

What CAT4 tells you – the test batteries explained

CAT4 comprises four test batteries, each of which contains two tests. The tests assess the main types of mental processing which play a substantial role in human thought. Together, they provide users with a comprehensive understanding of the core abilities related to learning. The test batteries are described below.

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Verbal Reasoning Battery	<ul style="list-style-type: none"> Verbal Classification Verbal Analogies
Quantitative Reasoning Battery	<ul style="list-style-type: none"> Number Analogies Number Series
Non-verbal Reasoning Battery	<ul style="list-style-type: none"> Figure Classification Figure Matrices
Spatial Ability Battery	<ul style="list-style-type: none"> Figure Analysis Figure Recognition

Each of the test batteries is explored in further detail throughout this next section, highlighting what they assess and the types of questions featured. Examples from both the paper and digital versions are also included.



Verbal Reasoning Battery – thinking with words

The Verbal Reasoning Battery assesses reasoning ability with words representing objects or concepts. Whilst the test battery requires some reading ability, CAT4 limits the reading requirements to a modest level throughout and the vocabulary demands have been kept as low as possible. The background knowledge needed to answer the verbal questions is that which all pupils will have encountered in school or everyday life, rather than including topics that may only be familiar to certain socioeconomic or cultural groups.

Since the greater part of education is presented through the verbal medium, the importance of this battery for diagnosis and educational attainment is clear. Tests of verbal reasoning have always been among the best predictors of educational progress.

Example Questions

Verbal Classification

The example asks pupils to recognise the conceptual link between three given words and then choose the word from the options that belongs with the original set.

CAT4

Verbal Classification

Directions

In each of these questions there are three words in bold type. These three words are similar in some way. Decide how they are the same. Then choose the word from the answer choices that goes with the first three words. Look at the example below.

Example

green blue red

A colour B crayon C paint D yellow E rainbow

The first three words are **green, blue and red**. Green, blue and red are all colours. Look for the answer choice that is also a colour. The correct answer is **D, yellow**. This is how you would show the answer:

A B C D E

Verbal Analogies

In each of these questions there are three words in bold type. The first two words go together. The third word goes together with one of the answer choices.

Example

new → old : wet →

A rain B drip C hot D sun E dry

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Pupils are required to choose the word from the answer choices that goes with the third word. Since new is the opposite of old, pupils have to find the word that is the opposite of wet. Answer E, dry, is the opposite of wet.

Example questions from CAT4 Digital Level A

CAT4

Directions

In each question there are three words in bold. The first two words go together. The third word goes together with one of the answer choices. Choose the word from the answer choices that goes with the third word. Look at this example.

Example

new → old : wet →

rain
drip
hot
sun
dry

Look at the first two words, new and old. Think about how these two words go together. New is the opposite of old.

Look at the third word, wet. The word 'wet' must go with the answer in the same way that new goes with old. Since new is the opposite of old, you have to find the word that is the opposite of wet. The correct answer is dry because dry is the opposite of wet.

Click on 'next' to try some practice questions.

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Directions

In each question there are three words in bold. These three words are similar in some way. Decide how they are the same. Then choose the word from the answer choices that goes with the first three words. Look at this example.

Example

green blue red

colour
crayon
paint
yellow
rainbow

The first three words are green, blue and red. Green, blue and red are all colours. Look for an answer choice that is also a colour. The correct answer is yellow.

Click on 'next' to try some practice questions.

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Quantitative Reasoning Battery – thinking with numbers

The Quantitative Reasoning Battery assesses reasoning ability with numbers. The test battery has been designed to be minimally reliant on mathematical knowledge. The Number Analogies test requires only basic arithmetical knowledge, and parallels the analogy tests in the Verbal and Non-verbal Reasoning Batteries. The Number Series test focuses as far as possible on the identification of relationships between the elements of the questions, though basic arithmetical knowledge is required too.

In this way, the Quantitative Reasoning Battery will give a genuine indication of most pupils' ability to think with numbers, with the exception of children with particularly low arithmetic skills.

Example Questions

Number Analogies

The example asks pupils to work out how the two given pairs of numbers are related and then choose the third number that has the same relationship from among the five options presented.

CAT4

Number Analogies

Directions

Each of these questions starts with two numbers that are linked together in some way. Next there are two more numbers that are linked in exactly the same way. You have to work out how the numbers are linked and then complete the third pair. Look at the example below.

Example

[2 → 3] [9 → 10] [6 → ?] A 3 B 4 C 5 D 6 E 7

What do you have to do that gets you from 2 to 3 and also from 9 to 10?

You have to add 1. So, 6 changes to 7. The correct answer is E, 7. This is how you would show the answer:

☐ A ☐ B ☐ C ☐ D ☒ E

This is just one example. In the test you might have to add, subtract, multiply or divide to get the second half of each pair. Remember, you must always check that what you decide for the first pair also works for the second pair.

Number Series

Each of these questions shows a series of numbers. Pupils have to work out the rule or rules used to arrange the numbers, then decide which number should come next in the series.

Example

15 14 13 12 →

A 9 B 10 C 11 D 13 E 14

From among the five options, pupils are required to choose the number that continues the given sequence. In this example each number is one lower than the number before it. As 12 minus 1 is 11, the right answer is C, 11.

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Example questions from CAT4 Digital Level D

CAT4

Directions

Each question shows a series of numbers. You have to work out the rule or rules used to arrange the order of the numbers and decide which number comes next. Look at this example.

Example

15 14 13 12 →

9

12

11

13

14

Each number is one less than the number before. Using this rule, think about the number that should come after 12. As 12 minus 1 is 11, the correct answer is 11.

Click on "next" to try some practice questions.

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CAT4

Directions

Each question starts with two numbers that are linked together in some way. Next there are two more numbers that are linked in exactly the same way. You have to work out how the numbers are linked and then complete the third pair. Look at this example.

Example

[2 → 3] [9 → 10] [6 → ?]

3

4

5

6

7

To get from 2 to 3 and also from 9 to 10 you have to add 1. So 6 changes to 7. This is just one example. In the test you might have to add, subtract, multiply or divide to get to the second half of each pair. Click on "next" to try some practice questions.

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Non-verbal Reasoning Battery – thinking with shapes

The Non-verbal Reasoning Battery assesses the ability to think and reason with non-verbal material and measures something distinct from the Spatial Ability Battery. The materials used are still shapes but the difficulty in the task lies not in creating, maintaining and mentally manipulating precise images but in reasoning with easily distinguishable shapes and designs.

Like the Verbal and Quantitative Reasoning Batteries, it measures basic reasoning processes such as identifying similarities and relationships but using shapes and designs rather than words or numbers.

Example Questions

Figure Classification

The example asks pupils to identify the common characteristics of the three given figures and choose the option from the five presented, which shares the same characteristics.


CAT4


Figure Classification


Directions


In each of these questions the first three figures are similar in some way. Decide how they are the same. Then choose the figure from the answer choices that goes with them. Look at the example below.


Example





A


B


C


D



E


Think about how the first three figures are similar. Each figure is shaded and has four sides. Now look at the answer choices. Find the one that is shaded and also has four sides. The correct answer is D. This is how you would show the answer:


Figure Matrices


In each of these questions there are figures arranged in a large square. One figure is missing and its place is shown by a question mark.


Example

A


B


C


D


E


Pupils are required to identify the relationship of the figures in the square and from the five options presented, select the figure that has the same relationship. In this example the top pair of figures comprises a large square and a small square. They are the same shape but the second figure is smaller. Since the bottom figure is a large circle pupils are required to find the figure that completes the pair in the same way. The correct answer is D because this is a small circle.

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Example questions from CAT4 Digital Level F


CAT4


Directions


In each question there are figures arranged in a large square. One figure is missing and its place is shown by a question mark. You have to decide which figure is the missing one.


Look at this example. Look at the top pair of figures – a large square and a small square. They are the same shape but the second figure is smaller.


Look at the bottom figure – a large circle. Find the figure from the answer choices that completes the pair in the same way.

A


B


C


D


E


The correct answer is D because this is a small circle. Click on 'next' to try some practice questions.


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Directions


In each question the first three figures are similar in some way. Decide how they are the same and choose the figure from the answer choices that goes with them. Look at the example:


Example





A


B


C


D


E

Each of the first three figures is shaded and has four sides. Look for an answer choice that is also shaded and has four sides. The correct answer is D. Click on 'next' to try some practice questions.

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Spatial Ability Battery – thinking with shape and space

The Spatial Ability Battery assesses how well pupils can create and retain mental images of precise shapes and objects, and then manipulate these in their minds. This ability is critical to effective working in many 'spatial' disciplines and careers (for example engineering, physical sciences, mathematics and architecture). Yet it has traditionally been under-appreciated or under-assessed in schools, either being ignored completely or viewed as relevant only to 'low level' manual skills.

As spatial tests make no demands on verbal ability, they can be highly effective indicators of potential in pupils with poor verbal skills as well as effectively identifying the weaker abilities of those who have verbal strengths. This then provides a more comprehensive picture of the pupils concerned.

Example Questions

Figure Analysis

Each of the questions in this test is about folding paper and punching holes in it. The example asks pupils to decide how the paper would look when it is unfolded, selecting from five given answers.

CAT4

Figure Analysis

Directions

Each of the questions in this test is about folding paper and punching holes in it. You must decide how the paper would look when unfolded. Look at the example below.

Example

A B C D E

Figure Recognition

The test is about hidden shapes. Each question has a target shape and the target is hidden in one of five designs.

Example

A B C D E

Pupils are required to find where the target is hidden and mark the letter for that design. The target will be exactly the same size and way round and all sides of the target have to be shown on the design. Pupils are not required to imagine it turned around or flipped over. As shown above the target can be found in design B.

Example questions from CAT4 Digital Level G

CAT4

Directions

This test is about hidden shapes. Each question has a target shape. The target is hidden in one of five designs. Look at the example.

Example

A B C D E

Click on 'next' to continue.

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CAT4

Directions

This test is about folding paper and punching holes in it. You must decide how the paper would look when unfolded. Look at the example.

A B C D E

The top row shows how the paper is folded and punched through.

Click on 'next' to continue.

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