



THIRD SPACE
LEARNING

Themed Math Problems

Winter Term:
January - March

5th grade

New Year's Day

January 1st

Today, we celebrate the first day of the new calendar year. People around the world celebrate this day by reminiscing on the past year and setting goals for the year ahead with family and friends.

Question

On New Year's Eve, a town decides to launch fireworks every 45 minutes starting from 9:00 PM until midnight. How many times will the fireworks be launched? What if they launched fireworks every hour and a half? 18 minutes?

Discuss strategies with a friend to find different ways to solve this problem.



World Braille Day

January 4th

Today, we celebrate and bring awareness to the importance of Braille as a means of communication for blind and visually impaired people.

Question

A Braille printing press is preparing a special edition book in honor of World Braille Day. The book consists of 450 pages, with each page having 25 lines of Braille text. If each line can accommodate 35 Braille characters, how many characters will be used to print the entire book? What if there were 225 pages?

Discuss with a friend different strategies to solve this problem.



Martin Luther King Jr. Day

Third Monday in January

Today, we celebrate Martin Luther King Jr., an activist and political philosopher, who was one of the most prominent civil rights leaders during the 1950's and 60's.

Question

In 1964, Martin Luther King Jr. was awarded the Nobel Peace Prize. He received a monetary award alongside the honor. Dr. King decided to use this money to further the civil rights movement. The total prize money was \$54, 123. He gave one-third of the amount to the Southern Christian Leadership Conference. Another quarter of the total amount was donated to various voter registration initiatives. He kept the remaining amount for other civil rights initiatives and campaigns.

Discuss with a friend how you would figure out how much money Martin Luther King Jr. kept for civil rights initiatives.



Black History Month

February

February marks Black History Month, a tradition that was officially recognized in 1976 as part of the nation's celebrations. It aims to honor the contributions that African Americans have made and to recognize their sacrifices.

Question

A school library is setting up a special display for Black History Month featuring books by African American authors and about African American history. The librarian is organizing the books based on different categories.

- There are 120 books in total for the display.
- Two thirds of the books are biographies of prominent African American figures.
- A quarter of the books are about significant events in African American history.
- The rest of the books are a mix of African American literature and poetry.

How many books of African American literature and poetry are included in the display?



Groundhog Day

February 2nd

Today, we celebrate Groundhog Day, a superstition originating from Pennsylvania where if a groundhog emerges from its burrow on this day and sees its shadow, winter will go on for 6 more weeks. If it does not see its shadow, then Spring will arrive early.

Question

A science class decides to conduct an experiment on Groundhog Day to understand shadows. They set up a groundhog model and measure the length of its shadow at different times.

- At 8 AM, the shadow of the model is 24 inches long.
- The class takes its last measurement at 11 AM.
- They observe that every hour, the shadow shortens to a third of its size from the previous hour.

If this pattern were to continue, what would the length of the shadow be at 2 PM? Discuss with a friend how you would go about solving this.



Walt Disney's Peter Pan

February 5th

Today, we celebrate the anniversary of the release of Walt Disney's Peter Pan on February 5th, 1953.

Question

In a game of hide and seek in Neverland, Peter Pan finds the Lost Boys in a certain order. The first boy is found after 5 minutes of searching. Each subsequent boy is found in half the time it took to find the previous one. If Peter finds the fourth Lost Boy, how many total minutes has he spent searching? Discuss with a friend how you would go about solving this problem.



National Pizza Day

February 9th

Today, we celebrate one of the most commonly liked foods across the globe – pizza! It is celebrated today because it is believed to be around the time pizza was discovered in Naples, Italy. How is a food “discovered”, you might ask? Simply by accidentally throwing some sauce and cheese on flatbread, and voila! You have pizza.

Question

To celebrate National Pizza Day, a group of friends decided to order several pizzas. They ordered different types of pizzas, and each pizza was cut into equal slices.

- They ordered 3 pepperoni pizzas, and each pizza was cut into 8 slices.
- They ordered 2 vegetarian pizzas, and each of these was cut into 6 slices.
- During the party, the friends ate $\frac{3}{4}$ of all the pepperoni pizza slices and $\frac{2}{3}$ of all the vegetarian pizza slices.

How many slices of pizza were left over after the party? Discuss with a friend how you would go about solving this problem.



Chinese New Year

Either January or February,
February 10th 2024

Today is the Chinese New Year, following the traditional lunisolar Chinese calendar. The date varies every year because it goes by the new moon which is different each year. The celebration lasts for 15 days and is full of vibrant colors and festivities to ring in the new year.

Question

For Chinese New Year, a grandmother is giving out red envelopes, known as "hongbao," to her grandchildren as a symbol of good luck and prosperity. She has decided to distribute a total of \$350 among them.

- She gives her oldest grandchild \$20 more than she gives to each of the others.
- She has four grandchildren in total.
- The rest of the grandchildren receive the same amount each.

How much money does each grandchild receive in their red envelope? Discuss with a friend how you would go about solving this problem.



National Inventors' Day

February 11th

Today is National Inventors' Day, a day we recognize the contributions of inventors. President Ronald Reagan declared this day the National Inventors' Day in 1983, in honor of the birthday of Thomas Edison.

Question

For an Inventor's Day project, a class is building several model robots. Each robot requires 13 gears, 12 motors, and 14 light sensors. However, due to a limited supply, the class can only use a total of 257 gears, 147 motors, and 135 light sensors. What is the maximum number of complete robots the class can build with these supplies, assuming all parts must be used equally and no robot can be left incomplete?

Discuss with a friend how you would solve this problem.



Super Bowl Sunday

Second Sunday in February

Today we celebrate Super Bowl Sunday, the annual league championship game of the National Football League, marking the final game of the NFL season.

Question

A family is hosting a Super Bowl party and they're preparing a variety of snacks. They want to make sure they have enough for all their guests:

- They decide to make 6 mini-tacos per guest. They are expecting 18 guests.
- The family also wants to prepare sliders. They plan to serve each guest 2 sliders. However, they expect that about $\frac{1}{3}$ of the guests will ask for an extra slider so they make enough for those guests to have an extra.
- For dessert, they are preparing brownies. They estimate that each guest will eat 2 brownies. To be on the safe side, they decide to prepare an additional 10 brownies beyond their initial estimate.

How many mini-tacos, sliders, and brownies do they need to prepare in total for their party? Discuss with a friend how you would solve this problem.



Valentine's Day

February 14th

Happy Valentine's Day! Today is a day to celebrate all those that we love, by sharing valentines and candy.

Question

In a 5th grade class, students are participating in a Valentine's Day card exchange. Each student brings a certain number of cards to share with classmates, and everyone gets an equal number of cards.

- There are 24 students in the 5th grade class.
- Each student brings 15 Valentine's Day cards to the exchange.
- However, 4 of the students forget to bring their cards.
- To make up for the missing cards, the teacher brings 20 additional cards.

How many Valentine's Day cards does each student receive during the exchange? Are there any cards left over? Discuss with a friend how you would solve this problem.



President's Day

Third Monday in February

Today we honor all our presidents, past and present, for their service to our country. This date was chosen in honor of first President George Washington's birthday.

Question

A group of students are making bookmarks to sell for a President's Day fundraiser. Each bookmark is designed with images and quotes from different U.S. Presidents. The students set a goal to represent as many presidents as possible.

- They decided to make 124 bookmarks for each of the first 12 presidents.
- For presidents 13 through 25, they made 123 bookmarks each.
- For presidents 26 through 36, they made 122 bookmarks each.
- And for presidents 37 through 45, they made 125 bookmarks for each president.

How many total bookmarks did the students make for their President's Day fundraiser? Discuss with a friend how you would solve this problem.



Themed Winter Term - Answers

Day	Question	Answer
New Year's Day	<p>On New Year's Eve, a town decides to launch fireworks every 45 minutes starting from 9:00 PM until midnight. How many times will the fireworks be launched? What if they launched fireworks every hour and a half? 18 minutes?</p> <p>Discuss strategies with a friend to find different ways to solve this problem.</p>	<p>Every 45 minutes: 5 times</p> <p>Every hour and a half: 3 times</p> <p>Every 18 minutes: 11 times</p>
World Braille Day	<p>A Braille printing press is preparing a special edition book in honor of World Braille Day. The book consists of 450 pages, with each page having 25 lines of Braille text. If each line can accommodate 35 Braille characters, how many characters will be used to print the entire book? What if there were 225 pages?</p> <p>Discuss with a friend different strategies to solve this problem.</p>	<p>For 450 pages: 393,750 characters</p> <p>For 225 pages: 196,875 characters</p>

Day	Question	Answer
Martin Luther King Jr. Day	<p>In 1964, Martin Luther King Jr. was awarded the Nobel Peace Prize. He received a monetary award alongside the honor. Dr. King decided to use this money to further the civil rights movement. The total prize money was \$54,123.</p> <p>He gave one-third of the amount to the Southern Christian Leadership Conference.</p> <p>Another quarter of the total amount was donated to various voter registration initiatives.</p> <p>He kept the remaining amount for other civil rights initiatives and campaigns.</p> <p>Discuss with a friend how you would figure out how much money Martin Luther King Jr. kept for civil rights initiatives.</p>	\$22,551.25 was kept for civil rights initiatives
Black History Month	<p>A school library is setting up a special display for Black History Month featuring books by African American authors and about African American history. The librarian is organizing the books based on different categories.</p> <ul style="list-style-type: none">• There are 120 books in total for the display.• Two thirds of the books are biographies of prominent African American figures.• A quarter of the books are about significant events in African American history.• The rest of the books are a mix of African American literature and poetry. <p>How many books of African American literature and poetry are included in the display?</p>	10 books

Day	Question	Answer
Groundhog Day	<p>A science class decides to conduct an experiment on Groundhog Day to understand shadows. They set up a groundhog model and measure the length of its shadow at different times.</p> <ul style="list-style-type: none">• At 8 AM, the shadow of the model is 24 inches long.• The class takes its last measurement at 11 AM.• They observe that every hour, the shadow shortens to a third of its size from the previous hour. <p>If this pattern were to continue, what would the length of the shadow be at 2 PM? Discuss with a friend how you would go about solving this.</p>	$\frac{8}{243}$ of an inch
Walt Disney's Peter Pan	<p>In a game of hide and seek in Neverland, Peter Pan finds the Lost Boys in a certain order. The first boy is found after 5 minutes of searching. Each subsequent boy is found in half the time it took to find the previous one. If Peter finds the fourth Lost Boy, how many total minutes has he spent searching? Discuss with a friend how you would go about solving this problem.</p>	9 minutes and 22 and a half seconds or 9.375 minutes




Day	Question	Answer
National Pizza Day	<p>To celebrate National Pizza Day, a group of friends decided to order several pizzas. They ordered different types of pizzas, and each pizza was cut into equal slices.</p> <ul style="list-style-type: none"> • They ordered 3 pepperoni pizzas, and each pizza was cut into 8 slices. • They ordered 2 vegetarian pizzas, and each of these was cut into 6 slices. • During the party, the friends ate $\frac{3}{4}$ of all the pepperoni pizza slices and $\frac{2}{3}$ of all the vegetarian pizza slices. <p>How many slices of pizza were left over after the party? Discuss with a friend how you would go about solving this problem.</p>	10 pieces of pizza
Chinese New Year	<p>For Chinese New Year, a grandmother is giving out red envelopes, known as "hongbao," to her grandchildren as a symbol of good luck and prosperity. She has decided to distribute a total of \$350 among them.</p> <ul style="list-style-type: none"> • She gives her oldest grandchild \$20 more than she gives to each of the others. • She has four grandchildren in total. • The rest of the grandchildren receive the same amount each. <p>How much money does each grandchild receive in their red envelope? Discuss with a friend how you would go about solving this problem.</p>	The oldest receives \$102.50 and the other 3 grandchildren receive \$82.50 each

Day	Question	Answer
National Inventors' Day	<p>For an Inventor's Day project, a class is building several model robots. Each robot requires 13 gears, 12 motors, and 14 light sensors. However, due to a limited supply, the class can only use a total of 257 gears, 147 motors, and 135 light sensors. What is the maximum number of complete robots the class can build with these supplies, assuming all parts must be used equally and no robot can be left incomplete?</p> <p>Discuss with a friend how you would solve this problem.</p>	9 robots
Super Bowl Sunday	<p>A family is hosting a Super Bowl party and they're preparing a variety of snacks. They want to make sure they have enough for all their guests:</p> <ul style="list-style-type: none"> • They decide to make 6 mini-tacos per guest. They are expecting 18 guests. • The family also wants to prepare sliders. They plan to serve each guest 2 sliders. However, they expect that about $\frac{1}{3}$ of the guests will ask for an extra slider so they make enough for those guests to have an extra. • For dessert, they are preparing brownies. They estimate that each guest will eat 2 brownies. To be on the safe side, they decide to prepare an additional 10 brownies beyond their initial estimate. <p>How many mini-tacos, sliders, and brownies do they need to prepare in total for their party? Discuss with a friend how you would solve this problem.</p>	108 mini-tacos, 42 sliders, 46 brownies

Day	Question	Answer
Valentine's Day	<p>In a 5th grade class, students are participating in a Valentine's Day card exchange. Each student brings a certain number of cards to share with classmates, and everyone gets an equal number of cards.</p> <ul style="list-style-type: none"> • There are 24 students in the 5th grade class. • Each student brings 15 Valentine's Day cards to the exchange. • However, 4 of the students forget to bring their cards. • To make up for the missing cards, the teacher brings 20 additional cards. <p>How many Valentine's Day cards does each student receive during the exchange? Are there any cards left over? Discuss with a friend how you would solve this problem.</p>	Each student receives 13 Valentine's Day cards and there are 8 left over
President's Day	<p>A group of students are making bookmarks to sell for a President's Day fundraiser. Each bookmark is designed with images and quotes from different U.S. Presidents. The students set a goal to represent as many presidents as possible.</p> <ul style="list-style-type: none"> • They decided to make 124 bookmarks for each of the first 12 presidents. • For presidents 13 through 25, they made 123 bookmarks each. • For presidents 26 through 36, they made 122 bookmarks each. • And for presidents 37 through 45, they made 125 bookmarks for each president. <p>How many total bookmarks did the students make for their President's Day fundraiser? Discuss with a friend how you would solve this problem.</p>	5,554 bookmarks

Do you have a group of students who need a boost in math?

Each student could receive personalized lessons every week from our specialist one-on-one math tutors.




-  Differentiated instruction for each student
-  Aligned to your state's standards
-  Scaffolded learning to close gaps

“We just had our first session and it went great! The kids really liked it and felt like they were learning! One even said he finally felt like math was making sense.”



Michelle Craig, Instructional Coach,
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