

Diagnostic Quiz

Number: Number and Place
Value

Pre-topic Test 1

Year 5

Y5 Number and Place Value Assessment 1

Name.....

Date..... Class.....

School..... Score.....



Please tick your answer to each question, like the example below. You can use any space left below a question for your working out, if you need it.

Example question

3. What fraction of the shape is shaded blue?



Select the equivalent fraction below.

- a) ☐ $\frac{2}{5}$ b) ☐ $\frac{6}{4}$ c) ☒ $\frac{3}{5}$ d) ☐ $\frac{3}{2}$

1. Match 607,002 to its written form.

- a) ☐ sixty-seven hundred and two
b) ☐ six hundred and seven thousand and two
c) ☐ six hundred and seventy-two
d) ☐ six thousand and seventy-two

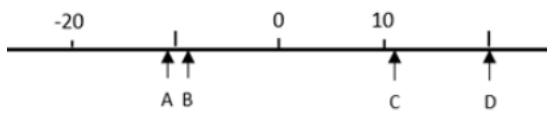
2. What is 84 in Roman numerals?

- a) ☐ LXXXIV
 - b) ☐ VIIIIV
 - c) ☐ DCCCIV
 - d) ☐ XV
-

3. What is the value of the digit 8 in 482,300?

- a) ☐ eighty
 - b) ☐ eight
 - c) ☐ ten thousand
 - d) ☐ eighty thousand
-

4. What arrow is pointing to -11?



- a) ☐ A
 - b) ☐ B
 - c) ☐ C
 - d) ☐ D
-

5. Mrs Robinson's new sofa costs two thousand and forty pounds.
What numerals are written on the price tag?

- a) ☐ £2,040
 - b) ☐ £20,040
 - c) ☐ £240
 - d) ☐ £2,00040
-

6. Which is the largest number?

- a) ☐ 510 hundreds
 - b) ☐ 50100 ones
 - c) ☐ 501 thousands
 - d) ☐ 5100 tens
-

7. The table shows the number of times each online video had
been liked in a week. Which video had the least number of likes?

Video	Number of likes
Monkey Mayhem	568,999
Rocket Launch	590,000
Billy the Beatboxer	599,999
Pie Eating Contest	586,999

- a) ☐ Monkey Mayhem
- b) ☐ Rocket Launch
- c) ☐ Billy the Beatboxer
- d) ☐ Pie Eating Contest

8. Which number has a digit with a value of four thousand?

- a) ☐ 40,850
 - b) ☐ 854,000
 - c) ☐ 8,405
 - d) ☐ 400,508
-

9. Round 29,563 to the nearest 1000.

- a) ☐ 30,563
 - b) ☐ 29,600
 - c) ☐ 29,000
 - d) ☐ 30,000
-

10. Arrange the numbers in descending order:

45678 78645 67854 84756

- a) ☐ 45678 67854 78645 84756
 - b) ☐ 67854 84756 45678 78654
 - c) ☐ 87654 87654 87654 87654
 - d) ☐ 84756 78645 67854 45678
-

11. 14,942 men, 15,210 women and 3070 children attended a cricket match.

Which is the best estimate of the total attendance?

- a) ☐ $15,000 + 15,000 + 3,000$
- b) ☐ $14,942 + 15,210 + 3,070$
- c) ☐ $14,000 + 15,000 + 4,000$
- d) ☐ $14,940 + 15,210 + 3,070$



12. 12,440 is how much more than 12,340?

- a) ☐ 100
- b) ☐ 1000
- c) ☐ 140
- d) ☐ 24,780

13. What number lies between 6123 and 6321?

- a) ☐ 6222
- b) ☐ 198
- c) ☐ 12,444
- d) ☐ 5321

14. If:



What number do these symbols make?



- a) ☐ 313
b) ☐ 3013
c) ☐ 3022
d) ☐ 30212



15. The school wanted to buy new turf for the football pitch that was 124 metres (m) in length. The caretaker rounded the amount of turf needed to the nearest 10 metres (m). Why was this a bad decision?

- a) ☐ He rounded to 130m which would be too much turf and would waste the school's money.
b) ☐ There wouldn't be enough turf because he rounded it down to 120m.
c) ☐ He rounded to 110m which would be too much turf and would waste the school's money.
d) ☐ It wasn't a bad decision. It was the right decision.
-

16. What is the rule in this sequence?

45708 46608 47508 48408

- a) ☐ Count on by 9
 - b) ☐ Count back by 100
 - c) ☐ Count on by 1000
 - d) ☐ Count on by 900
-

17. The thermometer read 8°C at the start of the day. By midnight, the temperature had dropped by ten degrees. What was the temperature at midnight?

- a) ☐ 18°C
- b) ☐ -3°C
- c) ☐ 2°C
- d) ☐ -2°C



18. Marvin, the tailor has 394,499 buttons to sort. He throws five thousand broken buttons in the bin and sews one hundred onto garments that have missing buttons. How many buttons does he have left to sort out?

a) ☐ 399,599

b) ☐ 389,399

c) ☐ 388,499

d) ☐ 390,399



19. Four children were all given five chocolate bars each. They all compared how much chocolate they had left. Who had eaten the most chocolate?

a) ☐ Wayne had $\frac{1}{12}$ bars left.

b) ☐ Bridget had $\frac{1}{14}$ bars left.

c) ☐ Raj had 2 bars left.

d) ☐ Kristof had 3 bars left.



20. $IX + DI = ?$

a) ☐ 512

b) ☐ 510

c) ☐ 509

d) ☐ 234



21. The temperature of Zainab's freezer was -18°C . When she defrosted it, the temperature rose to 20°C .

What is the difference between the two temperatures?

a) ☐ 2°C

b) ☐ 38°C

c) ☐ 37°C

d) ☐ -38°C



22. Last week, Steven decided to count his large collection of marbles. He started by counting each marble one-by-one up to 59 and then decided he would count on in groups of 20 to make it easier. What number would he say if he did this?

- a) ☐ 119
- b) ☐ 129
- c) ☐ 70
- d) ☐ None of the above



23. At the festival, Peggy sold 230,000 ice-creams rounded to the nearest 10,000. What is the smallest possible amount of ice-creams she could have sold?

- a) ☐ 234,999
 - b) ☐ 220,000
 - c) ☐ 225,000
 - d) ☐ 240,000
-

24. Sukhman was working out roughly how much money he had spent so far over the month. He was paid £1781.30 on 1st January. He spent £70 on his food shopping and £200 on bills in the first week. Round the amount he had left after the first week to the nearest ten pounds.

a) ☐ £1778.61

b) ☐ £1511.30

c) ☐ £2050

d) ☐ £1510



25. The festival holds 4567 people. The drinks stall has to order enough bottles of water so that everybody gets a drink. Each box holds 10 bottles. Estimate how many boxes will need to be ordered so that everyone at the festival can have a bottle of water.

- a) ☐ 4570 boxes
- b) ☐ 457 boxes
- c) ☐ 45670 boxes
- d) ☐ 456 boxes



Y5 Number and Place Value Assessment

Answer Sheet

1. Match 607,002 to its written form.

Checks the ability to write numbers as words.

- a) Reads 60, 700 and 2 as separate entities. Lacks understanding of the relevance of zeros as place holders. Lacks knowledge of column values in the number system.

- b) Correct answer.

- c) Ignoring zeros as placeholders which has changed the value of the digits.

Understanding of the number system may not have extended beyond hundreds, tens and ones.

- d) Ignoring zeros as placeholders which has changed the value of the digits.

Has been introduced to the number system beyond hundreds, tens and ones.

2. What is 84 in Roman numerals?

Checks ability to translate into Roman numerals.

- a) Correct answer.
- b) Has recognised 8 (VIII) and 4 (IV) but has not understand how to write multiples of 10.
- c) Has mistaken 80 for 800 (DCCC) but has understood 4 (IV).
- d) Misconception that smaller numbers need less digits. Lacks understanding of how Roman numerals are formed.

3. What is the value of the digit 8 in 482,300?

Checks ability to determine the value of a digit in relation to the other digits' positions.

- a) Has identified the value of 8 in relation to the 4 and 2. May lack knowledge of place value beyond hundreds.
- b) Can relate the numeral to the word, but has not understood the meaning of the 'value' of a digit.
- c) Has identified the value of the column in which 8 is placed, but has not established the actual value of the digit 8.
- d) Correct answer.

4. What arrow is pointing to -11?

Checks the understanding of number order when including negative numbers.

- a) Correct answer.
- b) Has identified where -10 is. Has misunderstood that the position of -11 is further away from 0 than -10.
- c) Has identified 11. Lacks knowledge of negative numbers.
- d) Has incorrectly identified the spaces between each point on the number line and lacks knowledge of negative numbers and their positions.

5. Mrs Robinson's new sofa costs two thousand and forty pounds. What numerals are written on the price tag?

Checks the ability to read numbers as words and identify them in their numerical form.

- a) Correct answer.
- b) Lacks knowledge of thousands columns.
- c) Lacking basic place value knowledge up to and beyond hundreds.
- d) Has read the numerals as independent parts (2000 and 40).

6. Which is the largest number?

Checks understanding of quantity value.

- a) 51,000 - Understands that hundreds are worth more than tens or ones, but has not recognised the connection with d) in that they are worth the same. Lacks knowledge of thousands and their value.
 - b) 50,100 - Has visualised this as a larger number based on the amount of digits shown. Needs consolidation of value within columns.
 - c) 501,000 - Correct answer.
 - d) 1,000 - Understands that tens are larger than ones, but has not recognised the connection with a) in that they are worth the same.
-

7. The table shows the number of times each online video had been liked in a week. Which video had the least number of likes?

Checks ability to compare numbers up to one million.

- a) Correct answer.
 - b) Has considered the amount of zeros instead of checking the column with the greatest value.
 - c) Has chosen the greatest number of likes.
 - d) Does not understand the concept of comparing numbers.
-

8. Which number has a digit with a value of four thousand?

Checks understanding of column values.

- a) Has knowledge of thousands but has misunderstood the value of the column in which 4 is placed.
- b) Correct answer.
- c) Lacks understanding of how to read numbers (eight thousand, four hundred and five). May not have knowledge of numbers beyond hundreds.

- d) May have knowledge of the thousands but may not be familiar with the 'family of three' in the thousands column.
-

9. Round 29,563 to the nearest 1000.

Checks ability to apply understanding of exchanging process in the context of rounding.

- a) Has added 1000 and not understood the concept of rounding.
 - b) Has rounded to the nearest 100.
 - c) Many not have understood that 500 – 900 are closer to the next 1000, or has ignored/not understood the exchange between the thousands and ten thousands columns.
 - d) Correct answer.
-

10. Arrange the numbers in descending order:

45678 78645 67854 84756

Checks ability to order numbers based on their value.

- a) Has arranged the numbers in ascending order. Misunderstanding of terminology.
 - b) Has arranged numbers at random. Lacks understanding of terminology and the numbers' worth.
 - c) Has arranged the digits in descending order. Terminology of 'digit' and 'number' is misunderstood.
 - d) Correct answer.
-

11. 14,942 men, 15,210 women and 3070 children attended a cricket match. Which is the best estimate of the total attendance.

Checks use of rounding to estimate.

- a) Correct answer.
- b) Lacks understanding of the word 'estimate'.
- c) Inconsistencies in knowledge of rounding; when to round up and when to round down.

- d) Understanding of rounding to the nearest 10, however needs to consolidate understanding of estimation and why it is used.
-

12. 12,440 is how much more than 12,340?

Checks ability to count backwards in powers of 10.

- a) Correct answer.
 - b) Has identified a change in one digit but has identified the wrong column.
 - c) Is unable to visualise the change in only one digit/column.
 - d) Has found 12,340 more than 12,440.
-

13. What number lies between 6123 and 6321?

Checks understanding of comparing and ordering 4-digit numbers.

- a) Correct answer.
 - b) Has found the difference between the two numbers. Has not read/understood the question properly.
 - c) Has found the sum of the two numbers. Has a lack of understanding of the meaning of 'between'.
 - d) Has found a number less than both original numbers. Has not understood the significance of 'between'.
-

14. What number do these symbols make?

Checks ability to unitise.

- a) Has counted the objects with no regard for their value.
- b) Has knowledge of place value and can use placeholders correctly. Needs to use concrete and pictorial methods to consolidate ability to unitise.
- c) Correct answer.

- d) Has placed 12 in the ones column, changing the value of every digit in the number. Needs to consolidate understanding of the number system regarding exchanging;

$$3 \times \star = 12$$

which is equal to one ten and two ones.

15. The school wanted to buy new turf for the football pitch that was 124 metres (m) in length. The caretaker rounded the amount of turf needed to the nearest 10 metres (m). Why was this a bad decision?

Check understanding of rounding in context.

- a) Incorrect understanding of rounding. 124 is nearer to 120, not 130, so this answer is invalid.
 - b) Correct answer.
 - c) Lacks understanding that rounding to the nearest 10m signifies an ending that is a multiple of 10 depending on which is closer. Instead, has changed the last digits to 10. Also, this would not be enough turf.
 - d) Lacks basic knowledge of rounding.
-

16. What is the rule in this sequence?

45708 46608 47508 48408

Checks ability to notice patterns of change within number sequences.

- a) Has noticed a difference of 9 but has failed to give the value of this 9.
- b) Has recognised a change in the hundreds column and has identified the correct amount, but has disregarded the changes in the thousands column.
- c) Has recognised a change in the thousands column and identified the correct amount, but has disregarded the changes in the hundreds column.
- d) Correct answer.

17. The thermometer read 8°C at the start of the day. By midnight, the temperature had dropped by ten degrees. What was the temperature at midnight?

Checks ability to count backwards through 0.

- a) Has added 10 degrees.
 - b) Common mistake - didn't count through the zero.
 - c) Has not understood the non-commutative aspect of subtraction and switched the numbers around.
 - d) Correct answer.
-

18. Marvin, the tailor has 394,499 buttons to sort. He throws five thousand broken buttons in the bin and sews one hundred onto garments that have missing buttons. How many buttons does he have left to sort out?

Checks ability to count back in multiples of 10.

- a) Has identified the amount that the original number will change by, but has not identified the correct operation.
 - b) Correct answer.
 - c) Has the ability and understanding to carry out an exchange across columns. Has simply represented one hundred as one thousand.
 - d) Has identified a change in the thousands and hundreds columns. Lacks understanding of the necessity and flexibility of exchange across columns. Has counted back in the thousands column until zero, but was unable to count back further as soon as the column ran out of digits.
-

19. Four children were all given five chocolate bars each. They all compared how much chocolate they had left. Who had eaten the most chocolate?

Checks ability to compare numbers including rational numbers.

- a) Has not understood that the smaller denominator (2) is a larger portion of chocolate than

the greater denominator (4).

- b) Correct answer.
 - c) Lacks understanding of rational numbers. Has not given a logical answer.
 - d) Has found who had the most chocolate remaining. Hasn't made a connection that the more chocolate that was left means less had been eaten.
-

20. IX + DI = ?

Checks understanding of the different place value structure within Roman numerals.

- a) Has misunderstood the structure of some Roman numerals where 9 is written as 1 and 10. Child has connected these digits as 11.
 - b) Correct answer.
 - c) Understands the structure of Roman numerals. Miscalculated 9 + 501.
 - d) Random answer. Lacks knowledge of simple Roman numerals.
-

21. The temperature of Zainab's freezer was -18°C. When she defrosted it, the temperature rose to 20°C.

What is the difference between the two temperatures?

Checks ability to find the difference between positive and negative numbers.

- a) Understands the difference (between 18 and 20). Does not understand how the sign (-) completely changes the value of the number.
- b) Correct answer.
- c) Understands concept of negative numbers. Made common mistake of ignoring to count through the 0.
- d) Has misunderstood that the rising of the temperature moves in a positive direction. Has misunderstood the meaning of finding the difference.

22. Last week, Steven decided to count his large collection of marbles. He started by counting each marble one-by-one up to 59 and then decided he would count on in groups of 20 to make it easier. What number would he say if he did this?

Checks ability to count forwards in multiples of 10.

- a) Correct answer.
- b) Common mistake (missed out 109 when counting). Consolidate ten times table from various starting points to encounter the exchange across columns.
- c) Has disregarded the ones and simply added on 20 to 50.
- d) Gaps in basic addition, multiples of ten and relationship between columns in number system.

23. At the festival, Peggy sold 230,000 ice-creams rounded to the nearest 10,000. What is the smallest possible amount of ice-creams she could have sold?

Checks deeper understanding of the range of numbers that round to the same amount.

- a) Has found the greatest amount rather than the smallest. Has understanding of rounding.
- b) Has subtracted 10,000 from 230,000. Has not grasped concept of rounding.
- c) Correct answer.
- d) Has simply added the numbers together - has not grasped the concept of rounding.

24. Sukhman was working out roughly how much money he had spent so far over the month. He was paid £1781.30 on 1st January. He spent £70 on his food shopping and £200 on bills in the first week. Round the amount he had left after the first week to the nearest ten pounds.

Checks ability to solve multi-step problems using more than one skill.

- a) Has the ability to count backwards correctly. Has no knowledge of the significance of the decimal point; has ignored it and changed the value of the digits (178,130 - 270).
- b) Has correctly subtracted, but has neglected to complete the problem by rounding to the nearest ten pounds.
- c) Has rounded correctly to the nearest ten pounds, but has added instead of subtracted.
- d) Correct answer.

25. The festival holds 4567 people. The drinks stall has to order enough bottles of water so that everybody gets a drink. Each box holds 10 bottles. Estimate how many boxes will need to be ordered so that everyone at the festival can have a bottle of water.

Checks ability to estimate using rounding and dividing by 10, in context.

- a) Has rounded the people to the nearest 10 but has not considered that each box contains 10 bottles.
- b) Correct answer - has rounded to the nearest 10 and counted in powers of 10 correctly.
- c) Has multiplied the number of people by 10. Has not been able to breakdown and understand each step of the question.
- d) Has tried to round in order to estimate, but has rounded down instead of up to the nearest ten. 7 people will be without a bottle of water.