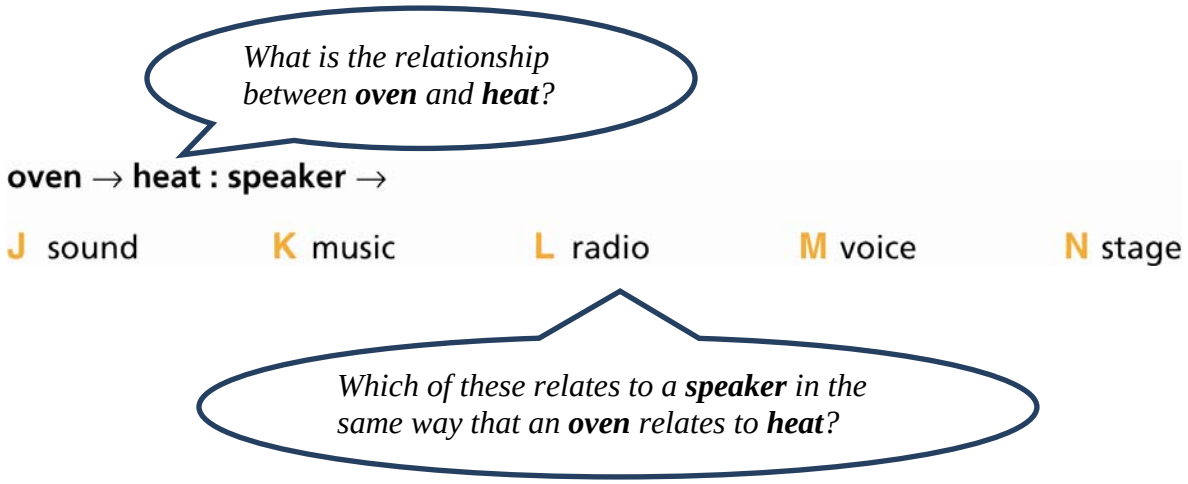
Test 1: Verbal Analogies, Levels 9–12

Part 1: Overview of Verbal Analogies

An analogy draws parallels between objects or ideas. Analogies can be about simple concepts such as “Brothers are boys just like sisters are girls” or complex concepts such as “Friendships are like glass. Once broken, they are hard to fix.” Successful learners habitually reason by analogy. Good analogies allow them to use what they already know when they are trying to understand new ideas. Reasoning by analogy requires attending carefully to the ways that two things are similar. Then this relationship is mapped onto a different pair of objects or ideas.

In this test, students answer questions that look like this:



When practicing the Verbal Analogies questions, encourage students to use these strategies.

- Make a sentence that describes the potential relationship, substituting words for the symbols. For example, use “is related to” in place of the arrow, and “in the same way” in place of the colon. Oven is related to heat in the same way that speaker is related to…?

- Generate a possible answer and look for it among the answer choices, testing for the relationship that matches best.

Students at this level tend to make the following common mistakes.

- Students may ignore the relationship between the first two words and simply choose an answer that is associated with the third word. For example, the student might pick **radio** because a radio has a **speaker**.

- Students might examine only some of the answer choices and then choose an answer that only partially satisfies the analogy. For example, the student may pick **voice**, which partially captures the idea of something the **speaker** emits, but the speaker emits **sound** in general, and voice is only part of that sound. Thus, **sound** is a better answer.

Test 2: Number Analogies, Levels 10–12

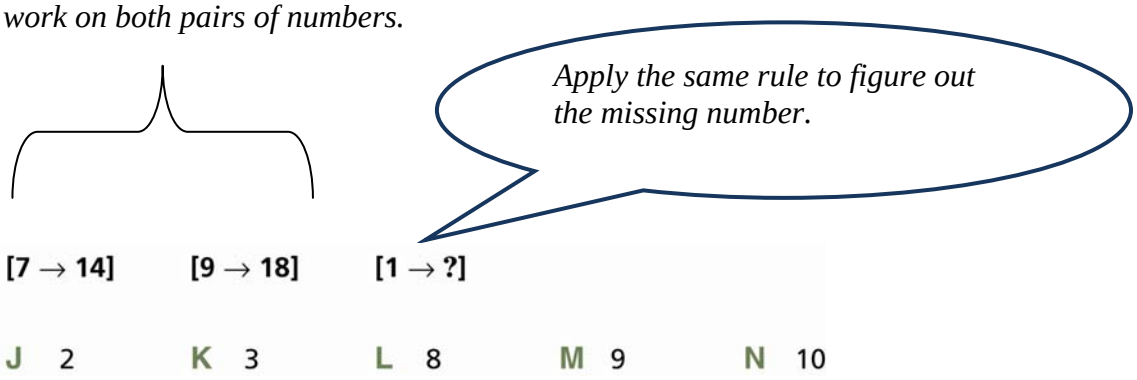
Part 1: Overview of Number Analogies

An analogy draws parallels between objects or ideas. Successful learners habitually reason by analogy. Good analogies allow students to use what they already know when they are trying to understand or remember new ideas. Reasoning by analogy requires attending carefully to the ways in which two things are similar. Then this relationship is mapped onto something new. Performance on this test predicts mathematics achievement because discovering quantitative patterns and relationships is at the core of learning mathematics.

Each question on the Number Analogies test presents two pairs of numbers. To solve the questions, students must find a rule that transforms the first number in each pair into the second number. The same rule must work for both pairs of numbers. Then the student uses the rule to generate the missing number in the third pair. Most questions require only one rule, but some questions use two rules such as adding and then doubling. Students are allowed to use scratch paper on the actual test. Items in the test look like this:

What rule explains how to transform 7 into 14 and 9 into 18? The rule must work on both pairs of numbers.

Apply the same rule to figure out the missing number.



When practicing the Number Analogies questions, encourage students to use these strategies.

- Think of a rule that describes how to transform the first number into the second number in the first two pairs. For example, the second number is double the first.
- If more than one rule works, then try the simplest rule first.
- Apply the same rule to the third pair of numbers to determine the missing number.

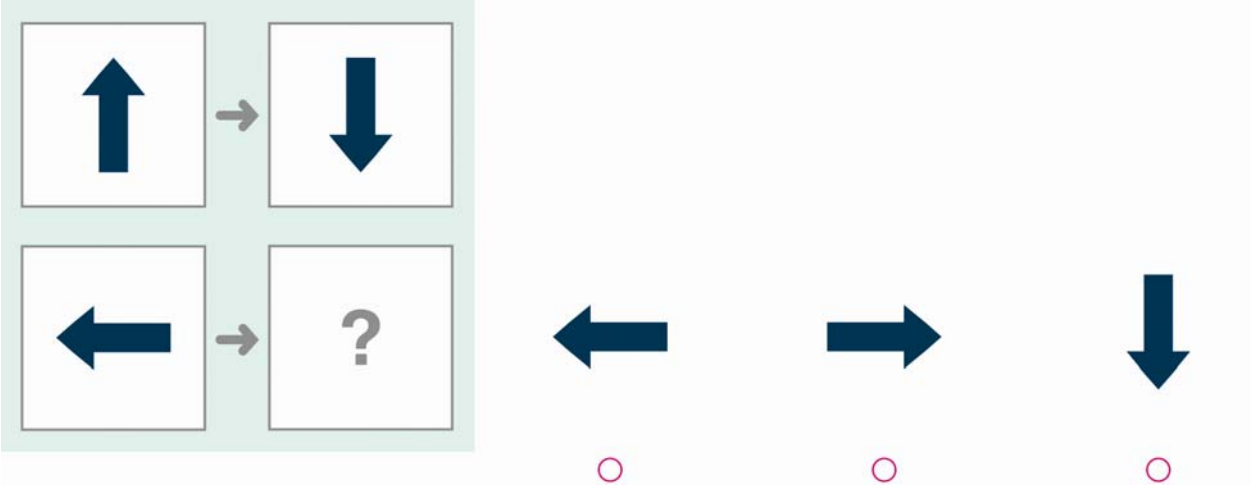
Test 3: Figure Matrices, Levels 9–12

Part 1: Overview of Figure Matrices

An analogy draws parallels between objects or ideas, for example, “up is to down as left is to right.” Analogies can be about simple things “A tadpole is like a fish” or complex concepts “Friendships are like glass. Once broken, they are hard to fix.” Successful learners habitually reason by analogy. Good analogies allow them to use what they already know to understand or remember new ideas. Reasoning by analogy requires attending carefully to how two things are similar and then applying these relationships to something new.

The Figure Matrices test is like the Picture Analogies and Number Analogies tests except the questions use figures or shapes rather than pictures of objects or activities.

In this test, students are asked to solve problems that look like this:



Which answer choice shows what would happen if the new arrow changed in the same way as the first arrow?