Problem Solving • Elapsed Time

Essential Question How can you use the strategy *draw a diagram* to solve elapsed time problems?

Unlock the Problem   Real World

Dora and her brother Kyle spent 1 hour and 35 minutes doing yard work. Then they stopped for lunch at 1:20 P.M. At what time did they start doing yard work?

Use the graphic organizer to help you solve the problem.

Read the Problem

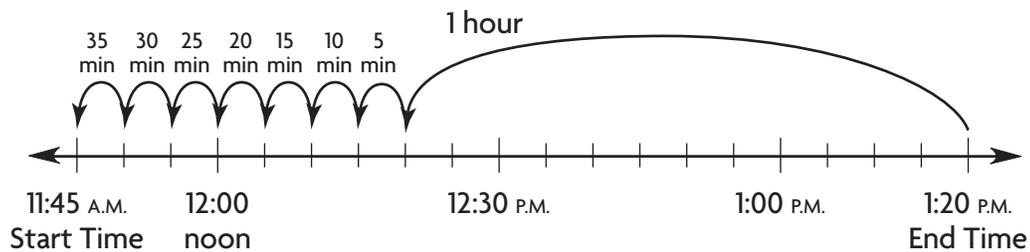| **What do I need to find?**	**What information do I need to use?**	**How will I use the information?**
I need to find the time that Dora and Kyle _____ .	I need to use the _____ and the time that they _____ .	I can draw a time line to help me count backward and find the _____ .

Solve the Problem

I draw a time line that shows the end time 1:20 P.M. Next, I count backward 1 hour and then 5 minutes at a time until I have 35 minutes.

35 min 30 min 25 min 20 min 15 min 10 min 5 min   1 hour

11:45 A.M. Start Time   12:00 noon   12:30 P.M.   1:00 P.M.   1:20 P.M. End Time

So, Dora and her brother Kyle started doing yard work at _____ .

1. What if Dora and Kyle spent 50 minutes doing yard work and they stopped for lunch at 12:30 P.M.? What time would they have started doing yard work?

_____

🔑 Try Another Problem

Ben started riding his bike at 10:05 A.M. He stopped 23 minutes later when his friend Robbie asked him to play kickball. At what time did Ben stop riding his bike?

Read the Problem

What do I need to find?	What information do I need to use?	How will I use the information?

Solve the Problem

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←——+—+—+—+—+——+—+—+—+—+——+—+—+—+—+——+—+—+—+—+——+—+—+—+—+——+—+—+—+—+——→
   10:05 A.M.    10:10 A.M.    10:15 A.M.    10:20 A.M.    10:25 A.M.    10:30 A.M.
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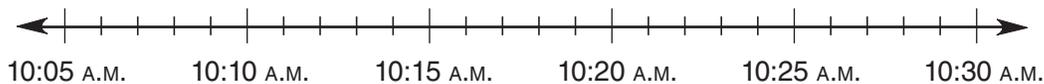
2. How did your diagram help you solve the problem?

_____

_____

_____

Math Talk

MATHEMATICAL PRACTICES ①

Describe another way you could find the time an activity started or ended given the elapsed time and either the start or end time.

Name _____

Unlock the Problem

✓ Use the Problem Solving MathBoard.
✓ Choose a strategy you know.
✓ Underline important facts.

1. Evelyn has dance class every Saturday. It lasts 1 hour and 15 minutes and is over at 12:45 P.M. At what time does Evelyn's dance class begin?

First, write the problem you need to solve.

_____

Next, draw a time line to show the end time and the elapsed time.

11:00 A.M.   12:00   1:00 P.M.
                     noon

Finally, find the start time.

Evelyn's dance class begins at _____ .

2. **THINK SMARTER**   What if Evelyn's dance class started at 11:00 A.M. and lasted 1 hour and 25 minutes? At what time would her class end? Describe how this problem is different from Problem 1.

_____

_____

✓ 3. Beth got on the bus at 8:06 A.M. Thirty-five minutes later, she arrived at school. At what time did Beth arrive at school?

_____

_____

✓ 4. Lyle went fishing for 1 hour and 30 minutes until he ran out of bait at 6:40 P.M. At what time did Lyle start fishing?

_____

_____

On Your Own

5. Mike and Jed went skiing at 10:30 A.M. They skied for 1 hour and 55 minutes before stopping for lunch. At what time did Mike and Jed stop for lunch?

_____

6. **GO DEEPER** Mike can run a mile in 12 minutes. He starts his run at 11:30 AM. and runs 4 miles. What time does Mike finish his run?

_____

7. **MATHEMATICAL PRACTICE ⑤ Communicate** Explain how you can use a diagram to determine the start time when the end time is 9:00 A.M. and the elapsed time is 26 minutes. What is the start time?

_____

_____

_____

8. **THINK SMARTER** Bethany finished her math homework at 4:20 P.M. She did 25 multiplication problems in all. If each problem took her 3 minutes to do, at what time did Bethany start her math homework?

_____

9. **THINK SMARTER** Vincent began his weekly chores on Saturday morning at 11:20 A.M. He finished 1 hour and 10 minutes later. Draw a time line to show the end time.

11:00 A.M.   12:00 noon   1:00 P.M.

Vincent finished his chores at _____ P.M.

Problem Solving • Elapsed Time

Read each problem and solve.

1. Molly started her piano lesson at 3:45 P.M. The lesson lasted 20 minutes. What time did the piano lesson end?

Think: What do I need to find?
How can I draw a diagram to help?

5 min   10 min   15 min   20 min

3:45 P.M.   3:50 P.M.   3:55 P.M.   4:00 P.M.   4:05 P.M.
Start Time   End Time

4:05 P.M.

2. Brendan spent 24 minutes playing a computer game. He stopped playing at 3:55 P.M and went outside to ride his bike. What time did he start playing the computer game?

_____

3. Aimee's karate class lasts 1 hour and 15 minutes and is over at 5:00 P.M. What time does Aimee's karate class start?

_____

4. Mr. Giarmo left for work at 7:15 A.M. Twenty-five minutes later, he arrived at his work. What time did Mr. Giarmo arrive at his work?

_____

5. **WRITE** *Math* Explain why it is important to know if a time is in the A.M. or in the P.M. when figuring out how much time has elapsed.

_____

_____

Lesson Check

1. Bobbie went snowboarding with friends at 10:10 A.M. They snowboarded for 1 hour and 43 minutes, and then stopped to eat lunch. What time did they stop for lunch?

_____

2. The Cain family drove for 1 hour and 15 minutes and arrived at their camping spot at 3:44 P.M. What time did the Cain family start driving?

_____

Spiral Review

3. A praying mantis can grow up to 15 centimeters long. How long is this in millimeters?

_____

4. Thom's minestrone soup recipe makes 3 liters of soup. How many milliliters of soup is this?

_____

5. Stewart walks $\frac{2}{3}$ mile each day. List three multiples of $\frac{2}{3}$.

_____

_____

6. Angelica colored in 0.60 of the squares on her grid. Write 0.60 as tenths in fraction form.

_____

_____

**FOR MORE PRACTICE
GO TO THE
Personal Math Trainer**