

Max's Non-Verbal Reasoning Challenge

Learning objective: To develop spatial awareness, pattern recognition, and logical deduction skills through non-verbal reasoning puzzles.

Max the monkey has prepared these flashcards to help you sharpen your observation skills. Read each question carefully, identify the underlying pattern, and deduce the correct solution.

If a shape is rotated 90 degrees clockwise, how does its orientation change?

The shape turns one-quarter turn to the right, changing its position relative to the vertical axis.

Describe the difference between a reflection and a rotation.

A reflection is a 'flip' across a line of symmetry, whereas a rotation is a 'turn' around a fixed point.

In a sequence, if a square becomes a pentagon, then a hexagon, what is the logical next step?

The shape gains one additional side, so the next shape must be a heptagon.

What is the order of rotational symmetry for a regular square?

4. The square looks identical in four different positions during a full 360-degree rotation.

Explain why a mirror image is considered a horizontal reflection.

The left side of the original object becomes the right side of the image, while the vertical orientation remains unchanged.

If two shapes in a grid are identical but one is shaded, what is the most likely relationship?

They are likely congruent shapes, with the shading representing a change in property or a 'fill' pattern rule.

Identify the pattern: A circle with one dot, then a circle with two dots, then a circle with three dots. What is the rule?

The number of dots increases by one in each step, following an arithmetic progression.

How can you justify that two complex shapes are congruent without measuring them?

By checking if they can be mapped onto each other exactly through translation, rotation, or reflection.

What might happen if you reflect an asymmetrical shape twice across parallel lines?

The shape will undergo a translation (a slide) rather than ending up back in its original mirrored position.

Compare and contrast a rhombus and a square in terms of their symmetry.

Both have rotational symmetry, but a square has four lines of symmetry while a rhombus typically has only two.