Maths Games And Activities Pack

20 Fun Maths Challenges To Do At Home

Year 3

THIRD SPACE LEARNING

Note to Parents and Carers

Your child works hard during school and we know they deserve some rest and relaxation when they're at home. BUT… this pack is here to help you with some ideas of how to bring maths into your home 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. We understand that pupils are not always able to complete activities with others and as such hope this will help you and your child select appropriate activities to complete.

Individual activities

1 Multiplication Mosaic

You will need:
- Challenge 1 Sheet
- Colouring pencils or felt tips

Your challenge:
- Can you use your multiplication 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 times tables (with a focus on the 3, 4 and 8 times tables).
2. Colour in each square based on the key at the top of the sheet.

What picture will you reveal?

2 Division Mosaic

You will need:
- Challenge 2 Sheet
- Colouring pencils or felt tips

Your challenge:
- Can you use your 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 times tables to solve division questions.
2. Colour in each square based on the key at the top of the sheet.

What picture will you reveal?

Challenge 1 Sheet Multiplication Mosaic

Solve the questions in the squares below. Colour in the squares with the colours based on your answer. What picture will you make?

Blue: 0, 4, 6, 15, 30, 40, 64, 80

Red: 8, 24, 28, 36, 56, 88

Orange: 3, 18, 33, 44, 96

Yellow: 21

Green: 9, 12, 16, 20, 27, 32, 48, 72

5 x 6 =	5 x 3 =	8 x 0 =	4 x 10 =	4 x 1 =	10 x 8 =	8 x 8 =	3 x 5 =
8 x 10 =	3 x 2 =	6 x 6 =	8 x 11 =	7 x 4 =	1 x 6 =	3 x 0 =	3 x 10 =
2 x 2 =	4 x 7 =	8 x 12 =	4 x 11 =	3 x 11 =	2 x 4 =	5 x 8 =	3 x 2 =
6 x 1 =	4 x 2 =	3 x 1 =	3 x 7 =	3 x 6 =	8 x 3 =	3 x 5 =	6 x 5 =
10 x 4 =	8 x 7 =	6 x 3 =	1 x 3 =	11 x 4 =	1 x 8 =	3 x 0 =	1 x 4 =
6 x 6 =	8 x 8 =	8 x 1 =	11 x 8 =	3 x 8 =	2 x 3 =	2 x 2 =	5 x 6 =
3 x 4 =	10 x 3 =	4 x 5 =	3 x 9 =	10 x 0 =	4 x 4 =	8 x 5 =	11 x 3 =
8 x 9 =	4 x 12 =	4 x 1 =	2 x 8 =	12 x 1 =	8 x 8 =	5 x 0 =	5 x 4 =
4 x 4 =	4 x 0 =	6 x 5 =	3 x 3 =	5 x 8 =	2 x 2 =	6 x 8 =	8 x 2 =
4 x 8 =	1 x 12 =	8 x 6 =	4 x 5 =	8 x 4 =	12 x 4 =	1 x 9 =	4 x 3 =

Challenge 2 Sheet Division Mosaic

Solve the questions in the squares below. Colour in the squares with the colours based on your answer. What picture will you make?

Blue: 1, 2, 3, 4, 5

White: 6, 7, 8

Brown: 9, 10, 11

Green: 12

8 ÷ 1 =	5 ÷ 5 =	16 ÷ 4 =	12 ÷ 4 =	20 ÷ 10 =	36 ÷ 6 =	64 ÷ 8 =	6 ÷ 1 =
18 ÷ 3 =	28 ÷ 4 =	45 ÷ 9 =	8 ÷ 8 =	32 ÷ 4 =	30 ÷ 5 =	21 ÷ 3 =	56 ÷ 8 =
7 ÷ 1 =	16 ÷ 2 =	35 ÷ 5 =	20 ÷ 4 =	12 ÷ 3 =	27 ÷ 9 =	15 ÷ 3 =	10 ÷ 10 =
21 ÷ 7 =	24 ÷ 12 =	44 ÷ 11 =	9 ÷ 1 =	88 ÷ 8 =	22 ÷ 11 =	36 ÷ 12 =	20 ÷ 5 =
40 ÷ 8 =	28 ÷ 7 =	50 ÷ 5 =	24 ÷ 2 =	27 ÷ 3 =	8 ÷ 8 =	25 ÷ 5 =	18 ÷ 9 =
14 ÷ 7 =	6 ÷ 2 =	33 ÷ 3 =	60 ÷ 5 =	100 ÷ 10 =	44 ÷ 4 =	40 ÷ 10 =	15 ÷ 5 =
6 ÷ 6 =	15 ÷ 3 =	80 ÷ 8 =	84 ÷ 7 =	60 ÷ 6 =	72 ÷ 8 =	50 ÷ 10 =	3 ÷ 3 =
24 ÷ 6 =	120 ÷ 12 =	108 ÷ 9 =	10 ÷ 1 =	96 ÷ 8 =	48 ÷ 4 =	18 ÷ 2 =	32 ÷ 8 =
16 ÷ 8 =	90 ÷ 10 =	99 ÷ 11 =	120 ÷ 10 =	22 ÷ 2 =	36 ÷ 4 =	55 ÷ 5 =	8 ÷ 4 =
110 ÷ 10 =	36 ÷ 3 =	30 ÷ 3 =	11 ÷ 1 =	72 ÷ 6 =	40 ÷ 4 =	12 ÷ 1 =	45 ÷ 5 =

3 My Favourite Number

You will need:
- A piece of plain paper
- Colouring pencils or crayons

Your challenge:

- How much do you know about your favourite number?

What to do:

1. What's your favourite number? Write it down in the centre of a piece of plain paper (if you don't have a favourite number, pick a number at random).
2. Note down at least 20 facts about the number, creating a poster.
3. For example, if your favourite number was 20 you could write down facts like:
   - It's in the 2, 5, 1 and 10 times table
   - It's an even number
   - 20 x 2 = 40 and so on.
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.

4 How Many Ways Can You Show?

You will need:
- A plain piece of paper
- Some pencils and pens

Your challenge:

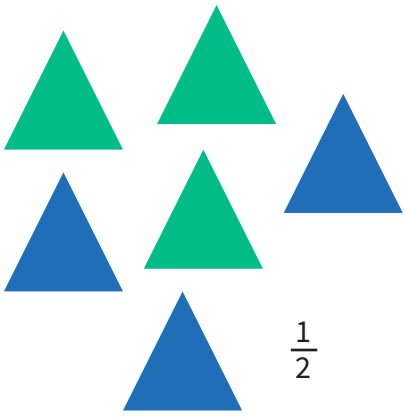
- Find as many different ways as you can to show fractions.

How to play:

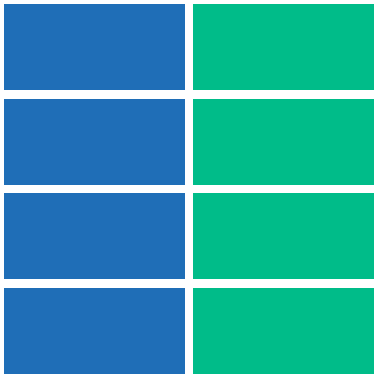
1. Pick one of the fractions from the list below, and put it in the centre of your paper.

$\frac{1}{2}$ $\frac{1}{4}$ $\frac{3}{4}$

2. Then, draw, write or create as many different ways of representing that number that you can.
3. So, for example, all of the ways below show $\frac{1}{2}$



$\frac{1}{2}$



10 out of 20

Can you create at least 10 ways to show the fraction that you have chosen?

5 How many ways can you make...

You will need:
- A piece of plain paper

Your challenge:
- How many ways can you find to make 520?

What to do:
1. Write 520 in the centre of a piece of plain paper.
2. Around the number, write at least 20 ways to make it.
3. For example:
   - 500 + 20 + 0
   - 104 x 5
4. Try to make sure you have a good range of different types of facts.

6 Money Problems

You will need:
- A receipt
- A piece of plain paper
- Colouring pencils or crayons

Your challenge:
- Which combination of coins and notes can you use to make a total?

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 total on your receipt with notes and coins. How many different combinations of notes and coins could you use to pay the total exactly (not over or under).
3. On a piece of paper, stick the receipt in the middle. Around the receipt write the different combinations you could use.
4. Be creative - could you draw the coins and notes to make sure they make the correct total?

7 Tallying Totals

You will need:
- Challenge 7 Sheet

Your challenge:
- How many items do you have in your house?

What to do:
1. Pick 6 items you know you have in your home (windows, doors, pens, pencils, people, etc).
2. Go round your house and complete the tally chart, showing how many of each item you have in your home.
3. When you have finished, create a bar chart of your results.

Challenge 7 Sheet Tallying Totals

A. Use the table below to help you record your data.

Item	Tally	Total

B. Make a bar chart of your results.

Put your results for the item totals. Remember to think about the scale you are going to use for your vertical axis and to give the chart a title.

Bar Chart Title: _____

8 How Long Did It Take?

You will need:
- Challenge 8 Sheet
- A pencil or pen
- A ball
- A stopwatch (on an adult's phone or tablet is fine)

Your challenge:
- Can you become quicker over time?

Things to remember:
1. On Challenge 8 Sheet you will find some fun challenges to take part in. Have a go at each one, and time yourself, recording the time.
2. Repeat these challenges over 5 days and compare if you have become quicker.

9 Length and Perimeter

You will need:
- A tape measure or ruler
- A piece of plain paper

Your challenge:
- Can you estimate and measure accurately?

What to do:
1. Create a list of items you are going to measure (at least 10 items) and find the perimeter of (at least 5 items).
2. Estimate their length or perimeter.
3. Measure the lengths and perimeters.
4. Compare your estimates to the real measures. How accurate were you?

10 Get Arty!

You will need:
- Plain paper
- Art materials

Your challenge:
- Can you create a piece of art that contains a selection of shapes?

Things to remember:
1. Use at least one of each of these shapes in your art: quadrilateral, triangle, pentagon, hexagon and octagon.
2. 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.
3. As an extra challenge, can you create a repeated pattern? This could be repeating colours or shapes.

Challenge 8 Sheet How Long Did It Take?

Can you improve your time over 5 days?

Challenge A: Jump 20 times.

Challenge B: Hop 25 times without falling over.

Challenge C: Throw a ball up in the air and catch it 10 times in a row.

Challenge D: Do 5 kick-ups without the ball hitting the ground.

Challenge E: Say your alphabet backwards as fast as you can.

Challenge F: Do 50 star jumps.

Challenge G: Spin around 5 times and then jump to the other side of your outside area.

	Time taken (minutes)				
Challenge	Day 1	Day 2	Day 3	Day 4	Day 5
A					
B					
C					
D					
E					
F					
G					

Compare the time it took at the start and end of the 5 days. Did you get quicker in any activity?

Pair activities

11 Place Value Duel

You will need:

- Digit Cards Resource Sheet
- Two sheets of plain paper
- A partner

Your challenge:

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

How to play:

1. Get your digit cards ready. Cut them out from the Digit Cards Resource Sheet.
2. Shuffle both sets of the digit cards. You and your partner must each draw three big lines on your sheet of paper like this:

   ____ ____ ____
3. Take it in turns to turn 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 2 in the tens column, you would say 'this 2 is worth 2 tens or twenty'.
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 six rounds.

Who will be the champion?

I played with _____

The person who won was _____

12 3, 4 and 8 Duel

You will need:

- Two sets of the Digit Cards on Resource Sheet 1
- A partner

Your challenge:

- Are you ready to have a times table duel?

How to play:

1. This game is simple, but addictive! Shuffle two sets of digit cards from resource sheet 1, and put them in a pile between the two players.
2. Turn over the card in the middle, and for the first set of rounds, race to multiply the number by 3. So if you turned over an 8 you'd need to shout out 24 as 8 x 3 = 24.
3. The person who shouts out the correct answer first gets to keep the cards. Keep playing until there are no cards left in the centre. The player with the most cards wins!
4. Once you have played with the 3 times table, play again, then play twice with the 4 times table, then twice with the 8 times table.

First, I played 3 times table duel against _____

and the person who won was _____

Then, I played 3 times table duel against _____

and the person who won was _____

Next, I played 4 times table duel against _____

and the person who won was _____

Then, I played 4 times table duel against _____

and the person who won was _____

After that, I played 8 times table duel against _____

and the person who won was _____

Finally, I played 8 times table duel against _____

and the person who won was _____

13 One-handed Maths, Paper, Scissors – All the Threes

You will need:
- A partner

Your challenge:

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

How to play:

1. On scissors, each of you puts out between 0 and 5 fingers.
2. You then need to race to add the number of fingers you have put out with the number of fingers your partner put out (e.g 4 + 2 = 6) and then multiply that answer by 3 (e.g. 6 x 3 = 18) and be the first to call out the answer.
3. 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 20 points wins!

I played with _____

The person who won was _____

14 Threes Tennis

You will need:
- A partner

Your challenge:

- Who can win a match of threes tennis?

How to play:

1. Stand opposite your partner. The first player picks a number between 1 and 10 to start with and says that out loud. The other player must add 3 to the number. This becomes your running total.
2. Now it's back to the first player who adds 3 to the running total, and so on.

You win when:

- You are the first player to say a number over 100
- Your partner makes a mistake
- Your partner says 'umm'
- Your partner takes more than 3 seconds to answer.

Play at least 6 matches with your partner. Who will win the most games?

I played with _____

The person who won was _____

15 Four in a Row

You will need:
- A partner
- A copy of Challenge 15 Sheet
- A coloured pencil each
- Digit Cards Resource Sheet

Your challenge:
- Let's play a classic game of 'four in a row' but with a maths twist!

How to play:
1. Start by sitting next to your partner and putting one of the grids from Challenge 15 Sheet in between you. Then, put one set of the digit cards spread out on the table face down.
2. Take it in turns to turn over a digit card, and multiply the answer by 4. If your partner agrees that you got the answer correct, you get to colour in one of the squares that contains that number on the grid. Turn the digit card back over.
3. Then, your partner has their go.
4. The person to win is the first person to colour in four squares in a row (in any direction - diagonals count!) in their colour. You may want to start to think about what number you need to find to colour in a certain square and then to remember which card has that number on!
5. Play the game three times. Who's going to win? What's your strategy?

I played with _____

The person who won was _____

16 Tug of War

You will need:
- Digit Cards Resource Sheet 1
- A partner
- Paper to keep a track of your score

Your challenge:
- Why not play a maths version of Tug of War?

How to play:
1. First, 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 50 at the top of your piece of paper.
2. The player who is adding starts first. They turn over 1 digit card and the player who is adding adds these to 50 (e.g. 50 + 8 = 58). The rest of this calculation is your new running total.
3. The player who is subtracting goes next. They turn over a digit and subtract it from the running total.
4. Keep playing in the same way, taking it in turns to make a number and add or subtract it. If the player who is adding gets above 100 they win, and if the player who is subtracting gets below 5 they win!

Who will win the tug of war?

I played with _____

The person who won was _____

Challenge 15 Sheet Four in a Row

Game 1

45	10	15	25	20	30
40	35	20	15	5	10
15	10	0	25	15	35
35	40	5	10	45	5
5	0	10	20	30	35
15	25	5	0	10	20
25	20	5	10	30	45

Game 2

45	10	15	25	20	30
40	35	20	15	5	10
15	10	0	25	15	35
35	40	5	10	45	5
5	0	10	20	30	35
15	25	5	0	10	20
25	20	5	10	30	45

Game 3

45	10	15	25	20	30
40	35	20	15	5	10
15	10	0	25	15	35
35	40	5	10	45	5
5	0	10	20	30	35
15	25	5	0	10	20
25	20	5	10	30	45

Game 4

45	10	15	25	20	30
40	35	20	15	5	10
15	10	0	25	15	35
35	40	5	10	45	5
5	0	10	20	30	35
15	25	5	0	10	20
25	20	5	10	30	45

17 Matching Pairs

You will need:

- Challenge 17 Sheet
- A partner

Your challenge:

- Find the pairs, with a maths twist!

What to do:

1. Cut out the cards from Challenge Sheet 17. Place the answer cards (the cards with the shaded background) spread out face down on one half of your playing area. Then place the question cards (the non-shaded cards) face down on the other half of your playing area. You need to keep the questions and answers separate.
2. Take it in turns with your partner to turn over a question card, and then an answer card. If the answer matches the question, you get to keep the cards and take another go. If it does not, turn them back over, and your partner takes their turn.
3. Continue playing until all questions and answers have been matched. The player with the most cards at the end of the game wins.

Play the game twice. Did you get a different winner each time?

The first time I played the game _____ won.

The second time I played the game _____ won.

Challenge 17 Sheet Matching Pairs

2 x 3 =	3 x 10 =	4 x 2 =	3 x 5 =
5 x 10 =	2 x 7 =	2 x 8 =	5 x 5 =
9 x 2 =	5 x 8 =	2 x 10 =	9 x 5 =
18	20	45	40

30	8	50	14
6	15	16	25

18 Unicorns Versus Giants

You will need:

- Challenge 18 Sheet
- A partner
- A counter each (you could make your own out of paper)
- Plain paper for any working out

Your challenge:

- Who will win in the battle between unicorn and giant?

How to play:

1. Sit opposite your partner and decide who will be the unicorn and who will be the giant.
2. Place the grid from Challenge 18 Sheet in between you. The aim of the game is for the unicorn to make it to the giant's home on the other side of the grid. The giant's aim is to stop the unicorn from getting there by ending up on the same hexagon on the grid as the unicorn.
3. The unicorn goes first. Place your counter on one of the hexagons on the 'unicorn's home' side of the paper and carry out the calculation 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 joint 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. Have a think 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 _____

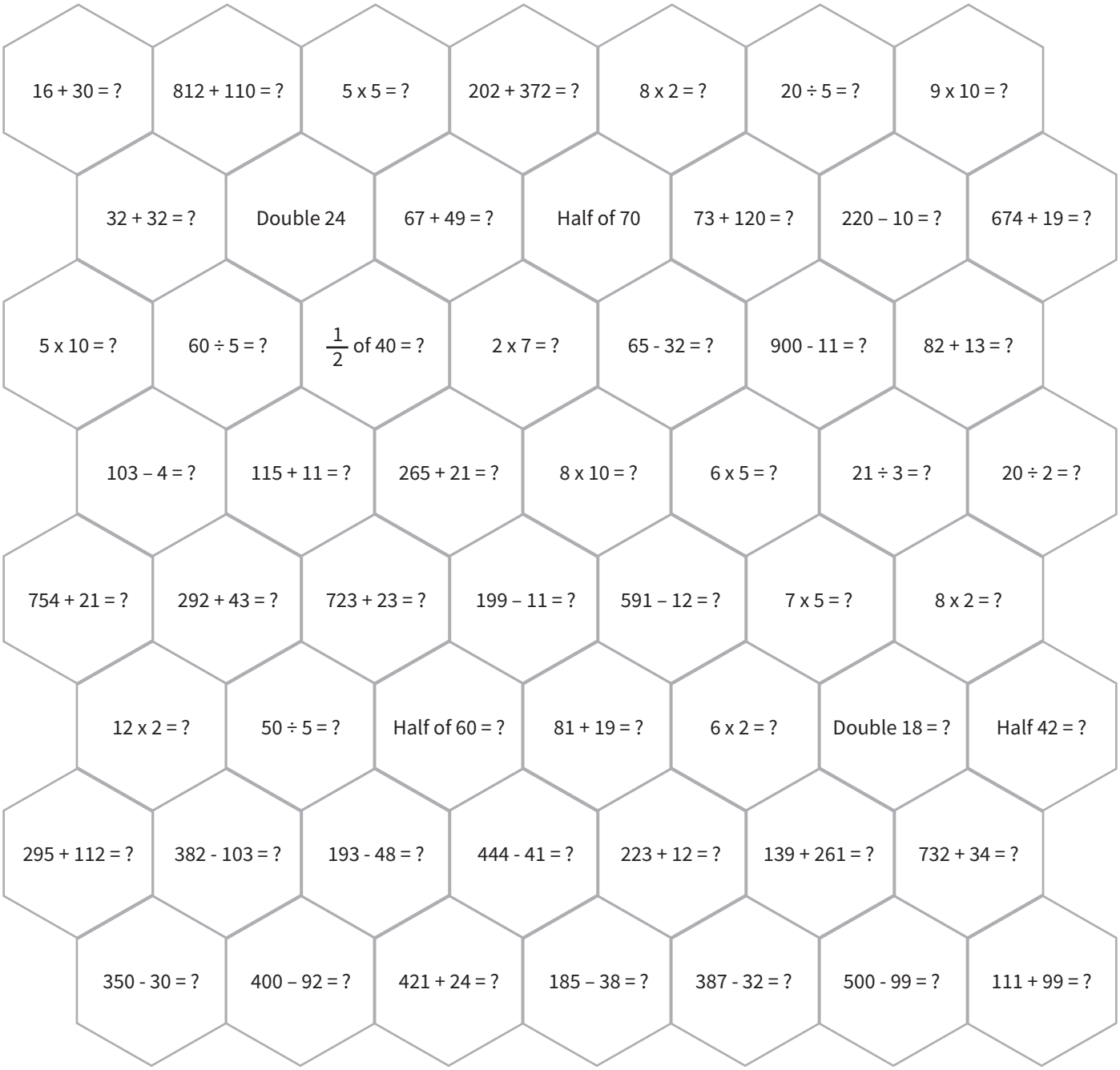
and the person who won was _____

The second time I played, I played against _____

and the person who won was _____

Challenge 18 Sheet Unicorns vs Giants

Unicorn's House



Giant's House

19 Who Creates the Most Washing Up?

You will need:
- Challenge 19 Sheet

Your challenge:

- Can you find out who creates the most washing up in your house?

Things to remember:

1. This activity involves helping out with the washing up for a week. People at home generate a LOT of dirty dishes. But who in your house generates the most?
2. Before you begin, predict who you think will create the most washing up over the next week.
3. I think that the following person will make the most is:

   _____
4. Over the next week, use the Challenge 19 Sheet to record your results. In the table, record how many items of washing up each person in your house generates. Think about how you can record this data – will you use a tally?
5. Next create a pictogram of your results.
6. Then, write down four things you can tell from the data on your Challenge 19 Sheet. For example, who creates the least washing up? Who creates the most?
7. The person who created the most washing up was

   _____

20 The Great Maths Bake Off

You will need:
- A recipe for something yummy
- Ingredients
- An adult to help you

Your challenge:

- Bake something tasty and find the hidden maths.

What to do:

1. Cooking is so much fun! But did you know it involves a lot of amazing maths too?
2. Work with an adult to bake something yummy. Need an idea of some recipes? Head to bit.ly/TSLrecipes to get some ideas. Have fun in the kitchen, and then fill in the details below. What did you make, and what maths skills did you think you used!?

I made: _____

The maths I used was

_____

_____

Challenge 19 Sheet Who creates the most washing up?

A. Use the table below to help you record your data.

Family member's name	**Mon**	**Tues**	**Wed**	**Thur**	**Fri**	**Sat**	**Sun**	**Total**

B. Put your results for the total amount of washing up made into pictogram. Remember to think about the scale you are going to use for your vertical axis.

Pictogram Title: _____

C. Now, use the lines below to write at least four things that you can tell from your data.

Resource Sheet 1

0	1	2	3
4	5	6	7
8	9	0	1
2	3	4	5