

**North Penn School District**  
**Elementary Math Parent Letter**

**Grade 3**

**Unit 6 – Chapter 10: Time, Length, Liquid Volume, and Mass**

**Examples for each lesson:**

**Lesson 10.1**

**Time to the Minute**

Tommy wants to know what time the clock shows. He also wants to know one way to write the time.

**Step 1** Where is the hour hand pointing? What is the hour?  
It points just after the 6, so the hour is 6.

**Step 2** Where is the minute hand pointing?  
It points just after the 3.

Count the minutes. Count zero at the 12. Count on by fives: 5, 10, 15.

Then count on by ones: 16, 17.

So, the time is 6:17, or **seventeen minutes after six**.



More information on this strategy is available on Animated Math Model #38.

**Lesson 10.2**

**A.M. and P.M.**

Lori and her father went shopping at the time shown on the clock at the right. How should Lori write the time?

**Use A.M. or P.M.**

**Step 1** Read the time on the clock. **11:30**

**Step 2** Decide if the time is A.M. or P.M.

Write **P.M.** for times after noon and before midnight. **Noon** is 12:00 in the daytime.

Write **A.M.** for times after midnight and before noon. **Midnight** is 12:00 at night.

**Think:** Most people go shopping **during the day**.

So, Lori should write the time as **11:30 A.M.**



**REMEMBER**

More information on this strategy is available on Animated Math Model #39.

## Lesson 10.3

### Measure Time Intervals

Julia starts her homework at 4:20 P.M. She finishes at 5:00 P.M. How much time does Julia spend doing homework?

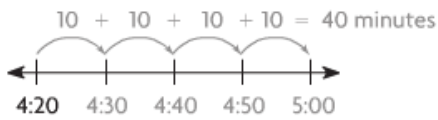
**Elapsed time** is the amount of time that passes from the start of an activity to the end of the activity.

**Use a number line to find elapsed time.**

**Step 1** Begin with the start time, 4:20.

**Step 2** Skip count by **tens** to count the minutes from 4:20 to 5:00.

**Step 3** Label the number line. Draw jumps for every 10 minutes until you get to 5:00.



**Step 4** Add the minutes that have elapsed. **40 minutes**

So, Julia spends 40 minutes doing homework.

More information on this strategy is available on Animated Math Model #40.

## Lesson 10.4

### Use Time Intervals

You can use a number line to find the starting time when you know the ending time and the elapsed time.

**The ending time is 4:05 P.M. Use the number line to find the starting time if the elapsed time is 35 minutes.**

**Step 1**

Find the ending time on the number line.

**Think:** The ending time is 4:05 P.M.

**Step 2**

Jump back 5 minutes.

**Think:** Jump back 5 minutes to get to the hour.

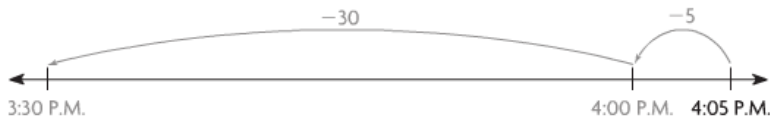
You jump back to 4:00 P.M.

**Step 3**

Jump back 30 minutes.

**Think:** Jump back 30 minutes to get to a total of 35 minutes.

You jump back to 3:30 P.M.



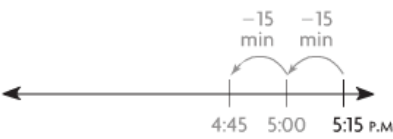
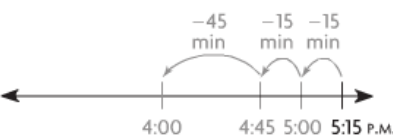
So, the starting time is 3:30 P.M.

More information on this strategy is available on Animated Math Model #40.

## Lesson 10.5

### Problem Solving • Time Intervals

As soon as Carter got home, he worked on his book report for 45 minutes. Then he did chores for 30 minutes. He finished at 5:15 P.M. At what time did Carter get home?

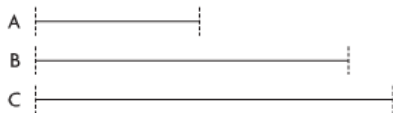
Read the Problem	Solve the Problem
<p><b>What do I need to find?</b> I need to find what <u>time</u> Carter got <u>home</u>.</p>	<ul style="list-style-type: none"> <li>Find Carter's 5:15 P.M. finishing time on the number line.</li> <li>Count back 30 minutes using two 15-minute jumps to find the time Carter started his chores. <u>4:45 P.M.</u></li> </ul>  <ul style="list-style-type: none"> <li>Count back 45 minutes for the time Carter worked on his report. The jumps end at <u>4:00 P.M.</u></li> </ul>  <p>So, Carter got home at <u>4:00 P.M.</u></p>
<p><b>What information do I need to use?</b> Carter worked for <u>45 minutes</u> on his report. He did chores for <u>30 minutes</u>. He finished at <u>5:15 P.M.</u></p>	
<p><b>How will I use the information?</b> I will use a number line and count back to find the time Carter got home.</p>	

## Lesson 10.6

### Measure Length

You can measure length to the nearest half or fourth inch.

Use a ruler to measure lines A–C to the nearest half inch.



**Step 1** Line up the left end of Line A with the zero mark on the ruler.

**Step 2** The right end of Line A is between the half-inch marks for 1 and  $1\frac{1}{2}$ .

The mark that is closest to the right end is for  $1\frac{1}{2}$  inches.

So, the length of Line A to the nearest half inch is  $1\frac{1}{2}$  inches.

Repeat Steps 1 and 2 for lines B and C.

The length of Line B to the nearest half inch is  $2\frac{1}{2}$  inches.

The length of Line C to the nearest half inch is 3 inches.

More information on this strategy is available on Animated Math Model #41.

## Lesson 10.7

### Estimate and Measure Liquid Volume

**Liquid volume** is the amount of liquid in a container. You can measure liquid volume using the metric unit **liter** (L).

**A water bottle holds about 1 liter. Estimate how much liquid a plastic cup and a fish bowl will hold. Then write the containers in order from the greatest to least liquid volume.**



A plastic cup holds *less* than 1 liter.

**Think:** A plastic cup is *smaller* than a water bottle.



A water bottle holds about 1 liter.



A fish bowl holds *more* than 1 liter.

**Think:** A fish bowl is *larger* than a water bottle.

So, the order of the containers from greatest to least liquid volume is **fish bowl, water bottle, plastic cup**.

More information on this strategy is available on Animated Math Model #42.

## Lesson 10.8

### Estimate and Measure Mass

**Mass** is the amount of matter in an object. You can measure mass using the metric units **gram** (g) and **kilogram** (kg).

**Should you use gram or kilogram to measure the mass of a penny?**

The mass of one grape is about 1 gram.



The mass of a book is about 1 kilogram.



**Think:** The mass of a penny is closer to the mass of a grape than to the mass of a book. So, use **grams** to measure the mass of a penny.

You can use a pan balance to compare the masses of an eraser and a stapler.

**Think:** The pan with the stapler is lower.

So, the mass of a stapler is **more** than the mass of an eraser.



More information on this strategy is available on Animated Math Model #43.

## Lesson 10.9

### Solve Problems About Liquid Volume and Mass

You can use a model or write an equation to solve problems about liquid volume and mass.

**Tina's watering can holds 4 liters of water. Todd's watering can holds 6 liters of water. What is the total liquid volume of both watering cans?**

Tina's Watering Can



Todd's Watering Can



**Use a bar model.**



**Think:** Add to find the total.

$$4 \text{ L} + 6 \text{ L} = 10 \text{ L}$$

So, the total liquid volume is 10 L.

**Write an equation.**

**Think:** I can write an addition equation to find the sum of the liquid volumes.

$$4 + 6 = 10$$

So, the total liquid volume is 10 L.

### Vocabulary

**A. M.** – the times after midnight and before noon

**Elapsed time** – the amount of time that passes from the start to the end of an activity

**Gram (g)** – a metric unit for measuring mass

**Kilogram (kg)** – a metric unit for measuring mass

**Liquid volume** – the amount of liquid in a container

**Liter (L)** – a metric unit for measuring capacity

**Midnight** – twelve o'clock at night

**Minute** – a unit used to measure short amounts of time; in one minute, the minute hand moves from one mark to the next

**Noon** – twelve o'clock in the daytime

**P. M.** – the times after noon and before midnight