

Don't Forget Your Maths Pack!

20 Fun Holiday Maths Challenges

Year 5 to Year 6

Note to Children

Hooray! It's the summer holidays!

You've worked so hard this year, and learnt so many new things in Year 5 you deserve a big pat on the back. You also deserve to be able to start Year 6 in September still knowing what you know now – and not forget everything over the summer!

So in between your summer adventures and relaxing are you up for an extra challenge?

Your task is to complete 10 of the challenges in this special Don't Forget Your Maths! Pack. As well as being lots of fun, the challenges will help make sure all of the amazing maths that you have learnt in Year 5 sticks in your brain ready for your new learning adventures in Year 6.

Simply tick the challenges you have attempted and bring this pack back with you when school starts again in September!

Have fun!

Note to Parents and Carers

The summer holidays are finally here! Your child has worked hard all year learning all the maths we expect Year 5 pupils to know and now they deserve some rest and relaxation. BUT... this pack is here to make sure they also don't forget all that they've learnt and have some fun maths activities to keep them going over the summer!

There is lots of evidence that doing just a little bit of maths practice over the summer holidays will make it much, much easier for them to start the next term in September.

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, and most will fit into your day-to-day plans and life during the summer holidays.

We're setting a target for your child to complete 10 over the holiday which is only a couple of challenges a week. If children are struggling with their maths, just knowing that they can tick off a handful of challenges over the holidays will really boost their confidence and success when they move into Year 6 next term. Other children may want to do more and really push themselves. Do what's right for your child.

When they've done each challenge, do please date and sign it so the child knows it's important.

Thank you for your support, and we hope you and your child has fun with the challenge!

1 Shopping A-Round

Your challenge:

- Can you estimate the total cost of the food bill?

How to play:

1. Going food shopping with adults can be a bit boring can't it? So, let's try to make it more interesting...See how close you can get to the final cost of the items in your adult's trolley!
2. Use the table on Challenge 1 Sheet to keep track of the price of each item that gets added to your trolley and keep a running total of the cost. To help you, round each price to the nearest whole pound. For example, if something costs £1.48 you'd round it to £1 and if something costs £1.76 you'd round it to £2.

My estimated (rounded) total for the shop was £ _____

The actual cost (before any coupons etc) was £ _____

The actual cost was £ _____ higher/lower than my rounded estimate.

You will need:

- Challenge 1 Sheet

Completed on (date):

Adult's initials:

2 Place Value Duel

Your challenge:

- Can you make a larger four-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 six 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 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.

Who will be the champion?

I played with _____

The person who won was _____

You will need:

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

Completed on (date):

Adult's initials:

3 Multiplication Mosaic

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.
2. Colour in each square based on the key at the top of the sheet.

What picture will you reveal?

You will need:

- Challenge 3 Sheet
- Colouring pencils or felt tips

Completed on (date):

Adult's initials:

4 Who Creates the Most Washing

Your challenge:

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

Things to remember:

1. This one involves helping out with the washing for a week. (Sorry!) Families generate a LOT of washing, right? But who in your house generates the most washing?
2. Before you begin, predict who you think will create the most washing over the next week.
3. I think that the following person will make the most washing:

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

You will need:

- Challenge 4 Sheet

Completed on (date):

Adult's initials:

5 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 five rounds. Who will be the champion?

I played with _____

The person who won was _____

You will need:

- Digit Cards Resource Sheet
- A partner

Completed on (date):

Adult's initials:

6 Playing Games With Maths

Your challenge:

- Find the maths in your favourite board or card game.

How to play:

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

The game I played was _____

The maths I spotted in it was

You will need:

- Your favourite board or card game to play
- People to play it with

Completed on (date):

Adult's initials:

7 Get Arty!

Your challenge:

- Your challenge is to create a piece of art that is symmetrical and contains at least 6 obtuse angles.

Things to remember:

- Your piece of art needs to have at least one line of reflective symmetry. Remember, this means that one (or more) parts of the image would be identical after a flip (or reflection in a mirror).
- Your piece of art needs 6 obtuse angles. An obtuse angle is one that is over 90 degrees but under 180 degrees.
- You can create your artwork using any type of materials you like – you could create a collage, paint, colour or do anything else – it's up to you.
- Simply bring your piece of art in with your challenge sheet! Have fun being arty!

You will need:

- Plain paper
- Art materials

Completed on (date):

Adult's initials:

8 The Great Maths Bake Off

Your challenge:

- Bake something tasty and find the hidden maths.

What to do:

- Cooking is so much fun! But did you know it involves a lot of amazing maths too?
- 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!?
- Don't forget to then taste what you have made!

You will need:

- A recipe for something yummy
- Ingredients
- An adult to help you

I made: _____

The maths I used was

Completed on (date):

Adult's initials:

9 Two-handed Maths, Paper, Scissors

Your challenge:

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

How to play:

1. Stand and facing your partner. Make two fists and say together with your partner 'maths, paper, scissors' whilst 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 1 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), double the answer (e.g. 48×2) and call out the answer (e.g. 96).
4. The player to call the correct answer first, wins a point.
5. Record who wins each 'battle' in a simple table; the first player to 15 points wins!

I played with _____

The person who won was _____

You will need:

- A partner

Completed on (date):

Adult's initials:

10 Mystery Times Tables

Your challenge:

- Can you help solve a times table mystery?
- On Challenge 10 Sheet there are two times tables that have been written in code. Each digit has been replaced by a letter and the times tables have all been jumbled up!

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 times table is the 11 times table or the 1 times table? Does the number of single digit answers help you work out which times table it could be?
3. Solve the puzzle and record which digit each letter stands for on the challenge sheet.

Set 1 times table (Z) is _____

Set 2 times table (A) is _____

You will need:

- Challenge 10 Sheet

Completed on (date):

Adult's initials:

11 Product Hunt

Your challenge:

- How well do you know your numbers?

How to play:

1. You have the digits 6, 2, 7, and 3. You need to arrange them into a multiplication question like this: $TO \times TO = ?$ For example, you could make $23 \times 67 = ?$
2. In each question, you can only use each digit once. Work out the answer to your calculation, 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 11 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 11 Sheet to explain how you did this.

You will need:

- Challenge 11 Sheet

Completed on (date):

Adult's initials:

12 My Favourite Number

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.
2. Note 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 favourite 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.
5. Be as creative as you can with how you present your work. Why not help other people in your family to create a poster showing their favourite number too?

You will need:

- A piece of plain paper
- Colouring pencils or crayons

Completed on (date):

Adult's initials:

13 Trolls and Giants

Your challenge:

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

How to play:

1. Sit opposite your partner and decide who will be the troll and who will be the giant.
2. Place the grid from Challenge 13 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 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.

You will need:

- Challenge 13 Sheet
- A partner
- A counter each (you could make your own out of paper)
- Plain paper for any working out

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 _____

Completed on (date):

Adult's initials:

14 How Much Screen Time?

Your challenge:

- Ever wondered how much time you spend on a 'screen' (such as watching TV or using a tablet or computer) over two days? Well, let's find out!

Things to remember:

1. Use Challenge 14 Sheet to record the start and end time whenever you have 'screen time'.
2. Work out the length of time you spent on the screen.
3. At the end of two days, add up the total amount of time. How many hours and minutes have you spent on a screen? Remember – there are 60 minutes in an hour.

I spent _____ minutes on a screen over 2 days.

This is the same as _____ hours and _____ minutes.

You will need:

- Challenge 14 Sheet
- A pencil or pen
- A clock or watch

Completed on (date):

Adult's initials:

15 Proportion Hunting

Your challenge:

- Can you find the proportions all around us?

What to do:

1. On a plain piece of paper, write 'Proportions are all around us' in the middle.
2. Fill the rest of the paper with places you have seen fractions, decimals and percentages in real life over the holidays.
3. Perhaps you've been to a shop having a sale - did you see any percentages there? Have you shared some cake over the holiday? I bet you used fractions there. Look carefully, and you will find proportions everywhere!

You will need:

- A plain piece of paper

Completed on (date):

Adult's initials:

16 Proportion Snap

Your challenge:

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

How to play:

- Shuffle the cards from Challenge 16 Sheet and deal them between the players.
- Play just like you would do in 'normal' snap – take it in turns to turn over one of your cards and place it in the middle.
- 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:
 $\frac{1}{4}$ and $\frac{2}{8}$
 $\frac{75}{100}$ and 75%
 $\frac{1}{5}$ and 0.2
- The first player to get all of the cards wins! Try to play the game at least twice.

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 _____

You will need:

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

Completed on (date):

Adult's initials:

17 Money Problems

Your challenge:

- Maths problems are everywhere! Can you write at least 7 worded problems that involve money?

What to do:

- You could base your money problems on ways you have used money during the holidays, or you could make them totally up.
- Try to write problems that involve different operations – could you create problems that involve more than one operation? Bring in the sheet of problems with your challenge sheet in September!

You will need:

- A sheet of lined paper

Completed on (date):

Adult's initials:

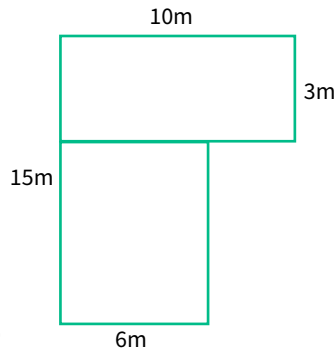
18 What's the Area?

Your challenge:

- Can you find the area of your garden?

Things to remember:

1. The area is the space inside a shape or area.
2. To help you, draw a rough outline of the space you are measuring on a piece of plain paper, and mark on the side lengths that you measure. Bring this piece of paper in with you with your challenge sheets in September!
3. You may need to split the shape up into different shapes to work out the total area – have a look at the example garden to see how we have split up the garden to help.
4. Think about how you are going to measure the side lengths, and what unit you will use. No garden? No Problem! Measure the area of a room in your house instead.



The area of my _____ is _____

You will need:

- A tape measure or ruler
- A large area to measure the perimeter of
- Plain paper

Completed on (date):

Adult's initials:

19 Decimal Compare!

Your challenge:

- Are you ready for a fast-paced game with a partner?

How to play:

1. Cut up the cards from Challenge 19 Sheet. Shuffle them and deal them between both players.
2. At the same time turn over a card each. The player who has the largest value number has 5 seconds to collect the cards and add them to their pile – if they don't collect in time, then the other player gets the cards.
3. The person who gets all the cards first wins!

Play the game at least twice – can you win both 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 _____

You will need:

- The cards from challenge sheet 8.
- A partner to play with

Completed on (date):

Adult's initials:

20 Tug of War

Your challenge:

- Why not play a maths version of Tug of War?

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 250,000 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, 45,658). The player who is adding adds these to 250,000 (e.g. $250,000 + 45,658 = 295,658$). The result of this calculation is your new running total.
3. The player who is subtracting goes next. They turn over 5 digits, make it into a five-digit number 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 450,000 they win, and if the player who is 'subtract' gets the running total below 50,000 they win!

Who will win the tug of war?

I played with _____

The person who won was _____

You will need:

- Digit Cards Resource Sheet
- A partner
- Paper to keep a track of your score

Completed on (date):

Adult's initials:

Challenge 3 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?

Brown: 3, 6, 7, 8, 18, 21, 24, 28, 32, 35, 49, 42, 60, 70

Pink: 9, 15, 27, 30, 40

Black: 21, 56, 84

Blue: Any other number

| | | | | | | | | |
|-----------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|------------------|-----------------|
| $4 \times 8 =$ | $3 \times 8 =$ | $4 \times 8 =$ | $4 \times 7 =$ | $3 \times 7 =$ | $7 \times 1 =$ | $4 \times 8 =$ | $7 \times 10 =$ | $6 \times 7 =$ |
| $3 \times 8 =$ | $10 \times 3 =$ | $2 \times 4 =$ | $7 \times 12 =$ | $8 \times 4 =$ | $8 \times 7 =$ | $7 \times 4 =$ | $3 \times 5 =$ | $10 \times 7 =$ |
| $7 \times 7 =$ | $3 \times 3 =$ | $7 \times 6 =$ | $7 \times 10 =$ | $1 \times 3 =$ | $3 \times 2 =$ | $7 \times 10 =$ | $8 \times 5 =$ | $1 \times 7 =$ |
| $6 \times 10 =$ | $2 \times 8 =$ | $3 \times 6 =$ | $4 \times 6 =$ | $3 \times 7 =$ | $5 \times 7 =$ | $9 \times 2 =$ | $8 \times 0 =$ | $6 \times 8 =$ |
| $5 \times 5 =$ | $7 \times 0 =$ | $10 \times 6 =$ | $7 \times 3 =$ | $7 \times 8 =$ | $12 \times 7 =$ | $6 \times 10 =$ | $12 \times 7 =$ | $9 \times 6 =$ |
| $5 \times 6 =$ | $6 \times 6 =$ | $11 \times 3 =$ | $7 \times 10 =$ | $7 \times 7 =$ | $7 \times 5 =$ | $3 \times 1 =$ | $11 \times 3 =$ | $8 \times 6 =$ |
| $3 \times 9 =$ | $6 \times 12 =$ | $5 \times 12 =$ | $3 \times 9 =$ | $5 \times 8 =$ | $9 \times 3 =$ | $0 \times 6 =$ | $3 \times 0 =$ | $7 \times 12 =$ |
| $11 \times 6 =$ | $6 \times 9 =$ | $3 \times 6 =$ | $7 \times 5 =$ | $6 \times 4 =$ | $2 \times 3 =$ | $4 \times 2 =$ | $10 \times 12 =$ | $6 \times 11 =$ |
| $3 \times 0 =$ | $9 \times 2 =$ | $7 \times 7 =$ | $6 \times 10 =$ | $8 \times 3 =$ | $7 \times 8 =$ | $4 \times 7 =$ | $3 \times 1 =$ | $9 \times 3 =$ |

Challenge 4 Sheet Who creates the most washing?

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

| Family member's name | Mon | Tues | Wed | Thur | Fri | Sat | Sun | Total |
|----------------------|-----|------|-----|------|-----|-----|-----|-------|
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B. Make a bar chart of your results for each person's totals

Put your results for the total amount of washing made into a bar chart. 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: _____

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

D. Complete this sentence:

After collecting my data, the person who created the most washing in the house was

Challenge 13 Sheet Trolls vs Giants

Troll's House

87 x 3 = ? 754 + 8321 = ? 76 x 2 = ? Half 620 = ? 6758 + 8432 = ? 54,328 + 43,382 = ? 78,769 - 12,382 = ?

56 ÷ 3 = ? 82 x 6 = ? 8,433 + 435,3820 = ? 999,000 - 106,992 = ? 875 + 832 + 212 = ? 765 x 2 = ? 76 x 12 = ?

8754 - 3281 = ? 7674 + 832,832 = ? 876 - 84 = ? 64 x 37 = ? 874 ÷ 6 = ? 938 x 3 = ? Half of 675 = ?

1.5 + 1.6 = ? 65 + 382 = ? 76.4 + 1.7 = ? 65 x 4 = ? 85,843 + 832,321 = ? 765,743 - 483,943 = ? 994 + 994 = ?

Double 765 = ? 765 + 832 = ? 8,654 + 8,843 = ? 76,843 + 84,483 = ? 43,434 + 54,332 = ? 786 + 32,321 = ? 65,323 - 843 = ?

7603 + 989 = ? 765 + 878 = ? 68 + 854 = ? 8794 - 982 = ? 7930 - 4596 = ? 3888 - 2325 = ? 7932 - 4865 = ?

794 x 4 = ? 85 x 32 = ? 675 ÷ 4 = ? 794 ÷ 5 = ? 35,239 + 8,432 = ? 8764 + 44,3821 = ? 665,584 - 5743,832 = ?

99,888 + 999,999 = ? 54 x 33 = ? 85 x 3 = ? 382 ÷ 6 = ? 65.4 + 39.2 = ? 543 + 7684 = ? 3765 + 4573 = ?

Giant's House

Challenge 16 Sheet Proportion Snap

| | | | | |
|----------------|----------------|----------------|----------------|------------------|
| $\frac{1}{2}$ | 0.25 | $\frac{2}{4}$ | $\frac{1}{2}$ | $\frac{4}{8}$ |
| 0.75 | $\frac{3}{4}$ | $\frac{5}{10}$ | $\frac{1}{3}$ | $\frac{6}{8}$ |
| $\frac{1}{5}$ | 0.5 | $\frac{2}{6}$ | $\frac{9}{12}$ | $\frac{3}{9}$ |
| $\frac{5}{15}$ | $\frac{2}{10}$ | 0.75 | $\frac{3}{5}$ | $\frac{25}{100}$ |

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

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

$$\frac{2}{5}$$

$$\frac{2}{5}$$

$$\frac{4}{5}$$

$$\frac{4}{5}$$

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

$$\frac{2}{5}$$

40%

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

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

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

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

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

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

$$\frac{4}{10}$$

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

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

0.5

0.25

0.75

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

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

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

50%

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

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

0.2

0.4

0.8

Challenge 19 Sheet Decimal Compare!

0.43

0.34

0.44

0.67

0.76

0.68

0.69

0.96

0.45

0.54

0.53

0.52

0.70

0.3

0.4

0.5

0.23

0.32

0.31

0.1

0.98

0.89

0.99

0.97

0.79

1.43

1.01

0.01

0.05

0.09

0.9

0.17

0.71

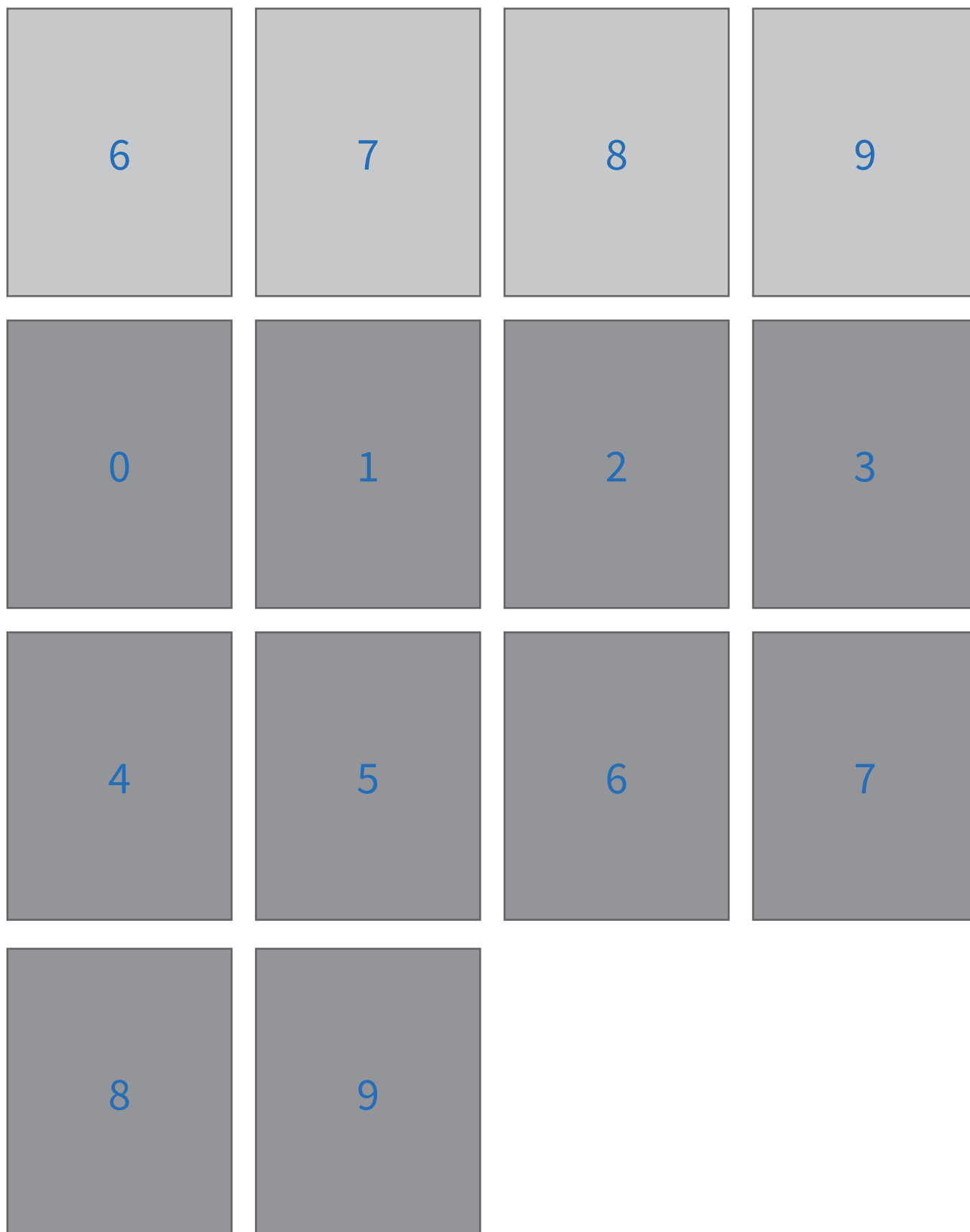
0.81

0.18

0.77

Resource Sheet 1

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



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- Plug any gaps or misconceptions

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Lisa Graham

Deputy Headteacher
St Hugh's Church of England Primary School

My tutor shows me what to do to get it right. If I make a mistake I have to try and work it out myself and then they help me.

Child

Year 6



For Schools:



thirdspacelearning.com

For Families:



matr.org