DMT INSTITUTE

Developing Mathematical Thinking Institute (DMTI)

Professional Development

Curricular Resources

Assessment

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DMTI Varied Practice Worksheets

This PowerPoint or PDF displays the worksheets that have varied situations (context, visual, equations, and other mathematical models) for children to work on. By completing these worksheets, children increase their foundational skills in the topic, which will help them with these standards and future mathematical topics.

1. If using a journal, have children present the worksheet and complete all the problems.

2. Or print the ‘Varied Practice Worksheet Slide’ for them to work on. Then, you can return to the PowerPoint or PDF to look at the keys to check their work.

Grade 5 – Measurement and Data Part 2

LINE PLOTS AND LINEAR MEASUREMENTS

Grade 5: Measurement and Data – Part 2

Materials Needed

Printed copies of the **Length Measurement Line Plot** graph.

Instructions

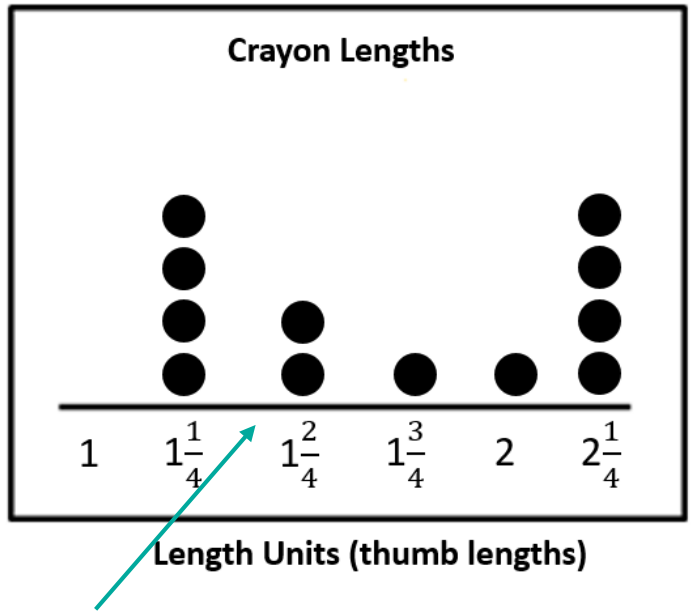
1. Find 10 to 20 similar objects in or around your home. These can be writing and drawing supplies (e.g. pencils and crayons), plants, leaves, clothing and shoes, or any other object you can measure lengths of.

2. Measure the length of one part of each object from end to end. For example, the length of each crayon from the tip to the end. **Measure to the nearest $\frac{1}{4}$ unit.**

3. To measure, you can choose any unit you prefer. If you have formal measuring tools like a ruler, use standard units such as inches or feet. But, if you do not have any formal measuring tools, choose any item you want. For example, you could measure the length of crayons using the length of your thumb. These different units are why the graph only refers to the lengths as measured in **" length units."**

4. Plot the measurements on the **Length Measurement Line Plot** graph and answer the **Challenge Questions**.

Example Line Plot of crayon lengths measured in inches.

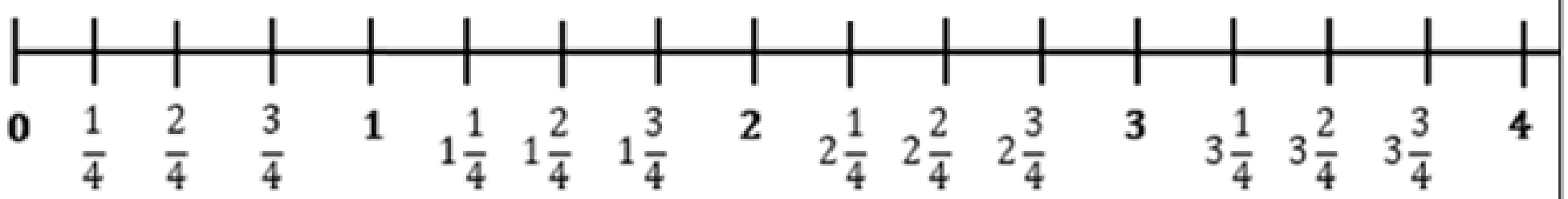


These two dots indicate that two crayons measured $1\frac{2}{4}$ thumb lengths.

Name:_____

If your measurements are greater than 4 units in length, extend the line plot out further.

Objects Measured:



Length Units

Grade 5: Measurement and Data – Part 2

Challenge Questions

A) What is the difference between the shortest and longest measurement found in the graph?

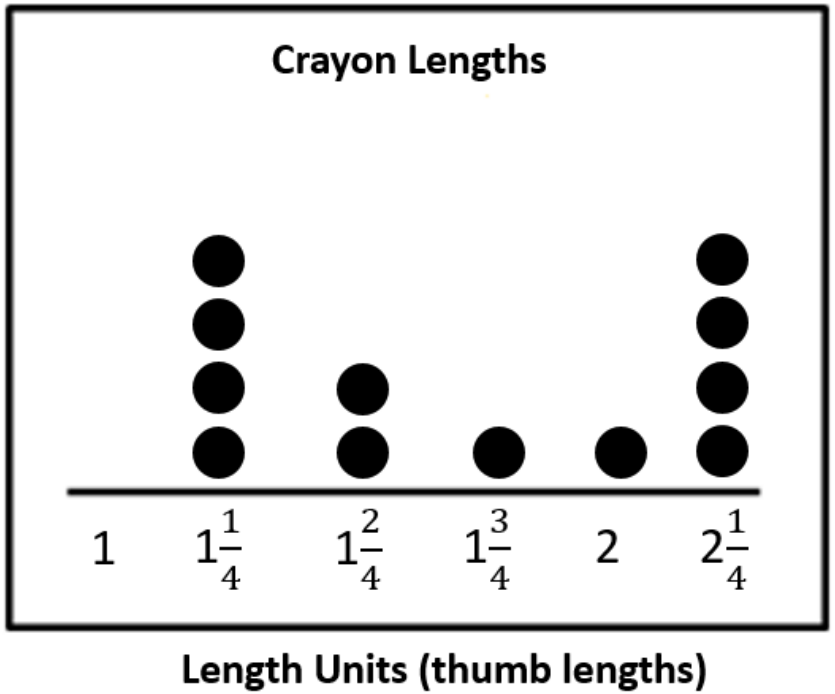
B) If you added up all of the shortest lengths you found together, what would that total length be? Write a multiplication equation to show how to solve this problem.

C) If you added up all of the longest lengths you found together, what would that total length be? Write a multiplication equation to show how to solve this problem.

D) Use your answers from B and C to find the difference between the two total lengths.

E) For both your answer to B and to C, write division equations to show how you find the length of one object if you were given the total length and the number of objects used to find that total length.

KEY – Data collected will vary as will the correct answers to the challenge questions. This example is provided to show the correct responses to a graph of crayon lengths using thumb lengths as the unit of measure.



Challenge Questions

A) What is the difference between the shortest and longest measurement found in the graph?

$2\frac{1}{4} - 1\frac{1}{4} = 1$ *1 length unit*

B) If you added up all of the shortest lengths you found together, what would that total length be? Write a multiplication equation to show how to solve this problem.

$4 \times 1\frac{1}{4} = 5$ *5 length units*

C) If you added up all of the longest lengths you found together, what would that total length be? Write a multiplication equation to show how to solve this problem.

$4 \times 2\frac{1}{4} = 9$ *3 length units*

D) Use your answers from B and C to find the difference between the two total lengths. $9 - 5 = 4$ *4 length units*

E) For both your answer to B and to C, write division equations to show how you find the length of one object if you were given the total length and the number of objects used to find that total length. B. $5 \div 4 = 1\frac{1}{4}$ C. $9 \div 4 = 2\frac{1}{4}$

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"The Developing Mathematical Thinking Institute (DMTI) is dedicated to enhancing students' learning of mathematics by supporting educators in the implementation of research-based instructional strategies through high-quality professional development, curricular resources and assessments."

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