Fractions, Decimal and Percentages Prior Assessment Question 15:
Objective: I understand and identify the value of decimal digits.

NC: NFDP 7 identify the value of each digit in numbers given to three decimal places.

Teacher Input Ideas:

- Create a large place value grid outside or in the classroom with columns for hundreds, tens, ones, tenths, hundredths and thousandths. Ask children to write a digit on to a piece of A4 paper. Create different numbers using the digits and the grid. Discuss where the digit has been placed and the value of the digit. Encourage the children to use key vocabulary such as tenths, hundredths and thousandths. Ensure the children understand why the digits have been placed in each column and why decimals are needed. You could use visual representation alongside this such as a rectangle with ten sections to represent a chocolate bar or a 100-square grid that you can clearly show tenths and hundredths. Discuss what thousandths are too and what these would look like.
- Calculator game: children to explore creating decimals on a calculator. Children could explore dividing 4 and 5 digit amounts by 1 or 2 digit numbers to see the result they get. Children explore the decimals they create and discuss the value of the digits that appear on the screen. Children should only discuss they value of the first 3 digits after the decimal.
- Children to have own place value charts and digit cards. Children could explore different numbers they can make. Encourage children to think about the value of the digits and to think about how they can make the largest number possible with the cards. Place 8 digits on to the board and children to choose 5 to make the largest number possible. Encourage children to talk about their decisions and how they used their understanding of place value. Place some zeroes in with the sets of numbers to make it more challenging.
- Partner games: encourage children to make numbers to 3 decimal places using digit cards. Children could take it in turns to pick a card from a pile. Children could draw a grid with 5 boxes. Children to place the digit they select in to the grid in the best position possible to either make the largest or smallest number. They will have to think about the value of the digit and the position to place it.

Practice Activities

Purple Practice: Most suited for children who made errors in Question 15 and have little understanding of place value after the decimal point.

Practical: Introduce the place value chart on the purple support sheet. Discuss the columns with the children and the value of these. Discuss what is normally placed between the ones digits and the tenths in numbers. Discuss what the purpose of the decimal point is.

Children to be given digit cards to place into different columns. The children could either create their own numbers and then explain the value of each digit or an adult could give a number verbally or an instruction such as 7 tenths for the children to place the cards in to the correct place. Encourage the children to use vocabulary such as tenths, hundredths and thousandths. Children could then record the number they have created on to a white board, ensuring they include the decimal point, and then the children could write how many tenths, hundredths and thousandths the number has.

Challenge: Children could be given 5 similar amounts and then they should order from smallest to largest using the decimal digits to help.

Green Practice: Most suited for children who made errors in Question 15 and will benefit from developing their use of vocabulary for numbers to 3 decimal places.

This activity encourages children to identify the value of decimal digits and use the correct vocabulary to identify their worth. The children are also presented with amounts that use the digit 5. They are to use the correct vocabulary to identify their value. This also provides the opportunity for children to apply the use of the correct vocabulary for whole numbers such as the value of 5 is fifty or five hundred rather than 5 tens.

Yellow: Most suited for children who show understanding in Q15 and will benefit from applying this knowledge to order amounts.

The children can be presented with this activity as a support sheet or the children can cut up the blocks and complete it in groups or pairs by selecting 5 blocks at a time. The children should look at the value of the digits in the number to help to order them. Encourage children to challenge themselves by selecting blocks which have the same tens and units, which then requires the children to look solely at the worth of the decimal digits. Some children may make errors when they are presented with 1 decimal digit and 3 digits to compare and when zeroes are used as a place holder.

Mastery: The children are presented with an open-ended challenge of creating 5 different numbers, that when ordered can be arrange from the largest to the smallest amount. The children need to decide where to place the digit cards, encouraging them to think about the position and their worth. The children can only use odd digit cards for the start of the number and the children will have to place zeroes into the number where they feel most appropriate. This activity should provide lots of opportunities for talk about the value of digits, the children's thought process and methods they have used to complete the task.

Further Mastery opportunity: you could use this opportunity to check the children's fluency of dividing and multiplying by 10, 100, 1000 etc. The children could create different numbers and then either x or ÷ by 10, 100, 1000 etc. Once they have performed this, they can discuss what has happened to the value of the digits using key vocabulary from the lesson.

Answers:

Green:

1)

b) five tenths c) one tenth, six hundredths and five thousandths
d) one tenth, zero hundredths and nine thousandths
e) Zero tenths and two hundredths
f) one tenth and six hundredths

2)

a) five hundred b) fifty c) five hundredths
d)five thousand, five e) five tenths f) five thousandths

Mastery:

Encourage children to share their answers as a class or group. Encourage children to discuss how they went about the challenge and that there are many different possible answers.

BRICKWORK
Mathematics

Purple Practice

Practical Resource

Thousandths	
Hundredths	
Tenths	
Ones	
Tens	
Hundreds	

BRICKWORK Mathematics

Green Practice

Lo: I can identify the value of digits to three decimal places.

1) Write the value of the digits after each decimal point:

a) 12.97

For example:
nine tenths
seven hundredths

b) 190.5

c) 8.165

d) 272.109

e) 54.02

f) 18.160

2) Write the value of the digit 5 in every number below:

1590.87

859.01

1000.15

5345.190

123.590

7.245

BRICKWORK Mathematics

Yellow Practice

LO: I use my knowledge of the value of decimal digits to order numbers.

Pick 5 blocks at a time and order from the largest amount to the smallest amount.

Challenge: explain how you used your knowledge of place value to order the numbers. Can you discuss how many tens, tenths, hundreds each number has?

48.803	48.09	84.132
48.9	47.913	408.09
84.02	48.007	84.2
48.1	84.12	408.1
84.008	408.50	408.6

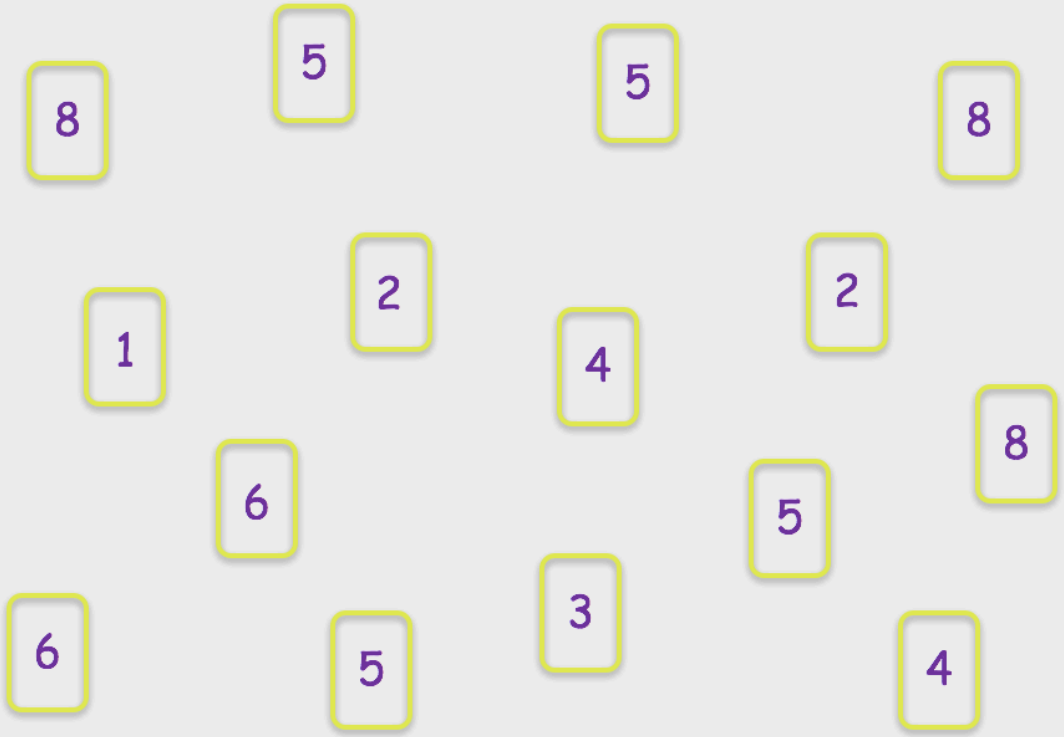
BRICKWORK Mathematics

Mastery

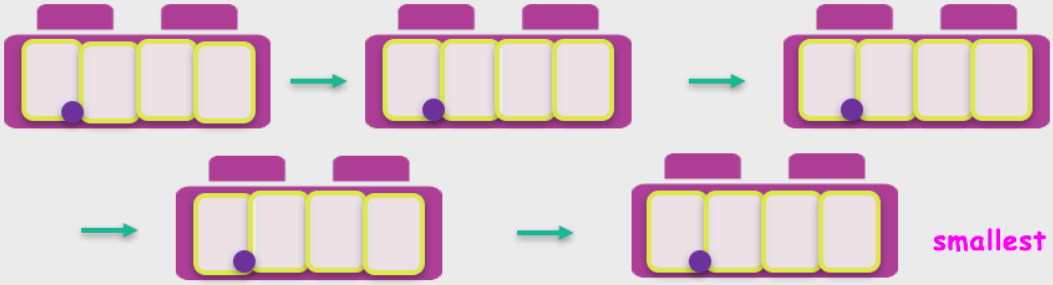
Use the digit cards below to make 5 numbers which can be ordered from the largest amount to the smallest amount.

Rules:

1) Each number card can only be used once.
2) All the numbers must start with an odd digit.
3) There are only 15 digit cards. Use zeroes for any empty places.



largest



smallest