The Ecology Club

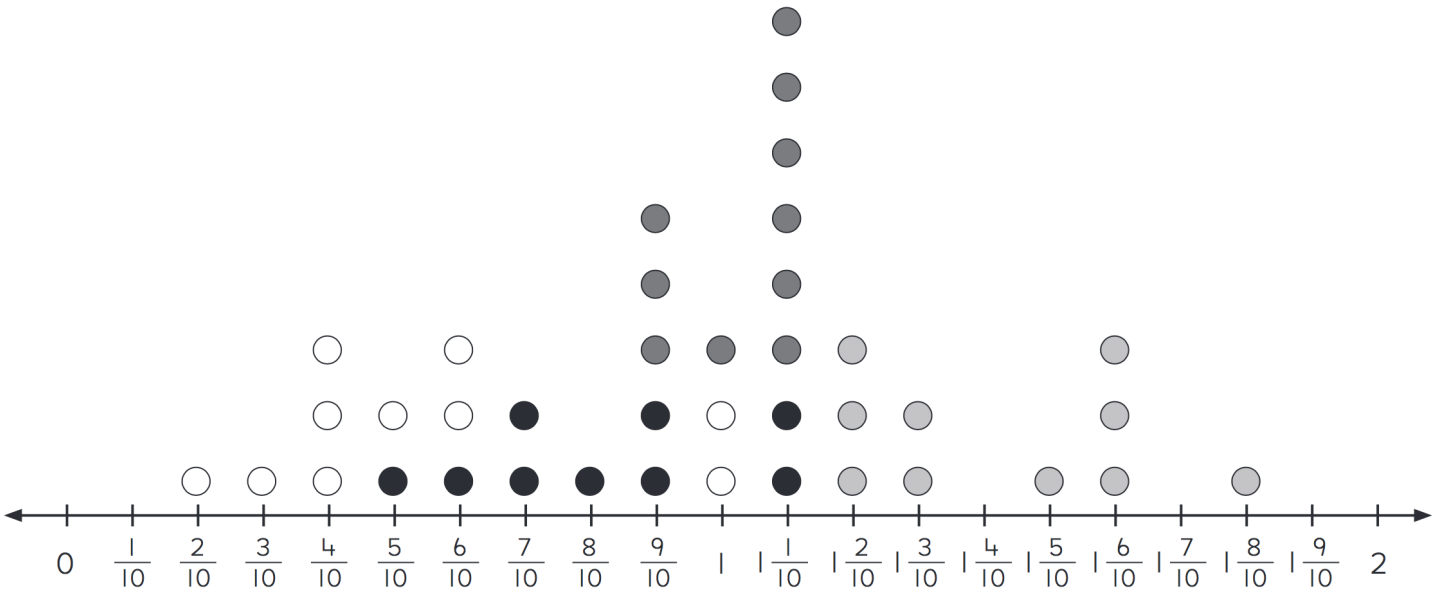
The Grade 5 Ecology Club stays after school once a week to maintain the garden and the trees that surround their school. One year ago they hosted a big tree-planting event. Every year they will measure the trees in the grove to see how they are growing and buy new seedlings to replace those that have died.

This year, the club measured all of the young trees to compare the heights of all the trees.

They measured the growth of the new trees and recorded it on this line plot. The trees that died are not represented.

Line Plot

Tree Growth in One Year



Key and Price List

Tree type	Price for each seedling
○ Birch	15.00
● Cypress	12.00
● Maple	14.50
● Flowering Pear	20.00

Use the **Line Plot** to solve.

1. What is the difference in height between the tree with the greatest growth and the tree with the least growth?

☐ meters

Use the **Line Plot** and the **Key** to solve.

2. The club planted 40 trees last year. One of them died.

- Write an expression for each type of tree that shows the total growth of that tree type.

Tree type	Expression showing total growth in meters
○ Birch	
● Cypress	
● Maple	
● Flowering Pear	

Use the **Line Plot**, the **Key**, and information from **Question 2** to solve.

3. In order to see which type of tree grew the most over the course of one year, the club will combine the growth data of each tree measured.

For this item:

- Solve using the order of operations
- Compare the total growth of the four types of trees

Tree type	Total growth in meters equation	Total growth in meters
○ Birch		
● Cypress		
● Maple		
● Flowering Pear		

What is the difference between the type of tree that showed the least total growth and the type of tree that showed the greatest total growth?

Show your work.

3. *Continued*

 meters

Use the **Line Plot** and the **Key** to solve.

4. Each year, the Ecology Club mixes compost fertilizer into the soil to keep it healthy. The bags of compost cost $8.75 each, but 13 bags were donated by the PTA and the club wants to use these first.

- What fraction of each donated bag can be used for each tree?

Each tree needs ☐ of a bag.

It turns out that the Cypress and Birch trees require twice as much compost for each tree as the Maple and Flowering Pear trees.

- How much more compost should the Ecology Club buy?
- How much will it cost?

They need to buy ☐ more bags.

It will cost ☐.

4. *Continued*

Use the **Line Plot**, the **Key**, and all the information gathered so far to respond to this item.

5. The School Board is willing to fund the planting of 4 more trees at the front of the school. They will use the club's recommendation to decide which type of tree to purchase. They present these guidelines to the club:

- Healthiest and fastest-growing tree
- Least expensive to buy and/or maintain

Use the data and other information to make a recommendation to the School Board. Include the following in your recommendation:

- The one type of tree that best fits the guidelines of the School Board
- A growth comparison
- The cost of the tree
- The cost of the fertilizing compost
- A prediction for how the four trees will grow over the next 3 years

5. *Continued*