



A2Z Learning
Working with
Verbal Reasoning
for the 11+

Non-Verbal reasoning

Non-verbal reasoning tests are commonly found in Common Entrance exams at 11+ and 13+ level, and they're designed to test pupils' logical reasoning skills using series of shapes or patterns. It's been said that they were intended to be 'tutor-proof', but, of course, every kind of test can be made easier through proper preparation and coaching.

Bond produces a lot of useful books of past papers, and there is also a Bond guide on How To Do Non-verbal Reasoning available from [Amazon](#) for £8.98.

The kind of questions that are included within non-verbal reasoning papers:

- Finding the most similar shape
- Finding a shape within another shape
- Finding the shape to complete the pair
- Finding the shape to continue the series
- Finding the code to match the shape
- Finding the shape to complete the square
- Finding the shape that is a reflection of a given shape
- Finding the shape made when two shapes are combined
- Finding the cube that cannot be made from a given net
- Finding the cube that can be made from a given net
- Finding the net that made a cube
- Finding the individual components of 3D shapes
- Finding the 2D aerial view of a 3D shape
- Find the pattern on the paper by the way it is folded
- Find the hole punch pattern when the paper is unfolded

These can be grouped into categories:

- Identifying shapes
- Missing shapes
- Rotating shapes
- Coded shapes and logic
- 3D and spatial

These subgroups have several question types within them:



Identifying shapes

Types of question

- Recognise shapes that are similar and different
- Identify shapes and patterns
- Pair up shapes

Sample questions

- "Which is the odd one out?"
- "Find the figure in each row that is most unlike the other figures."
- "Which pattern on the right belongs with the two on the left?"
- "Which pattern on the right belongs in the group on the left?"
- "Which shape is most similar to the shapes in the group on the left?"

Missing shapes

Types of question

- Find shapes that complete a sequence
- Find a given part within a shape
- Find a missing shape from a pattern

Sample questions

- "Which one comes next?"
- "Which pattern completes the sequence?"
- "Choose the shape or pattern that completes the square given."
- "In which larger shape or pattern is the small shape hidden?"
- "Find the shape or pattern which completes or continues the given series."

Rotating shapes

Types of question

- Recognise mirror images
- Link nets to cubes

Sample questions



- "Work out which option would look like the figure on the left if it was reflected over the line."
- "Work out which of the six cubes can be made from the net."

Coded shapes and logic

Types of question

- Code and decode shapes
- Apply shape logic

Sample questions

- "Each of the patterns on the left has a two-letter code. Select the correct code for the shape on the right following the same rules."
- "Select the code that matches the shape given at the end of each line."
- "Which one comes next? A is to B as C is to ?"
"Which pattern on the right completes the second pair in the same way as the first pair? A is to B as C is to ?"

3D and spatial

Types of question

- Link nets to cubes
- 2D views of 3D shapes
- Cubes that make a 3D figure
- Folded paper
- Hole punch questions

Sample questions

- "Work out which of the six cubes can be made from the net."
- "Find the cube that cannot be made from the net."
- "Find the 2D aerial view of the figure."
- "Find the group of cubes that make the 3D figure."
- "A piece of paper is folded then hole punched. Find the pattern that would be on the paper once unfolded."

- "A transparent piece of paper is folded, find what the pattern will look like when folded."

Hints and tips

- Function
 - Location
 - SPANSS
 - Story
 - Symmetry
 - Process of elimination
1. When looking for similarities between shapes, one thing to think about is the 'function' of the objects shown. In other words, what are they for? If all but one of the drawings show kitchen equipment, then the bedside lamp must be the odd one out.
 2. Another way of looking at it is to think about is the 'location' of the objects shown. Where would you usually find them? If there is a rolling pin together with a lot of tools you'd find in the garage, then the tools 'belong' together in the same set.
 3. Another useful way of working through a question is to use 'SPANSS', which stands for:
 - Shape,
 - Position,
 - Angle,
 - Number,
 - Shading and Size (NOT 'sides', as some people have written online!).

This is a list of all the possible things that can change in a diagram.

Non-verbal Reasoning questions demand that you're very disciplined, logical and systematic when working through all the possibilities, so it's useful to have a mnemonic such as SPANSS to help you tick off all the options.

4. If none of those works, another thing you can look for is a 'story'? For example, do the pictures show the steps you take to get ready for school in the morning, such as getting up, brushing your teeth, getting dressed and having breakfast?
5. You should also look out for 'symmetry'. Could the images be reflections of each other, or could they show rotational symmetry - in other words, has one pattern simply been turned upside-down or turned 90 degrees?
6. Finally, it's a good idea to work by process of elimination. Just cross off all the answers that can't be right until you're left with only one.

As Sherlock Holmes once said to Doctor Watson, "*When you have eliminated the impossible, whatever remains, however improbable, must be the truth.*"