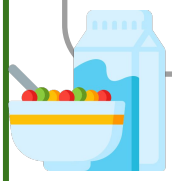




3



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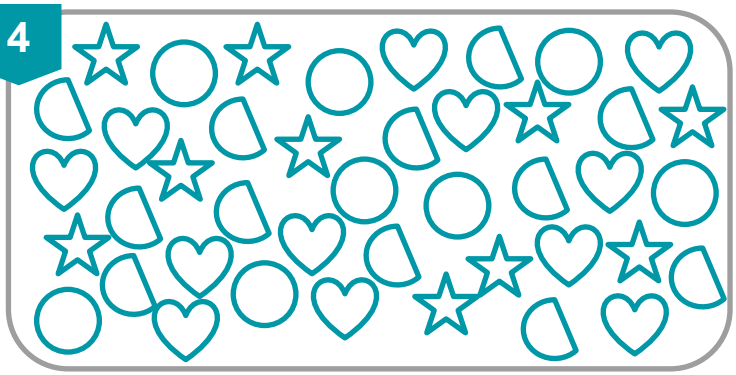
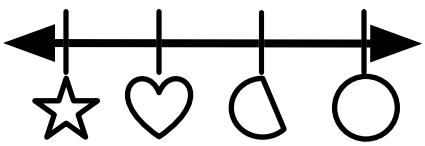
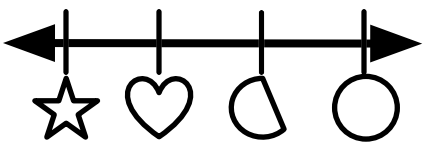






BEST-SELLER DISH

G4 Basic

The restaurant manager asked you to answer the questions below. As a reward he will give you the best-seller dish for free. Read carefully and choose the correct letter from the choices. Encircle the letter of your answer.

1. A line plot is similar to line graph.

a. TRUE b. FALSE

2. In creating a line plot, the line must be in _____ line.

a. Horizontal
b. X-axis
c. Both A and B

3. It is not important for a line plot to have a title and label of the x-axis.

a. TRUE b. FALSE

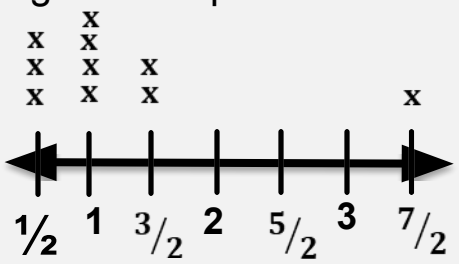
4. In a line plot, frequency represents as _____

a. X's and Y's
b. X's and Z's
c. X's and Dots

5. _____ is a data value that is much greater or much less than the other data value.

a. Label
b. Dots
c. Outlier

6. What is the outlier in the given line plot below?



a. 1/2 b. 3/2 c. 7/2

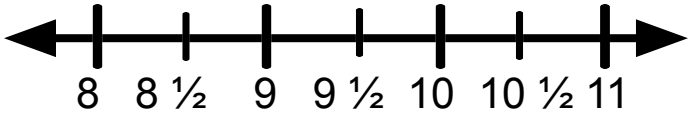
LUNCH BOX

G4 Basic

Help Nina prepare her lunchbox before she leave for school. You can help her by creating a line plot based on the given set of data below.

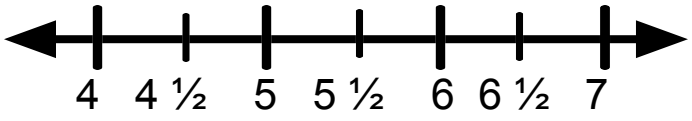
1

8, 9 ½ , 10, 8, 8 ½ , 8, 8 ½ , 9, 9, 9, 9 ½ , 10, 9 ½ , 8 ½



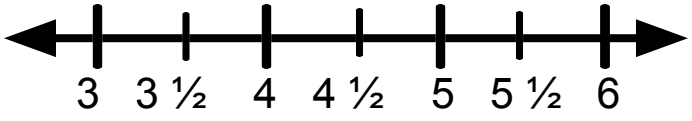
2

5 ½ , 5 ½ , 4 ½ , 4 ½ , 5, 5 ½ , 4, 6, 4 ½ , 5, 6½ , 5 ½ 6, 6, 6 ½, 5



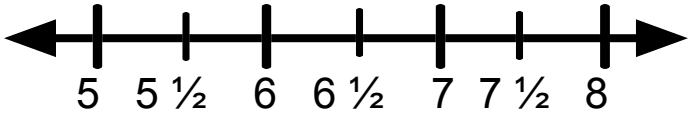
3

4, 3, 3, 3, 5 ½ ,5, 4 ½ ,4 ½ , 3 ½ , 4, 5, 5, 5 ½



4

7 ½ ,6 ½ ,5 ½ ,7 ½ , 7, 6, 7, 5 ½ , 5 ½ , 6, 7 ½ , 6, 6 ½ , 7, 6 ½ , 5



CUPCAKES FOR EVERYONE

G4 Basic

Von wants to bake some cupcakes for his classmates. Help him count the preferred flavor of his classmates by creating a line plot based on the given data below. Answer the questions below and write your answers on the space provided.

Chocolate	Strawberry	Red Velvet	Blueberry
5	4	3	2

Cupcakes

Cupcake Flavors

1.) How many flavors of cupcake did Von bake? _____

2.) How many strawberry flavored cupcakes did Von bake?_____

3.) How many were chocolate and red velvet flavored cupcakes in total? _____

4.) Which was the most preferred cupcake flavor? _____

DRINKS FOR THE PARTY

G5 Advanced

There will be an event tomorrow at Chrysa's house, she asked you to help her answer the problems below so that she can prepare the drinks for tomorrow's events. Draw and write your answers on the space provided.

Chrysa conducted an experiment. She put a total of 3 ⅛ cups of orange juice into an empty container. Then, Chrysa recorded the amount of juice that evaporated from the container each day for seven days. The table below shows the amount of juice that evaporated from the container on each day for seven days

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
⅛	4/8	⅝	⅝	⅛	2/8	⅛

1.) Make a line plot based on the table presented.

2.) How much juice evaporated over the seven days?

3.) How much juice evaporated from Monday to Thursday?

4.) How much juice does Chrysa have left in her container?

FRUITS FOR YOUR BODY

G5 Advanced

Fruits give huge amount of nutrients in our body. You will be given different types of fruits if you managed to answer the following. Draw and write your answers on the space provided.

1 Use the data in the list to create a line plot.

Length (inches)
4
4
5
3
5
1

2 10 Students measured the lengths of chocolate bars. The lengths are recorded below. Create a line plot using the data.

2	3	4	7	4
3	4	7	6	4

3 15 Children measured the lengths (in inches) of gummy worms. The lengths are recorded below. Create a line plot using the data.

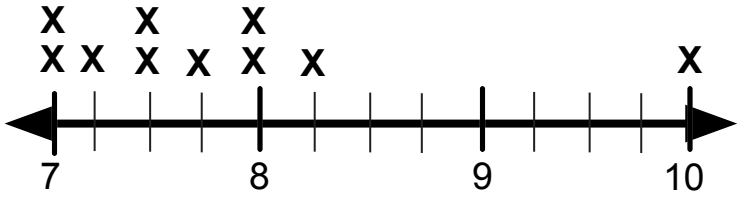
½	¾	1	1	½
¼	¼	1	¾	½
¼	½	¼	½	1

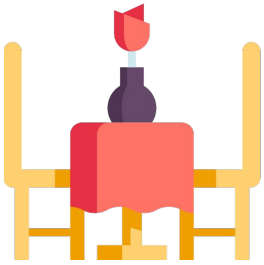
FINE DINING

G5 Advanced

Help James answer the following problems. In return, he will treat you in a fine dining restaurant. Create a line plot based on the data below. Answer the questions and show your solution on the space provided. The example below is for your reference.

Example: In the line plot below, 10 is the outlier.





Find the mean with the outlier:

$= (7)(2) + (7\frac{1}{4})(1) + (7\frac{2}{4})(2) + (7\frac{3}{4})(1) + (8)(2) + (8\frac{1}{4})(1) + (10)(1)$

$= [\ 14 + \frac{29}{4} + \frac{60}{4} + \frac{31}{4} + 16 + \frac{33}{4} + 10\ ]\ (4)$

$= 56 + 29 + 60 + 31 + 64 + 33 + 40 = 313$

Mean = $\frac{313}{10}$ or $\mathbf{31\frac{3}{10}}$

1

1, ¼ , ½ , ¾ , ½ , 1, 3, 1, 1, 1

What is the outlier?___

Find the mean with the outlier.

2

1, 3, 3, 2, 1, 3, ¼ , 1, 3, 1, 1

What is the outlier?___

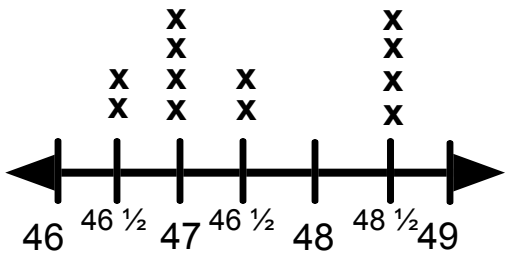
Find the mean with the outlier.

DESSERT TIME!

G5 Advanced

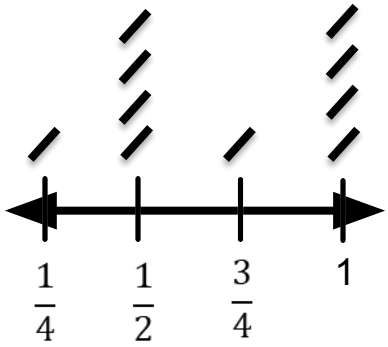
You will be given some desserts prepared by your Mom if you answer the following. Read the problems carefully and answer the questions being asked. Write your solution on the space provided.

1.) The line plot below shows the weight in grams of orange brought by different students.



What is the difference in grams between the heaviest orange and lightest orange?

2.) The line plot below shows the length in meters of Pocky chocolate brought by different students.



What is the difference in meters between the longest and shortest pocky chocolate?

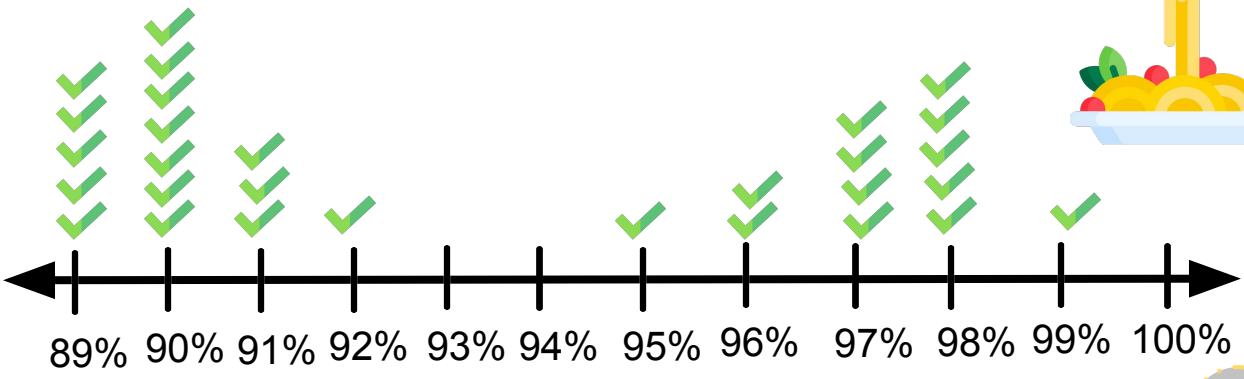
PASTA AND BURGER

G5 Advanced

Shane cooked pasta and burger. She will give some to you if you help her answer the following. Based on the line plot below, answer the questions being asked. Write your answers on the space provided.

Mrs. Cruz is very proud of all the students in his mathematics class. They all studied hard and did an excellent job on their final exam. Everyone in the class scored 89% or above. The line plot below shows the score distribution.

Mathematics Test Scores



1.) How many students received a score of 91 %? _____

2.) What was the highest score on the class? _____

3.) What was the lowest score on the class? _____

4.) How many students received a score of 80's? _____

5.) How many students received a score of 90's? _____

6.) How many students are in Mrs. Cruz mathematics class? ___

7.) How many students scored 95% or less? _____

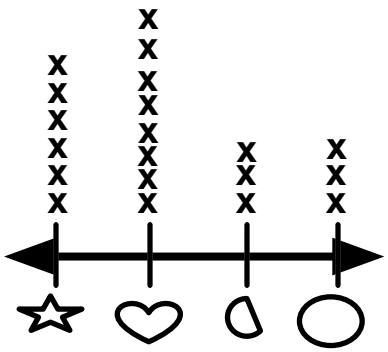
ANSWER GUIDE

Activity 1

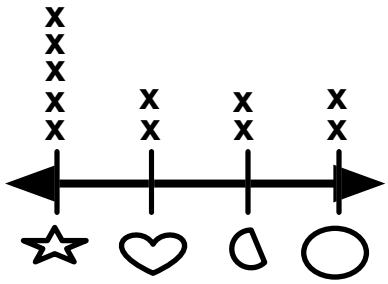
1.) 3 2.) 4 3.) 2 4.) 2 5.) 5 6.) 1 7.) 1

Activity 2

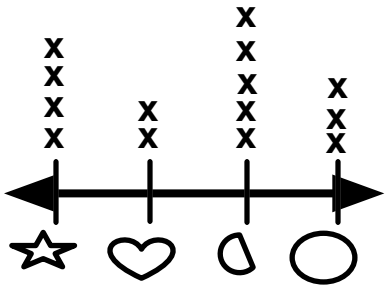
1.)



2.)



3.)



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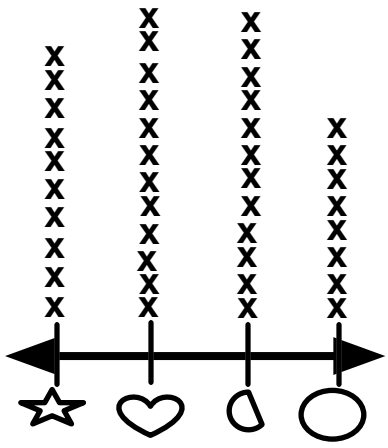


Activity 3

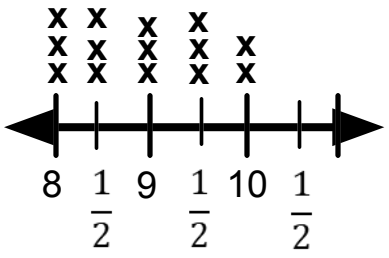
1.) b 3.) b 5.) c

2.) c 4.) c 6.) c

ANSWER GUIDE

Activity 4

1.)



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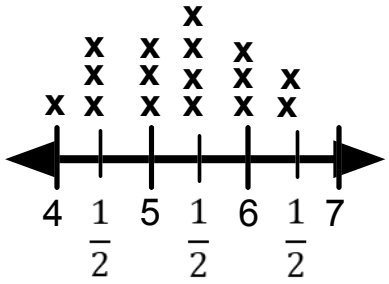

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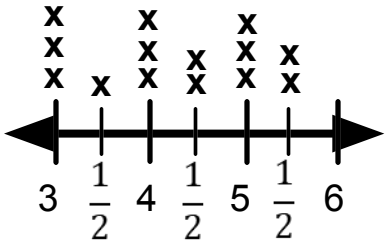
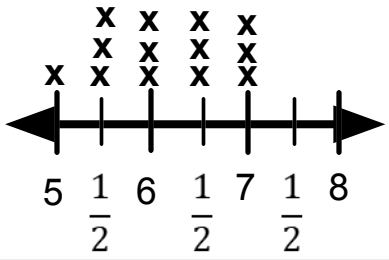
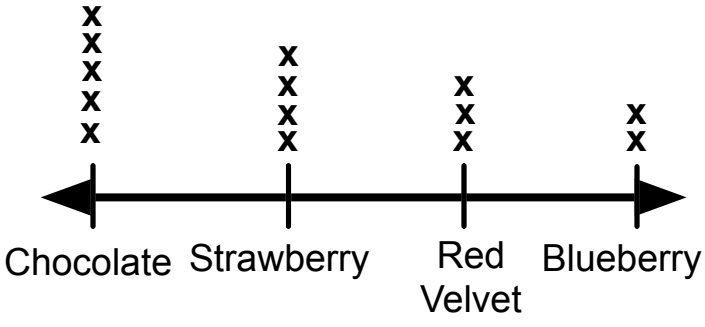


4.)



Activity 5



1.) 4 flavors

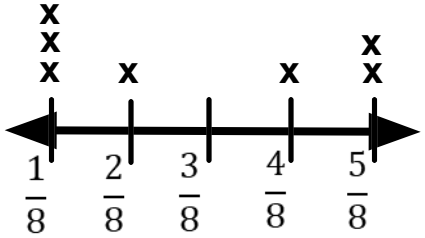
2.) 4 strawberry flavor

3.) 8

4.) Chocolate flavor

Activity 6

1.)



2.) $= \frac{1}{8} + \frac{4}{8} + \frac{5}{8} + \frac{5}{8} + \frac{1}{8} + \frac{2}{8} + \frac{1}{8}$

$= \frac{1+4+5+5+1+2+1}{8} = \frac{19}{8}$

3.) $= \frac{1}{8} + \frac{4}{8} + \frac{5}{8} + \frac{5}{8}$

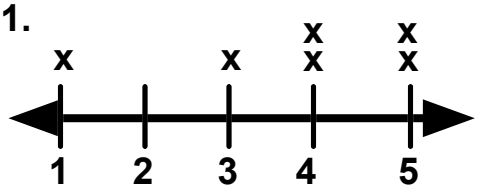
$= \frac{1+4+5+5}{8} = \frac{15}{8}$

ANSWER GUIDE

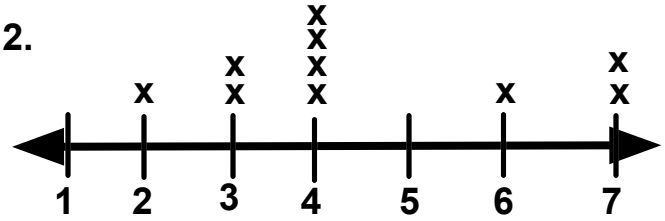
4.) $= 3\frac{1}{8} - \frac{19}{8} = \frac{25}{8} - \frac{19}{8} = \frac{25-19}{8} = \frac{6}{8} = \frac{3}{4} cups$

Activity 7

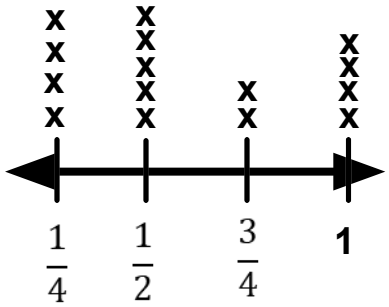
1.



2.

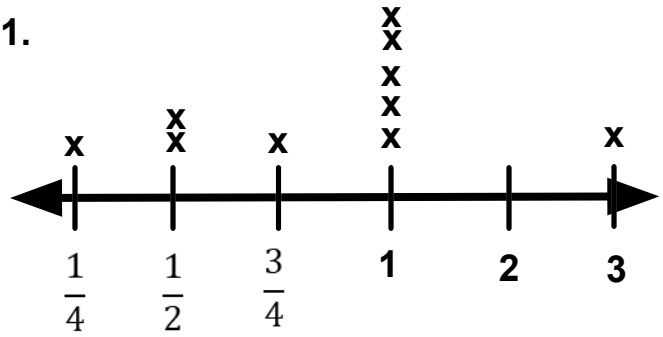


3.



Activity 8

1.



Outlier: **3**

$= \left(\frac{1}{4}\right)(1) + \left(\frac{1}{2}\right)(2) + \left(\frac{3}{4}\right)(1) + (1)(5) + (3)(1)$

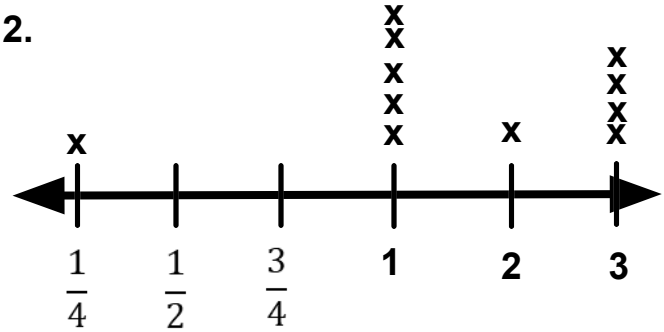
$= \left[\frac{1}{4} + 1 + \frac{3}{4} + 5 + 3\right](4)$

$= 1 + 4 + 3 + 20 + 12$

$= 40$

$mean = \frac{40}{10} = 4$

2.



Outlier: $\frac{1}{4}$

$= \left(\frac{1}{4}\right)(1) + (1)(5) + (2)(1) + (3)(4)$

$= \left[\frac{1}{4} + 5 + 2 + 12\right](4)$

$= 1 + 20 + 8 + 48$

$= 77$

$mean = \frac{77}{11} = 7$

ANSWER GUIDE

Activity 9

1.

$$48\frac{1}{2} - 46\frac{1}{2} = \frac{97}{2} - \frac{93}{2}$$

$$\frac{97-93}{2} = 2$$

2.

$$1 - \frac{1}{4} = \frac{4-1}{4} = \frac{3}{4}$$

Activity 10

1. 3 students
2. 99%
3. 89%
4. 5 students
5. 24 students
6. 29 students
7. 17 students

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