4th Grade TEKS ALIGNED
MEASUREMENT
NOTEBOOK

Measurement *Table of Contents*
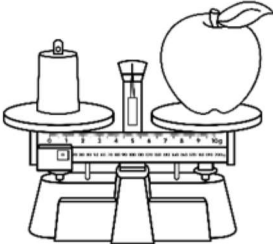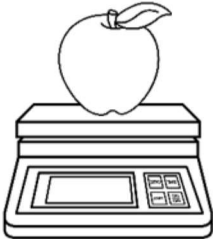
ESSENTIAL MEASUREMENT VOCABULARY

Term	Picture or Example	Definition
Perimeter		
Formula for perimeter		
Area		
Formula for Area		

ESSENTIAL MEASUREMENT VOCABULARY

Term	Picture or Example	Definition
Customary units		
Metric units		
Capacity		
Mass		
Weight		

PERIMETER *and* AREA

Perimeter

_____ *is the*

_____

_____

Area

_____ *is the*

_____

_____

18 CM

8 CM
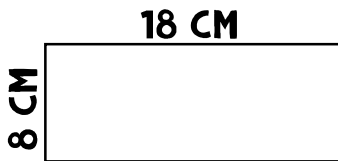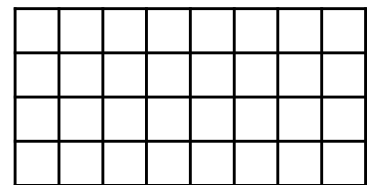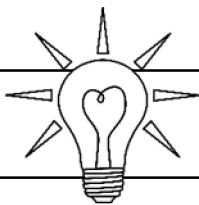
Easy way to find the perimeter of a rectangle:

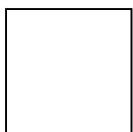Sophisticated way to find the perimeter of a rectangle:

How to find the area of a rectangle:

Finding the area is the same as finding the value of an

_____ .

Remember squares are special _____ .

Perimeter of a SQUARE

9 CM

Area of a SQUARE

9 CM

Get to Know Your STAAR CHART
PART 1

PERIMETER			
Square			$P = 4s$
Rectangle	$P = l + w + l + w$	or	$P = 2l + 2w$
AREA			
Square			$A = s \times s$
Rectangle			$A = l \times w$

Look at the formulas for **AREA**.
There is ____ formula to find the area of a _____.
and ____ formula to find the area of a _____.

Look at the formulas for **PERIMETER**.
There is ____ formula to find the perimeter of a _____.
and ____ formulas to find the perimeter of a _____.

Why are there 2 formulas to find the perimeter of a rectangle?

_____

_____

_____

_____

Draw a **SQUARE** next to the word *square*. Color your 2 squares red.

Shade all of the **S**'s lightly in red.   **S** = _____.

Draw a **RECTANGLE** next to the word *rectangle*. Color your 2 rectangles green.

Shade all of the **L**'s lightly in blue.   **L** = _____.

Shade all of the **W**'s lightly in yellow. **W** = _____.

Get to Know Your STAAR CHART
PART 2

Look at both sides of your STAAR Chart

The side with the length, volume & capacity, weight & mass and time conversions has a ruler that measures length using
_____.
The side with the perimeter and area formulas has a ruler that measures length using _____.

Use the rulers to answer the questions below. Highlight the unit, centimeters or inches, that each question is asking you to use.

1. What is the difference between the height of the pen and the height of the marker to the nearest inch?
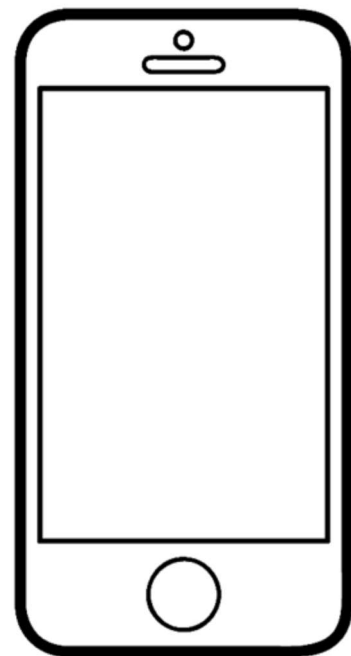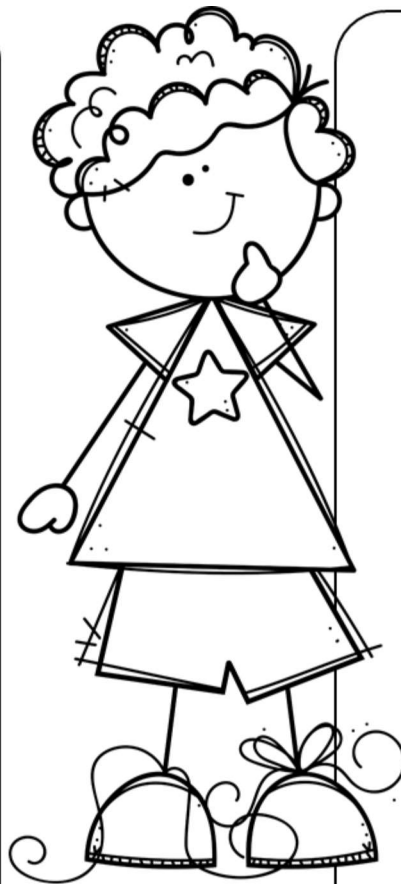
2. Measure the perimeter of the rectangular screen on the phone to the nearest centimeter.

Understanding FRACTIONS *of* INCHES

Look at the ruler below that measures inches.
The Image below the ruler zooms in on the first inch.

Color the shortest lines between 0 and 1 blue.
Look at the fraction bar above this inch that has 8 parts.
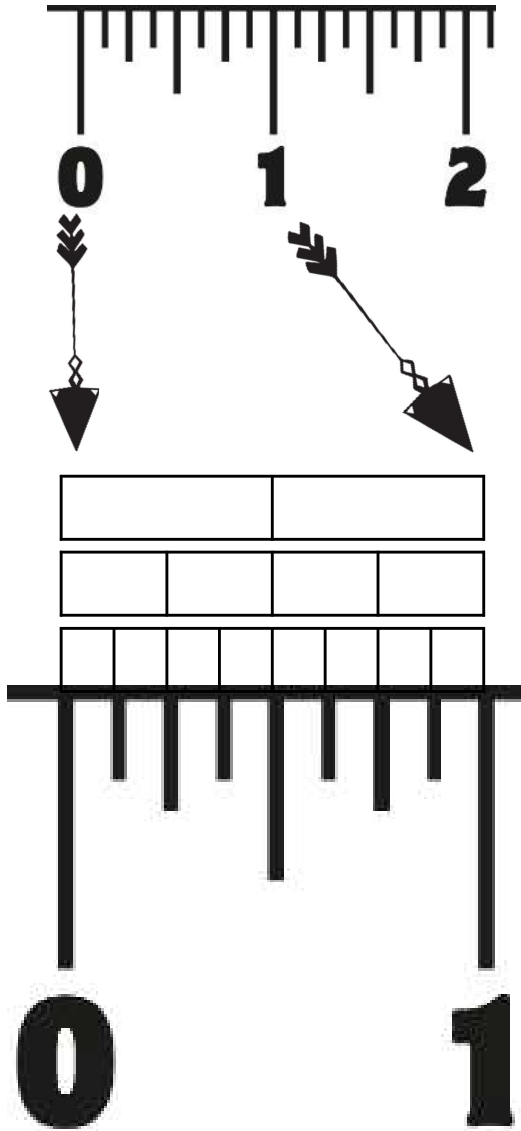*Shade* that fraction bar blue. This fraction bar represents _____.
Each line that matches a line in this fraction bar represents ___ of an inch.
Label all of the lines as eighths.

Color the next longest lines between 0 and 1 red.
Look at the fraction bar above this inch that has 4 parts.
Shade that fraction bar red. This fraction bar represents _____.
Each line that matches a line in this fraction bar represents ___ of an inch.
Label these lines as fourths.
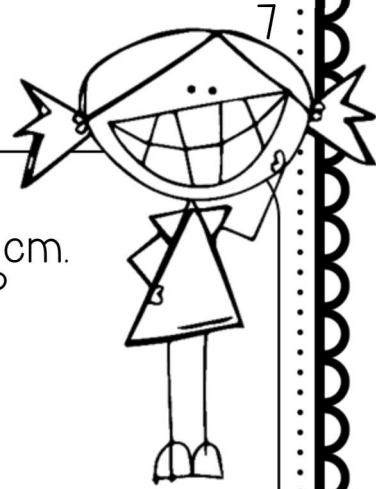
Color the longest line between 0 and 1 green.
Look at the fraction bar above this inch that has 2 parts.
Shade that fraction bar green. This fraction bar represents _____. This line represents ___ of an inch.
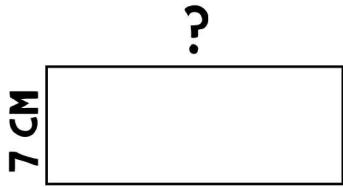*Label* the green line with the correct fraction.

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COMPLEX *Perimeter*

The perimeter of the rectangle is 42 cm. What is the length?

?

7 CM

WORK BACKWARDS.....

p = 2L + 2w   Fill in the numbers you know.

42 = (2 x   ) + (2 x   )   Solve the part you can solve.

42 =   +

Whole =   part + part

Think about part, part, whole relationships.

42

_____

Take the part you know away from the whole to find the missing part.

This is the length of 2 sides. How do you find the length of one side?

The perimeter of the rectangle is 46 cm. What is the length?

?

5 CM

WORK BACKWARDS.....

p = 2L + 2w   Fill in the numbers you know.

= (2 x   ) + (2 x   )   Solve the part you can solve.
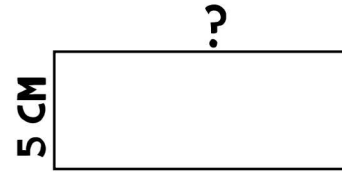
=   +

Whole =   part + part

Think about part, part, whole relationships.

_____

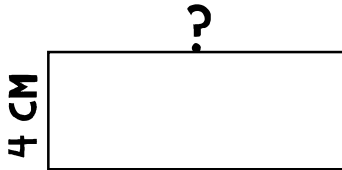Take the part you know away from the whole to find the missing part.

This is the length of 2 sides. How do you find the length of one side?

Challenging Problems = Strong Brains

COMPLEX Perimeter 2

The area of the rectangle is 44 square centimeters. What is the perimeter ?

?

4 CM

WORK BACKWARDS.....

A = L X W   Fill in the numbers you know.

=   X

Think about the relationship between multiplication and division. Write a related fact you can solve.

÷   =

Now you know the missing side. Find the perimeter.

The area of the rectangle is 45 square meters. What is the perimeter?

?

5 M

WORK BACKWARDS.....

A = L X W   Fill in the numbers you know.

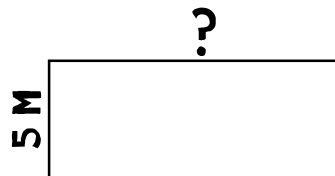=   X

Think about the relationship between multiplication and division. Write a related fact you can solve.

÷   =

Now you know the missing side. Find the perimeter.

We LOVE a good challenge!!!

Challenging Problems = Strong Brains

Get to Know Your STAAR CHART

PART 3

Draw a vertical line between the customary and metric units.

List the 4 measurement categories:

Why is (yd) written next to yard?

Label the larger and smaller units in each section.

LENGTH

Customary	Metric
1 mile (mi) = 1,760 yards (yd)	1 kilometer (km) = 1,000 meters (m)
1 yard (yd) = 3 feet (ft)	1 meter (m) = 100 centimeters (cm)
1 foot (ft) = 12 inches (in)	1 centimeter (cm) = 10 millimeters (mm)

VOLUME AND CAPACITY

Customary	Metric
1 gallon (gal) = 4 quarts (qt)	1 liter (L) = 1,000 milliliters (mL)
1 quart (qt) = 2 pints (pt)	
1 pint (pt) = 2 cups (c)	
1 cup (c) = 8 fluid ounces (fl oz)	

WEIGHT AND MASS

Customary	Metric
1 ton (T) = 2,000 pounds (lb)	1 kilogram (kg) = 1,000 grams (g)
1 pound (lb) = 16 ounces (oz)	1 gram (g) = 1,000 milligrams (mg)

TIME

1 year = 12 months

1 year = 52 weeks

1 week = 7 days

1 day = 24 hours

1 hour = 60 minutes

1 minute = 60 seconds

Fill-in the relationship between larger to smaller units.

Larger units ➤➤➤ Smaller units

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Measurement CONVERSIONS

The distance from Joseph's back door to his back fence is 14 yards. How many feet is that equivalent to?

		expression		

Fill in the units from the problem. What am I starting with and what am I changing it into?

On the first line complete what you know from your STAAR chart. Match the units to the correct column. Complete the expression column.

Fill in the numbers from the problem.

Hannah has 24 feet of fabric to make curtains. How many yards is that equivalent to?

		expression		

Jacob's snake is 3 feet long. How many inches long is his snake?

		expression		

Kara's jump rope is 84 inches long. How many feet is her jump rope?

		expression		

Emiliano ran 3 miles. How many yards is that equivalent to?

		expression		

Problem Solving with CONVERSIONS

Read each problem carefully.
Highlight the units used in the problem (cm, meters, km).
Use the tables to help you make conversions to solve each problem.

1. Isaac's soccer team is practicing on a soccer field that is 100 meters long. How many times does the team need to run the entire length of the field to run 2 km?

expression

2. Jordyn has 425 cm of pink ribbon and 275 cm of gold ribbon. How many meters of ribbon does she have in all?

expression

3. Evan is running a 3 km race. He ran 785 meters before the first water stop. He ran 899 meters from the first to the second water stops. How much farther does he need to run to finish the race?

expression

Problem Solving with CONVERSIONS 2

Read each problem carefully.
Highlight the units used in the problem (cm, meters, km).
Use the tables to help you make conversions to solve each problem.

1. There are 128 ounces of lemonade in a jug. How many cups is this amount of lemonade equivalent to?

expression

2. An ice cream parlor has 6 quarts of ice cream in a container. They make 8 one pint ice cream sundaes. How many pints of ice cream are left in the container?

expression

3. Lilliana has 1 liter of distilled water. She pours 175 mL into each of 5 graduated cylinders. How much distilled water is in her original container?

expression

Customary LENGTH

Think about the size of each unit of measure.
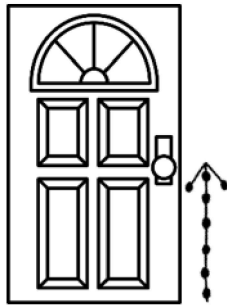*List* things that are about that length.

INCH

small paperclip

FOOT

A floor tile

YARD

From the ground to the door knob

MILE

Distance you drive

Thinking About **MILES & KM**

Pick 3 locations to travel to from school.

Use Google Maps to find the distance in miles and km to each of those destinations.

Determine how long it would take in minutes and/or hours to drive or walk to that location.

From school to _____

is _____ miles (or _____ km)

It would take _____ to drive there.

It would take _____ to walk there.

From school to _____

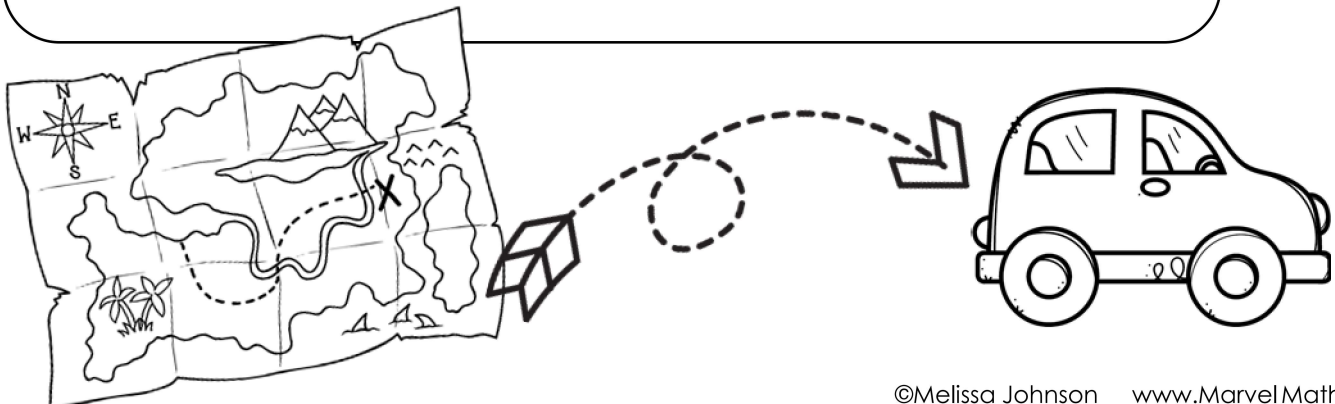is _____ miles (or _____ km)

It would take _____ to drive there.
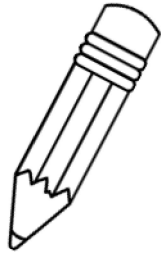
It would take _____ to walk there.

From school to _____

is _____ miles (or _____ km)

It would take _____ to drive there.

It would take _____ to walk there.

Metric LENGTH

Think about the size of each unit of measure.
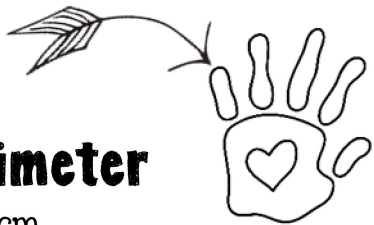*List* things that are about that length.
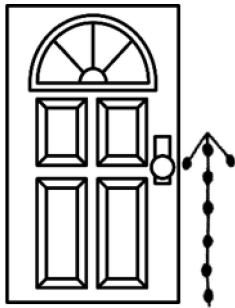
Millimeter
mm

Pencil point

Centimeter
cm

Width of
your pinky

Meter
m

A little farther
than the
doorknob

Kilometer
km

Distance you drive,
a little shorter than
a mile

Customary * CAPACITY * Metric

Think about the size of each unit of measure.
List things that are about that capacity.

fluid ounce

fl oz

4 spoonfuls

cup

c

pint

p

Grande size coffee at Starbucks

quart

q

MILK

1 QUART

gallon

gal

MILK

Gallon

milliliter

ml

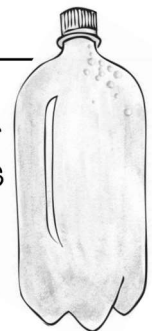a drop of water

A milliliter is much smaller than a fluid ounce.

A liter is just a little larger than a quart. 1 quart = 0.946 liter

liter

l

Think about a 2 liter of soda. Half of that amount is 1 liter.

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Customary WEIGHT

Think about the size of each unit of measure.
List things that are about that weight.

How is weight different from mass?

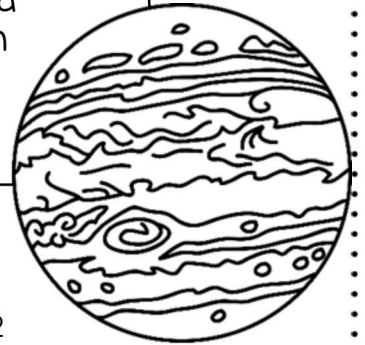Weight of a football on earth:

1 lb

Weight of a football on the (earth's) moon:
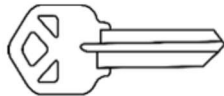
Weight on moon=
Weight on earth x 0.166

Weight of a football on Jupiter:

Weight on Jupiter=
Weight on earth x 2.52
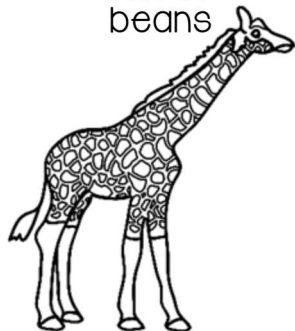
ounces

oz

Imagine holding a key

pound

lb

BEANS

Imagine holding a can of beans

ton

T

Metric **MASS**

Think about the size of each unit of measure.
List things that are about that mass.

How is mass different from weight?
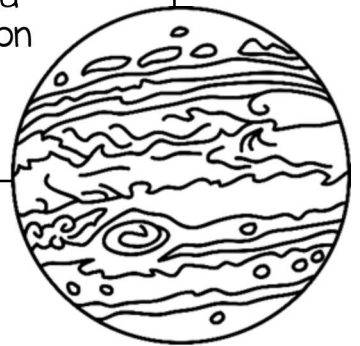
Mass of a football on earth:
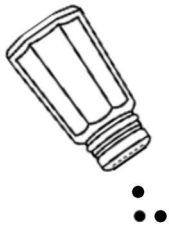
400 g

Mass of a football on the (earth's) moon:

Mass of a football on Jupiter:

milligram

mg

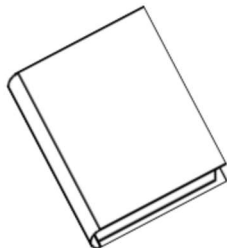Imagine holding one grain of salt

gram

g

Imagine holding a paperclip

kilogram

kg

Imagine holding a dictionary

Converting TIME

Change time in minutes to time in hours and minutes:

84 minutes ➤ **84** -60 / **24** Take out 60 minutes and add 1 hour

1 hour **24** minutes

92 minutes ➤ **92** - ___ Take out 60 minutes and add 1 hour

___ hour ___ minutes

115 minutes

107 minutes

124 minutes ➤ **124** - ___ Take out ___ minutes and add ___ hours

___ hour ___ minutes

Hours	Minutes
1	
2	
3	
4	

135 minutes

247 minutes

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Elapsed TIME: 2 Ways

Jacob started mowing the lawn at 2:53 pm. It took him 42 minutes to mow the lawn. What time did he finish?
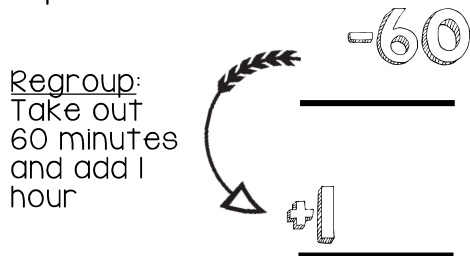
Add & Regroup
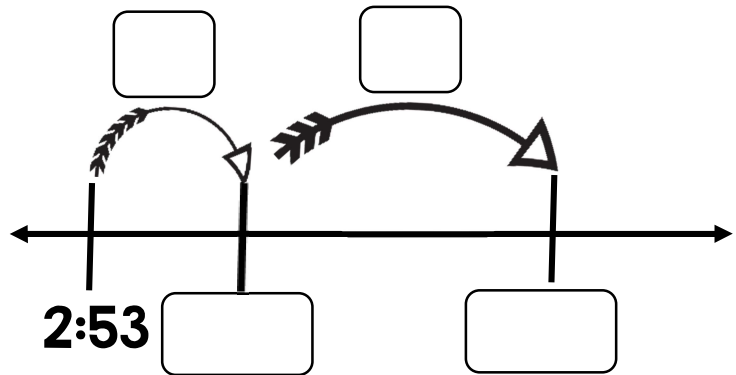
2:53
Start time
42 min
Elapsed time

Regroup:
Take out 60 minutes and add 1 hour

2:53
+ :42
_____
-60
_____
+1
_____

Open Time Line

1. How many minutes do you need to jump to get to the next hour?

3. How many more minutes or hours do you need to jump?

2:53

2. Label the next hour

4. What time do you end at?

Kaylee is driving to dance practice. She left her house at 3:47. It takes 25 minutes to drive to dance. What time will she arrive?
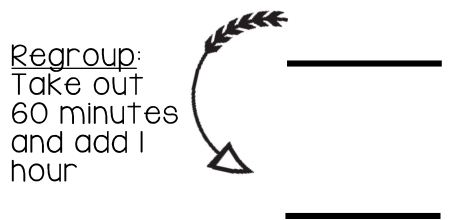
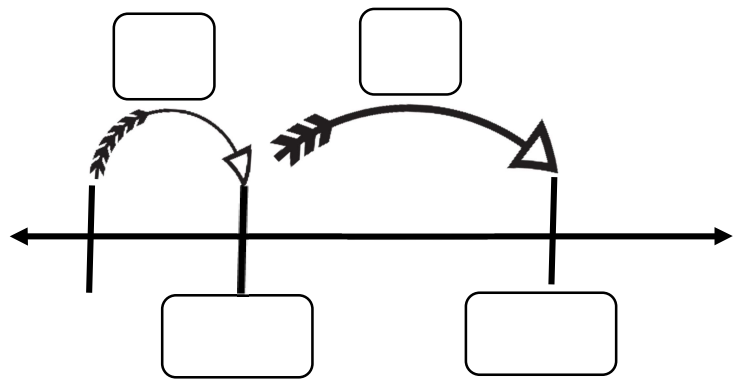## Add & Regroup

3:47
Start time
25 min
Elapsed time

Regroup:
Take out 60 minutes and add 1 hour

:
+ :
_____
_____

Open Time Line

1. How many minutes do you need to jump to get to the next hour?

3. How many more minutes or hours do you need to jump?

2. Label the next hour

4. What time do you end at?

Elapsed **TIME:** 2 Ways

Trinity is making a pudding filled cake. The instructions say to chill the cake for 155 minutes before serving. If Trinity puts the cake in the refrigerator at 4:25 to chill, what is the earliest time she can serve the cake?

Add & Regroup

155   4:25
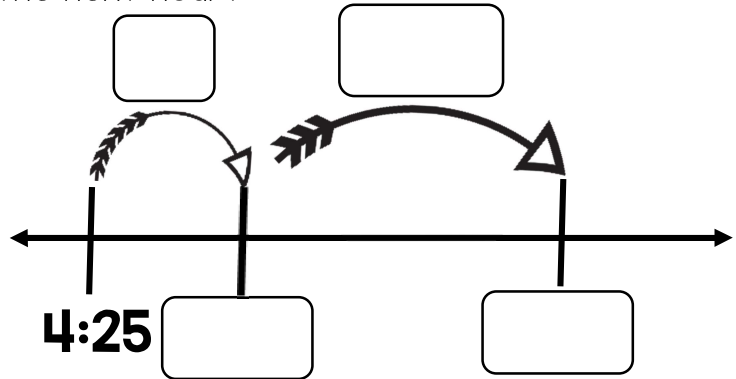
__ + __

Regroup:
Take out 60 minutes and add 1 hour

-60
___
+1
___

Open Time Line

1. How many minutes do you need to jump to get to the next hour?

3. How many more minutes or hours do you need to jump?

4:25

2. Label the next hour

4. What time do you end at?

Ed started horse back riding at 11:08. He rode his horse for 227 minutes. What time did he finish his ride?
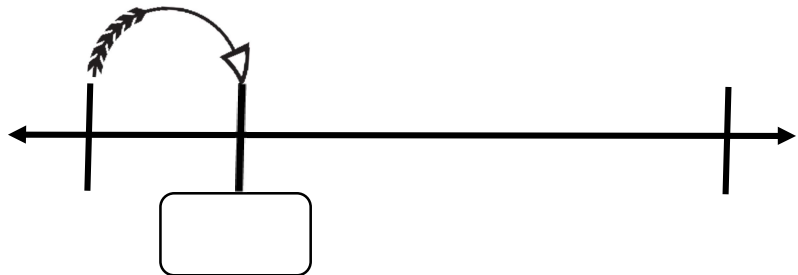
Add & Regroup

:

+ :

___

Open Time Line

1. How many minutes do you need to jump to get to the next hour?

3. How many more minutes or hours do you need to jump?

2. Label the next hours

4. What time do you end at?

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