

Grade Level: 3rd

Subject(s) Area: Math and Science

Materials Needed:

- Graph Paper
- Rulers
- Worksheets

Standards:

Math:

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.

Science:

3.2.3. Record observations (e.g., journals, drawings, charts) based on simple investigations.

Objectives:

- Student will be able to measure the lengths of various objects around the classroom using a ruler.
- Student will be able to record the correct length on a sheet of paper.
- Student will be able to construct a simple line plot using the measurements they collected.

Learning Activities:

- 1.) Teacher will review inches with the students using a ruler
 - a.) Each student will receive a ruler so that they can follow along with the teacher during the demonstration.
 - b.) The teacher will point out an inch, a quarter inch, and half an inch on a ruler and will explain to the students what they each mean when measuring.
 - c.) The teacher will stand in front of the class and measure different sample objects around the classroom to demonstrate to the class.
- 2.) Teacher will hand each student a worksheet with different sized black lines on it.
 - a.) Students will do the worksheet and measure the lengths of the different black lines. The worksheet will also list different lengths and students will be instructed to draw a line according to the length that is written on the worksheet.
 - a. While the students are practicing, teacher will walk around the classroom and check the answers to make sure that there are no questions and the students are measuring the lines properly.
- 3.) For the next activity, the teacher will explain that the students will be paired together and together they will find different objects around the classroom, measure the lengths of the objects, and record the results on a sheet of paper. The objects should not be longer than the length of their ruler. Students should round to the nearest .5 inch.
 - a.) Teacher will explain to the students that this is a performance based assessment and that they will be graded on the accuracy of their measurement and the completion of their line plots (see rubrics).
 - b.) Using popsicle sticks, students will be paired together.
 - c.) Each student will receive one ruler that they are able to measure with.

- d.) Students will have 15 minutes to measure 5 different objects around the classroom.
 - e.) When 15 minutes is up, the teacher will instruct the students to return to their desks.
- 4.) The teacher will demonstrate to the students how to create a simple line plot showing students how to label the line plot and how to enter information.
- a.) Students will be given a blank template to work on their line plot
 - b.) Working individually, students will construct their own line plot using the data they collected from around the classroom.
- 5.) Once students are finished with their line plots, they will go around the classroom and compare the objects that they measured and the lengths of those objects with their classmates.
- a.) Once the students are finished comparing their findings with each other I will ask them questions about their findings. Ex: Which object was the longest? Which object was the shortest? How long would the objects be if they were lined up end-to-end?

Rubrics:

Line Plot worksheet Rubric

Labels	4: Students labeled line plot correctly	3. Students labeled the line plot with few errors	2. Students labeled the line plot with some errors	1. Students labeled the line plot with frequent errors
Data	4. Student input the measurement data correctly	3. Student input the measurement data with few errors	2. Student input the measurement data with some errors	1. Student input the measurement data with frequent errors

Measurement Rubric

Units of Measurement	4. Student used the correct unit of measurement all of the time.	3. Student used the correct unit of measurement most of the time.	2. Student used the correct unit of measurement some of the time.	1. Student did not use the correct unit of measurement any of the time.
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Rounding	4. Student rounded to the nearest .5 inch with no errors.	3. Student rounded to the nearest .5 inch with few errors	2. Student rounded to the nearest .5 inch with some errors.	1. Student rounded to the nearest .5 inch with frequent errors.
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Measurement Unit Test

Name _____

Date _____

True and False

Read each statement below and decide whether it is true (yes) or false (no). Circle the correct answer. If the answer is false, change the question to make it correct.

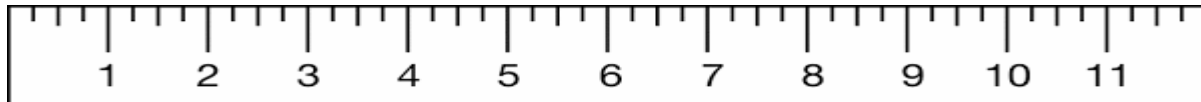
- 1.) T F Inches are a bigger measurement than millimeters.
- 2.) T F One would wear a coat if it was 85 °F outside.
- 3.) T F A ruler is labeled in milliliters.
- 4.) T F 100 millimeters is longer than 20 inches.
- 5.) T F A line plot is used for recording data.

Rewrite the next two statements to make them true.

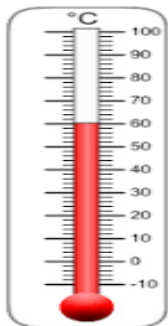
- 6.) A thermometer is used to measure weight.
- 7.) The volume of a liquid can be measured using a scale.

Multiple Choice

Directions: Choose the correct answer. Write the letter of the correct answer on the space provided.



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- 1.) What is the length of the line segment in inches? Round to the nearest half inch.
 - a. 4 inches
 - b. 4.5 inches
 - c. 5 inches
 - d. 3.5

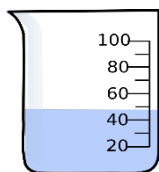


For questions 2 and 3 refer to the thermometer pictured above.

- 2.) According to the thermometer, what is the current temperature outside?
 - a. 60° F
 - b. 55° C
 - c. 60° C
 - d. 70° F

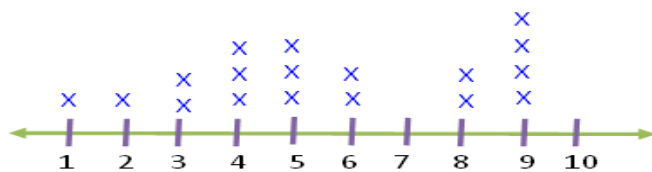
- 3.) According to the thermometer, what is the weather like outside?
 - a. Windy
 - b. Rainy
 - c. Partially cloudy
 - d. All of the above

- 4.) Using estimation, determine which of the following animals would weigh the most.
 - a. cat
 - b. dog
 - c. polar bear
 - d. cheetah



- 5.) Approximately how many milliliters (ml) of water are present in the beaker?
 - a. 40 ml
 - b. 50 ml
 - c. 48 ml
 - d. 45 ml

- 6.) Which tool would help you to measure the correct amount of flour for a recipe?
 - a. Teaspoon
 - b. Measuring cup
 - c. Tablespoon
 - d. All of the above



Use the line plot above to answer questions 6 and 7.

- 7.) Which number on the line plot had the most data?
 - a. 10
 - b. 1
 - c. 9
 - d. 5

- 8.) Altogether, how much data was collected and used in the line plot?
- a. 18
 - b. 10
 - c. 7
 - d. 14

Matching

Directions: Column A names different tools that can be used for measuring data. Column B gives pictures of different tools that can be used to measure data. Match the word in column A with the correct measurement item in column B. Write only the letter of the answer on the blank provided next to the number.

Column A

_____ 1. Ruler

_____ 2. Measuring cups

_____ 3. Beaker

_____ 4. Scale

_____ 5. Thermometer

_____ 6. Tape measure

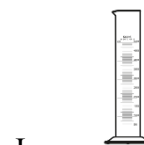
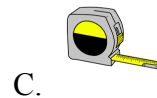
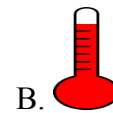
_____ 7. Stop Watch

_____ 8. Meter stick

_____ 9. Graduated Cylinder

_____ 10. Teaspoon

Column B



Short Answer

Directions: Fill in the blank with the correct answer.

- 1.) There are _____ inches on a ruler.
- 2.) The weight of a dog would be measured using a _____.

Essay Question

Directions: Answer the following question in 3 sentences. Use complete sentences with correct punctuation

Question: How would you measure the height of an elephant?

Answer Key

True and false:

1. T
2. F
3. F
4. T
5. T
6. F- cross out thermometer and write in scale
7. F- Cross out scale and write in either beaker or thermometer

Multiple choice:

1. B
2. A
3. D
4. C
5. C
6. D
7. C
8. A

Matching:

1. F
2. G
3. D
4. E
5. B
6. C
7. A
8. J
9. L
10. H

Short Answer:

1. 12
2. Scale

Essay:

Possible response:

I would get a ladder and two meter sticks. I would stand on the ladder and the stack the meter sticks. I would combine the two distances and that would be the official height of the elephant.

I would get a friend and I would lift them up so they could reach the top of the elephant. They would measure the top of the elephant and I would measure the bottom. We would combine the heights.

Rubric for Essay

3

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Punctuation	Student uses correct punctuation all of the time.	Student uses correct punctuation most of the time.	Student uses correct punctuation some of the time.
Sentence	Student writes essay in 3 or more sentences.	Student writes essay in 2 sentences.	Student writes in 1 sentence.
Clarity	Student writes in complete sentences all of the time.	Student write in complete sentences most of the time.	Student writes in complete sentences some of the time.

Grade 3