

Whole Numbers and the Number Line

Unit: Knowing Our Numbers - Student Practice Worksheet

Overview: Kabir said the smallest whole number was 1. Anaya said it was 0. Both had learned this from the same teacher, in the same classroom. Neither one was quoting it wrong — they were just talking about two different families of numbers, without realising it.

Practice Questions (30 Total)

Section A - Easy

Q1. On this number line, which marked number sits furthest to the left?



- ☐ A. 0
- ☐ B. 1
- ☐ C. 5
- ☐ D. 3

Q2. What is the smallest natural number?

- ☐ A. -1
- ☐ B. 1
- ☐ C. 0
- ☐ D. 2

Q3. What is the predecessor of 10?

- ☐ A. 11
- ☐ B. 10
- ☐ C. 9
- ☐ D. 0

Q4. Using the table and the two lists, which family is the only one that includes 0?

Natural: 1, 2, 3, 4, ...

Whole: 0, 1, 2, 3, 4, ...

- ☐ A. Natural numbers
- ☐ B. Negative numbers
- ☐ C. Fractions
- ☐ D. Whole numbers

Q5. Does the whole number line have a largest number?

- ☐ A. Yes, 100
- ☐ B. No, it never ends
- ☐ C. Yes, 1000
- ☐ D. Yes, 0

Q6. What whole number comes right after 6?

- ☐ A. 5
- ☐ B. 8
- ☐ C. 12
- ☐ D. 7

Q7. The red extra dot appears only on Anaya's line. What number is that extra dot?

Kabir — Natural Numbers



Anaya — Whole Numbers



- ☐ A. 0
- ☐ B. 1
- ☐ C. 4
- ☐ D. -1

Q8. Is 0 a natural number?

- ☐ A. Yes, always
- ☐ B. Yes, because it is a whole number
- ☐ C. No
- ☐ D. Only if it is written first

Q9. How many whole numbers are there from 0 through 4, counting both ends?

- ☐ A. 5
- ☐ B. 4
- ☐ C. 3
- ☐ D. 6

Q10. Kabir's line starts at 1. Which single change turns it into Anaya's whole-number line?

- ☐ A. Add negative numbers to the left
- ☐ B. Erase the dot at 1
- ☐ C. Add halves between the dots
- ☐ D. Add one extra dot at 0

Section B - Medium

Q11. The red dots sit strictly between 4 and 9. How many whole numbers is that?



- ☐ A. 6
- ☐ B. 5
- ☐ C. 4
- ☐ D. 3

Q12. Which statement correctly describes the two families?

- ☐ A. Natural numbers = whole numbers minus 0
- ☐ B. Whole numbers = natural numbers minus 0
- ☐ C. They share no numbers at all

- ☐ **D.** Natural numbers are always bigger

Q13. What is the successor of the predecessor of 20?

- ☐ **A.** 18
☐ **B.** 22
☐ **C.** 19
☐ **D.** 20

Q14. 15 sits to the right of 12 on this line. What does that tell you?



- ☐ **A.** 15 is larger than 12
☐ **B.** 15 is smaller than 12
☐ **C.** They are equal
☐ **D.** Nothing can be concluded

Q15. Kabir says every whole number has both a successor and a predecessor. Is this true?

- ☐ **A.** True for all of them
☐ **B.** False — 0 has no predecessor
☐ **C.** False — no whole number has a successor
☐ **D.** False — only 0 has a successor

Q16. Which pair of numbers are consecutive whole numbers?

- ☐ **A.** 5 and 7
☐ **B.** 5 and 5.5
☐ **C.** 5 and 6
☐ **D.** 5 and 10

Q17. The red mark sits exactly halfway between 10 and 20. Which whole number is it?



- ☐ A. 12
- ☐ B. 18
- ☐ C. 16
- ☐ D. 15

Q18. If a number line shows only whole numbers, can you find a point for 4.5 exactly on one of the marked dots?

- ☐ A. Yes, it is a whole number
- ☐ B. No, 4.5 falls between two dots, not on one
- ☐ C. Yes, at the dot marked 4
- ☐ D. Yes, at the dot marked 5

Q19. How many whole-number dots sit on a line from 0 to 5, counting both 0 and 5?

- ☐ A. 5
- ☐ B. 6
- ☐ C. 7
- ☐ D. 4

Q20. Over the stretch from 0 to 5, Anaya's line has one more dot than Kabir's. Which line is Anaya's, and why?

- ☐ A. Natural numbers, because they start later
- ☐ B. Whole numbers, because the extra dot is 0
- ☐ C. They must be identical over that stretch
- ☐ D. Cannot be determined without measuring

Section C - Challenge

Q21. This segment shows exactly 8 whole-number dots, starting from 0. What is the largest number shown?



- ☐ A. 8
- ☐ B. 9
- ☐ C. 7
- ☐ D. 6

Q22. Ms. Rao says "one dot is the whole difference" between whole numbers and natural numbers, no matter how far the line extends. Why does adding more dots to the right never change that difference?

- ☐ A. Because every new dot on the right belongs to both families equally
- ☐ B. Because the difference grows every time a dot is added
- ☐ C. Because natural numbers eventually include 0 too
- ☐ D. Because whole numbers stop being whole past a certain point

Q23. A whole number's predecessor equals its successor's predecessor's predecessor. If the number is 12, what is the result of that chain?

- ☐ A. 13
- ☐ B. 10
- ☐ C. 12
- ☐ D. 11

Q24. The table and line show 8 natural-number dots starting from 1. What is the largest number shown?



- ☐ A. 9
- ☐ B. 7
- ☐ C. 6
- ☐ D. 8

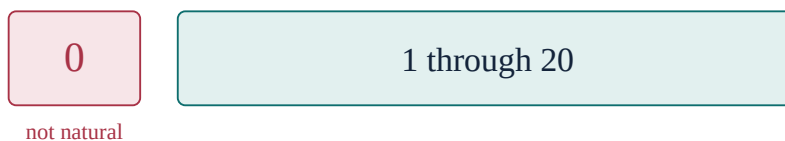
Q25. Anaya says whole numbers have no largest member, but they do have a smallest member. Kabir says that is a contradiction. Who is correct?

- ☐ **A.** Anaya — a set can start and still go on forever in the other direction
- ☐ **B.** Kabir — any endless set has no smallest member either
- ☐ **C.** Neither — whole numbers have both a smallest and a largest
- ☐ **D.** Both are wrong — whole numbers have no smallest member

Q26. Two whole numbers are consecutive. Their sum is 25. What are the two numbers?

- ☐ **A.** 11 and 14
- ☐ **B.** 12 and 13
- ☐ **C.** 13 and 13
- ☐ **D.** 10 and 15

Q27. A line marks whole numbers 0 through 20. If you remove every dot that is NOT a natural number, how many dots remain?



Marks from 0 to 20: twenty-one dots in all.

- ☐ **A.** 20
- ☐ **B.** 21
- ☐ **C.** 19
- ☐ **D.** 0

Q28. Kabir argues that since every natural number is a whole number, the two families must be the same size. What is the flaw in this reasoning?

- ☐ **A.** There is no flaw — they are the same size
- ☐ **B.** Being a subset does not mean being equal — whole numbers contain one extra member, 0
- ☐ **C.** Natural numbers actually contain more members than whole numbers
- ☐ **D.** The two families share no members, so size cannot be compared

Q29. Start at 0 and take the successor eight times. Which whole number do you land on?

- ☐ **A.** 7

☐ B. 9

☐ C. 8

☐ D. 0

Q30. Ms. Rao draws a whole-number line and asks: which single whole number, if erased, would turn it into exactly the natural-number line?

☐ A. 1

☐ B. The last number on the line

☐ C. 0

☐ D. Any even number

Answer Key

Q1: (A) (a) 0. The highlighted leftmost dot is 0 — on a whole-number line, that is the smallest marked number, and larger numbers sit further right.

Q2: (B) (b) 1. Natural numbers are the counting numbers starting at 1, not 0 — 0 belongs to whole numbers but not to natural numbers.

Q3: (C) (c) 9. Subtract 1 from the given number: $10 - 1 = 9$. Adding 1 instead would give the successor, 11.

Q4: (D) (d) Whole numbers. The table's first row and the lower list both show 0 on Anaya's whole-number side only — natural numbers start at 1.

Q5: (B) (b) No, it never ends. Whatever number you name, you can always add 1 to get a bigger one, so there is no last whole number.

Q6: (D) (d) 7. Add 1 to find the successor: $6 + 1 = 7$. Subtracting 1 would give the predecessor, 5.

Q7: (A) (a) 0. The stacked lines match from 1 onward; the only extra mark is the leftmost red dot labelled 0 on Anaya's whole-number line.

Q8: (C) (c) No. 0 is a whole number but not a natural number — that single number is the entire difference between the two families.

Q9: (A) (a) 5. List them: 0, 1, 2, 3, 4. Counting 4 minus 0 as 4 misses the starting 0; the count is $4 - 0 + 1 = 5$.

Q10: (D) (d) Add one extra dot at 0. Whole numbers are natural numbers plus that single extra member; negatives and fractions belong to other families.

Q11: (C) (c) 4. The highlighted dots are 5, 6, 7, 8. Counting 4 and 9 as well would wrongly give 6.

Q12: (A) (a) Natural numbers = whole numbers minus 0. Remove the single number 0 from the whole numbers and what remains is exactly the natural numbers.

Q13: (D) (d) 20. The predecessor of 20 is 19, and the successor of 19 is 20 — successor and predecessor undo each other. Stopping after only one step leaves 19.

Q14: (A) (a) 15 is larger than 12. Position on the number line shows size — right means greater, always.

Q15: (B) (b) False — 0 has no predecessor. Every whole number has a successor, since the line never ends going right, but 0 is the starting point with nothing before it in this family.

Q16: (C) (c) 5 and 6. Consecutive whole numbers differ by exactly 1, with nothing else in between — 5 and 7 skip over 6.

Q17: (D) (d) 15. Halfway between two numbers is their average: $(10 + 20) / 2 = 15$, equally spaced from both ends.

Q18: (B) (b) No, 4.5 falls between two dots, not on one. Only whole numbers get their own marked dot; 4.5 sits in the gap between 4 and 5.

Q19: (B) (b) 6. The dots are 0, 1, 2, 3, 4, 5. Using $5 - 0 = 5$ forgets to count the starting 0; the count is $5 - 0 + 1 = 6$.

Q20: (B) (b) Whole numbers, because the extra dot is 0. From 0 to 5, wholes give 6 dots and naturals give 5 (1 through 5).

Q21: (C) (c) 7. Starting at 0, eight dots are 0,1,2,3,4,5,6,7 — counting 0 as the first dot means the eighth dot lands on 7, not 8.

Q22: (A) (a) Because every new dot on the right belongs to both families equally. Only 0 is exclusive to whole numbers — every dot from 1 onward is shared, so the gap stays exactly one number.

Q23: (D) (d) 11. The predecessor of 12 is 11. Separately, the successor of 12 is 13, whose predecessor is 12, whose predecessor is 11 — both paths land on 11.

Q24: (D) (d) 8. Starting at 1, eight dots are 1,2,3,4,5,6,7,8 — with no 0 using up a slot, the count reaches one higher than the whole-number version of the same length.

Q25: (A) (a) Anaya — a set can start and still go on forever in the other direction. Unbounded means it does not stop, not that it cannot start; 0 anchors the low end while the line still runs forever to the right.

Q26: (B) (b) 12 and 13. Consecutive whole numbers differ by 1; if the smaller is n , then $n + (n+1) = 25$, so $n = 12$. The other options either skip or repeat.

Q27: (A) (a) 20. There were 21 dots (0 through 20 inclusive). Removing the one non-natural dot — just 0 — leaves 20 dots, matching the natural numbers 1 through 20.

Q28: (B) (b) Being a subset does not mean being equal — whole numbers contain one extra member, 0, that natural numbers lack. Every natural number being whole only shows one family sits inside the other.

Q29: (C) (c) 8. Successor means add 1, eight times: $0 + 8 = 8$. Stopping at seven steps would land on 7, the off-by-one trap from counting 0 as a step.

Q30: (C) (c) 0. Removing only the dot at 0 leaves 1, 2, 3, 4... which is precisely the natural numbers — the entire difference between the two families is that single number.

You've got this! Keep learning and shining! - Ruchi Math Coaching