

Number Nest Detectives

Sort numbers into nested number sets.

GRADE 6 • TEKS 6.2.A

6.2.A "classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers;"

NAME _____

DATE _____

NESTED NUMBER SETS

Picture three nested circles: whole numbers inside integers, and integers inside rational numbers. Whole numbers are 0 and counting numbers, integers also include negative numbers, and rational numbers can be written as a fraction a/b where b is not 0.

WORKED EXAMPLE

Classify -12 in the nested sets: whole numbers, integers, and rational numbers.

1. -12 is negative, so it is not a whole number.
2. -12 has no fractional part, so it is an integer.
3. -12 can be written as $-12/1$, so it is rational.

Answer: -12 belongs to the integer and rational number sets. Its smallest set is integers.

PRACTICE 6 problems

- 1** Use the nested circles: whole numbers inside integers inside rational numbers. For 0, name every set that contains it.

ANSWER _____

- 2** For -7, name every set that contains it.

ANSWER _____

- 3** For $5/8$, name every set that contains it.

ANSWER _____

- 4** For 3.25, name every set that contains it.

ANSWER _____

- 5** For -4.5, name every set that contains it.

ANSWER _____

- 6** For 14, name every set that contains it.

ANSWER _____

APPLY IT Show your work

- 1** Jalen's video game score changes by -18 points after one round. In the nested number sets, which sets contain -18?

WORK SPACE

ANSWER _____

- 2** Rosa eats $\frac{7}{10}$ of a large pizza. In the nested number sets, which set contains $\frac{7}{10}$?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Kai places $-\frac{1}{4}$ in the integer circle because it is negative. Is Kai correct? Explain which set or sets should contain $-\frac{1}{4}$.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Use the nested circles: whole numbers inside integers inside rational numbers. For 0, name every set that contains it.	whole numbers, integers, rational numbers
2	For -7, name every set that contains it.	integers, rational numbers
3	For $\frac{5}{8}$, name every set that contains it.	rational numbers
4	For 3.25, name every set that contains it.	rational numbers
5	For -4.5, name every set that contains it.	rational numbers
6	For 14, name every set that contains it.	whole numbers, integers, rational numbers

PART 2 • APPLY IT

1. **integers, rational numbers** -18 is negative and has no fractional part, so it is an integer. It can be written as $-\frac{18}{1}$, so it is also rational, but it is not whole.
2. **rational numbers** $\frac{7}{10}$ is a fraction, so it is rational. It is not a whole number or an integer.

CHALLENGE

No. $-\frac{1}{4}$ is rational because it is a fraction, but it is not an integer or a whole number.

Accept equivalent wording such as "rational only" when a number belongs only to the rational number set. Terminating decimals are rational because they can be written as fractions.