

# Year 4 Decimals: A Step-by-Step Guide for Parents

This step-by-step explanation to year 4 decimal numbers can help you support your child's learning at home. The subject is broken down into manageable chunks, providing you with a simple guide to follow when learning about year 4 decimal numbers, either to support your child's homework or if you decide to give your child some extra support. In this guide, you will find a step that matches your child's level of understanding and then have suggested activities which can be used to support that step.

Within **this area of the website**, you will find a selection of resources intended to help your child learn about each step of this guide. Each step also contains a keyword or phrase that you can use to search the Twinkl site for more resources and activities, designed to support your child in achieving that stage. Simply type the keyword or phrase into the search bar and press enter to explore together.

recognising tenths and hundredths



Click here



We hope you find the information on our website and resources useful. The contents of this resource are for general, informational purposes only. This guide is intended to offer parents general guidance on what subject areas tend to be covered in their child's year group and where they could support their children at home. However, please be aware that every child is different and information can quickly become out of date. There are some subject areas that we have intentionally not covered due to the nature of how they are taught or because a trained professional needs to teach these areas. We try to ensure that the information in our resources is correct but every school teaches the national curriculum in its own way. If you would like further guidance or are unsure in any way, we recommend that you speak to your child's teacher or another suitably qualified professional.

# Decimals

## What Are Children Taught about Decimal Numbers in Year 4?

In year 4, children are taught to:

- Recognise that tenths are made when dividing an object by 10 and hundredths are made when dividing an object by 100. They will learn to write these as both fractions ( $\frac{1}{10}$  and  $\frac{1}{100}$ ) and as decimals (**0.1** and **0.01**).
- Recognise and write decimal equivalents of any number of tenths or hundredths (for example,  $\frac{3}{10}$  can be written as 0.3 or 0.56 can be written as  $\frac{56}{100}$ ).
- Count up and down in tenths and hundredths.
- Compare numbers with the same number of decimal places (for example, being able to say that 3.67 is a smaller number than 3.68).
- Find the effect of dividing one- or two- digit numbers by 10 and 100, identifying the digits in the answer as **ones, tenths** and **hundredths**.
- Round numbers with one decimal place to the nearest whole number (for example, 3.6 would round to 4).
- Recognise and write decimal equivalents to  $\frac{1}{4}$ ,  $\frac{1}{2}$  and  $\frac{3}{4}$  (i.e. **0.25, 0.5** and **0.75**).

This guide can help you support the learning of year 4 decimal numbers at home. Each step contains an explanation to that stage and a link to an appropriate resource which can be used at home to support your child's learning.

As well as using the resources in this category and the keyword searches to help your child with decimal numbers, below are a few ideas of games and activities to help your child practise learning decimal numbers at home.

### Food for Thought

Fractions and decimals can be modelled with food at home. Look for opportunities to make fractions with foods that can be cut into smaller pieces such as cakes and pizzas. Try to cut things into ten pieces and discuss the fraction and the decimal with your child (each piece is  $\frac{1}{10}$  or 0.1). State what fraction you have eaten and then ask your child to do the same. For example, if you have eaten three slices of the pizza, you could say, 'I have eaten  $\frac{3}{10}$  or 0.3 of the pizza'.

### Decimal Counting

Play a game of decimal counting with your child to see how far you can go before making a mistake. To do this, one person chooses a starting decimal number and you must decide if you will count up or down and by how much each time. Then the next person says the next number in the decimal sequence. For example, if you decided to start on 0.22 and count up in hundredths, the next numbers in the sequence would be 0.23, 0.24, 0.25, 0.26 etc. Continue to take turns to do this until somebody makes a mistake.

### Decimal Card Game

Cut a piece of card into small squares, all the same size. Write a selection of decimal numbers on the cards, all with the same number of decimal places (i.e. 1 or 2 decimal places). Then, ask your child to order the numbers from smallest to biggest. Once completed, ask your child to explain how they knew to place the numbers in that order.

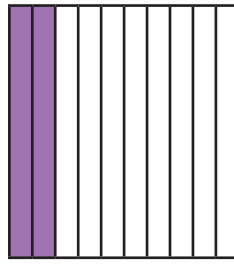
### Make a Decimal Poster

This is a fun way for your child to show what they know about decimal numbers and to help them revise decimals. Challenge them to make a poster showing equivalent decimals and fractions. They could use pictures to show fractions pictorially and then label them with the fraction and decimal, such as 0.3 and  $\frac{3}{10}$ .

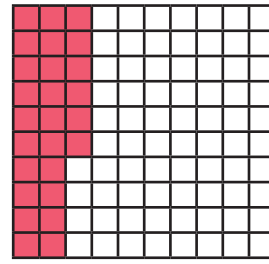
## Step 1

### Recognising Tenths and Hundredths

In school, children are often introduced to the concept of tenths and hundredths with diagrams such as these squares:



$$\frac{2}{10} \text{ or } 0.2$$



$$\frac{26}{100} \text{ or } 0.26$$

In these two examples, you can see that the first square has been broken down into ten equal parts and the second square has been broken into 100 equal parts. These two squares represent the numbers 0.2 and 0.26. Diagrams like these will be used in school to introduce children to the topic of tenths and hundredths and to show fraction and decimal equivalents. From these two representations, children can also see that ten-hundredths is equivalent to one-tenth using the diagrams. Place value cards can also be used to show how to write these pictures in numbers. Try using this **Place Value Support Desk Mat** at home to help your child.

T Tens 10	0 Ones 1	t Tenths 0.1 $\frac{1}{10}$	h Hundredths 0.01 $\frac{1}{100}$

Using a place value chart, you can show your child how to place the number of tenths in the tenth column and the number of hundredths in the hundredth column. They need to understand that if there is no whole number, a zero needs to be placed before the decimal point.

At home, try this **Year 4 Fractions: Tenths and Hundredths Activity Pack** to help your child recognise and write tenths and hundredths as decimals.

### Writing Any Fraction of Tenths and Hundredths as a Decimal

Once children have seen the visual representations of tenths and hundredths and placed decimal numbers onto a place value chart, they should now be able to make the link between the decimal (such as, 0.72) and the fraction (such as,  $\frac{72}{100}$ ). After using visuals in Step 1 to help children make this link, the next step is to remove the visuals to see if they can still identify equivalent fractions and decimals.

Use the place value chart suggested in Step 1 to support your child. Try these **Fraction and Decimal Equivalent Matching Cards** at home to help your child practise matching fractions and decimals. Try cutting out the cards and turning them upside down. Take it in turns at turning two cards over and trying to find a matching pair. The winner is the one with the most matching pairs at the end.

## Step 2

# Step 3

## Counting and Comparing Decimals

Once children have developed an understanding of tenths and hundredths, they can begin to count in and compare decimal numbers. At home, you can help your child by counting in tenths and hundredths out loud together, for example: 0.3, 0.4, 0.5 or 1.32, 1.31, 1.30, 1.29.

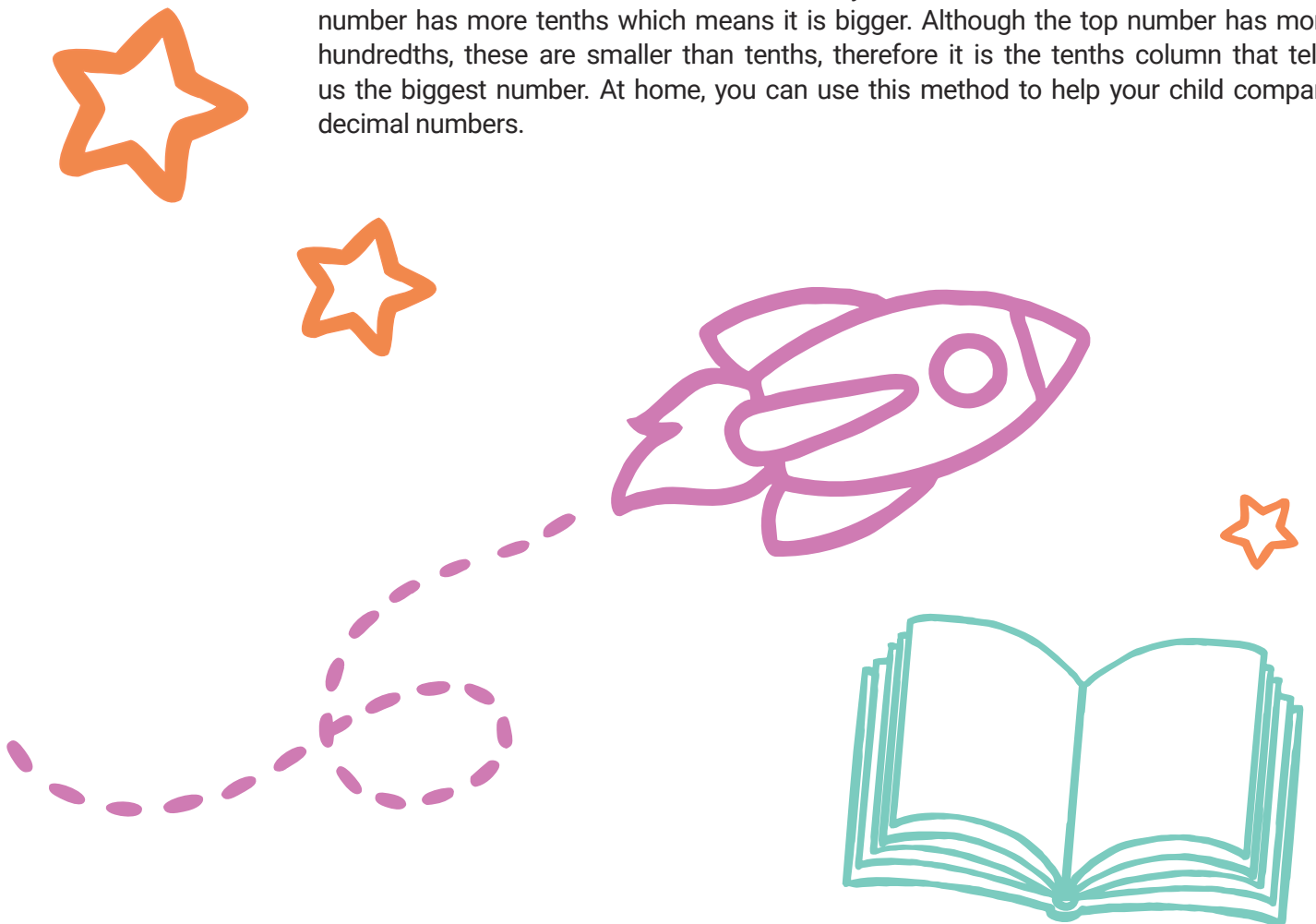
You could challenge your child by saying a decimal number and asking your child which number would come next or which number would go before it. You can use this **Counting in Decimals Number Line** to help your child practise this.

They can then use this knowledge to help them order and compare decimal numbers. Try this **Ordering Decimal Numbers Activity** at home to help your child practise comparing decimal numbers by placing them in order from smallest to largest. If your child struggles with this, use the **Place Value Support Desk Mat** to help your child compare the numbers.

For example, if we place the following numbers in a place value chart:

Ones		tenths	hundredths
2	●	3	8
2	●	5	4

Going from left to right, compare the numbers column by column. In the example above, both numbers have two ones. However, when you look at the tenths column, the second number has more tenths which means it is bigger. Although the top number has more hundredths, these are smaller than tenths, therefore it is the tenths column that tells us the biggest number. At home, you can use this method to help your child compare decimal numbers.



## Step 4

### Dividing 2 Digit Numbers by 10 and 100

When dividing a number by 10 or 100, children need to understand that the number is being split into 10 or 100 equal parts and gets 10 times, or 100 times, smaller. A great way to do this at home is by using a place value chart and counters, as shown below. Show your child a number on the place value chart using the counters provided. For example, if you wanted to show the number 42, place four counters in the tens column and place two counters in the ones column:

Tens	Ones	tenths	hundredths
● ● ● ●	● ●		

Explain to your child that when you divide by 10, the number gets 10 times smaller, therefore you move the number one place to the right. The new number would be 4.2. You can show this by moving the counters on the place value chart.

Tens	Ones	tenths	hundredths
	● ● ● ●	● ●	

Do this with lots of different examples. Once your child is familiar with dividing by 10, explain to your child that when you divide a number by 100, the number gets 100 times smaller. Therefore, you have to move the number two decimal places to the right. 42 would now become 0.42. You can show this again using the place value chart.

Tens	Ones	tenths	hundredths
		● ● ● ●	● ●

You must emphasise the importance of placing a 0 in the ones column as a place holder, to show that there are no ones.

Once you've played this activity several times with your child to help familiarise them with dividing by 10 and 100, why not try this **Dividing by 10 and 100 Worksheet?**

## Step 5

### Rounding Decimal Numbers to the Nearest Whole Number

A whole number is a number without a fraction or decimal. In year 4, children are taught to round decimals to the nearest whole number. To do this, they need to use the tenths column to help them decide whether to round a number up or not. If the tenth column contains 5 or above, we round up. For example, 5.7 would round to 6. If the tenth column contains 4 or less, we round down. For example, 5.4 would round to 5 as the nearest whole number.

In school, a number line is usually used to introduce this as it allows the child to see which whole number the decimal is closest to. For example:

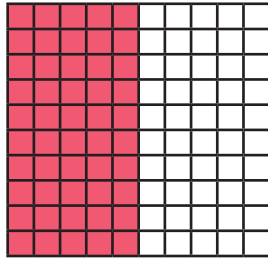


On the number line above, you can clearly see that 0.7 is closer to one than it is to zero. Try these **Rounding Decimals Differentiated Worksheets** at home to help your child practise this skill at home.

# Step 6

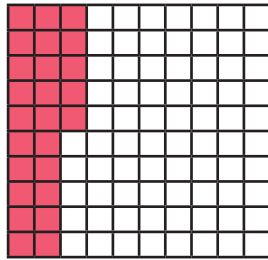
## Recognise and Write Decimal Equivalents of $\frac{1}{2}$ , $\frac{1}{4}$ and $\frac{3}{4}$

In year 4, children need to learn that  $\frac{1}{2} = 0.5$ ,  $\frac{1}{4} = 0.25$  and  $\frac{3}{4} = 0.75$ ; this is often done with pictures so that children can clearly see why the fractions make those decimals. For example:

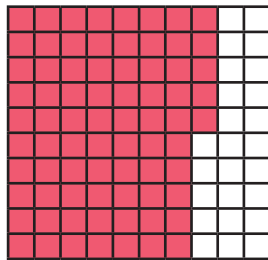


$$\frac{1}{2} = 50/100 = 5/10 = 0.5$$

Using this method, children can see why  $\frac{1}{2}$  is the same as 0.5. The same can be done for  $\frac{1}{4}$  and  $\frac{3}{4}$ .



$$\frac{1}{4} = 25/100 = 0.25$$



$$\frac{3}{4} = 75/100 = 0.75$$

At home, you could work with your child to make a poster to show equivalent fractions and decimals. This can be displayed in their bedroom to help them remember the fractions and decimals. Use this **Fractions, Decimals and Percentages** poster for ideas and inspiration.



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Imagine resources are designed to help your children to think creatively, question and imagine. Every week, a new topic consisting of five photos, each with related activities, is created.



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