TIME FLIES







Jason left at 8:15 am. He arrived at 8:30 am.

How long does it take him to walk to school?



Marcus leaves at 3:15 pm. It takes him 30 minutes to get to practice.

What time does he arrive?





Sarah has to get her teeth cleaned. The appointment took 45 minutes from start to finish.

If the appointment began at 9:27 am, what time did it end?



Sandra left for the movies at 7:15 pm and arrived at 7:25 pm.

How long did it take her to get there?







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Date: _

Talking About Elapsed Time Vocabulary

What is **elapsed time** anyway? "Elapse" is a verb that means to slip or pass away. Elapsed time is time that has passed.

Here are some other important words to know:

- Analog Clock: A clock that has hands.
- **<u>Digital Clock</u>**: A clock that has a digital display.
- **Duration**: The time during which something happens.
- <u>Elapse</u>: To pass or go by.
- <u>Quarter Hour</u>: 15 minutes, or one quarter of an hour. In time, this is expressed as :15. **Example**: The quarter hour of 2:00 pm is 2:15 pm.
- <u>Half Hour</u>: 30 minutes, or one half of an hour. In time, this is expressed as :30. **Example:** The half hour of 2:00 pm is 2:30 pm.
- <u>Three Quarters of an Hour</u>: 45 minutes, or three-quarters of an hour is expressed as :45.
 Example: Three quarters of an hour for 2:00 pm is 2:45 pm.
- **PM**: Post Meridian (after midday)
- <u>AM</u>: Ante Meridian (before midday)
- •<u>12 noon</u>: 12:00 pm
- •<u>12 midnight</u>: 12:00 am

Choose from the words above to fill in the blanks.

1. Matt's parents didn't have a digital clock so v	when he was very young. He learned to tell
time on an old fashioned	clock with an hour and
a minute hand.	

2. At 8:00	Sandy had to be at school in the morning. Sandy had to be
ready for bed by 8:00	

3. 5 hours had	_ from the time Marcus got on the
airplane to the time he stepped off it in New York City	

airplane to the time he stepped off it in New York City.

4. There are two quarter hours in one ______.

5.	Erica	war	nted to	stay up	past _	 		_on	Nev	νY	ear's,	but sl	he
								 	• •				

always fell asleep at around 11:00 ______. Her older sister stayed up much later and usually fell asleep at 2:00 _____.

into 24 Hours?

Why is the Day Divided Many people say it was because of the ancient Egyptians that we now divide the day into 24 hours.

The Hand Theory

The Egyptians used a counting system in base 12. (Remember, our system is base 10.) Why did they use this system? Some historians think it was because Egyptians used the joints on

their fingers to count, instead of their fingers, as we do.

Each of your four fingers has three joints. If you count by pointing to finger joints using your thumb you will count 12 joints.



Why is the Day DividedIf you think about it, 12 is a very
important number in measure-
ment. We have 12 months on our calendar
and 12 inches in a foot. Some people think
that the reason we have divided the day
into 24 hours (day and night each takes 12

hours) is because it's easier to divide up things that are in groups of 12.

Let's look:







There are 60 minutes in an hour. Let's look at that number more closely so that we can see how it is divided up.

Factors of 60 **1.** 2 x _ = 60 30 minutes Now do the rest on your own: **2.** 4 x = 60 minutes ৩ 10 11 **3.** 6 X _ = 60 5

4.
$$12 \times$$
 = 60
2. $60 \times$ = 60
 $\int_{\frac{1}{2}}^{\frac{1}{2}} \int_{\frac{1}{2}}^{\frac{1}{2}} \int_{\frac{1$

minutes

Counting by 5's How Many Minutes in an Hour?

How many minutes are in an hour? How many minutes can you count on the clock? Count by fives around the clock to find out. The first two are done for you.





Counting by 5's How Long Does It Take to Get to School?

Marcie, Jason, Danny, Carla, and Mark all walk to school every morning. They each have to leave at different times to get to school by 8:30 am. How long does it take each of them to walk to school? Use the clocks below to help you count by 5's to find out.

Example: Marcie leaves the house at 8:05 am. She arrives at 8:25 am.
How long does it take her to walk to school? 20 min.
She arrives at 8:25. (The time it took Marcie to walk to school.)
1. Jason left at 8:15 am. He arrived at 8:30 am.
How long does it take him to walk to school? min.
He arrives at 8:30. $>$
Danny Jogy co
Danny leaves the house at 7:50.
2 Danny left of 7:50 dm. He drived of 8:20 dm. -711^{10}
How long does it take him to walk to school? min.
$\mathfrak{R}_{\mathfrak{R}}$ Carla left at 8:10 am. She arrived at 8:20 am.
-10 2^{-1} -9 3^{-1} 3^{-1}
How long does it take her to walk to school? min.
11 12 1 12 1 12 1 12 1 12 1 12 1 12 1
$\mathbb{A}_{\mathbb{P}^{\circ}}$ mark left at 8:20 am. He arrived at 8:30 am.
4 Jason leaves
How long does it take him to walk to school?min.
He arrives at 8:30. >
Challenge Question: If all students walk the same speed, who lives the farthest away? Why do you think so?



Carrie, Marcus, Ahmed, Theo, and Valerie have to get to soccer practice after school. Practice begins at 4:00 pm. The coach says that anyone who is late won't be able to play in Saturday's game. Use the clocks and the information below to calculate who will get to practice on time and be able to play.





Extra Practice

Use this practice sheet to become a time counting master!



Counting by Hours and Half Hours Mia's Day at School

Now you will be practicing how to count by hours and half hours. Here are some things to remember:



Use the timelines below to help you count. The first problem is done for you. **Remember:** Every two hops is one hour!



 1_{\circ} Mia loves playing tetherball with her friends during recess. Recess begins at 10:00 am. How long does Mia have to wait **from the time school starts** to the **time recess begins**?

ANSWER: Two hours and thirty minutes.



2. Mia's school day begins at 7:30 am. For the **first half hour**, there is music. For the **second half hour**, there is dance. Then, language arts begins. What time is it when language arts begins?

3. Mia goes to lunch at 11:30 am. Her math class starts **1 hour after** that. At what time does math class start?

A: Mia had a doctor's appointment in the morning and got to school **three hours late**. If **school starts at 7:30 am**, at what time did Mia get to school?

5 Mia's class has **half an hour** to get ready for the field trip. If they start getting ready at **8:00 am**, by what time should they be ready?





So far, you have counted hours like this: from 8:00 to 9:00.



There is exactly an hour's difference between 8:00 and 9:00. But how many hours are there between 8:15 and 9:15? Because the minutes past the hour are exactly the same for both, there is still one hours' difference between them.



Here are some problems that will help you practice. The first two are done for you.

1. A movie begins at 10:50 am and ends at 1:50 pm. How long is it?

<u>HINT</u>: If the minutes are the same amount, just count the hours. Remember to start over after 12 noon. There are 2 hours from 10 am to noon, and 1 hour from noon to 1.1 + 2 = 3.

Answer: 3 hours

2. Carrie goes to a movie that begins at 7:20 pm. The movie lasts exactly 2 hours. What time does it end?

<u>Answer:</u> 9:20 pm

3. Marcus needs to read an hour a night for school. If he begins reading at 6:36 pm, when should he stop? Give the exact time.

4. Sandra is flying on a plane from Alaska to California. The flight leaves late at night, at 11:44 pm. It arrives exactly at 1:44 am. How long is the flight?

5. Gabby has piano lessons at 4:30 pm for one hour. At what time will Gabby finish?

6. Diego's mom is making a pizza. She placed it in the oven at 11:45 am and must wait one hour before taking it out. At what time should Diego's mom take the pizza out?

7. Martha likes to take her dog out for a walk around the park. If she started at 2:30 pm and walked for one hour, at what time will she be done walking her dog?



Counting by Hours and Quarter Hours: Jessie's Minimum Day at School

Now you will be practicing how to count by quarter hours and hours. Here are some important things to remember.



Schedule	Quarter hours	Half Hours	Hours
8:00-8:15			
8:15-8:30			
8:30-8:45			
8:45-9:00			
9:00-9:15			
9:15-9:30			
9:30-9:45			
9:45:-10:00			
10:00-10:15			
10:15-10:30			
10:30-10:45			
10:45-11:00			
11:00-11:15			
11:15-11:30			
11:30-11:45			
11:45-12:00			

Use the table to help you answer the questions below about Jessie's day. The first one is done for you.

 Jessie has band practice for the last 45 minutes of school on minimum days. What time does his band practice begin? Hint: how many quarter hours must you count? <u>Answer</u>: 11:15 am

2. Language arts begins at 9:45 am and lasts until Jessie has to leave class for band practice. How long does language arts last?

3. Jessie starts math at 8:30. He stays there for three quarter hours. At what time does math finish?

4. Jesse's recess is 30 minutes long. If it starts at 9:00, at what time does it finish?



When Minutes Have Elapsed

and the Hour Stays the Same

There are many time problems where the hour stays the same. These problems can be solved by simply adding and subtracting the minutes.

EX: Meredith put a cake in the oven at exactly 8:12 pm. It needs to bake for 35 minutes. What time should she take it out?

To solve this problem just add the minutes: 12+35 = 47

The answer? Meredith needs to take the cake out of the oven at 8:47 pm. The hour stays the same.

Additions Do the problems below by adding to find end times:

1. Eva needs to boil some eggs for her lunch. They need
to boil for 10 minutes exactly. The water started to boil at
2:43 pm. What time should Eva stop boiling the eggs?

Note This only works when the sum of the minutes is less than 60. If the sum of the minutes is 60 or more, the hour has to change.

2. Cindy put some cupcakes in the oven at 12:15 pm. She needs to bake them for 15 minutes. At what time should she take them out?

3. Bethany went to the grocery store with her mom. They got in line at the cash register at 5:25 pm and they waited in line for 20 minutes. At what time were they able to pay the cashier?

Subtraction Do the problems below by subtracting to find the starting or the elapsed time.

1. Ethan's dentist appointment was scheduled for 3:30 pm, but the dentist was running late. Ethan didn't see the dentist until 3:52 pm. How long did he wait?

2. Lily starts school at 7:30 am, but she likes to get there at 7:15 am instead. How many minutes early is she?

3. Stephanie lives 13 minutes away from her grandmother's house. If she needs to visit her grandmother at 4:30 pm at what time should she leave her house?

4. Erick takes 20 minutes to get ready for school. If he has to be ready by 7:30 am, at what time should he start getting ready?



When Minutes Have Elapsed

and the Hour Changes

Look at this example:

EX: Meredith is baking a single batch of cookies. They need to bake for 12 minutes. She puts the cookies into the oven at 3:54 pm. When should she take them out?

If you try to do this problem by adding the minutes, you will end up with an answer like this: 54 + 12 = 66.

What's wrong with this answer?

There is no such time as 3:66. So what do you need to do? You need to regroup.

60 minutes = an hour. Add one hour to 3:00 to make it 4:00. You have 6 minutes left over. Now add those to 4:00. The answer is 4:06.



Do the following problems by either regrouping or counting using the clocks below:

1. Jimmy is making muffins for his class party. He puts them in the oven at 9:48 am and removes them at 10:10 am. How long did they take to bake? **Answer**:



2. Ellie and Gabe wear a horse costume in the school play. It takes them 25 minutes to get ready. If they have to be onstage by 7:15 pm, what is the latest time they can begin getting ready in order to be ready on time? **Answer:**_____



3. Sarah has to get her teeth cleaned. The appointment took 45 minutes from start to finish. If the appointment began at 9:27 am, what time did it end? **Answer**:







Use all of your counting time practice to answer questions about Maria's first trip on an airplane.

1. Maria is excited about her first journey in an airplane. Her plane leaves Seattle at 1:36 pm and arrives in San Diego at 3:39 pm. How long will her flight last?

Answer:

 Check-in time is an hour and a half before the flight is scheduled to depart. What time is check-in?
 Answer:

3. It takes 2 hours to drive to the airport. What is the latest time Maria and her family can leave the house if they want to arrive in time for check-in? Answer:

4. Maria and her family have gone through security and are waiting to board the airplane. They hear an announcement that the flight will be delayed and won't depart until 2:10 pm. How much later is the flight leaving? (<u>HINT</u>: Use the original departure time from problem one to calculate your answer.) Answer:

5. On the plane, the flight attendants announce that they will be serving beverages 10 minutes after the flight has taken off. The flight takes off at 2:10 pm. What time will the flight attendants begin serving beverages? Answer:





Time Flies

Time Words Factors of 12 Factors of 60 Minutes in an Hour Counting by 5s Word Problems 2 Counting by 5s Practice Counting by Hours and Half Hours How Many Hours? Counting by Quarter Hours When Minutes Have Elapsed When Minutes Have Elapsed 2 Airplane Journey

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Name:	Date:
	Talking About Elapsed Time Vocabulary
What is elapsed 1 Elapsed time is tir	ime anyway? "Elapse" is a verb that means to slip or pass away. me that has passed.
Here are some of Analog Clock: A Digital Clock: A Digital Clock: A Duration: The tim Elapse: To pass of Quarter Hour: 15 Example: The Half Hour: 30 min Example: The Three Quarters of Example: The PM: Post Meridia AM: Ante Meridia 12 noon: 12:00 pr 12 midnight: 12:00	her important words to know: clock that has hands. clock that has a digital display. ie during which something happens. or go by. minutes, or one quarter of an hour. In time, this is expressed as :15. e quarter hour of 2:00 pm is 2:15 pm. iutes, or one half of an hour. In time, this is expressed as :30. e half hour of 2:00 pm is 2:30 pm. f an Hour: 45 minutes, or three-quarters of an hour is expressed as :45. ree quarters of an hour for 2:00 pm is 2:45 pm. n (after midday) an (before midday) m
Choose from the 1. Matt's parents di time on an old fash a minute hand.	words above to fill in the blanks. dn't have a digital clock so when he was very young. He learned to tell ioned clock with an hour and
2. At 8:00 <u>a</u> ready for bed by 8:	m Sandy had to be at school in the morning. Sandy had to be 20
3. 5 hours had airplane to the time	<u>ela psed</u> from the time Marcus got on the he stepped off it in New York City.
4. There are two qu	parter hours in one <u>half hour</u> .
5. Erica wanted to always fell asleep a much later and usu	stay up past <u>12 midnight</u> on New Year's, but she t around 11:00pm Her older sister stayed up ally fell asleep at 2:00 <u>a m</u>

Why is the Day Divided If you think about it, 12 is a very into 24 Hours?

important number in measurement. We have 12 months on our calendar and 12 inches in a foot. Some people think that the reason we have divided the day into 24 hours (day and night each takes 12

The Factor Theory

hours) is because it's easier to divide up things that are in groups of 12.

Let's look:







Counting by 5's How Many Minutes in an Hour?

How many minutes are in an hour? How many minutes can you count on the clock? Count by fives around the clock to find out. The first two are done for you.





Example:	Carrie leav It takes he What time	ves the house at 3 er 20 minutes to ge does she arrive?	:35 pm. et to practice. 3:55 pm	15 10 10→ -9	
Hint: Count	by 5's until y	vou get to 20. See	the example.	5	43 7 6 5 5 5 5 5 5 5 7 5 7 5 7 5 7 7 7 7 8 7 7 8 7 8
lo Marcus leave It takes him 3 What time does l	es at 3:15 pm 0 minutes to ne arrive?	get to practice. <u>3</u> <u>45</u> Hours: Minutes	_	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	tart time: 3:15
≗。 Ahmed leav It takes him 1 What time does I	es at 3:40 pm 0 minutes to ne arrive?	n. get to practice. <u>3</u> : <u>50</u> Hours: Minutes	Start time: 3:40	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
3₀ Theo leaves It takes him 2 What time does I	at 4:45 pm. 0 minutes to ne arrive?	get to practice. <u>5</u> :05 Hours: Minutes	Start time: 4:45 ∽	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
B₀ Theo leaves It takes him 2 What time does I	at 4:45 pm. 0 minutes to ne arrive?	get to practice. <u>5</u> :05 Hours: Minutes	Start time: 4:45 ∽	$\begin{array}{c} 11 & 12 & 1 \\ 10 & 2^{1} \\ -9 & 3^{2} \\ -8 & 4^{1} \\ 8 & 4^{1} \\ 7 & 6^{5} \end{array}$	



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Counting by Hours and Half Hours Mia's Day at School

Now you will be practicing how to count by hours and half hours. Here are some things to remember:



1. Mia loves playing tetherball with her friends during recess. Recess begins at 10:00 am. How long does Mia have to wait **from the time school starts** to the **time recess begins**?

ANSWER: Two hours and thirty minutes.



2. Mia's school day begins at 7:30 am. For the **first half hour**, there is music. For the **second half hour**, there is dance. Then, language arts begins. What time is it when language arts begins?

8:30 a m

 \mathfrak{Z}_{\circ} Mia goes to lunch at 11:30 am. Her math class starts **1 hour after** that. At what time does math class start?

12:30 pm

A. Mia had a doctor's appointment in the morning and got to school **three hours late**. If **school starts at 7:30 am**, at what time did Mia get to school?

10:30 a m

 5_{\circ} Mia's class has **half an hour** to get ready for the field trip. If they start getting ready at **8:00 am**, by what time should they be ready?

8:30 a m





So far, you have counted hours like this: from 8:00 to 9:00.



There is exactly an hour's difference between 8:00 and 9:00. But how many hours are there between 8:15 and 9:15? Because the minutes past the hour are exactly the same for both, there is still one hours' difference between them.



Here are some problems that will help you practice. The first two are done for you.

1. A movie begins at 10:50 am and ends at 1:50 pm. How long is it?

<u>HINT</u>: If the minutes are the same amount, just count the hours. Remember to start over after 12 noon. There are 2 hours from 10 am to noon, and 1 hour from noon to 1.1 + 2 = 3.

Answer: 3 hours

2. Carrie goes to a movie that begins at 7:20 pm. The movie lasts exactly 2 hours. What time does it end?

<u>Answer:</u> 9:20 pm

3. Marcus needs to read an hour a night for school. If he begins reading at 6:36 pm, when should he stop? Give the exact time.

7:36 pm

4. Sandra is flying on a plane from Alaska to California. The flight leaves late at night, at 11:44 pm. It arrives exactly at 1:44 am. How long is the flight?

It's two hours long.

5. Gabby has piano lessons at 4:30 pm for one hour. At what time will Gabby finish? 5:30 pm

6. Diego's mom is making a pizza. She placed it in the oven at 11:45 am and must wait one hour before taking it out. At what time should Diego's mom take the pizza out? 12:45 pm

7. Martha likes to take her dog out for a walk around the park. If she started at 2:30 pm and walked for one hour, at what time will she be done walking her dog? 3:30 pm



Counting by Hours and Half Hours Mia's Day at School

Now you will be practicing how to count by hours and half hours. Here are some things to remember:



1. Mia loves playing tetherball with her friends during recess. Recess begins at 10:00 am. How long does Mia have to wait **from the time school starts** to the **time recess begins**?

ANSWER: Two hours and thirty minutes.



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8:30 a m

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 5_{\circ} Mia's class has **half an hour** to get ready for the field trip. If they start getting ready at **8:00 am**, by what time should they be ready?

8:30 a m



When Minutes Have Elapsed

and the Hour Stays the Same

There are many time problems where the hour stays the same. These problems can be solved by simply adding and subtracting the minutes.

EX: Meredith put a cake in the oven at exactly 8:12 pm. It needs to bake for 35 minutes. What time should she take it out?

To solve this problem just add the minutes: 12+35 = 47

The answer? Meredith needs to take the cake out of the oven at 8:47 pm. The hour stays the same.

Addition: Do the problems below by adding to find end times:

1. Eva needs to boil some eggs for her lunch. They need to boil for 10 minutes exactly. The water started to boil at 2:43 pm. What time should Eva stop boiling the eggs?

2:53 pm



2. Cindy put some cupcakes in the oven at 12:15 pm. She needs to bake them for 15 minutes. At what time should she take them out?

12:30 pm

3. Bethany went to the grocery store with her mom. They got in line at the cash register at 5:25 pm and they waited in line for 20 minutes. At what time were they able to pay the cashier?

5:45 pm

Subtraction Do the problems below by subtracting to find the starting or the elapsed time.

1. Ethan's dentist appointment was scheduled for 3:30 pm, but the dentist was running late. Ethan didn't see the dentist until 3:52 pm. How long did he wait?

22 minutes

2. Lily starts school at 7:30 am, but she likes to get there at 7:15 am instead. How many minutes early is she?

15 minutes

3. Stephanie lives 13 minutes away from her grandmother's house. If she needs to visit her grandmother at 4:30 pm at what time should she leave her house?

4:17 pm

4. Erick takes 20 minutes to get ready for school. If he has to be ready by 7:30 am, at what time should he start getting ready?

7:10 am



When Minutes Have Elapsed

and the Hour Changes

Look at this example:

<u>EX</u>: Meredith is baking a single batch of cookies. They need to bake for 12 minutes. She puts the cookies into the oven at 3:54 pm. When should she take them out?

If you try to do this problem by adding the minutes, you will end up with an answer like this: 54 + 12 = 66.

What's wrong with this answer?

There is no such time as 3:66. So what do you need to do? You need to regroup.

60 minutes = an hour. Add one hour to 3:00 to make it 4:00. You have 6 minutes left over. Now add those to 4:00. The answer is 4:06.



Do the following problems by either regrouping or counting using the clocks below:

 Jimmy is making muffins for his class party. He puts them in the oven at 9:48 am and removes them at 10:10 am. How long did they take to bake? Answer: 22 minutes



2. Ellie and Gabe wear a horse costume in the school play. It takes them 25 minutes to get ready. If they have to be onstage by 7:15 pm, what is the latest time they can begin getting ready in order to be ready on time? Answer: _____6:50 pm



3. Sarah has to get her teeth cleaned. The appointment took 45 minutes from start to finish. If the appointment began at 9:27 am, what time did it end? Answer: 10:12 am







Use all of your counting time practice to answer questions about Maria's first trip on an airplane.

1. Maria is excited about her first journey in an airplane. Her plane leaves Seattle at 1:36 pm and arrives in San Diego at 3:39 pm. How long will her flight last?

Answer:

2 hours and 2 minutes

2. Check-in time is an hour and a half before the flight is scheduled to depart. What time is check-in? Answer:

12:06 pm

3. It takes 2 hours to drive to the airport. What is the latest time Maria and her family can leave the house if they want to arrive in time for check-in? **Answer:**

10:06 am

4. Maria and her family have gone through security and are waiting to board the airplane. They hear an announcement that the flight will be delayed and won't depart until 2:10 pm. How much later is the flight leaving? (<u>HINT</u>: Use the original departure time from problem one to calculate your answer.)

Answer:

34 minutes

5. On the plane, the flight attendants announce that they will be serving beverages 10 minutes after the flight has taken off. The flight takes off at 2:10 pm. What time will the flight attendants begin serving beverages?



