



THIRD SPACE
LEARNING

Themed Math Problems

Set 3
March - June

5th grade

Read Across America Day

March 2nd

Today, we celebrate the privilege of being able to read and the pleasure of enjoying a good book. People across America are encouraged to pick up a book and spend some time getting lost in the stories on their bookshelves.

Question

For Read Across America Day, a grade level decides to start a book club. Each student in the book club commits to reading a certain number of pages each week.

The book club has 121 students.

In the first week, each student reads 28 pages.

In the second week, each student increases their reading by 6 pages.

In the third week, each student increases their reading by another 8 pages from the second week.

Question:

How many total pages does the book club read collectively over the three weeks? Discuss with a friend how you would go about solving this.



International Women's Day

March 8th

Today, we celebrate the social, economic, political, and cultural achievements of women across the world and the progress that has been made towards achieving equality. Today we also bring awareness to the ways in which we need to continue to strive towards gender equality.

Question

In a company, $\frac{3}{4}$ of the employees participate in an International Women's Day seminar. If 90 employees are participating in the International Women's Day seminar, how many employees does the company have?
Discuss with a friend how you would go about solving this problem.



Pi Day

March 14th

Today is Pi Day, celebrated on March 14th, because it is 3/14, the first three digits of the mathematical constant, pi (3.14...). Today we bring awareness to the importance of mathematics and its role in shaping our world, and to promote the beauty and relevance of mathematics in the world.

Question

A bakery decides to celebrate Pi Day with an intricate pie puzzle for their customers. They create a large pie and make various cuts to divide it into unique fractional pieces. Initially, the bakery cuts the pie into 10 equal slices.

They then select 4 of these slices and cut each one into thirds, creating smaller slices.

From the remaining uncut slices, they take 2 slices and cut each in half.

A customer decides to buy a mix of slices: they buy two of the slices that were cut into thirds, three of the original untouched slices, and one of the slices that was cut in half. What fraction of the whole pie does the customer purchase? Discuss with a friend how you would go about solving this problem.



St. Patrick's Day

March 17th

Today, we celebrate St. Patrick's Day, a religious and cultural holiday commemorating the arrival of Christianity into Ireland, and by extension, we celebrate the heritage and culture of the Irish in general. We celebrate with shamrocks and by wearing green, and may even include visits from mischievous leprechauns.

Question

For St. Patrick's Day, a group of children embarks on a challenging hunt for leprechaun gold. According to legend, each leprechaun's pot of gold contains a unique and tricky number of gold coins.

The first leprechaun's pot contains 23 gold coins.

The second leprechaun's pot contains gold coins equal to three times the amount in the first leprechaun's pot, minus 5 coins.

The third leprechaun, known for his riddles, has a pot containing gold coins equal to the difference between the first two pots, multiplied by 2.

How many gold coins do the children find in total from all three leprechaun pots? Discuss with a friend how you would go about solving this problem.



April Fool's Day

April 1st

Today is April Fool's Day, a day consisting of practical jokes and pranks. From whoopee cushions to pies in the face, today is a day to be extra alert, never knowing when you may find yourself on the other side of a prank!

Question

A group of friends decides to pull a series of harmless pranks at their school for April Fool's Day. They plan to place whoopee cushions on the seats in three classrooms. In each classroom, they place whoopee cushions on $\frac{2}{3}$ of the chairs. In the first classroom, they put whoopee cushions on 16 of the chairs. In the second classroom, they put whoopee cushions on 22 of the chairs. In the third classroom, they put whoopee cushions on 14 of the chairs. How many chairs were there in each classroom?



Easter

First Sunday after the full moon on or after the Spring Equinox (a Sunday in March or April)

Today, many around the world celebrate the Christian holiday of Easter, known to many Christians as Resurrection Sunday. It is also a day that many celebrate as a marker of Spring after a long and difficult winter, celebrating with flowers, bunnies and chicks, and goodies found inside Easter baskets.

Question

A family decides to bake cookies, cupcakes and pies for an Easter gathering. They have a tradition of baking a specific number of each based on the number of guests.

For each guest, they bake 5 cookies.

They also bake 1 cupcake for every 2 cookies to ensure there's a variety.

For every 5 cupcakes, the family decides to bake 2 pies as a special treat.

If they are expecting 24 guests at the gathering, how many cookies, cupcakes, and pies do they bake in total?



Earth Day

April 22nd

Today is Earth Day, a day to bring awareness to our planet and the things we can do to take better care of it and support environmental protection. Many celebrate by learning about new ways they can make a simple change in their everyday lives that will make a larger impact over time. Others may plant a tree, or clean up trash they find outside.

Question

A community embarks on a revitalization project for Earth Day to transform a local park into a vibrant space with areas dedicated to different purposes: a relaxation zone, a playground, and a community garden. The park is designed in a rectangular shape. The total area of the park is 2,000 square meters.

The relaxation zone, featuring benches and shade trees, will take up $\frac{1}{4}$ of the park's total area.

The playground area will occupy a space that is $\frac{3}{10}$ of the park's total area.

The remaining area is designated for the community garden, which will be divided into sections for flowers, vegetables, and fruit trees. The flower section will take up $\frac{1}{5}$ of the garden's area, and the vegetable section will take up $\frac{1}{2}$ of the garden's area. The rest of the garden area is allocated for fruit trees.

What is the area, in square meters, allocated for the relaxation zone, the playground, and each section of the community garden? Discuss with a friend how you would go about solving this problem.



National Superhero Day

April 28th

Today is National Superhero Day, and while this day may sound like a day to celebrate your favorite comic book superhero, it is also a day to recognize the superheroes that exist around us in our society, making a difference with the sacrifices they make for others every day.

Question

A local community organizes a "Superhero Fun Run" to celebrate National Superhero Day. Participants are encouraged to dress up as their favorite superheroes and run a specified distance.

The run is split into three age categories: children, teenagers, and adults.

Each child runs a distance of 1 kilometer, each teenager runs 3 kilometers, and each adult runs 5 kilometers.

In total, the participants ran 250 kilometers.

Come up with 3 possible combinations of children, teenagers and adults that were at the Superhero Fun Run. Discuss with a friend how you would go about solving this problem.



National Teacher Appreciation Day

Tuesday of the first full week
of May

Today is National Teacher Appreciation Day, a day to celebrate and honor our teachers past and present, for not only teaching us, but making a difference in our society and our world, and for the special relationship they form with their students during the school year.

Question

To show their appreciation on Teacher Appreciation Day, the art club at a middle school decides to create a series of banners to hang in the school's hallways. Each banner is dedicated to a different subject department.

The art club plans to make the banners in the shape of rectangles, each with a length that is twice as long as its width. They aim to create a banner for the 5 subject departments: Math, Science, English, History, and the Arts. Each banner will have a width of 1.5 meters.

If the art club wants all banners to have the same dimensions, what will be the length of each banner?

What will the area of one banner be?

What is the total area of paper the art club will need to create all 5 banners?

They need to buy banner paper by the square meter. If it costs \$7 per square meter, how much will the art club spend on banner paper for the banners?

Discuss with a friend how you would go about solving this problem.



Star Wars Day

May 4th

Today is National Star Wars Day, after the famous films that have remained a household favorite to this day since its debut in 1977. We celebrate National Star Wars Day on May 4th every year as it reminds us of the famous line “May the force be with you.”

Question

A group of friends decides to challenge themselves with a Star Wars themed escape room called "Escape from the Death Star." To successfully escape, they must solve a series of puzzles within a 45-minute time limit. Each puzzle takes them the following amount of time to complete:

The Droid's Help:

- They need to program an R2 unit to bypass the security. The programming takes $\frac{2}{5}$ of their total time.

The Control Room:

- Once the R2 unit has bypassed security, they have to solve a physical puzzle in the control room, which takes $\frac{2}{3}$ as long as the programming did.

The Final Code:

- With the control room puzzle solved, they must then decipher a series of ancient Jedi texts to find the final numeric sequence. It takes them $\frac{2}{3}$ of the remaining time to decipher it.

If they solve the puzzles as quickly as possible, how much time do they have left to enter the deactivation code and escape the Death Star?



Mother's Day

Second Sunday in May

Today is Mother's Day, a day to honor our mothers, grandmothers, and every person in our lives that has taken care of us in some way, been there for us when we most need it, and has acted as a mother to us.

Question

Some kids decide to make breakfast for the family on Mother's Day. They decide to make pancakes and fruit salad for all the members of the family.

The recipe for pancakes serves 12 people, but they need to adjust it to serve 4 family members. The recipe for the pancakes is as follows:

Flour: 3 cups

Milk: $2\frac{1}{2}$ cups

Eggs: 6

Sugar: $\frac{1}{4}$ cup

Baking Powder: 1 tablespoon

Salt: $\frac{1}{2}$ teaspoon

Butter (melted): $\frac{1}{3}$ cup

Vanilla Extract: 1 teaspoon

How much of each ingredient will they need? Discuss with a friend how you would solve this problem.



Memorial Day

Last Monday in May

Today we honor and remember all those who have paid the great price, sacrificing their lives for our freedom by serving in our nation's Armed Forces. Many celebrate this day by going to memorial services, watching parades, and spending time with their families. Whatever way you celebrate, today is a day to feel gratitude for the freedom we are able to enjoy because of the bravery of others.

Question

A community center decides to host a Memorial Day picnic to honor local veterans and their families. For every 5 attendees, 2 prefer hot dogs, 2 prefers hamburgers, and 1 does not prefer one or the other but will eat either.

They expect up to 300 people to attend the picnic. How many of each food item (hot dogs or hamburgers) should the community center prepare to meet the estimated demand?

If a pack of hot dogs contains 10 hot dogs and a pack of hamburgers contains 8 hamburgers, how many packs of each will the community center need to buy? Discuss with a friend how you would solve this problem.



Themed Spring Term - Answers

Day	Question	Answer
Read Across America Day	<p>For Read Across America Day, a grade level decides to start a book club. Each student in the book club commits to reading a certain number of pages each week.</p> <p>The book club has 121 students. In the first week, each student reads 28 pages. In the second week, each student increases their reading by 6 pages. In the third week, each student increases their reading by another 8 pages from the second week.</p> <p>Question: How many total pages does the book club read collectively over the three weeks? Discuss with a friend how you would go about solving this.</p>	12,584 pages
International Women's Day	<p>In a company, $\frac{3}{4}$ of the employees participate in an International Women's Day seminar. If 90 employees are participating in the International Women's Day seminar, how many employees does the company have?</p> <p>Discuss with a friend how you would go about solving this problem.</p>	120 employees

Day	Question	Answer
Pi Day	<p>A bakery decides to celebrate Pi Day with an intricate pie puzzle for their customers. They create a large pie and make various cuts to divide it into unique fractional pieces. Initially, the bakery cuts the pie into 10 equal slices.</p> <p>They then select 4 of these slices and cut each one into thirds, creating smaller slices.</p> <p>From the remaining uncut slices, they take 2 slices and cut each in half.</p> <p>A customer decides to buy a mix of slices: they buy two of the slices that were cut into thirds, three of the original untouched slices, and one of the slices that was cut in half.</p> <p>What fraction of the whole pie does the customer purchase? Discuss with a friend how you would go about solving this problem.</p>	<p>The customer buys $\frac{5}{12}$ of the whole pie</p>

Day	Question	Answer
St. Patrick's Day	<p>For St. Patrick's Day, a group of children embarks on a challenging hunt for leprechaun gold. According to legend, each leprechaun's pot of gold contains a unique and tricky number of gold coins.</p> <p>The first leprechaun's pot contains 23 gold coins.</p> <p>The second leprechaun's pot contains gold coins equal to three times the amount in the first leprechaun's pot, minus 5 coins.</p> <p>The third leprechaun, known for his riddles, has a pot containing gold coins equal to the difference between the first two pots, multiplied by 2.</p> <p>How many gold coins do the children find in total from all three leprechaun pots? Discuss with a friend how you would go about solving this problem.</p>	<p>Total gold coins = 23 (first pot) + 64 (second pot) + 82 (third pot) = 169</p>
April Fool's Day	<p>A group of friends decides to pull a series of harmless pranks at their school for April Fool's Day. They plan to place whoopee cushions on the seats in three classrooms. In each classroom, they place whoopee cushions on $\frac{2}{3}$ of the chairs.</p> <p>In the first classroom, they put whoopee cushions on 16 of the chairs.</p> <p>In the second classroom, they put whoopee cushions on 22 of the chairs.</p> <p>In the third classroom, they put whoopee cushions on 14 of the chairs.</p> <p>How many chairs were there in each classroom?</p>	<p>The first classroom has 24 chairs, the second classroom has 33 chairs, and the third classroom has 21 chairs</p>

Day	Question	Answer
Easter - the first Sunday after the full moon that occurs on or after the Spring Equinox	<p>A family decides to bake cookies, cupcakes and pies for an Easter gathering. They have a tradition of baking a specific number of each based on the number of guests. For each guest, they bake 5 cookies. They also bake 1 cupcake for every 2 cookies to ensure there's a variety. For every 5 cupcakes, the family decides to bake 2 pies as a special treat.</p> <p>If they are expecting 24 guests at the gathering, how many cookies, cupcakes, and pies do they bake in total?</p>	120 cookies, 60 cupcakes and 24 pies

Day	Question	Answer
Earth Day	<p>A community embarks on a revitalization project for Earth Day to transform a local park into a vibrant space with areas dedicated to different purposes: a relaxation zone, a playground, and a community garden. The park is designed in a rectangular shape. The total area of the park is 2,000 square meters.</p> <p>The relaxation zone, featuring benches and shade trees, will take up $\frac{1}{4}$ of the park's total area. The playground area will occupy a space that is $\frac{3}{10}$ of the park's total area.</p> <p>The remaining area is designated for the community garden, which will be divided into sections for flowers, vegetables, and fruit trees. The flower section will take up $\frac{1}{5}$ of the garden's area, and the vegetable section will take up $\frac{1}{2}$ of the garden's area. The rest of the garden area is allocated for fruit trees.</p> <p>What is the area, in square meters, allocated for the relaxation zone, the playground, and each section of the community garden? Discuss with a friend how you would go about solving this problem.</p>	<p>500 square meters for the relaxation zone, 600 square meters for the playground, 900 total square meters for the community garden, 180 square meters for the flowers, 450 square meters for the vegetable section, 270 square meters for the fruit trees.</p>

Day	Question	Answer
National Superhero Day	<p>A local community organizes a "Superhero Fun Run" to celebrate National Superhero Day. Participants are encouraged to dress up as their favorite superheroes and run a specified distance.</p> <p>The run is split into three age categories: children, teenagers, and adults.</p> <p>Each child runs a distance of 1 kilometer, each teenager runs 3 kilometers, and each adult runs 5 kilometers.</p> <p>In total, the participants ran 250 kilometers.</p> <p>Come up with 3 possible combinations of children, teenagers and adults that were at the Superhero Fun Run. Discuss with a friend how you would go about solving this problem.</p>	<p>Answers may vary; some examples are:</p> <p>20 children, 20 teenagers, 34 adults;</p> <p>10 children, 30 teenagers, 30 adults;</p> <p>8 children, 14 teenagers, 40 adults</p>

Day	Question	Answer
National Teacher Appreciation Day	<p>To show their appreciation on Teacher Appreciation Day, the art club at a middle school decides to create a series of banners to hang in the school's hallways. Each banner is dedicated to a different subject department.</p> <p>The art club plans to make the banners in the shape of rectangles, each with a length that is twice as long as its width. They aim to create a banner for the 5 subject departments: Math, Science, English, History, and the Arts. Each banner will have a width of 1.5 meters.</p> <p>If the art club wants all banners to have the same dimensions, what will be the length of each banner? What will the area of one banner be?</p> <p>What is the total area of paper the art club will need to create all 5 banners?</p> <p>They need to buy banner paper by the square meter. If it costs \$7 per square meter, how much will the art club spend on banner paper for the banners?</p> <p>Discuss with a friend how you would go about solving this problem.</p>	<p>The length of each banner will be 3 meters long;</p> <p>The area of one banner is 4.5 square meters;</p> <p>the total area of all the banners will be 22.5 square meters;</p> <p>the cost of all the banner paper they will need is \$161.</p>

Day	Question	Answer
Star Wars Day	<p>A group of friends decides to challenge themselves with a Star Wars themed escape room called "Escape from the Death Star." To successfully escape, they must solve a series of puzzles within a 45-minute time limit. Each puzzle takes them the following amount of time to complete:</p> <p>The Droid's Help: They need to program an R2 unit to bypass the security. The programming takes $\frac{2}{5}$ of their total time.</p> <p>The Control Room: Once the R2 unit has bypassed security, they have to solve a physical puzzle in the control room, which takes $\frac{2}{3}$ as long as the programming did.</p> <p>The Final Code: With the control room puzzle solved, they must then decipher a series of ancient Jedi texts to find the final numeric sequence. It takes them $\frac{2}{3}$ of the remaining time to decipher it.</p> <p>If they solve the puzzles as quickly as possible, how much time do they have left to enter the deactivation code and escape the Death Star?</p>	5 minutes

Day	Question	Answer
Mother's Day	<p>Some kids decide to make breakfast for the family on Mother's Day. They decide to make pancakes and fruit salad for all the members of the family.</p> <p>The recipe for pancakes serves 12 people, but they need to adjust it to serve 4 family members. The recipe for the pancakes is as follows:</p> <p>Flour: 3 cups Milk: $2\frac{1}{2}$ cups Eggs: 6 Sugar: $\frac{1}{4}$ cup Baking Powder: 1 tablespoon Salt: $\frac{1}{2}$ teaspoon Butter (melted): $\frac{1}{3}$ cup Vanilla Extract: 1 teaspoon</p> <p>How much of each ingredient will they need? Discuss with a friend how you would solve this problem.</p>	<p>1 cup of flour, $\frac{5}{6}$ cup of milk, 2 eggs, $\frac{1}{12}$ cup of sugar, $\frac{1}{3}$ tablespoon of baking powder, $\frac{1}{6}$ teaspoon of salt, $\frac{1}{9}$ cup of melted butter, $\frac{1}{3}$ teaspoon vanilla extract</p>
Memorial Day	<p>A community center decides to host a Memorial Day picnic to honor local veterans and their families.</p> <p>For every 5 attendees, 2 prefer hot dogs, 2 prefers hamburgers, and 1 does not prefer one or the other but will eat either.</p> <p>They expect up to 300 people to attend the picnic.</p> <p>How many of each food item (hot dogs or hamburgers) should the community center prepare to meet the estimated demand?</p> <p>If a pack of hot dogs contains 10 hot dogs and a pack of hamburgers contains 8 hamburgers, how many packs of each will the community center need to buy? Discuss with a friend how you would solve this problem.</p>	<p>They will need 120 hot dogs and 120 hamburgers to meet the demand of those who are decided on preference; for the ones who will eat either, they will need a total of 60 hot dogs and hamburgers to make sure everyone gets something; students may say that they should split it and have 30 extra of each with a total of 150 hot dogs and 150 hamburgers. This means they will need 15 packs of hot dogs and 19 packs of hamburgers to have enough, with 2 hamburgers left over.</p>

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,
Sherwood Forest Elementary, Washington

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