



THIRD SPACE  
LEARNING

# Place Value Concertina Resource: How to Make and Use

Place value made easy for Years 2 to 6

# Introduction

Place value never goes away does it? The underpinning of all our work with primary school pupils, it's essential for pupils to understand place value in order to access the KS1 and KS2 Maths curriculum. But it can be difficult to embed it fully, especially with some of the misconceptions that abound.

Not any more.

Follow the instructions to create and use this resource and you will never again hear the misconception:

"To multiply a number by 10 you just need to add a 0 to the end of a number." The resource is a really simple concertina made from a piece of card, with another piece of card used to create the numbers for the slots. It is great to make as part of a lesson with older children (who then often go on to make more for at home) or you can make them easily for a class of children for younger year groups.

To help you make your own Place Value Concertina we've included instructions on how to make it and use it, and, at the end a template you can print out and copy.

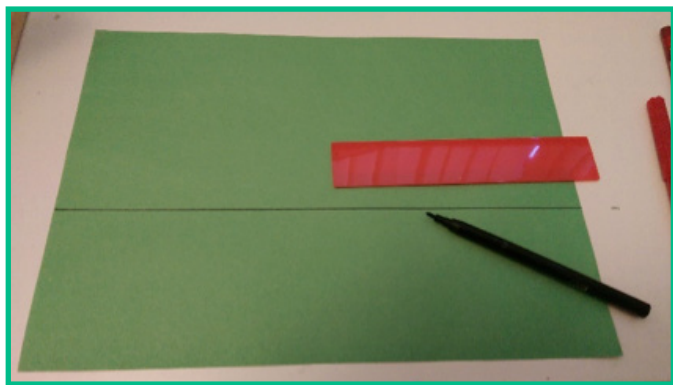
Let us know how you get on!

# How to Make Your Place Value Concertina

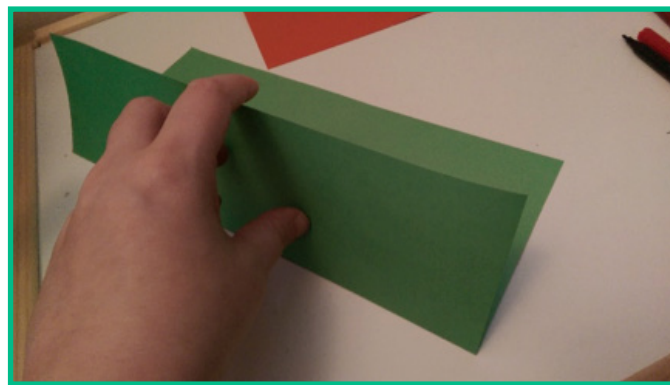
## What you will need

- 2 A4 sheets of coloured card (preferably two different colours)
- Scissors
- A felt tip pen
- A pencil
- A ruler
- Templates provided (if required)

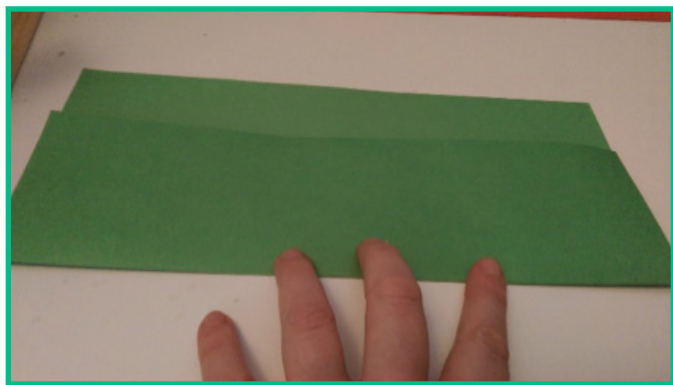
## Instructions



Step 1 Draw a line approximately 1/3 up from the bottom of the first sheet of card (landscape layout).



Step 2 Fold up from the bottom along the line. Use a ruler to keep the line straight.

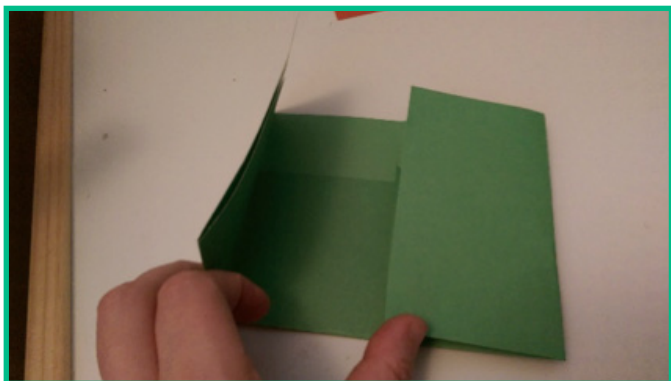


Step 3 Press down along the folded line.

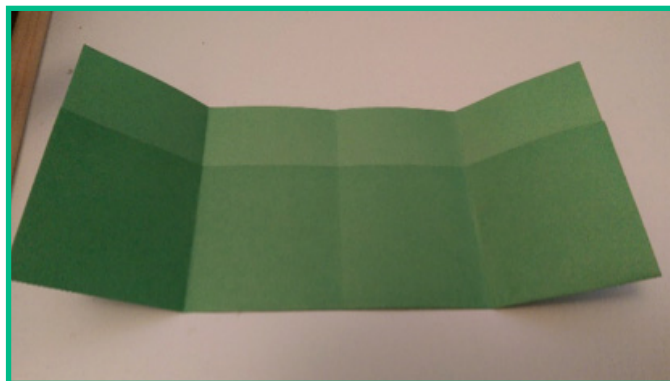


Step 4 Fold in half lengthways. Then open out again.

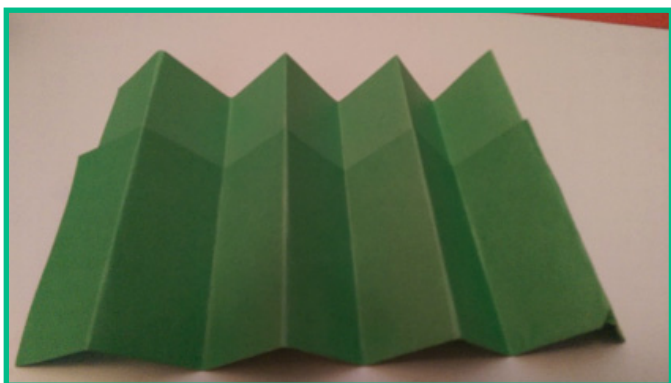
## Place Value Concertina Resource: How to Make and Use



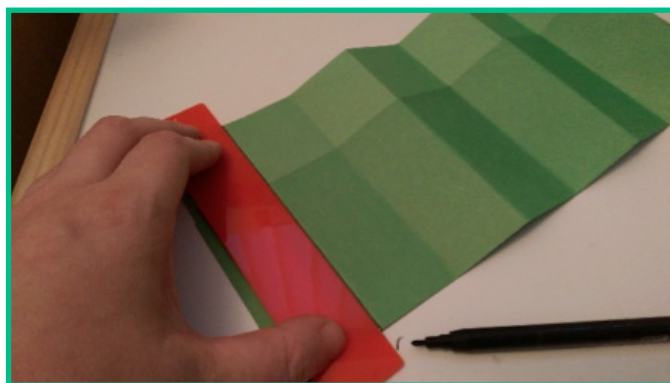
Step 5 Fold each half in to the centre fold to create 2 further folds.



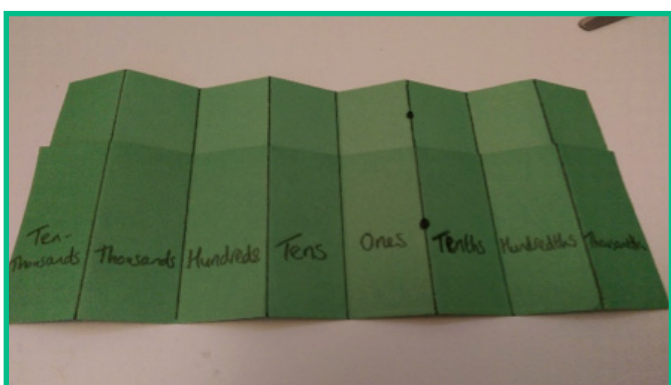
Step 6 Open the quarters back out flat again.



Step 7 Create a concertina by folding each section in half towards the fold, then folding back the other way – until you have 8 sections as seen here.



Step 8 Using the felt tip, draw a line down each fold.



Step 9 Label each of your columns – ensure that you make the decimal point clear in both the lower and upper sections.

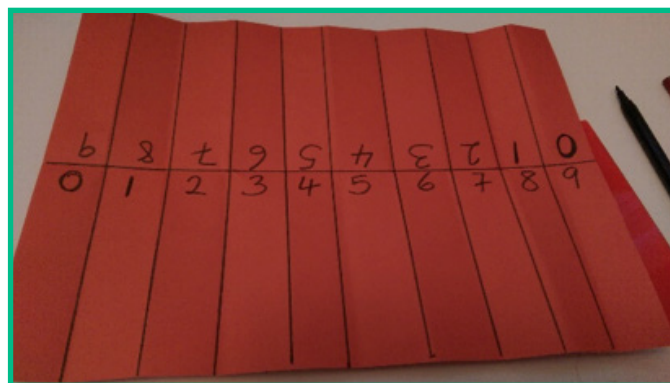


Step 10 Now take your second piece of card.

## Place Value Concertina Resource: How to Make and Use



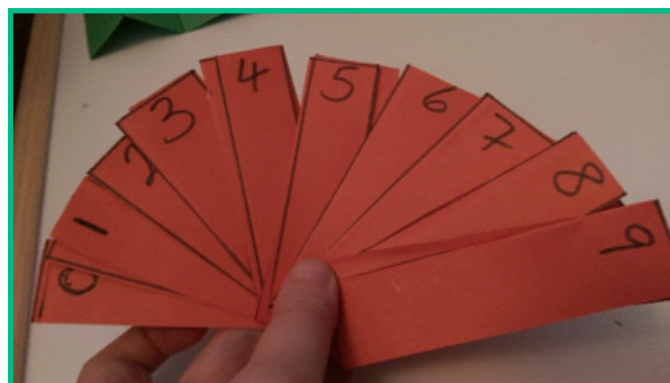
Step 11 Fold in half lengthways.



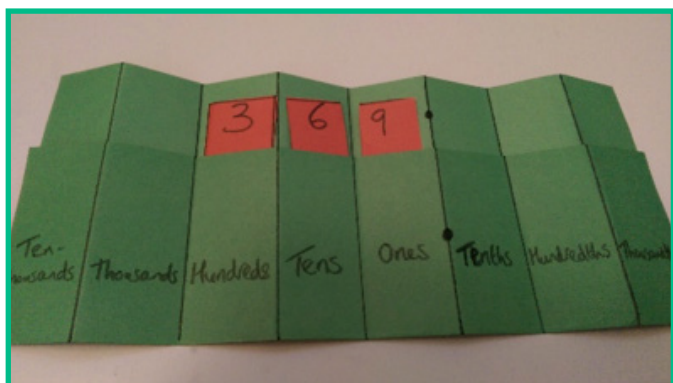
Step 12 Using a ruler, draw a line across the centre line then draw lines across the width of the card to create 10 columns (20 sections in total). You may prefer to do this with pencil first in case of mistakes. Then write the digits 0-9 on each set of 10. Ensure the digits are written at the top of each strip as shown.



Step 13 Cut out each of the sections to create all of your number strips.



Step 14 Collect all of the strips and put them into number order.



Step 15 Use the number strips in your Place Value Concertina.

# How to Use Your Place Value Concertina

## Instructions

Once you've made your concertina, simply ask students to make a number. In this example (right) we have made 369.

## Multiply by 10

Then ask them to multiply by ten, by moving the numbers one column each to the left.

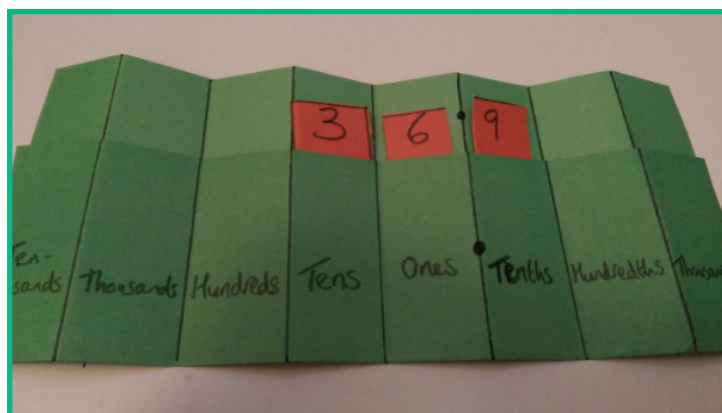
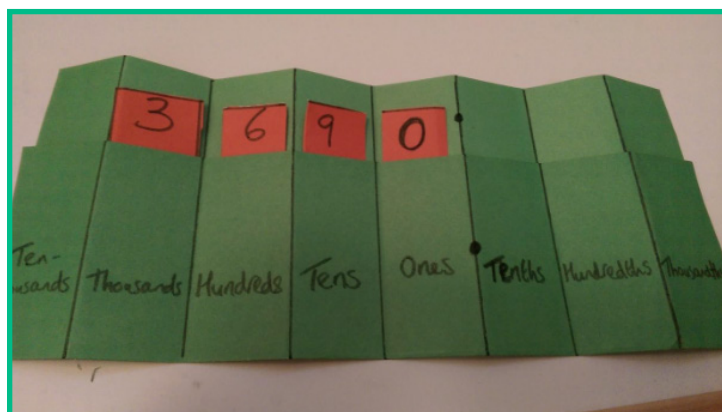
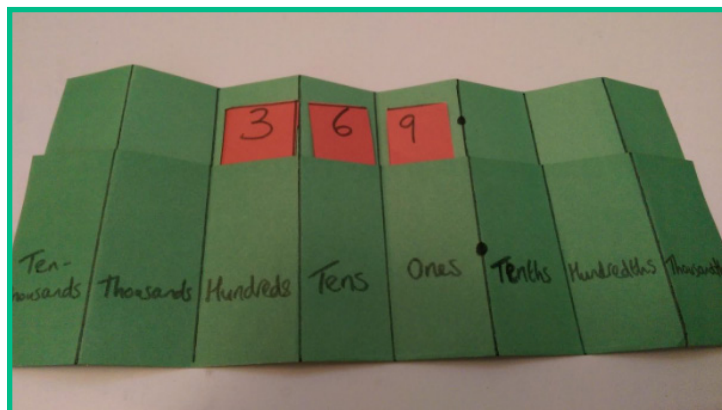
They will also need to add a zero as the place holder for the Ones column. Not for nothing did my class always call it Zero the Hero (see image middle right).

## Divide by 10

If you want to divide 369 by 10 then you simply move the numbers one column each to the right as seen in the picture (bottom right).

Pupils are quick to pick up the idea and process of physically moving the digits. This embeds the concept for them correctly, helping them to move on to bigger numbers and more complex concepts.

You can also move on to multiplying by 100, moving two columns left and needing two Zeros and so on.



The concertinas take a short time to make and can be easily folded up to store in folders or drawers so they are always on hand when you need them. You can keep a class set or the children can decorate their own on the back to personalise them.

### Activity ideas

My pupils have always loved this resource and we play games with them including me calling out clues for a number and them adding the right digits into the columns to show the answer.

I am a three-digit number. My tens digit is 6 less than my ones digit and 1 less than my hundreds digit. If you multiply me by 7, the estimated product is 1,400. What number am I?

(For more tricky ones I might ask them to work in pairs or groups).

Ask children to each make a number (you may want to specify for example a 3-digit or 2-digit number or a number with 1 decimal place) in their concertina. They can then show their number to a partner and together try adding/ subtracting one number from the other. This will help to reinforce place value in addition and subtraction.

### How to adapt

You can easily adapt this resource by only making 4 columns (with no decimal places) if using in Key Stage 1 or change the column names as needed.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>



Ten thousands	
Thousands	
Hundreds	
Tens	
Ones ●	
Tenths	
Hundredths	
Thousandths	

### Like this resource?

Thanks to Jodie Lopez and her Year 6 primary teacher for creating this brilliant resource. For more free resources like this sign up at:

[www.thirdspacelearning.com/blog](http://www.thirdspacelearning.com/blog)

At Third Space Learning, we are Maths specialists who have delivered more than 100,000 online lessons to pupils in England and Wales. Our 1-to-1 interventions boost pupils' confidence, accelerate their progress and raise their attainment in Maths.

"With Third Space, our pupils improved by 2-3 sub-levels in only one term. One of the major benefits of 1-to-1 tuition is the individual interaction and feedback each pupil receives from their tutor. This really boosted their confidence and has been reflected in their class work."

Kevin Imbush, Somers Heath Primary School 2014

"Our Third Space pupils were all low ability, but they absolutely smashed their Maths SATs!"

Alex Knight, Edwalton Primary School 2016

### Get in touch

If you have pupils who struggle in Maths and would benefit from 1-to-1 Maths tuition that is personalised to their own learning gaps, visit

[www.thirdspacelearning.com](http://www.thirdspacelearning.com) and book a demo. Our schools team would be delighted to talk to you.