TEACHING TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions

1. Answer: B) 1,700 grams
Explanation:"2 kilograms = 2,000 grams.
After using 300 grams, 2,000 grams - 300 grams = 1,700 grams.

2. Answer: B) 150,000 m
Explanation: 1 kilometer = 1,000 meters, so 150 kilometers = 150 × 1,000 = 150,000 meters.

3. Answer: C) Pound
Explanation: Pound is an imperial unit of mass, while gram, kilogram, and milligram are metric units.

4. Answer: A) 1,200 grams
Explanation: 1 kilogram = 1,000 grams, so 1.2 kilograms = 1.2 × 1,000 = 1,200 grams.

5. Answer: D) 8.05 km
Explanation: 5 miles × 1.60934 = 8.0467 ˜ 8.05 kilometers.

Advanced Level

More than One Answer Type

6. Answer: A) 1 meter = 100 centimeters, B) 1 foot = 30.48 centimeters, C) 1 kilometer = 1,000 meters
Explanation: These are valid length conversions. 1 inch = 2.54 centimeters, not 1.5 centimeters.

7. Answer: A) Gram (g), B) Kilogram (kg), D) Milligram (mg)
Explanation: Pound (lb) is not a metric unit; it's an imperial unit. The others are metric units of mass.

8. Answer: A) Mass is the amount of matter in an object, D) Weight can change based on location
Explanation: Mass is constant regardless of location, but weight depends on gravity and can change with location (e.g., on the Moon vs Earth).

Fill In the Blanks

9. Answer: 3 feet

Explanation: 1 yard = 3 feet.

10. Answer: Measuring Tape
Explanation: A measuring tape is often used for longer distances, especially in construction, as it is flexible and can stretch over large areas.

Matching Type
11. Match the Measurement Tools to Their Uses
1. Ruler C. Measuring length of objects
2. Balance Scale D. Weighing mass
3. Measuring Tape B. Measuring longer distances
4. Digital Scale A. Providing quick weight readings

Answer the Following Questions
12. Answer: 1.7 meters
Explanation: 2.5 meters - 1 meter (carrots) = 1.5 meters.
1.5 meters - 0.80 meters (tomatoes) = 0.7 meters.

13. Answer: 2,450 grams
Explanation: Convert 1.2 kilograms to grams: 1.2 × 1,000 = 1,200 grams.
Total weight = 1,200 + 750 + 500 = 2,450 grams.

14. Answer: 5 pieces
Explanation: 1.5 meters = 150 centimeters.
150 ÷ 30 = 5 pieces.

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions
1. Answer: D) Centimeter
Explanation: Centimeters are commonly used to measure short lengths in everyday situations like the size of an object or the height of a person.

2. Answer: A) 250 mm
Explanation: 1 centimeter = 10 millimeters, so 25 cm = 25 × 10 = 250 millimeters.

3. Answer: C) Balance Scale
Explanation: A balance scale is used to measure the mass of small objects like coins.

4. Answer: C) 36 inches
Explanation: 1 foot = 12 inches, so 3 feet = 3 × 12 = 36 inches.

5. Answer: B) 3.25 kg
Explanation: Convert 750 grams to kilograms: 750 grams = 0.75 kg.

Total weight = 2.5 kg + 0.75 kg = 3.25 kg.

Advanced Level

More than One Answer Type

6. Answer: A) Triple Beam Balance, C) Digital Scale
Explanation: Both a triple beam balance and a digital scale are used to measure mass, whereas a measuring tape and ruler are used for measuring length.

7. Answer: A) A pencil, B) A bag of flour, D) A piece of fruit
Explanation: Pencils, bags of flour, and pieces of fruit are typically measured in grams, while a car would be measured in kilograms or tons.

8. Answer: A) Converting kilometers to meters, C) Calculating the total weight of multiple items, D) Measuring the length of a table
Explanation: All of these are examples of real-world measurement problems. Finding the height of a building is not usually considered a simple "story sum" involving basic units of measurement.

Fill In the Blanks

9. Answer: meter
Explanation: The base unit of length in the metric system is the meter (m).

10. Answer: 1,000
Explanation: 1 kilogram = 1,000 grams, so to convert grams to kilograms, you divide by 1,000.

Matching Type

11. Match the Measurement Units to Their Categories
1. Millimeter (mm) ------- C. Metric Length
2. Foot (ft) ------- D. Imperial Length
3. Kilogram (kg) ------- A. Metric Mass
4. Inch (in) ------- D. Imperial Length

Answer the Following Questions

12. Answer: 3.3 meters
Explanation: Maria bought 450 cm and has 120 cm left, so she used:
450 cm - 120 cm = 330 cm.
330 cm = 3.3 meters.

13. Answer: 96.56 kilometers
Explanation: 15 miles × 1.60934 = 24.1401 kilometers per weekend.
Over 4 weekends, 24.1401 × 4 = 96.56 kilometers.

14. Answer: 700 grams
Explanation: 1 kilogram = 1,000 grams.
After using 300 grams, 1,000 grams - 300 grams = 700 grams left.

Measurement of Capacity

TEACHING TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions

1. C) 4.8 quarts
Explanation: 1 gallon = 4 quarts, so 1.2 gallons × 4 = 4.8 quarts.

2. B) 1.5 hours
Explanation: Time = Distance ÷ Speed, so 90 miles ÷ 45 mph = 2 hours.

3. C) 32 fl oz
Explanation: 1 pint = 16 fl oz, so 2 pints × 16 = 32 fl oz.

4. B) 4 km/h
Explanation: Speed = Distance ÷ Time, so 1 km ÷ 15 minutes = 4 km/h (convert 15 minutes to 0.25 hours).

5. A) 1.25 L
Explanation: 1.5 L - 250 mL (0.25 L) = 1.25 L left.

Advanced Level

More than One Answer Type

6. A) Milliliter (mL), C) Liter (L)
Explanation: Milliliter and Liter are metric units of capacity; Pint and Gallon are non-metric.

7. A) Measuring Cup, B) Graduated Cylinder, D) Syringe
Explanation: These are all tools used to measure liquid capacity.

8. A) Estimating helps save time, C) Estimating can help verify calculations, D) Estimating is useful for quick assessments
Explanation: Estimation is used for quick, rough calculations but is not always accurate.

Fill In the Blanks

9. 240 kilometers
Explanation: Distance = Speed × Time, so 80 km/h × 3 hours = 240 km.

10. 50 km/h
Explanation: Average speed = Distance ÷ Time, so 200 km ÷ 4 hours = 50 km/h.

Matching Type
11. Match the Concepts to Their Formulas
1. Speed ----- B. Speed = Distance ÷ Time
2. Distance ------ A. Distance = Speed × Time
3. Time ------ C. Time = Distance ÷ Speed

Answer the Following Questions
12. 500 mL = 0.5 L, 500 mL ÷ 240 mL = 2.08 cups (about 2 cups)
Explanation: 500 mL is half a liter, and 2 cups are approximately needed.

13. 3.5 gallons
Explanation: 10 gallons - 6.5 gallons = 3.5 gallons remaining.

14. Average speed = (120 km + 90 km) ÷ (1 hour + 1.5 hours) = 210 km ÷ 2.5 hours = 84 km/h
Explanation: Total distance divided by total time gives average speed.

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions
1. B) Liters
Explanation: Liters are used to measure capacity in the metric system.

2. B) 1,500 mL
Explanation: 1 liter = 1,000 milliliters, so 1.5 liters = 1,500 milliliters.

3. B) 4 cups
Explanation: 1 liter = 1,000 mL, and each cup holds 240 mL, so 1,000 ÷ 240 = 4.17, which rounds to about 4 cups.

4. B) 15 minutes
Explanation: Anna overestimated by 45 minutes - 30 minutes = 15 minutes.

5. B) 14 km/h
Explanation: Average speed = Distance ÷ Time, so 42 km ÷ 3 hours = 14 km/h.

Advanced Level

More than One Answer Type
6. B) Distance = Speed × Time, C) Time = Distance ÷ Speed
Explanation: Distance is found by multiplying speed by time, and time is found by dividing distance by speed.

7. A) Measuring 2 liters of juice for a party, C) Filling a tank with 15 gallons of water

Explanation: Both are examples of measuring capacity, while estimating time and weighing flour involve different measurements.

8. A) Kilometers per hour (km/h), C) Miles per hour (mph)
Explanation: Speed is typically measured in km/h or mph, not in meters or seconds.

Fill In the Blanks
9. 1,000
Explanation: To convert liters to milliliters, multiply by 1,000 (1 liter = 1,000 mL).

10. Measuring cup
Explanation: A measuring cup is commonly used for measuring liquid ingredients in cooking.

Matching Type
11. Match the Units of Capacity to Their Measurement System
1. Liter (L) ------ B. Metric
2. Gallon (gal) ------- A. Imperial
3. Milliliter (mL) ------ D. Metric
4. Pint (pt) ------ C. Imperial
Explanation: Liters and milliliters are metric units, while gallons and pints are imperial units.

Answer the Following Questions
12. 2.9 liters
Explanation: 2.5 liters - 1.2 liters = 1.3 liters; then 1.3 liters + 0.6 liters (600 mL) = 2.9 liters.

13. 16 km/h
Explanation: 1 hour and 30 minutes = 1.5 hours. Average speed = 24 km ÷ 1.5 hours = 16 km/h.

14. 55 minutes
Explanation: 45 minutes + 10 minutes = 55 minutes total time. s