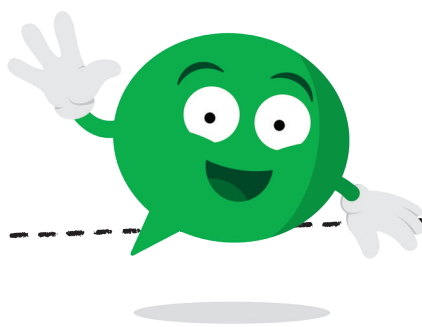


# Buddy's key challenge



## What is Buddy's Key Challenge?

Buddy's Key Challenge is a game where pupils solve maths related puzzles to find pieces of a key.

For each correct answer, the teacher can reveal a hidden piece of the key. There are ten pieces that make up the key, like a jigsaw.

Once all the pieces have been revealed, the key can be used to unlock a magical door for Buddy to come through to visit the school.

The challenge could be timed and played across the year group or school, with times up on a leader board. The winners will be the class that puts the key together and finds Buddy in the fastest time.

## How to raise money

Pupils can be sponsored by family and friends to take part in Buddy's Key Challenge. Families can raise money via JustGiving or by using printed sponsor forms and paying via your school's chosen donation method. If you need support in setting up your school's JustGiving or ParentPay page, please follow the instructions on the Number Day resources page, or you can email us at [numberday@nspcc.org.uk](mailto:numberday@nspcc.org.uk)

## What you need:

- A printout of the key, cut into ten pieces – one piece for each question
- Pupil question sheet for the teacher to read
- A pupil handout for each table, or as required
- Pencils and paper (for workings)
- A JustGiving page for the school or a printed sponsor form for each pupil/family, so parents can pay in money using ParentPay or the school's chosen donation option
- A timer (optional)
- A printout of Buddy

## How to play:

1. Print out the image of the key and cut it into ten pieces.
2. Put Buddy somewhere out of sight in the classroom.
3. The teacher will hold nine parts of the key. One piece of the key is to be placed by the window closest to the door, to work as the answer for question 5. The pupils need to get the answers correct in order to secure the pieces of the key.
4. Read Buddy's story to set the scene.
5. Start the timer (if using).
6. For each question, give the children some time to come up with an answer. Ask the pupils to raise their hands if they think they have the correct answer, and choose one of them to share with the class. If they get it right, a piece of the key can be revealed.
7. Once all ten pieces are secured and the key assembled, the class has succeeded and can find Buddy in the school!
8. Stop the timer (if using) and record how long it took the class to complete Buddy's Key Challenge.

## Story

Buddy lives in a magical forest where he has been visiting schools through a special door in an enchanted tree. He really wants to visit **<insert name of your school>** but the door is locked and there's a problem with the key: when Buddy sent the key to you, it got broken into ten pieces!

Can you help Buddy by answering the questions to solve the clues and find the pieces of the key around your classroom? Once the key is put together, you'll be able to open the magical door for Buddy and find him in your school. You need to put the key back together before the other classes. Good luck!

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## Questions

The following questions should be read to the class:

- The first clue will be easy.  
I know you will be great!  
Can you tell me the answer  
when you multiply 6 by 8?
- 3 children were in a pool,  
and 7 more jumped in,  
and then another 13.  
How many children went for a swim?
- A rectangle has 4 sides.  
A square has 4 sides too.  
A decagon has 10 sides  
To make 18 sides, what must you do?
- Add 10 to 45.  
Then add on 23.  
Subtract 10 from what you have.  
Now, what number do you see?
- Complete the printed word search that's on the  
pupil handout to reveal a hidden piece of the key.
- If two is company and three is a crowd,  
what is four and five?
- Using only addition and the number 8,  
how can you add eight 8s to make to 1,000?
- Work out the total by breaking the code.  
(This question is on the pupil handout):
- An anagram is a word or phrase made up  
of the letters of another word. These are all made up  
from maths related words. Can you work them out?  
(This question is on the pupil handout):
- For this question, you have the numbers 2, 4, 6 and  
8, along with the multiply sign 'x', the addition sign  
'+' and the equals sign '='. What is the largest number  
you can make? You may only use each digit and sign  
once, but you don't have to use all the signs.

## Answers

- 48
- 23
- Add them together
- 68
- By the window nearest the door
- 9
- $888 + 88 + 8 + 8 + 8 = 1,000$
- 241
- a) ARC, b) ANGLE, c) ODD, d) TRIANGLE,  
e) DECAGON, f) KILOMETRE, g) NUMBER,  
h) ESTIMATE, i) FACTOR, j) BILLION
- The favourite answer for this puzzle is 5,248,  
which is achieved by  $82 \times 64$ . Well done if you got  
that. But, if you want to stretch your mind, you might  
come up with 8,642. Yes, just the digits written down  
will give a larger answer! Note that the rules said  
that the signs did not have to be used. And if you are  
using a calculator and you're a real whizz you can get  
the incredible answer of 74,684,164. You get this by  
pressing  $8642 \times =$  on the calculator.



# Buddy's key challenge



# Number Day

## Pupil handout

Answer the questions in the space below:

- 1.
- 2.
- 3.
- 4.
5. Find the following words (they are only horizontal and vertical) and colour them in, then starting in the top left and going across each line write the first 27 letters that have not been used – that will spell out the location of the next part of the key:

Maths	Add	Triangle	Odd
Calculate	More	Orb	
Divide	Five	Times tables	
Area	Square	Ten	
Multiply	Pi	Quarter	
Nine	Sums	Cube	

M	A	T	H	S	B	Y	T	H	E	W	I	N
D	D	O	W	U	N	E	A	P	R	E	S	T
T	D	O	T	M	U	L	T	I	P	L	Y	H
E	D	O	O	S	O	R	I	Q	S	E	V	N
C	W	D	S	N	F	F	M	M	P	Q	Z	I
A	Y	D	I	V	I	D	E	H	C	U	N	N
L	L	P	O	G	V	D	S	Q	U	A	R	E
C	L	M	O	R	E	T	T	T	N	R	Q	F
U	W	K	R	Y	I	V	A	X	O	T	E	N
L	A	N	B	O	C	U	B	E	P	E	V	B
A	R	M	Z	R	P	J	L	D	A	R	E	A
T	R	I	A	N	G	L	E	Z	M	M	B	P
E	G	C	H	J	D	E	S	Q	Y	O	L	L

6. If two is company and three is a crowd, what is four and five?
7. Using only addition and the number 8, how can you add eight 8s to make to 1,000?
8. Work out the total by breaking the code:

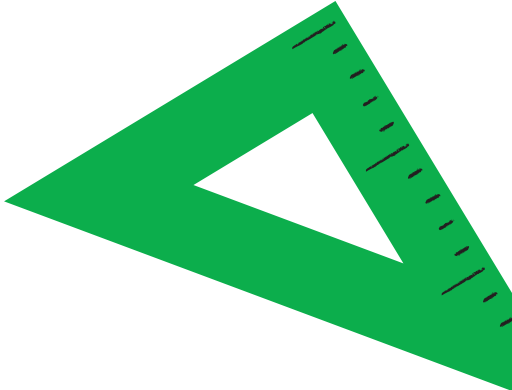
$$\begin{array}{cccc}
 \text{Buddy} & = & 5 & \text{Buddy with pencil} & = & 100 & \text{Buddy with pencil and abacus} & = & 20 & \text{Buddy with book} & = & 7
 \end{array}$$

$$\text{Buddy} + \text{Buddy with pencil} - (\text{Buddy with pencil} \div \text{Buddy}) + (\text{Buddy with pencil} \times \text{Buddy with book}) = ?$$

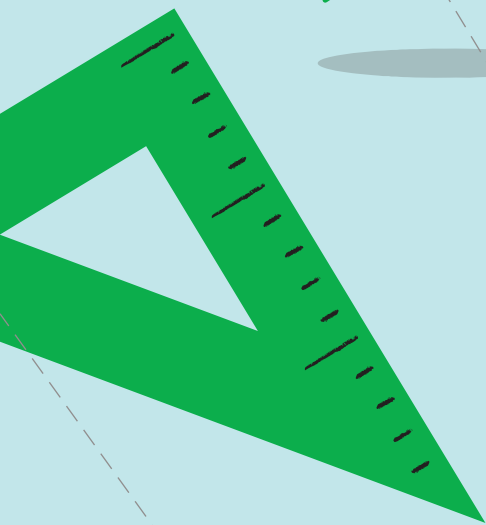
9. An anagram is a word or phrase made up of the letters of another word. These are all made up from maths related words. Can you work them out?
 

A) CAR	B) ANGEL	C) DOD
D) TRAIN LEG	E) CAGEDON	F) MOLERKITE
G) RENUMB	H) SITE TEAM	I) A CROFT
J) LIB LION		

10.



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