Lesson Maker Pro

Fractions as Distances

A focused investigation of halves, fourths and eighths on number lines.

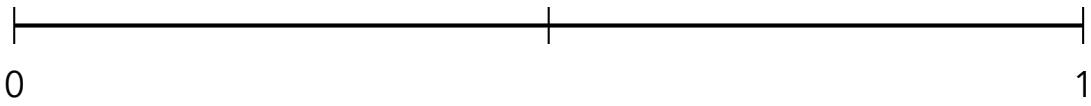
3.7 Geometry and measurement. The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving customary and metric measurement. The student is expected to: represent fractions of halves, fourths, and eighths as distances from zero on a number line; determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems; determine the solutions to problems involving addition and subtraction of time intervals in minutes using pictorial models or tools such as a 15-minute event plus a 30-minute event equals 45 minutes; determine when it is appropriate to use measurements of liquid volume (capacity) or weight; and determine liquid volume (capacity) or weight using appropriate units and tools.

NAME _____ **DATE** _____

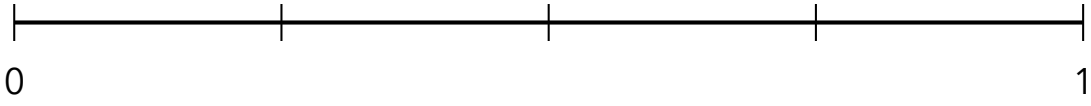
Plot and explain

Each line has the same whole distance from 0 to 1. Count equal spaces, not tick marks.

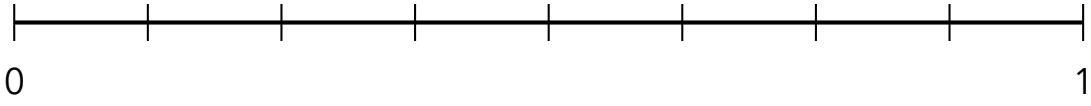
1. Mark and label 1/2. Explain how far it is from 0.



2. Mark and label 1/4 and 3/4. Trace the distance from 0 to 3/4.

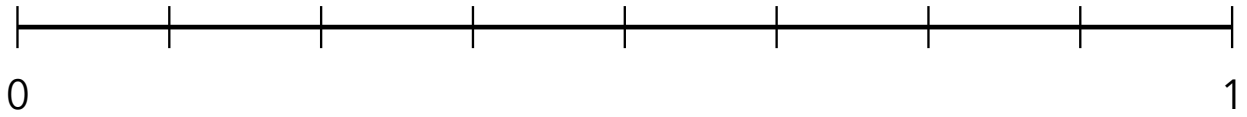


3. Mark and label 1/8,5/8 and 7/8. Trace the distance from 0 to 5/8.



One point, three names

4. On this eighths line, mark the point that is also 1/2 and 2/4. Write all three names and explain why the distances are equal.



5. Draw your own 0-to 1 line, partition it into four equal distances and mark 3/4. Then bisect every interval. What eighths name marks the same distance?

6. Lina counts eight tick marks including both endpoints and calls each space one eighth. Explain the mistake.

Teacher Key

1: midpoint; one of two equal distances from 0 to 1.2: first and third fourths ticks;3/4 is three one-fourth distances from 0.3: first,fifth,seventh eighths ticks.4: fourth eighths tick;1/2=2/4=4/8 because all locate the same distance along the same unit whole.5:3/4=6/8; original ticks remain while each interval is halved.6:eight ticks make seven spaces, so those spaces would be sevenths; eighths require nine ticks including endpoints.

This focused worksheet addresses the fraction-distance expectation within the broader 3.7 cluster; it does not claim to assess time, perimeter, capacity or weight.