

Units of Distance

1 For each pair of units listed below, circle the longer one:

inch or foot
yard or meter
meter or foot
mile or kilometer

2 For each pair of units listed below, circle the shorter one:

centimeter or inch
yard or foot
millimeter or centimeter
millimeter or inch

3 Fill in the blanks.

1 inch is about _____ centimeters
10 miles is about _____ kilometers

4 Fill in the blanks.

1 foot is exactly _____ inches
1 yard is exactly _____ feet

5 Circle the metric unit that would be the best choice for measuring the diameter of a basketball?

meters millimeters
kilometers centimeters

6 Circle the traditional unit that would be the best choice for measuring the length of a skateboard?

feet inches
miles yards

7 Circle the metric unit that would be the best choice for measuring the length of a swimming pool?

meters millimeters
kilometers centimeters

8 Circle the traditional unit that would be the best choice for measuring the length of the California coastline?

feet inches
miles yards

9 If you drove 40 miles to get to the beach, estimate how many kilometers you went.

10 If your cat is 1.5 feet long from head to tail, estimate how many centimeters long he is.

Units of Distance

1 For each pair of units listed below, circle the longer one:

inch or foot
yard or meter
meter or foot
mile or kilometer

2 For each pair of units listed below, circle the shorter one:

centimeter or inch
yard or foot
millimeter or centimeter
millimeter or inch

3 Fill in the blanks.

1 inch is about 2.5 centimeters

10 miles is about 16 kilometers

4 Fill in the blanks.

1 foot is exactly 12 inches

1 yard is exactly 3 feet

5 Circle the metric unit that would be the best choice for measuring the diameter of a basketball?

meters millimeters
kilometers centimeters

6 Circle the traditional unit that would be the best choice for measuring the length of a skateboard?

feet inches
miles yards
(feet also a good choice)

7 Circle the metric unit that would be the best choice for measuring the length of a swimming pool?

meters millimeters
kilometers centimeters

8 Circle the traditional unit that would be the best choice for measuring the length of the California coastline?

feet inches
miles yards

9 If you drove 40 miles to get to the beach, estimate how many kilometers you went.

remember: 10 mi ~ 16 km
you went 4 times the distance of 10 miles, so you went 4 x 16 km

$$\begin{array}{r} 16 \\ \times 4 \\ \hline 64 \end{array}$$

~ 64 km

10 If your cat is 1.5 feet long from head to tail, estimate how many centimeters long he is.

remember: 1 ft ~ 30 cm
So your cat is 30 cm PLUS half of that.
half of 30 = 15,
Your cat's length is about 30 + 15 = 45

~ 45 cm

Comparing Common Units of Distance

G-UOD 1

- 1 Put these common traditional units of distance in order from shortest to longest.

yard inch mile foot

_____ _____ _____ _____
shortest _____ _____ longest

- 2 Put these common metric units of distance in order from shortest to longest.

kilometer centimeter millimeter meter

_____ _____ _____ _____
shortest _____ _____ longest

- 3 Which metric unit is closest in length to a yard? _____

- 4 Is a meter longer than a yard? _____

- 5 Which metric unit is closest in length to a mile? _____

- 6 Is a kilometer longer than a mile? _____

- 7 Approximately how many kilometers are in 10 miles? _____

- 8 Which is longer, an inch or a centimeter? _____

- 9 Approximately how many centimeters are in an inch? _____

- 10 How many inches are in a foot? _____

- 11 How many feet are in a yard? _____

Choosing the 'Best' Traditional Unit

G-UOD 3

Instructions: For each problem below, decide which common traditional unit you think would be best for measuring the object listed. You can write the whole word or just the abbreviation of that unit.

inches: in

feet: ft

yards: yd

miles: mi

- | | | |
|-----------|----------------------------------|-----------|
| 1 | The length of a hot dog | <u>in</u> |
| 2 | The depth of a swimming pool | _____ |
| 3 | The diameter of a basketball | _____ |
| 4 | The length of a basketball court | _____ |
| 5 | The distance across an ocean | _____ |
| 6 | The width of a bedroom | _____ |
| 7 | The width of an envelope | _____ |
| 8 | The length of playground | _____ |
| 9 | The height of a ladder | _____ |
| 10 | The height of California | _____ |
| 11 | The diameter of a pumpkin | _____ |
| 12 | The length of a boat | _____ |

Simple Metric Distance Conversions

G-UOD 4

Instructions: To answer the following questions, remember these simple metric relationships you learned in the video lesson.

1 kilometer = 1,000 meters

1 meter = 100 centimeters

1 centimeter = 10 millimeters

Hint: If you are converting from a bigger unit to a smaller one (i.e. km to m) you will need to multiply, but if you are converting from a smaller unit to a bigger one (i.e. cm to m) you will need to divide.

- 1 How many meters are equivalent to 2 kilometers?

since: $1 \text{ km} = 1,000 \text{ m}$
 $\times 2 \quad \times 2$

then: $2 \text{ km} = 2,000 \text{ m}$

- 2 How many centimeters are equivalent to 50 millimeters?

since: $1 \text{ cm} = 10 \text{ mm}$
we need to divide our 50 mm
into groups of 10

$50 \text{ mm} \div 10 = 5 \text{ cm}$

- 3 How many millimeters are equivalent to 8 centimeters?

- 4 How many kilometers are equivalent to 3,000 meters?

- 5 How many centimeters are equivalent to 12 meters?

- 6 How many meters are equivalent to 400 centimeters?

- 7 How many meters are equivalent to 7 kilometers?

- 8 How many centimeters are equivalent to 60 millimeters?

- 9 How many centimeters are equivalent to 2.5 meters?

- 10 How many kilometers are equivalent to 1,500 meters?

Simple Traditional Distance Conversions

G-UOD 5

Instructions: To answer the following questions, remember these simple traditional distance relationships you learned in the video lesson.

$$1 \text{ mile} = 1,760 \text{ yards}$$

$$1 \text{ yard} = 3 \text{ feet}$$

$$1 \text{ foot} = 12 \text{ inches}$$

Hint: If you are converting from a bigger unit to a smaller one (i.e. ft to in) you will need to multiply, but if you are converting from a smaller unit to a bigger one (i.e. ft to yd) you will need to divide.

- 1** How many inches are equivalent to 3 feet?

$$\begin{array}{r} \text{since: } 1 \text{ ft} = 12 \text{ in} \\ \times 3 \quad \times 3 \end{array}$$

$$\text{then: } 3 \text{ ft} = \textcircled{36 \text{ in}}$$

- 2** How many yards are equivalent to 12 feet?

since: 1 yd = 3 ft
we need to divide our 12 ft
by 3 to see how many yards that is

$$12 \text{ ft} \div 3 = \textcircled{4 \text{ yd}}$$

- 3** How many feet are equivalent to 3 yards?

- 4** How many feet are equivalent to 24 inches?

- 5** How many yards are equivalent to 2 miles?

- 6** How many yards are equivalent to 30 feet?

- 7** How many inches are equivalent to 4 feet?

- 8** How many feet are equivalent to 60 inches?

- 9** How many inches are equivalent to 1.5 feet?

- 10** How many feet are equivalent to 6 inches?

Estimating Distance Conversions

G-UOD 6

Instructions: To answer the following questions, remember these estimated conversions between metric and traditional units.

10 miles \approx 16 kilometers

1 foot \approx 30 centimeters

1 inch \approx 2.5 centimeters

- 1 A pool is 4 feet deep. Estimate how many centimeters deep it is.

since: $1 \text{ ft} \approx 30 \text{ cm}$
 $\times 4 \quad \times 4$

then: $4 \text{ ft} \approx 120 \text{ cm}$

- 2 If you live 100 miles from the nearest big city, approximately how many kilometers is that?

- 3 If you have to travel 5 miles to school, about how many kilometers is that?

- 4 A tray is about 60 centimeters wide. What is its approximate width in feet?

- 5 If a drinking glass is 8 inches tall, what is its approximate height in centimeters?

- 6 If your friend is 5 feet tall, estimate their height in centimeters?

- 7 If the college you want to go to is 30 miles from your home, about how far is that in kilometers?

- 8 If a candle is 3 inches tall, about how many centimeters is that?

- 9 If your dog is 2.5 feet long, about how many centimeters long is it?

- 10 If your friend's hamster is 5 inches tall, about how many centimeters is that?

Comparing Common Units of Distance

G-UOD 1

- 1 Put these common traditional units of distance in order from shortest to longest.

yard inch mile foot

inch foot yard mile

shortest \longrightarrow *longest*

- 2 Put these common metric units of distance in order from shortest to longest.

kilometer centimeter millimeter meter

millimeter centimeter meter kilometer

shortest \longrightarrow *longest*

- 3 Which metric unit is closest in length to a yard? a meter

- 4 Is a meter longer than a yard? yes

- 5 Which metric unit is closest in length to a mile? a kilometer

- 6 Is a kilometer longer than a mile? no

- 7 Approximately how many kilometers are in 10 miles? 16

- 8 Which is longer, an inch or a centimeter? an inch

- 9 Approximately how many centimeters are in an inch? 2.5

- 10 How many inches are in a foot? 12

- 11 How many feet are in a yard? 3

Choosing the 'Best' Metric Unit

G-UOD 2

Instructions: For each problem below, decide which common metric unit you think would be best for measuring the object listed. You can write the whole word or just the abbreviation of that unit.

millimeters: mm

centimeters: cm

meters: m

kilometers: km

- | | | |
|----|----------------------------------|-----------|
| 1 | The length of a pencil | <u>cm</u> |
| 2 | The diameter of a water tower | <u>m</u> |
| 3 | The length of a highway | <u>km</u> |
| 4 | The width of a fruit fly | <u>mm</u> |
| 5 | The perimeter of a swimming pool | <u>m</u> |
| 6 | The radius of a bicycle tire | <u>cm</u> |
| 7 | The distance between two cities | <u>km</u> |
| 8 | The thickness of a pancake | <u>mm</u> |
| 9 | The depth of a lake | <u>m</u> |
| 10 | The length of a bee's wing | <u>mm</u> |
| 11 | The height of a building | <u>m</u> |
| 12 | The diameter of a cake | <u>cm</u> |

Choosing the 'Best' Traditional Unit

G-UOD 3

Instructions: For each problem below, decide which common traditional unit you think would be best for measuring the object listed. You can write the whole word or just the abbreviation of that unit.

inches: in

feet: ft

yards: yd

miles: mi

- | | | |
|-----------|----------------------------------|-------------------|
| 1 | The length of a hot dog | <u>in</u> |
| 2 | The depth of a swimming pool | <u>ft</u> |
| 3 | The diameter of a basketball | <u>in</u> |
| 4 | The length of a basketball court | <u>yd (or ft)</u> |
| 5 | The distance across an ocean | <u>mi</u> |
| 6 | The width of a bedroom | <u>ft</u> |
| 7 | The width of an envelope | <u>in</u> |
| 8 | The length of playground | <u>yd (or ft)</u> |
| 9 | The height of a ladder | <u>ft</u> |
| 10 | The height of California | <u>mi</u> |
| 11 | The diameter of a pumpkin | <u>in</u> |
| 12 | The length of a boat | <u>ft</u> |

Simple Metric Distance Conversions

G-UOD 4

Instructions: To answer the following questions, remember these simple metric relationships you learned in the video lesson.

1 kilometer = 1,000 meters 1 meter = 100 centimeters 1 centimeter = 10 millimeters

Hint: If you are converting from a bigger unit to a smaller one (i.e. km to m) you will need to multiply, but if you are converting from a smaller unit to a bigger one (i.e. cm to m) you will need to divide.

- 1** How many meters are equivalent to 2 kilometers?

since: $1 \text{ km} = 1,000 \text{ m}$
 $\times 2 \quad \times 2$

then: $2 \text{ km} = 2,000 \text{ m}$

- 2** How many centimeters are equivalent to 50 millimeters?

since: $1 \text{ cm} = 10 \text{ mm}$
we need to divide our 50 mm into groups of 10

$50 \text{ mm} \div 10 = 5 \text{ cm}$

- 3** How many millimeters are equivalent to 8 centimeters?

since: $1 \text{ cm} = 10 \text{ mm}$
 $\times 8 \quad \times 8$

then: $8 \text{ cm} = 80 \text{ mm}$

- 4** How many kilometers are equivalent to 3,000 meters?

since: $1 \text{ km} = 1,000 \text{ m}$

$3,000 \text{ m} \div 1,000 = 3 \text{ km}$

- 5** How many centimeters are equivalent to 12 meters?

since: $1 \text{ m} = 100 \text{ cm}$
 $\times 12 \quad \times 12$

then: $12 \text{ m} = 1,200 \text{ cm}$

- 6** How many meters are equivalent to 400 centimeters?

since: $1 \text{ m} = 100 \text{ cm}$

$400 \text{ cm} \div 100 = 4 \text{ m}$

- 7** How many meters are equivalent to 7 kilometers?

since: $1 \text{ km} = 1,000 \text{ m}$
 $\times 7 \quad \times 7$

then: $7 \text{ km} = 7,000 \text{ m}$

- 8** How many centimeters are equivalent to 60 millimeters?

since: $1 \text{ cm} = 10 \text{ mm}$

$60 \text{ mm} \div 10 = 6 \text{ cm}$

- 9** How many centimeters are equivalent to 2.5 meters?

since: $1 \text{ m} = 100 \text{ cm}$
 $\times 2.5 \quad \times 2.5$

then: $2.5 \text{ m} = 250 \text{ cm}$

- 10** How many kilometers are equivalent to 1,500 meters?

since: $1 \text{ km} = 1,000 \text{ m}$

$1,500 \text{ m} \div 1,000 = 1.5 \text{ km}$

Simple Traditional Distance Conversions

G-UOD 5

Instructions: To answer the following questions, remember these simple traditional distance relationships you learned in the video lesson.

$$1 \text{ mile} = 1,760 \text{ yards}$$

$$1 \text{ yard} = 3 \text{ feet}$$

$$1 \text{ foot} = 12 \text{ inches}$$

Hint: If you are converting from a bigger unit to a smaller one (i.e. ft to in) you will need to multiply, but if you are converting from a smaller unit to a bigger one (i.e. ft to yd) you will need to divide.

- 1** How many inches are equivalent to 3 feet?

$$\begin{array}{r} \text{since: } 1 \text{ ft} = 12 \text{ in} \\ \quad \times 3 \quad \times 3 \end{array}$$

$$\text{then: } 3 \text{ ft} = 36 \text{ in}$$

- 2** How many yards are equivalent to 12 feet?

since: $1 \text{ yd} = 3 \text{ ft}$
we need to divide our 12 ft by 3 to see how many yards that is

$$12 \text{ ft} \div 3 = 4 \text{ yd}$$

- 3** How many feet are equivalent to 3 yards?

$$\begin{array}{r} \text{since: } 1 \text{ yd} = 3 \text{ ft} \\ \quad \times 3 \quad \times 3 \end{array}$$

$$\text{then: } 3 \text{ yd} = 9 \text{ ft}$$

- 4** How many feet are equivalent to 24 inches?

$$\text{since: } 1 \text{ ft} = 12 \text{ in}$$

$$24 \text{ in} \div 12 = 2 \text{ ft}$$

- 5** How many yards are equivalent to 2 miles?

$$\begin{array}{r} \text{since: } 1 \text{ mi} = 1,760 \text{ yd} \\ \quad \times 2 \quad \times 2 \end{array}$$

$$\text{then: } 2 \text{ mi} = 3,520 \text{ yd}$$

- 6** How many yards are equivalent to 30 feet?

$$\text{since: } 1 \text{ yd} = 3 \text{ ft}$$

$$30 \text{ ft} \div 3 = 10 \text{ yd}$$

- 7** How many inches are equivalent to 4 feet?

$$\begin{array}{r} \text{since: } 1 \text{ ft} = 12 \text{ in} \\ \quad \times 4 \quad \times 4 \end{array}$$

$$\text{then: } 4 \text{ ft} = 48 \text{ in}$$

- 8** How many feet are equivalent to 60 inches?

$$\text{since: } 1 \text{ ft} = 12 \text{ in}$$

$$60 \text{ in} \div 12 = 5 \text{ ft}$$

- 9** How many inches are equivalent to 1.5 feet?

$$\begin{array}{r} \text{since: } 1 \text{ ft} = 12 \text{ in} \\ \quad \times 1.5 \quad \times 1.5 \end{array}$$

$$\text{then: } 1.5 \text{ ft} = 18 \text{ in}$$

- 10** How many feet are equivalent to 6 inches?

$$\text{since: } 1 \text{ ft} = 12 \text{ in}$$

$$6 \text{ in} \div 12 = 0.5 \text{ ft} \text{ or } \frac{1}{2} \text{ ft}$$

Estimating Distance Conversions

G-UOD 6

Instructions: To answer the following questions, remember these estimated conversions between metric and traditional units.

10 miles \approx 16 kilometers

1 foot \approx 30 centimeters

1 inch \approx 2.5 centimeters

- 1** A pool is 4 feet deep. Estimate how many centimeters deep it is.

since: $1 \text{ ft} \approx 30 \text{ cm}$
 $\times 4 \quad \times 4$

then: $4 \text{ ft} \approx 120 \text{ cm}$

- 2** If you live 100 miles from the nearest big city, approximately how many kilometers is that?

since: $10 \text{ mi} \approx 16 \text{ km}$
 $\times 10 \quad \times 10$

then: $100 \text{ mi} \approx 160 \text{ km}$

- 3** If you have to travel 5 miles to school, about how many kilometers is that?

since: $10 \text{ mi} \approx 16 \text{ km}$
 $\div 2 \quad \div 2$

then: $5 \text{ mi} \approx 8 \text{ km}$

- 4** A tray is about 60 centimeters wide. What is its approximate width in feet?

since: $1 \text{ ft} \approx 30 \text{ cm}$

$60 \text{ cm} \div 30 \approx 2 \text{ ft}$

- 5** If a drinking glass is 8 inches tall, what is its approximate height in centimeters?

since: $1 \text{ in} \approx 2.5 \text{ cm}$
 $\times 8 \quad \times 8$

then: $8 \text{ in} \approx 20 \text{ cm}$

- 6** If your friend is 5 feet tall, estimate their height in centimeters?

since: $1 \text{ ft} \approx 30 \text{ cm}$
 $\times 5 \quad \times 5$

then: $5 \text{ ft} \approx 150 \text{ cm}$

- 7** If the college you want to go to is 30 miles from your home, about how far is that in kilometers?

since: $10 \text{ mi} \approx 16 \text{ km}$
 $\times 3 \quad \times 3$

then: $30 \text{ mi} \approx 48 \text{ km}$

- 8** If a candle is 3 inches tall, about how many centimeters is that?

since: $1 \text{ in} \approx 2.5 \text{ cm}$
 $\times 3 \quad \times 3$

then: $3 \text{ in} \approx 7.5 \text{ cm}$ or 8 cm

- 9** If your dog is 2.5 feet long, about how many centimeters long is it?

since: $1 \text{ ft} \approx 30 \text{ cm}$
 $\times 2.5 \quad \times 2.5$

then: $2.5 \text{ ft} \approx 75 \text{ cm}$

- 10** If your friend's hamster is 5 inches tall, about how many centimeters is that?

since: $1 \text{ in} \approx 2.5 \text{ cm}$
 $\times 5 \quad \times 5$

then: $5 \text{ in} \approx 12.5 \text{ cm}$ or 13 cm