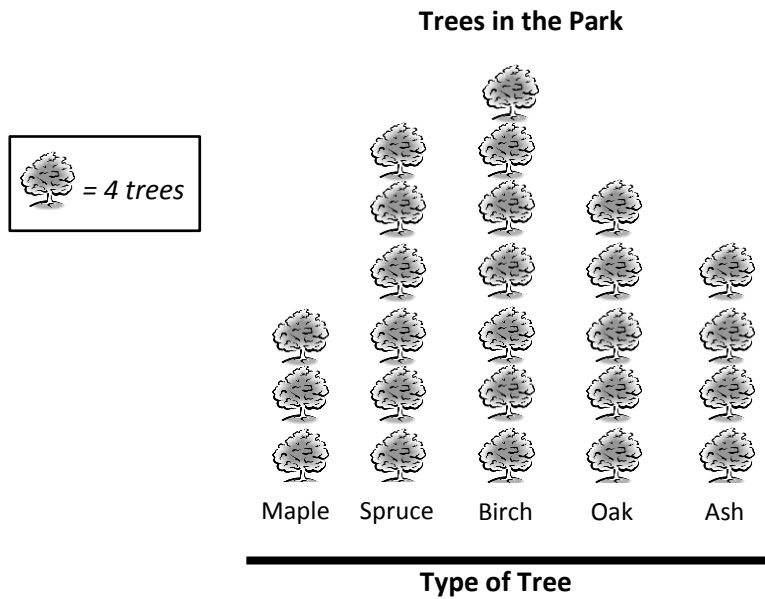


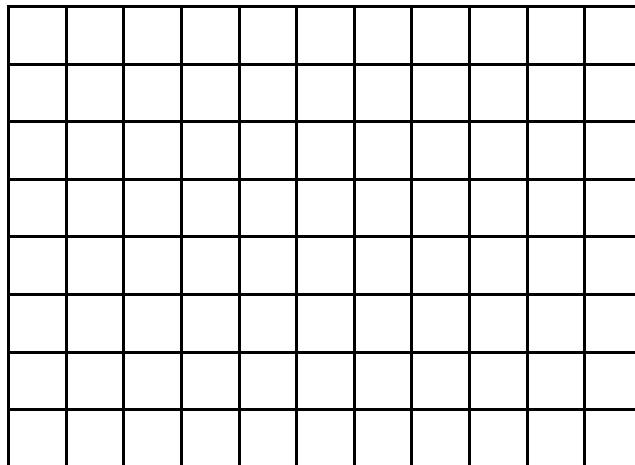
Name \_\_\_\_\_

Date \_\_\_\_\_

1. The picture graph below represents all the trees in the park.



- a. Use the grid to create and label a scaled bar graph representing the data in the picture graph above.



- b. How many more maple and oak trees are there than birch trees?

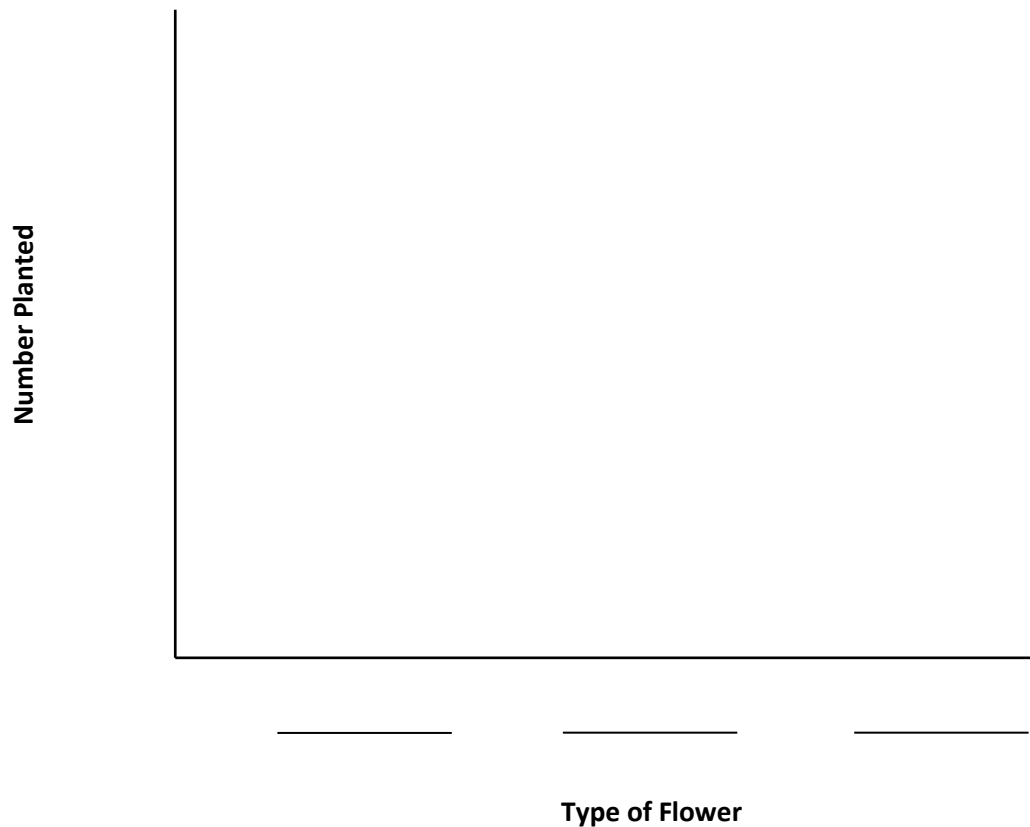
2. The table below shows the number of flowers that were planted by the science club.

a. Complete the table by filling in the number of marigolds that were planted.

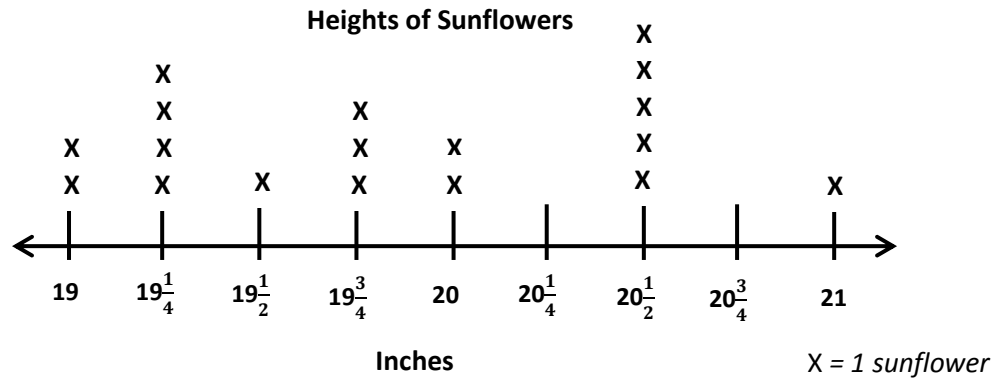
Flowers Planted by Science Club	
Type of Flower	Number Planted
Roses	24
Lilies	12
Marigolds	_____
TOTAL Flowers Planted:	54

b. Use the lines below to create and label a picture graph using the data in the table. Determine a picture and scale to represent the number of each type of flower.

= \_\_\_\_\_ flowers



3. Fred measures the heights of all the sunflowers in his backyard. His measurements in inches are shown on the line plot below.



- a. How many sunflowers are in Fred's backyard? Explain how you know.
- b. What are the three most frequent measurements on the line plot? Write them in order from shortest to longest.

4. Carol measures 16 bamboo shoots. Her measurements are recorded in the table below.

Heights of Bamboo Shoots (in Inches)			
$94\frac{1}{2}$	$94\frac{1}{4}$	$93\frac{3}{4}$	$94\frac{3}{4}$
$94\frac{3}{4}$	95	$94\frac{3}{4}$	$95\frac{1}{4}$
$94\frac{1}{2}$	$94\frac{3}{4}$	$94\frac{3}{4}$	$94\frac{1}{2}$
95	$94\frac{3}{4}$	$94\frac{3}{4}$	95

- a. Make a line plot of the bamboo shoot data. Explain your choice of scale.

- b. How many more bamboo shoots measured  $94\frac{3}{4}$  inches than both 95 and  $94\frac{1}{2}$  inches combined?

### End-of-Module Assessment Task Standards Addressed

Topics A–B

#### Represent and interpret data.

- 3MD.3** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*
- 3.MD.4** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.

### Evaluating Student Learning Outcomes

A Progression Toward Mastery is provided to describe steps that illuminate the gradually increasing understandings that students develop *on their way to proficiency*. In this chart, this progress is presented from left (Step 1) to right (Step 4). The learning goal for each student is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the students **CAN** do now and what they need to work on next.

## A Progression Toward Mastery

Assessment Task Item and Standards Assessed	STEP 1 Little evidence of reasoning without a correct answer.  (1 Point)	STEP 2 Evidence of some reasoning without a correct answer.  (2 Points)	STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer.  (3 Points)	STEP 4 Evidence of solid reasoning with a correct answer.  (4 Points)
1  3.MD.3	Student is unable to answer either question correctly.	Student attempts to draw and label the bar graph but does not use an appropriate scale. Student may or may not find the correct answer in Part (b).	Student creates an accurate bar graph with labels and an appropriate scale but does not answer Part (b) correctly. OR Student creates a graph that is missing labels but is otherwise correct, and Part (b) is correct.	Student: a. Creates an accurate, labeled bar graph with a scale of 4. b. Finds that there are 4 more maple and oak trees than birch trees.
2  3.MD.3	Student attempts to complete the table but finds the incorrect number of marigolds in Part (a). Student is unable to correctly complete the picture graph in Part (b).	Student correctly calculates the number of marigolds and attempts to scale, create, and label a picture graph in Part (b).	Student correctly calculates 18 marigolds in Part (a) and correctly scales and labels the picture graph in Part (b), but incorrectly represents the number of flowers for one or more types in Part (b).	Student correctly: a. Calculates 18 marigolds. b. Determines an appropriate scale and graphic representation; creates an accurate, labeled picture graph based on the data in the table.
3  3.MD.4	Student is unable to answer any question correctly.	Student correctly answers either Part (a) or Part (b).	Student correctly answers Part (a) and correctly identifies $19\frac{1}{4}$ , $19\frac{3}{4}$ , and $20\frac{1}{2}$ in Part (b), but does not list the measurements in order.	Student: a. Finds 18 sunflowers in Fred's backyard and provides sound reasoning to support the answer. b. Lists $19\frac{1}{4}$ , $19\frac{3}{4}$ , and $20\frac{1}{2}$ in order.



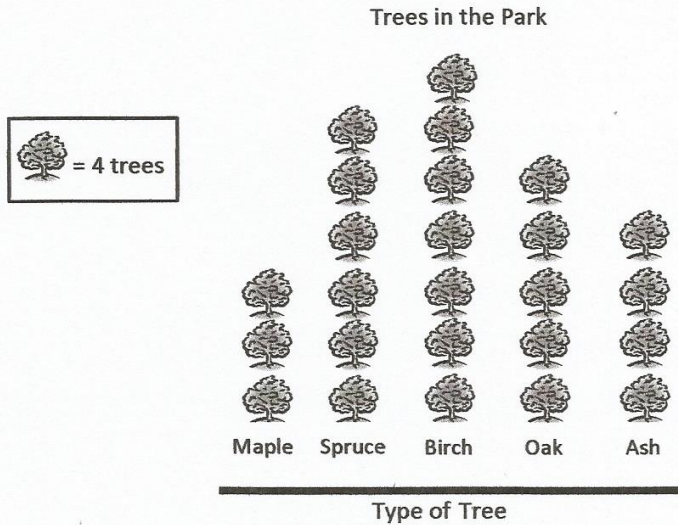
## A Progression Toward Mastery

<p><b>4</b></p> <p><b>3.MD.4</b></p>	<p>Student attempts, but is unable to complete, either question correctly.</p>	<p>Student draws the line plot correctly but may not explain her choice of scale. Student may make a minor error calculating Part (b).</p>	<p>Student answers Part (a) correctly but makes a minor error calculating Part (b).</p>	<p>Student:</p> <p>a. Creates an appropriate scale, draws a line plot to accurately display the data, and provides sound reasoning for the choice of scale.</p> <p>b. Finds 1 more shoot that measured <math>94\frac{3}{4}</math> inches than 95 and <math>94\frac{1}{2}</math> inches combined.</p>
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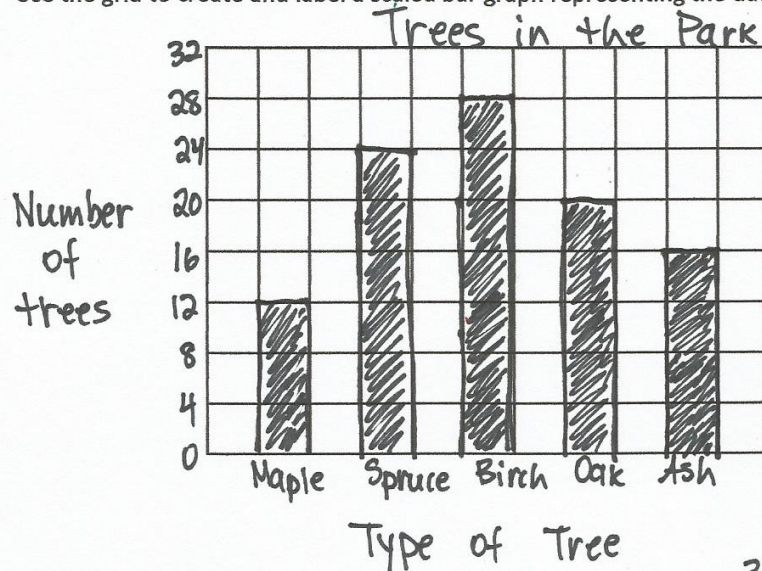
Name Gina

Date \_\_\_\_\_

1. The picture graph below represents all the trees in the park.



- a. Use the grid to create and label a scaled bar graph representing the data in the picture graph above.



- b. How many more maple and oak trees are there than birch trees?

32 Maple and Oak

12 Maple	20 Oak
----------	--------

 $12 + 20 = 32$ 

28 Birch	?
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 $32 - 28 = 4$ 

There are 4 more Maple and Oak than Birch trees.



2. The table below shows the number of flowers that were planted by the science club.
- a. Complete the table by filling in the number of marigolds that were planted.

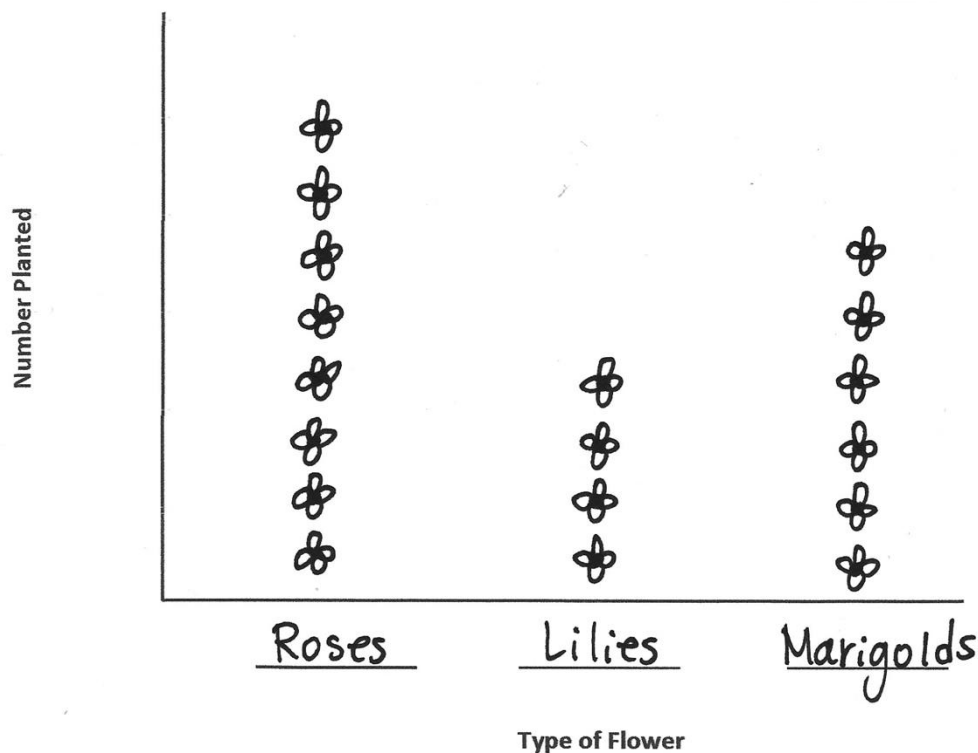
Flowers Planted by Science Club	
Type of Flower	Number Planted
Roses	24
Lilies	12
Marigolds	<u>18</u>
TOTAL Flowers Planted:	54

$$54 - 36 = 18$$

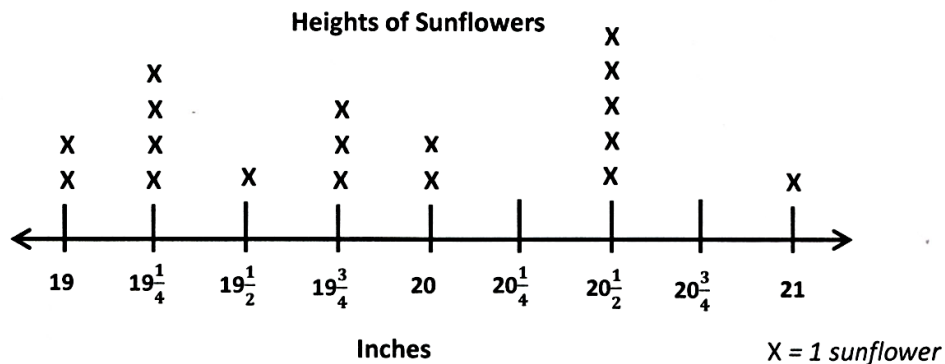
Handwritten calculation:  $54 - 36 = 18$  with a circled 18 and a 4 below it.

- b. Use the lines below to create and label a picture graph using the data in the table. Determine a picture and scale to represent the number of each type of flower.

$$\text{flower symbol} = 3 \text{ flowers}$$



3. Fred measures the heights of all the sunflowers in his backyard. His measurements in inches are shown on the line plot below.



- a. How many sunflowers are in Fred's backyard? Explain how you know.

There are 18 sunflowers in Fred's backyard. Each X represents 1 sunflower, so I found the total number of sunflowers by counting all of the X's.

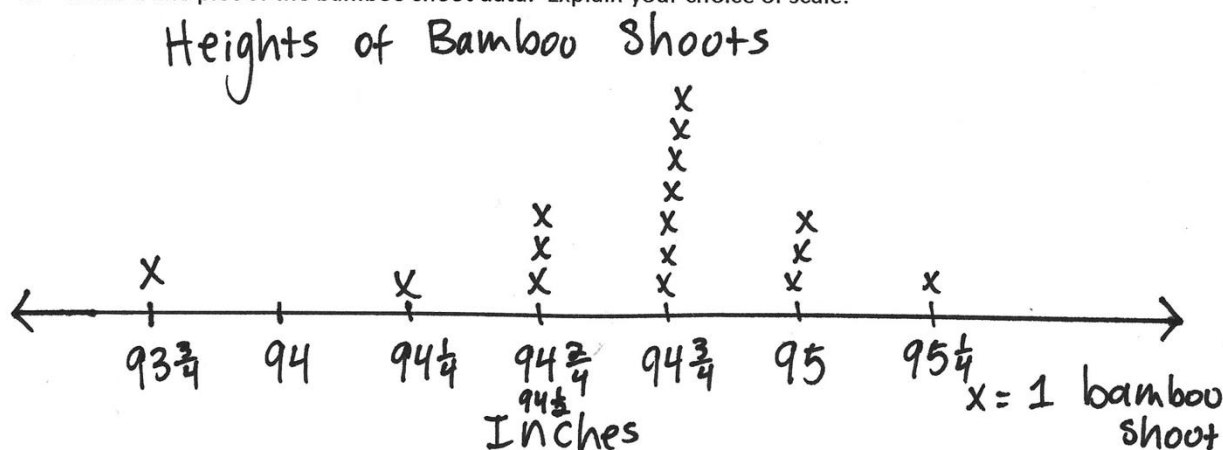
- b. What are the three most frequent measurements on the line plot? Write them in order from shortest, to longest.

The 3 most frequent measurements on the line plot from shortest to longest are  $19\frac{1}{4}$  inches,  $19\frac{3}{4}$  inches, and  $20\frac{1}{2}$  inches.

4. Carol measures 16 bamboo shoots. Her measurements are recorded in the table below.

Heights of Bamboo Shoots (in Inches)			
$94\frac{1}{2}$ ✓	$94\frac{1}{4}$ ✓	$93\frac{3}{4}$ ✓	$94\frac{3}{4}$ ✓
$94\frac{3}{4}$ ✓	95 ✓	$94\frac{3}{4}$ ✓	$95\frac{1}{4}$ ✓
$94\frac{1}{2}$ ✓	$94\frac{3}{4}$ ✓	$94\frac{3}{4}$ ✓	$94\frac{1}{2}$ ✓
95 ✓	$94\frac{3}{4}$ ✓	$94\frac{3}{4}$ ✓	95 ✓

- a. Make a line plot of the bamboo shoot data. Explain your choice of scale.



I used fourths of an inch for my scale because I looked at all of the heights and saw that fourths of an inch was the smallest unit.

- b. How many more bamboo shoots measured  $94\frac{3}{4}$  inches than both 95 and  $94\frac{1}{2}$  inches combined?

$94\frac{3}{4}$ : 7 shoots

$95 + 94\frac{1}{2}$ :  $3 + 3 = 6$  shoots

1 more bamboo shoot measured  $94\frac{3}{4}$  inches than 95 and  $94\frac{1}{2}$  inches combined.