

Lesson Printables

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Lesson Information Sheet: 2

All Zones
Activity: 3
Metric Measurements: 4
Answers: 5

Let's explore units of measurement

Why learn this?

Measurement has so many real life math applications. Knowing how to identify and work between a variety of different measurements helps students gain essential life skills that can be applied in a variety of scenarios.

What types of metric measurement should my student identify?

Length/distance

- In the metric system, the standard units of length and distance are millimeters, centimeters, meters and kilometers.

Mass

- In the metric system, the standard units of mass are grams, kilograms and metric tons.

Volume/Liquid Volume/Capacity

- Volume refers to the total 3D space an object occupies. Volume can be measured in cubic units such as cm^3 , m^3 , etc. *Please note, we do not explicitly discuss volume in this lesson, instead we focus on liquid volume and capacity.*

- Liquid volume refers to the space a liquid occupies. In the metric system, this is measured in milliliters and liters.

- Capacity refers to the maximum amount a container can hold. You can measure the capacity of a cup and you can also measure the liquid volume within a cup.

- The capacity of a cup refers to the storage potential of the cup while the liquid volume refers to the actual amount of liquid that is in the cup.
- The capacity of a stadium refers to the amount of people who can safely fill the whole stadium.
- The capacity of a car refers to how many people can fit (safely) in the car.

Let's warm up!

Starter Activity - Factor Friends

The numbers 1, 3 and 9 are factor friends because they are all factors of 9. Students should pick some numbers between 0 and 20 and explore their factors. What are the factor friends of the numbers they choose?

To support, students could:

- Be asked guiding questions:
 - Let's pick a number. What two numbers can be multiplied to make your number?
 - Are there two other numbers that could also be multiplied to make your number?
- Review skip counting in order to identify multiples/factors.

To challenge, students could:

- What is the number between 0 and 20 that has the most factor friends? (12, 18 and 20 all have 6 factors.)

Let's do this!

Main Activity - Students are shown a picture of a farmyard. What measurements can students connect to the picture? These could be obvious measurements or students can think more abstractly as modelled in the lesson. Encourage students to include what unit of measurement would be used to measure each of their ideas.

To support, students could:

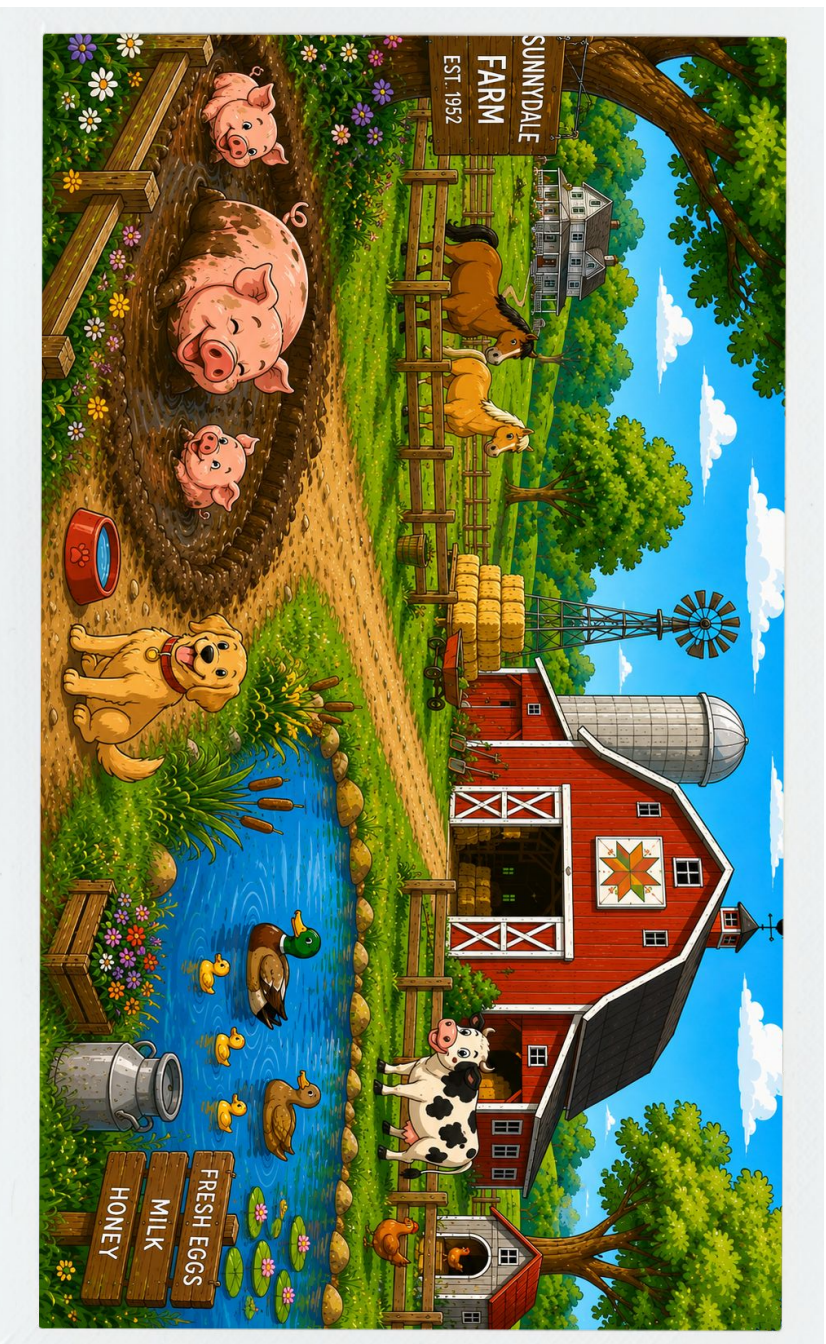
- Be asked guiding questions.
 - Let's focus on length. What could you measure using a tape measure or ruler in this picture?
 - Let's focus on mass. What could you weigh in this picture?
 - Let's focus on liquid volume. What could you measure that connects to liquids in this picture?

To challenge, students could:

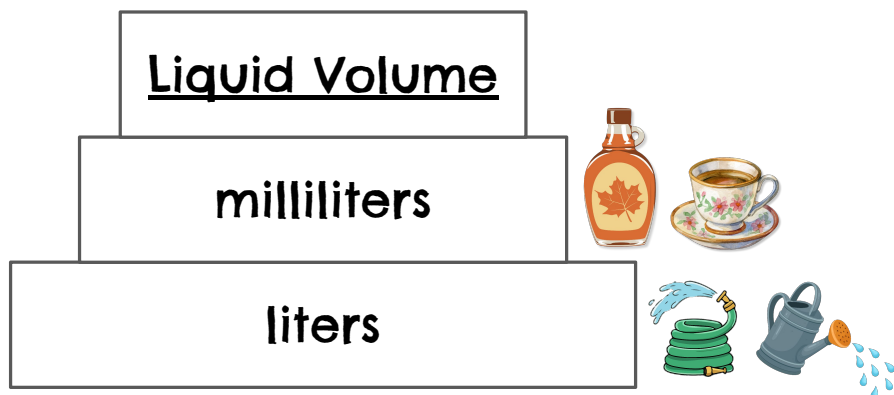
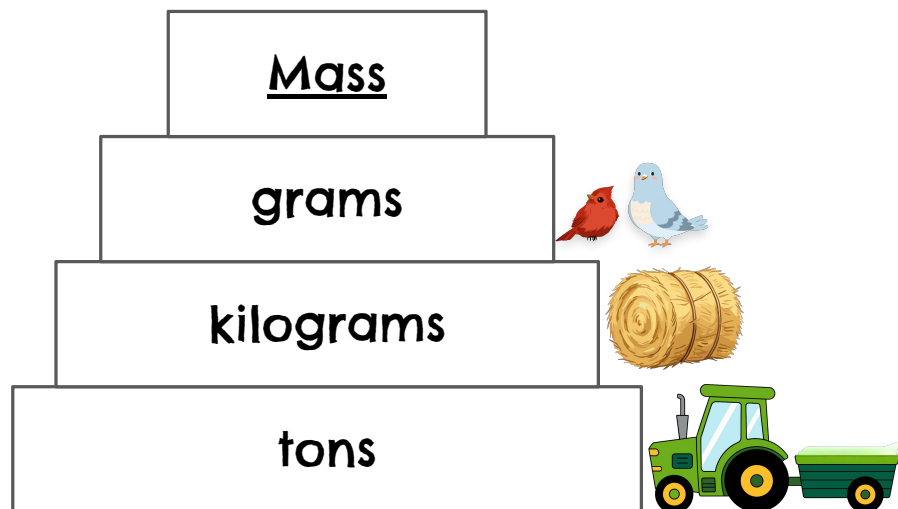
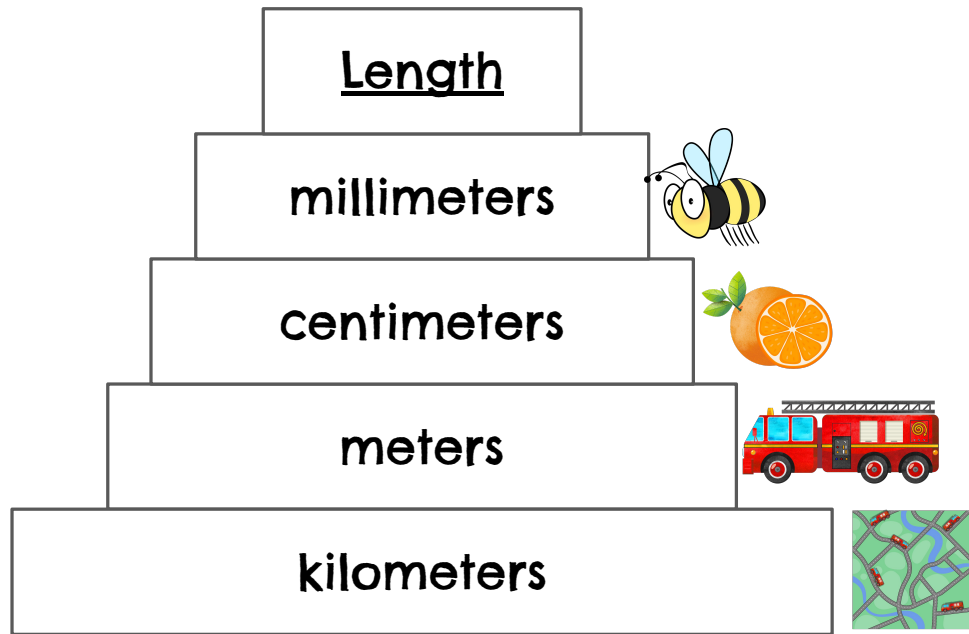
- Be encouraged to include an estimation for each of their ideas.

All Zone

What measurements could connect to the picture?



Metric Measurements



Answers

Encourage students to come up with as many ideas as possible. Below are some examples. Student might come up with other ideas.



Kilometers

- Distance a horse might gallop
- Length of the farm
- Distance food travels from field to table

Millimeters

- Width of a pig's nostril
- Width of nail in the barn
- Width of a horse hair

Meters

- Height of barn
- Height of a tree
- Length of a horse
- Height of the windmill.

Centimeters

- Length of a duck
- Length of the signs
- Height of the chicken
- Width of a horseshoe

Kilograms

- Mass of a cow
- Mass of a piglet
- Mass of the hay bales

Grams

- Mass of a duckling
- Mass of an egg
- Mass of a small rock

Liters

- Amount of milk in the milk jug
- Amount of mud in the mud pond
- Amount of water in the duck pond
- Amount of water used to water the plants

Milliliters

- Amount of milk in a cup
- Amount of liquid in a water bowl for the dog