



First Name: _____	Last Name: _____	Grade: _____
Teacher: _____	Parent's email: _____	


Measuring Time

Welcome to Math Challenge #13. Time is all around us! From the ticking of a clock to the changing of seasons, measuring time helps us organize our days, track events, and solve real-world problems. In this challenge, you will need to think critically about time, whether it's calculating elapsed time, converting between different units, or solving tricky word problems. Get ready to sharpen your time-measuring skills and put your problem-solving abilities to the test!

Kinder & First Grade: solve at least 3 problems.
Second & Third Grade: solve at least 7 problems.
Fourth Grade and above: solve at least 12 problems.

Answer

1. Maya wakes up at 7:00 AM and takes 30 minutes to get ready for school. What time is she ready?													
2. Arrange the following activities in order from the shortest to the longest time: Activity A: Practicing piano (30 minutes) Activity B: Brushing your teeth (2 minutes) Activity C: Watching a movie (90 minutes) Activity D: Napping (2 hours) Hint: Remember that one hour = 60 minutes . Compare the times carefully before ordering them.													
3. Alexa goes to bed at 9:00 PM. If it is 8:30 PM now, how many more minutes are there until bedtime?													
4. Lily's birthday party starts at 2:00 PM and ends at 4:30 PM. How long (in hours and minutes) does Lily's birthday party last?													
5. Five students participated in a 3-kilometer running race. The table below shows their finishing times. List the top three students in order of their placement: first, second, and third. <table border="1" data-bbox="203 1711 665 1921"><thead><tr><th>Name</th><th>Time</th></tr></thead><tbody><tr><td>Danika</td><td>16 minutes 5 seconds</td></tr><tr><td>Lucas</td><td>16 minutes 15 seconds</td></tr><tr><td>Maya</td><td>16 minutes 12 seconds</td></tr><tr><td>Tracy</td><td>15 minutes 30 seconds</td></tr><tr><td>Aaron</td><td>15 minutes 50 seconds</td></tr></tbody></table>	Name	Time	Danika	16 minutes 5 seconds	Lucas	16 minutes 15 seconds	Maya	16 minutes 12 seconds	Tracy	15 minutes 30 seconds	Aaron	15 minutes 50 seconds	
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<p>6. A train departs from Station A at 9:30 AM. It takes 1 hour and 15 minutes to reach Station B. The train stays at Station B for 10 minutes before heading to Station C, which is 45 minutes away. What time will the train reach Station C?</p>	
<p>7. A movie marathon starts at 12:00 PM and includes 3 movies. Each movie is 1 hour and 45 minutes long, and there is a 15-minute break between each movie. What time does the movie marathon end?</p>	
<p>8.  What time would it be 55 minutes before the time shown on the clock?</p>	
<p>9. A town experiences a power outage at 7:40 PM. Power is restored at 4:15 AM the next day.</p> <ol style="list-style-type: none"> How long was the power out? If a backup generator provided power to essential buildings for the first 5 hours of outage, how many hours were those buildings without power after the generator ran out? 	<p><i>a.</i></p> <p><i>b.</i></p>
<p>10. The world is divided into different time zones because Earth rotates, causing different places to experience day and night at different times. UTC (Coordinated Universal Time) is the standard time used worldwide to keep everything synchronized. Each time zone is measured as a certain number of hours ahead (+) or behind (-) UTC.</p> <p>For example:</p> <ul style="list-style-type: none"> New York (EDT - Eastern Standard Time) is UTC -4 → This means New York is 4 hours behind UTC. London (GMT - Greenwich Mean Time) is UTC 0 → This means London follows UTC exactly. <p>Lisa is in New York (EDT, UTC -4) and calls her friend in London (GMT, UTC 0) at 7:30 PM her time (EDT).</p> <ol style="list-style-type: none"> What time is it in London when she calls? If her friend in London takes 45 minutes to call her back, what time is it in New York when Lisa receives the call? 	<p><i>a.</i></p> <p><i>b.</i></p>
<p>11. A soccer match in Tokyo, Japan (JST, UTC +9) starts at 3:30 PM local time. Adam, who lives in Chicago (CDT, UTC -5), wants to watch it live.</p> <ol style="list-style-type: none"> What time will the match start in Chicago? If the match lasts 2 hours and 15 minutes, what time will it end in Chicago? 	<p><i>a.</i></p> <p><i>b.</i></p>

<p>12. Olivia takes a flight from Seattle (PDT, UTC -7) to New York (EDT, UTC -4). Her flight departs at 10:25 AM Seattle time and takes 5 hours and 45 minutes to reach New York.</p> <p>a. What time does Olivia’s flight land in New York (local time)?</p> <p>b. If she spends 1 hour and 55 minutes in transit before taking a connecting flight to Paris, what time does her flight to Paris depart (local New York time)?</p> <p>c. If the flight time to Paris is 7 hours and 15 minutes, what time will Olivia land in Paris local time (CET, UTC +1)?</p>	<p>a.</p> <p>b.</p> <p>c.</p>
<p>13. A factory produces 240 boxes of cereal per hour of normal production. Workers are scheduled for an 8-hour shift, which includes two 15-minute breaks and one 30-minute lunch break. All workers take these breaks simultaneously, during which production comes to a halt. How many boxes of cereal does the factory produce during a full shift?</p>	
<p>14. A train leaves Station A at 6:45 AM traveling at 50 miles per hour toward Station B. Another train leaves Station B at 8:15 AM, traveling at 70 miles per hour toward Station A. The distance between the stations is 240 miles. At approximately what time will the two trains meet?</p>	
<p>15. A water tank can hold 1,200 gallons of water. A pipe fills the tank at a rate of 30 gallons per minute, but at the same time, a leak in the tank causes water to drain at a rate of 5 gallons per minute. How long, in minutes, will it take to fill the tank completely if it starts empty?</p>	
<p>16. Katie is running a marathon (26.2 miles). She runs at an average pace of 8 minutes per mile for the first 18 miles, but then she slows down to 10 minutes per mile for the rest of the race. How long, in hours and minutes, does it take Katie to complete the marathon?</p>	
<p>17. It takes Tracy 8.5 minutes to listen to Chapter 4 at 1.2x speed. How long, in minutes, would it take to listen to Chapter 4 at regular speed? Express your answer in decimal form. <i>Hint: Think about whether it will take more time or less time if the chapter is at double (2x) the speed.</i></p>	
<p>18. Tommy walked one kilometer to his grandparents’ house, leaving at 9:15 AM, at an average speed of 4km/h. He returned home at an average speed of 3km/h, arriving home at 4:00 PM. How long did he spend at his grandparents’ house?</p>	

Solution is available on April 4, 2025
www.mathinaction.org