



**THIRD SPACE
LEARNING**

Math Games And Activities Pack

**17 Fun Math Activities and
Games for the Classroom**

4th Grade

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Note to Teachers

This pack is here to help you with some ideas of how to bring math into the classroom in a fun way. The challenges are not intended to be too much like 'work'. They should provide just a bit of a mathematical focus every now and then.

The activities are separated into individual activities and partner activities.

Individual activities

1 Multiplication and Division Mosaic

Your challenge:

Can you use your multiplication and division skills to reveal the picture hidden in the grid?

How to play:

- 1 Work out the answer to the calculation in each square using your knowledge of the 1-12 multiplication facts (including square numbers) and related division facts.
- 2 Color in each square based on the key at the top of the sheet.

What picture will you reveal?

You will need

Challenge 1 Sheet

Colored pencils, crayons, or
markers

2 Mystery Multiplication Facts

Your challenge:

- Can you help solve a multiplication facts mystery?
- On Challenge 2 Sheet there are two multiplication facts that have been written in code. Each digit has been replaced by a letter and the multiplication facts have all been jumbled up!

You will need

Challenge 2 Sheet

What to do:

- 1 Can you work out which digit each letter stands for? Try to spot patterns in the digits so you can rule out certain numbers and rule in others.
- 2 Can you work out which multiplication facts is the 11 multiplication fact or the 1 multiplication fact? Does the number of single digit answers help you work out which multiplication fact it could be?
- 3 Solve the puzzle and record which digit each letter stands for on the challenge sheet.

Set 1 Multiplication Facts (Z) is _____

Set 2 Multiplication Facts (A) is _____

3 Fraction Hunting

Your challenge:

Can you apply your knowledge of fractions to everyday life?

You will need

A recipe

A plain piece of paper

What to do:

- 1 Find a recipe for something you could make (a meal, cakes, slime, whatever you can find!).
- 2 Write the ingredients on a piece of paper.
- 3 Find these fractions of the recipe and write it below the original ingredients list:

$$\frac{1}{4} \quad \frac{3}{4} \quad \frac{1}{3} \quad \frac{3}{8} \quad \frac{3}{10}$$

4 Money Problems

Your challenge:

Which combination of coins and bills can you use to make a total?

You will need

A receipt

A piece of plain paper

What to do:

- 1 Find an old receipt for some shopping (you may need to ask an adult for this).
- 2 Imagine you are paying for the products on your receipt with bills and coins. How many different combinations of bills and coins could you use to pay the total. If you pay more than the total, what would your change be?
- 3 On a piece of paper, stick the receipt in the middle. Around the receipt write the different combinations of coins and bills you could use, including your change (where you can).

5 My Favorite Number

Your challenge:

How much do you know about your favorite number?

You will need

A receipt

A piece of plain paper

Colored pencils or crayons

What to do:

- 1 What's your favorite number? Write it down in the center of a piece of plain paper (if you don't have a favorite number, pick a number at random).
- 2 Write down at least 20 facts about the number around your number, creating a poster. Examples you could choose include factors, multiples, even/odd, square number, sides on a shape etc.
- 3 For example, if your favorite number was 32, you could write down facts like:
 - It's a multiple of 1, 2, 4, 8 and 16
 - It's an even number
 - $32 \times 2 = 64$
 - $1 + 31 = 32$
- 4 Try to make sure you have a good range of different types of facts. Be as creative as you can with how you present your work.

6 Product Hunt

Your challenge:

How many products can you make out of 4 digits?

You will need

How many products can you make out of 4 digits?

How to play:

- 1 You have the digits 4, 5, 7, and 8. You need to arrange them into a multiplication question like this: $HTO \times O = ?$ For example, you could make $458 \times 7 = ?$
- 2 In each question, you can only use each digit once. Work out the answer to your equation, using any method you like (but don't use a calculator!).
- 3 Make a list of the different products that you have made on Challenge 6 Sheet (remember, a product is the result of a multiplication). How can you make sure you have found all the possible products?

Fill in Challenge 6 Sheet to explain how you did this.

7 Get Arty!**Your challenge:**

Can you create a piece of art that contains all of the following shapes in it: A regular hexagon, A regular octagon, an irregular quadrilateral, a square, a rectangle, an irregular heptagon, a triangle.

You will need

Plain paper

Art materials

Things to remember:

- 1 You can create your art using any type of materials you like. You could collage, paint, colour or do anything else – it's up to you. You can also use any other shapes in your art but list them below.

8 Areas and Perimeters

Your challenge:

Can you estimate and measure area and perimeter accurately?

What to do:

- 1 Create a list of items you are going to find the areas and perimeters of (at least 16 in total). These could be large or small.
- 2 Next to each item, write an estimate of the area or perimeter.
- 3 Measure items and calculate the area or perimeter.
- 4 Compare your estimates to the real answers. How accurate were you?

You will need

A tape measure or ruler

A piece of plain paper

9 Converting Units

Your challenge:

Can you convert between metric units?

What to do:

- 1 Find 15 items in your classroom that you can measure the length of easily.
- 2 List the items on the table on the Challenge 9 sheet. Find the length of your item in cm then convert the length to mm, m and km.

You will need

Challenge 9 Sheet

Items to measure

Pair activities

10 Place Value Duel

Your challenge:

Can you make a larger five-digit number than your partner?

How to play:

- 1 Get your digit cards ready. Cut them out from the Digit Cards Resource Sheet (at the back of this pack).
- 2 Shuffle all three sets of the digit cards. You and your partner must each draw five big lines on your sheet of paper like this:

- 3 Take turns turning over a digit card and decide where in your number you are going to place the digit.
- 4 Put the digit in that position and tell your partner what value that digit has. For example, if you put a 3 in the tens column, you would say 'this 3 is worth 3 tens or thirty'.
- 5 Once you have placed a digit in your number, you can't move it! Therefore, it's important to think about the strategy you are using. Play at least seven rounds.

You will need

Digit Cards Resource Sheet

Two sheets of plain paper

A partner

Who will be the champion?

I played with _____

The person who won was _____

11 Playing Games With Math

Your challenge:

Find the math in your favorite board or card game.

How to play:

- 1 While you are playing it, think about all the math skills you are using!
- 2 Search hard – most games do involve some maths somewhere, but if your favorite game doesn't, then try your second favorite game!

You will need

Your favorite board or card
game to play

People to play it with

The game I played was _____

The math I spotted in it was

12 Multiplication Skirmish

Your challenge:

Are you ready to have a multiplication skirmish?

How to play:

- 1 This game is simple, but addictive! Shuffle all three sets of digit cards from the Digit Cards Resource Sheet, then deal them between the two players.
- 2 At the same time, each player turns over one of their cards and puts it in the middle.
- 3 Race your partner to shout out the answer that you get when you multiply both the numbers together. For example, if you turned over an 8 and your partner turned over a 6, you'd have to shout out 48, because $8 \times 6 = 48$.
- 4 The person who shouts out the correct answer first gets to keep both cards. Keep playing until one player has run out of cards.
- 5 Play at least three rounds. Who will be the champion?

You will need

Digit Cards Resource Sheet

A partner

I played with _____

The person who won was _____

13 Two-handed Math, Paper, Scissors

Your challenge:

Have you ever played 'Rock, Paper, Scissors'? Well this is a math version of the same game!

How to play:

- 1 Stand and face your partner. Make two fists and say together with your partner 'math, paper, scissors' while moving your fists up and down (in a similar way to when playing rock, paper, scissors).
- 2 On scissors, each of you puts out between 0 and 10 fingers.
- 3 You then need to race to multiply the number of fingers you have put out by the number of fingers your partner put out (e.g. 6×8) and call out the answer. The player to call the correct answer first wins a point.
- 4 Record who wins each 'battle' in a simple table; the first player to 15 points wins!

You will need

A partner

I played with _____

The person who won was _____

14 Tug of War

Your challenge:

Why not play a math version of Tug of War?

You will need

Digit Cards Resource Sheet

A partner

Paper to keep a track of your score

How to play:

- 1 Firstly, decide which player is going to 'add' and which player is going to 'subtract', then shuffle the digit cards into one pile. Write down the number 2,500 at the top of your piece of paper.
- 2 The player who is adding starts first. They turn over three cards and make them into a three-digit number (for example, 569). The player who is adding adds these to 2,500 (e.g. $2,500 + 569 = 3,069$). The result of this calculation is your new running total.
- 3 The player who is subtracting goes next. They turn over three digits, make it into a three-digit number and subtract it from the running total.
- 4 Keep playing in the same way, taking turns to make a number and add or subtract it. If the player who is adding gets above 5,000 they win, and if the player who is subtracting gets below 1 they win!

Who will win the tug of war?

I played with _____

The person who won was _____

15 Battleships!

Your challenge:

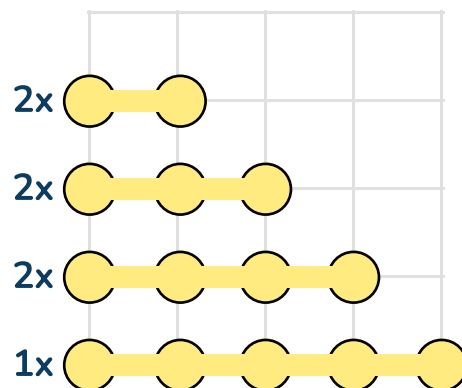
Let's play a classic game of battleships – but with a coordinates twist!

You will need

Two copies of Challenge 15 Sheet
A partner
Two pencils
Two colored pencils

How to play:

- 1 First, plot the 'ships' shown below on your grid. Make sure you hide them, so they are difficult for your partner to find.
- 2 Then, take turns to guess where your partner's ships are hidden. To do this, you need to read out the coordinates – remember, you read out the horizontal axis value first, and then the vertical axis value.
- 3 Your partner will then tell you if you have 'hit' one of their ships or not. Keep track of your hits and misses on your map (use a colored pencil). If you get a 'hit' you get another go, if not, it's your partner's turn to guess.
- 4 Who can find all of their partner's battleships first?



I played with _____

The person who won was _____

16 Fraction Snap

Your challenge:

Let's play a game of snap, but with a math twist.

How to play:

- 1 Shuffle the cards from Challenge 16 Sheet and deal them between the players.
- 2 Play just like you would do in 'normal' snap – take turns to turn over one of your cards and place it in the middle.
- 3 If the two cards are equivalent the first person to call 'snap' and place their hands on the pile of cards wins the cards. Remember, equivalent means they are worth the same, for example the following pairs are equivalent:
 - $\frac{1}{4}$ and $\frac{2}{8}$
 - $\frac{1}{3}$ and $\frac{3}{9}$
 - $\frac{1}{2}$ and $\frac{3}{6}$
- 4 The first player to get all of the cards wins! Try to play the game at least twice.

You will need

The cards from
Challenge 16 Sheet cut up
At least one other person

The first time I played, I played against _____

and the person who won was _____

The second time I played, I played against _____

and the person who won was _____

17 Trolls and Giants

Your challenge:

Who will win in the battle between troll and giant?

How to play:

You will need

Challenge 17 Sheet

A partner

A counter each (you could make your own out of paper)

Plain paper for any working out

- 1 Sit opposite your partner and decide who will be the troll and who will be the giant.
- 2 Place the grid from Challenge 17 Sheet in between you. The aim of the game is for the troll to make it to the giant's home on the other side of the grid. The giant's aim is to stop the troll from getting there by ending up on the same hexagon on the grid as the troll.
- 3 The troll goes first. Place your counter on one of the hexagons on the 'troll's home' side of the paper and solve the equation in the hexagon. If the calculation is correct (your partner needs to check and agree) you get to move to that hexagon.
- 4 The giant starts in the same way from the 'giant's home' side of the paper.
- 5 On the next turn, each player can move to one of the hexagons next to the hexagon they are on. If they get the answer correct, they move to that hexagon; if they don't get it correct, they stay as they are!
- 6 Think about about your strategy – where will you move next? Try to play the game at least two times.

The first time I played, I played against _____

and the person who won was _____

The second time I played, I played against _____

and the person who won was _____

Challenge 1 Sheet Multiplication and Division Mosaic

Solve the questions in the squares below. Color in the squares with the colors based on your answer.

What picture will you make?

Pink: 0, 1, 2, 3

Orange: 4, 6, 8, 9, 10

Black: 12, 16, 18

Yellow: 20, 24, 30

Purple: 25, 36, 40, 48, 49, 60, 72, 81

$8 \times 5 =$	$? \div 5 = 5$	$? \div 10 = 6$	6^2	$? \div 7 = 7$	$? \div 12 = 6$	$? \div 6 = 6$	$5 \times 12 =$
$6 \times 6 =$	$?^2 = 64$	$4 \times 0 =$	$18 \div 9 =$	$3 \times 1 =$	$48 \div ? = 8$	$4 \times 10 =$	$12 \times 4 =$
$? \times 11 = 110$	$4 \times 3 =$	$? \times 1 = 9$	$6 \div 6 =$	$? \times 1 = 4$	4^2	$72 \div 9 =$	$12 \times 3 =$
$? \times 3 = 24$	$72 \div ? = 12$	$28 \div 7 =$	$5 \times ? = 50$	$63 \div ? = 7$	$56 \div 7 =$	$?^2 = 36$	$9 \times 8 =$
$20 \div 5 =$	$20 \div 2 =$	$? \div 4 = 4$	$5 \times ? = 40$	$? \div 9 = 2$	$120 \div ? = 12$	2^2	9^2
$4 \times 5 =$	$54 \div 9 =$	$6 \times 3 =$	$?^2 = 100$	$84 \div 7 =$	$99 \div 11 =$	$? \div 5 = 6$	$? \div 5 = 8$
$? \div 8 = 5$	$2 \times 12 =$	3^2	$?^2 = 16$	$30 \div ? = 5$	$6 \times 4 =$	$5 \div 5 =$	$6 \times 12 =$
5^2	$24 \div 12 =$	$5 \times 6 =$	$9 \times 2 =$	$? \div 10 = 2$	$?^2 = 9$	$9 \times 0 =$	$10 \times 6 =$
$3 \times 12 =$	$? \div 12 = 3$	$7 \times 0 =$	$9 \div ? = 3$	$10 \div 10 =$	$8 \div 4 =$	$? \div 6 = 6$	$8 \times 6 =$
$? \div 12 = 4$	$12 \times 5 =$	7^2	$10 \times 4 =$	$? \div 12 = 3$	$? \div 6 = 10$	$? \div 10 = 4$	$? \div 5 = 12$

Challenge 2 Sheet Mystery Multiplication Facts

These multiplication facts are a mystery. Each digit has been replaced by a letter and the order of the multiplication facts has been jumbled up!

Can you work out which digit each letter stands for? There are two sets of multiplication facts for you to complete.

Try to spot patterns in the digits so you can rule out certain numbers and rule in others.

Can you work out which multiplication fact is the 11 multiplication fact or the 1 multiplication fact? Does the number of single digit answers help you work out which multiplication fact it could be?

Solve the puzzle and record which digit each letter stands for on the challenge sheet.

Multiplication Fact Set 1

M =	<input type="text"/>	N =	<input type="text"/>	P =	<input type="text"/>	Q =	<input type="text"/>	R =	<input type="text"/>
S =	<input type="text"/>	T =	<input type="text"/>	U =	<input type="text"/>	Y =	<input type="text"/>	Z =	<input type="text"/>

$$Y \times Z = Z$$

$$Z \times Z = S$$

$$T \times Z = YP$$

$$M \times Z = YQ$$

$$N \times Z = PY$$

$$YY \times Z = ZZ$$

$$Q \times Z = PT$$

$$U \times Z = YU$$

$$YP \times Z = ZM$$

$$P \times Z = M$$

$$S \times Z = PN$$

$$YR \times Z = ZR$$

Challenge 2 Sheet Mystery Multiplication Facts

Multiplication Fact Set 2

The letters and their digits are different to the first set!

A =	<input type="text"/>	B =	<input type="text"/>	C =	<input type="text"/>	D =	<input type="text"/>	E =	<input type="text"/>
F =	<input type="text"/>	G =	<input type="text"/>	H =	<input type="text"/>	J =	<input type="text"/>	K =	<input type="text"/>

$$C \times A = A$$

$$D \times A = JG$$

$$E \times A = HK$$

$$A \times A = FC$$

$$F \times A = GJ$$

$$G \times A = ED$$

$$H \times A = KH$$

$$J \times A = CF$$

$$K \times A = DE$$

$$CC \times A = AA$$

$$CJ \times A = CBF$$

$$CB \times A = AB$$

Challenge 6 Sheet Product Hunt!

You have the digits 4, 5, 7, and 8.

You need to arrange them into a multiplication question like this: $HTO \times O = ?$ For example, you could make $458 \times 7 = ?$ In each question, you can only use each digit once.

Work out the answer to your equation using any method you like (don't use a calculator). Make a list of the different products that you have made (remember, the product is the result of multiplication).

How can you make sure you have found all possible products?

The products I have found are: _____

Use this space below to help you.

I know I have found all the possible products because:

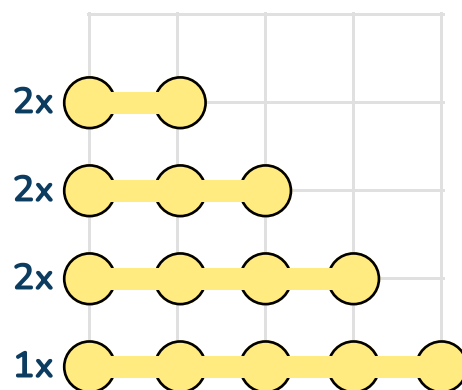
Challenge 9 Sheet Converting units

Measure and convert the lengths of objects around your house.

Item	Measure (cm)	Measure (mm)	Measure (m)	Measure (km)

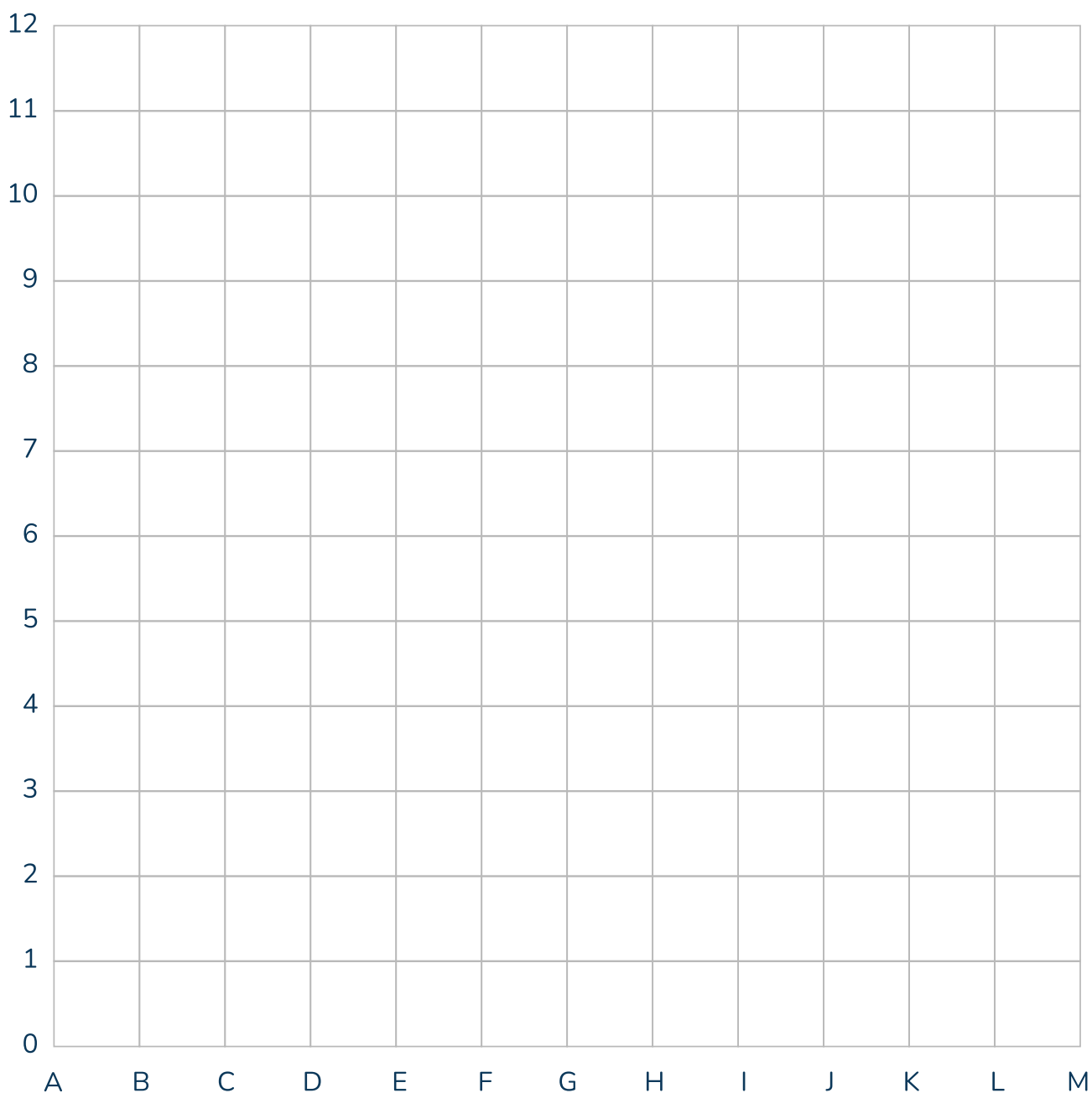
Challenge 15 Sheet Battleships

Let's play a game of coordinate battleships.
See the challenge list for the full instructions.



Here are the boats you need to put on your grid. Remember, your boats are made up of points not squares.

My Map



Challenge 16 Sheet Fraction Snap

$$\frac{1}{2}$$

$$\frac{1}{4}$$

$$\frac{2}{4}$$

$$\frac{1}{2}$$

$$\frac{16}{20}$$

$$\frac{6}{8}$$

$$\frac{3}{4}$$

$$\frac{5}{10}$$

$$\frac{1}{3}$$

$$\frac{3}{4}$$

$$\frac{1}{5}$$

$$\frac{5}{10}$$

$$\frac{2}{6}$$

$$\frac{9}{12}$$

$$\frac{5}{6}$$

$$\frac{5}{15}$$

$$\frac{2}{10}$$

$$\frac{3}{5}$$

$$\frac{25}{100}$$

$$\frac{8}{10}$$

Challenge 16 Sheet Fraction Snap

$$\frac{4}{8}$$

$$\frac{6}{10}$$

$$\frac{4}{20}$$

$$\frac{1}{7}$$

$$\frac{80}{100}$$

$$\frac{6}{8}$$

$$\frac{9}{15}$$

$$\frac{30}{50}$$

$$\frac{3}{21}$$

$$\frac{2}{8}$$

$$\frac{3}{9}$$

$$\frac{5}{6}$$

$$\frac{50}{100}$$

$$\frac{6}{12}$$

$$\frac{15}{18}$$

$$\frac{3}{15}$$

$$\frac{10}{12}$$

Challenge 17 Sheet Trolls vs Giants

Troll's House

$3,922 \times 2 = ?$	$82,654 - 832 = ?$	$8,543 \times 5 = ?$	$6,708 + 15,754 = ?$	$8,754 \div 2 = ?$	$501,843 - 72,983 = ?$	$3 \times 4,832 = ?$
$5,432 \div 4 = ?$	$30,876 - 4,382 = ?$	$56 \times 32 = ?$	$734,210 - 10,000 = ?$	$5,684 + 2,831 = ?$	$8,090 \div 5 = ?$	$43 \times 43 = ?$
$43 \times 100 = ?$	$85,421 + 13,723 = ?$	$453 + 231 = ?$	$30,001 - 29,456 = ?$	$4,543 \times 9 = ?$	$74 + 833 + 1 = ?$	$865 - 32 - 3 = ?$
$7^2 = ?$	$4,251 \times 7 = ?$	$10,743 - 3,287 = ?$	$8318 - 28 = ?$	$8,200 \div 5 = ?$	$7,932 - 2,432 = ?$	$4,912 - 3,789 = ?$
$6,310 \div 10 = ?$	$421,843 + 71,543 = ?$	$6,854 + 2,823 = ?$	$4,892 - 4,879 = ?$	$432 \times 1,000 = ?$	$3.21 + 53 = ?$	$8,764 - 1,276 = ?$
$234 \times 100 = ?$	$765 + 878 = ?$	$5^2 = ?$	$8,794 - 982 = ?$	$6,732 \times 7 = ?$	$19320 - 3231 = ?$	$512 \times 100 = ?$
$6,584 - 3,219 = ?$	$2,2400 \div 100 = ?$	$1,638 \div 7 = ?$	$4,021 + 2,304 = ?$	$10^2 = ?$	$3,245 \times 3 = ?$	$63400 \div 10 = ?$
$30,239 + 3,821 = ?$	$50,854 - 8,320 = ?$	$7321 \times 2 = ?$	$17,923 - 4,382 = ?$	$721 + 134 = ?$	$451 \times 100 = ?$	$3,765 + 4,573 = ?$

Giant's House

Resource Sheet 1

0

1

2

3

4

5

6

7

8

9

0

1

2

3

4

5

Resource Sheet 1

6

7

8

9

0

1

2

3

4

5

6

7

8




9

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

Each student could receive a personalized lesson every week from our specialist one on one math tutors.

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

Speak to us

-  thirdspacelearning.com/us/
-  +1 929-298-4593
-  hello@thirdspacelearning.com



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