Mathematics level 2

Measurement and Geometry

Example: Measurement

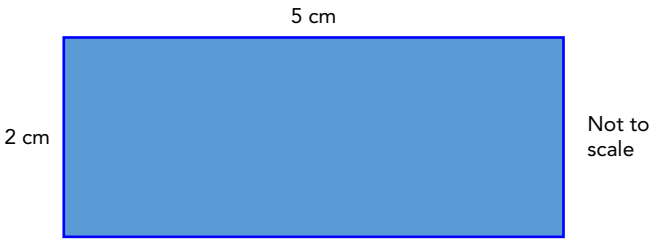
What is the perimeter of this rectangle?

A 5 cm

B 7 cm

C 10 cm

D 14 cm



ANSWER D: 14 cm

Students select option A: as they may misread the question and identify the value of the length.

Students select option C: as they ma y add 5 and 2 on the diagram to get 7.

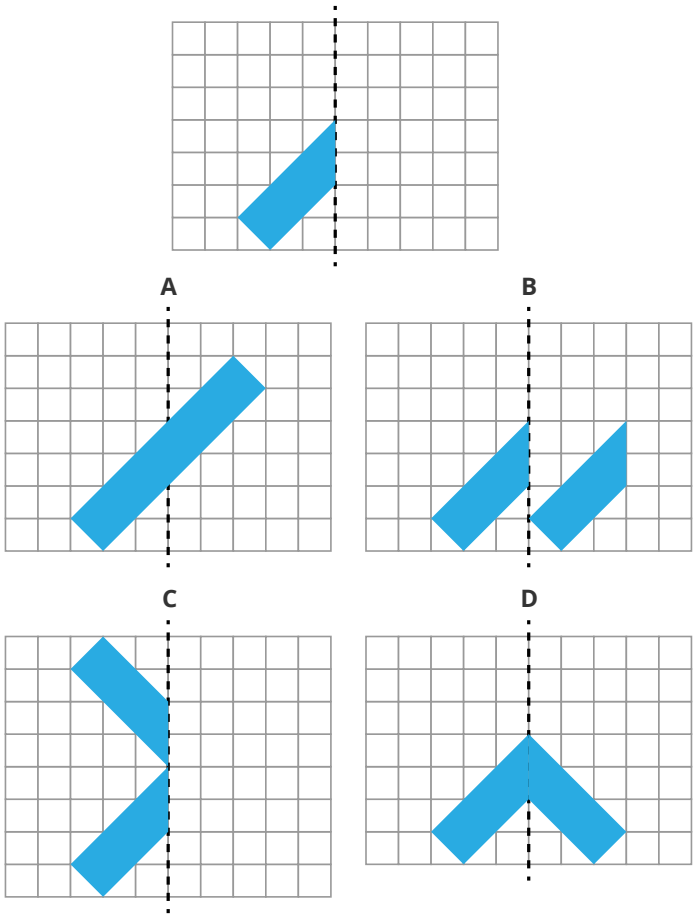
Students select option D: as they may confuse perimeter and area, and multiply the numbers 5 and 2 from the diagram.

COMMENTARY

Students are required to find the perimeter of a rectangular shape, by finding (acknowledging) the missing side lengths and then adding together, to find the perimeter.

Example: Geometry

Which is the correct reflection of this shape about the mirror line?



ANSWER D

Students select option A: as they may continue the shape, to make a rectangle.

Students select option B: as they confuse reflection and translation.

Students select option C: as they may reflect in the horizontal axis rather than the vertical axis.

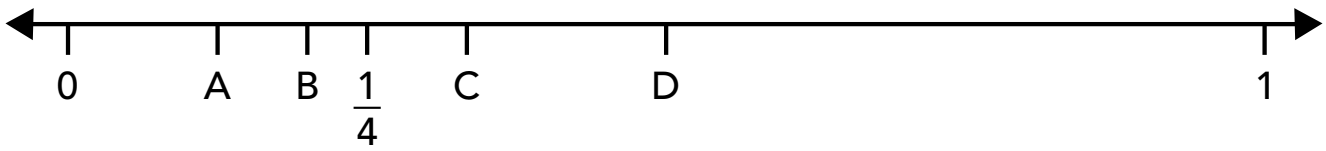
COMMENTARY

Students are required to understand the term reflection, and identify the correct diagram illustrating reflection. They need to be aware that the reflected object should be the same distance from the mirror line, as the original one.

Mathematics level 2

Number and Algebra

Example: Number



This number line has letters marking $\frac{1}{3}$, $\frac{1}{2}$, $\frac{1}{5}$ and $\frac{1}{8}$

Which letter is at $\frac{1}{5}$?

A A

B B

C C

D D

ANSWER B: B

Students select option A: as they may think $\frac{1}{5}$ is the smallest fraction.

Students select option C: as they may identify the third fraction in the list OR may think $\frac{1}{5}$ is larger than $\frac{1}{4}$.

Students select option D: as they may identify $\frac{1}{5}$ as one half.

COMMENTARY

Students are required to identify the location of fractions on a number line by placing them in a relative location.

Example: Algebra

In this pattern, what amount is added each time?

0.022, 0.024, 0.026, 0.028, ...

A two ones

B two tenths

C two hundredths

D two thousandths

ANSWER D: two thousandths

Students select option A: as they may find the difference between 24 and 22, which is 2.

Students select option B: as they may find the difference and think it is 2 tenths.

Students select option C: as they may find the difference and think 0.002 is two hundredths as each of the numbers in the pattern has 2 hundredths.

COMMENTARY

Students are required to identify the amount added each time (0.002) and then identify this as a value of place (thousandths).

ACER Academy

Annotated test questions

Mathematics level 2

Statistics and Probability

Example: Statistics

Kristy asked 21 students at school their favourite sport.

This graph shows her results.

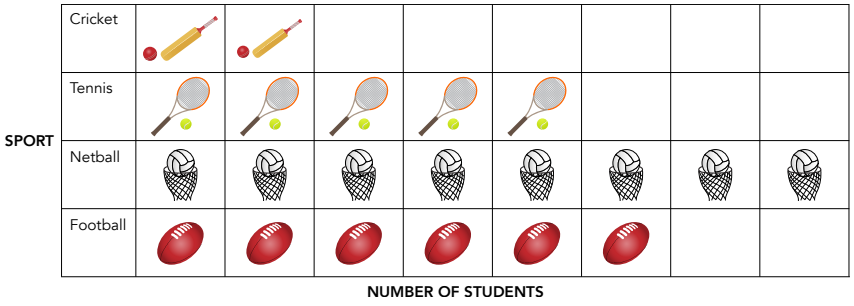
From the graph, which statement is true?

A Football is the least favourite sport for this class

B Most students' favourite sport is netball

C Cricket is the favourite sport for this class

D Kristy's favourite sport is netball



ANSWER B: Most students' favourite sport is netball.

Students select option A: as they may think that the sport at the bottom of the table is the least favourite.

Students select option C: as they may confuse the representation of the graph, OR think the sport at the top of the table is the most favourite.

Students select option D: as they may think that, as netball is the student's favourite, it must also be Kristy's favourite.

COMMENTARY

Students are required to read and interpret a picture graph in horizontal representation. Students need to work through each of the statements and interpret if they are true.

Example: Probability

In a box of fruit there are 3 bananas, 3 apples, 3 plums and 3 oranges.

A girl takes one piece of fruit without looking.

What is the chance that she takes an apple?

A $\frac{1}{12}$

B $\frac{1}{9}$

C $\frac{3}{12}$

D $\frac{1}{3}$

ANSWER C: $\frac{3}{12}$

Students select option A: as they may think as the selection is 1 piece of fruit from 12, there is a 1 out of 12 chance of selecting an apple.

Students select option B: as they may think that, as there are 3 apples and 9 pieces of fruit that are not apples, it means there is 1 selection out of a reduced sample space of 9.

Students select option D: as they may think as the selection is 1 apple from the 3 apples, it is a 1 in 3 chance of selecting an apple OR 1 type of fruit (apples) from 3 other types of fruit.

COMMENTARY

Students are required to read and interpret a worded problem requiring an understanding of probability. They need to be able identify the whole sample space (12) and the chance of selecting an apple (3), and then express this as a fraction, $\frac{3}{12}$.