

LESSON PLAN: MEASURING A LINE



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Measuring A Line

Objectives

1. To demonstrate how the method and type of tool used affects the measuring of a distance between two points.

Materials

1. Masking tape or similar tape
2. Magic Marker
3. Pen or pencil
4. 12" (1 foot) ruler
5. 36" (3 feet) yard stick
6. 25' (or longer) carpenter's tape
7. Tally sheet (attached)



Procedure

1. Mark two spots on the floor with tape. Place a marker or pencil on each tape. The space between the marks should be more than 20' but less than the length of the carpenter's tape.
2. Measure a line by laying one end of the 12" ruler on one of the tape marks with the opposite end of the ruler in the direction of the second tape mark. Mark the end of 12 inches with your finger or with a pencil. Move the first end of the ruler to this mark and mark the end of the next 12". (Be sure to identify the beginning and ending mark on the ruler – it is not always at the actual end of the ruler. Continue marking each 12 inches and moving the ruler along the line and recording the number of 12-inch increments until you get to the other mark. If the last distance is less than a full length, read the ruler to the nearest $\frac{1}{4}$ " and record this on the tally sheet.
3. Now measure the same line using the yard stick and the same method. Record this total measurement on the tally sheet, again, recording any partial length at the end.
4. Lastly, measure the line in one step using the carpenter's tape. Record this measurement on the tally sheet. Remember to measure to the nearest $\frac{1}{4}$ ".
5. Compare the 3 measurements you made. In theory, the measurements should be exactly the same.

New York State Associate of Professional Land Surveyors
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TALLY OF DISTANCES

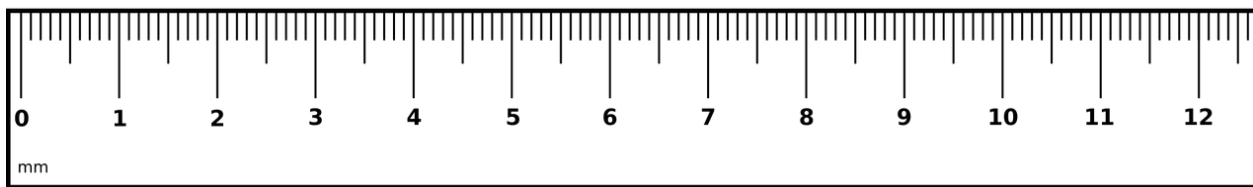
Number of full lengths of the 12" (1 foot) ruler _____ Partial length _____

12" Ruler – Total distance in feet and inches _____

Number of full lengths of the 36" (3 feet) yard stick _____ Partial length _____

36" Yardstick – Total distance in feet and inches _____

Carpenter's tape – Total distance _____



Wrap up/Questions

1. Describe any problems you encountered in measuring of the line.
2. What are some possible reasons for difference between the measurements?
3. What could you have done differently to make the 3 measurements be closer to each other?
4. Based on this experience, which measurement of the distance between the two points is likely to be most correct and why?
5. If you had to measure a much longer distance, say 300', outdoors, what other factors might affect the measurement?

