Cognitive Abilities Test Practice Activities Teacher Guide



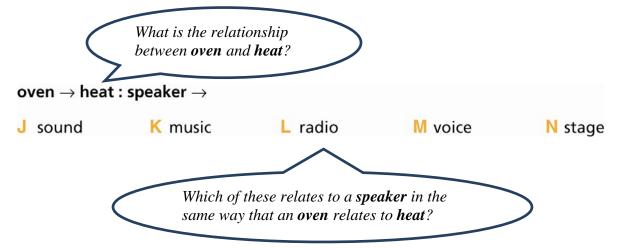


Test 1: Verbal Analogies, Levels 9–12

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.

Part 2: Verbal Analogies Practice Test Script

The following script covers many issues that will help students do their best on the test. Read aloud the text printed in *blue italics*: these are directions to the students. Directions for you are in parentheses and should NOT be read aloud. Feel free to modify the script to ensure that students understand what they are supposed to do and how to do it.

(Make sure each student has a practice booklet. Then **SAY**:)

Open your practice booklet to page 1.

(Check that all students have the correct page.)

For each question in the Verbal Analogies test, you must figure out the relationship between the first pair of words. Then think about the third word. Choose the answer that relates to the third word in the same way that the first word relates to the second word.

P1

Let's do the first practice question.

1	$white \to snow : black \to$						
	A brown	B bronze	C rain	D coal	E clouds		

How are **white** *and* **snow** *related to one another?*

(Encourage responses.)

White is the color of snow.

Which word in the bottom row relates to **black** in the same way that **white** relates to **snow**?

(Encourage responses. If someone chooses coal, **SAY**:)

Black is the color of **coal** just like **white** is the color of **snow**, so **coal** is the best answer.

(If someone chooses brown, bronze, rain, or clouds, **SAY**:)

That is not quite right. That is not something that is always colored black, like white is the color of snow.

(It can be helpful to give other examples of the difference between words that more precisely define a concept. For example, what would be a precise definition of "mother"? What would be wrong with a definition such as "a mother is a human being"?)

Let's do the second practice question.



How is an **oven** *related to* **heat**?

(Encourage responses. Most importantly, an oven produces heat.)

An **oven** produces **heat**. Now we must look for the word that relates to **speaker** in the same way that **oven** relates to **heat**.

What does a **speaker** produce? Which word in the bottom row best completes the analogy?

(Encourage responses. If someone chooses the correct answer, sound, **SAY**:)

You chose sound because a speaker produces or puts out sound like an oven produces or puts out heat. You're right. That is the best answer.

(If someone chooses music, **SAY**:)

Music is too specific because it is only one type of sound put out by a speaker.

(If someone chooses radio, **SAY**:)

Radio isn't the answer because it does not relate to speaker in the same way that oven relates to heat. A radio has a speaker, but it is not produced by a speaker.

(If someone chooses voice, **SAY**:)

Voice is too specific because it is only one type of sound put out by a speaker.

(If someone chooses stage, **SAY**:)

Stage isn't the correct answer because it is not put out by a speaker, but used as a place to set a speaker.

(Check to make sure that all students have selected answer choice J.)

Look at the third practice question. Listen carefully while I solve this question. I will tell you how I answer the question so you can answer similar questions.

3	animals $ ightarrow$ zoo : art $ ightarrow$							
	A display	B exhibition	C museum	D fair	E vault			

First I'll read the analogy. **Animals** are related to a **zoo** in the same way that **art** is related to.... *Hmmm*, let me think now. How are animals and a zoo connected?

Animals can live at a zoo. So where does art live? Well, art doesn't really live, so the rule must be something else.

First I want to look at all the answer choices to see if they can help me decide what might relate to art in the same way that animals relate to a zoo.

Well, art can be **displayed** (or shown) or it can be a type of **display**. But that doesn't really describe the same relationship of animals and a zoo.

An **exhibition** is a public display of art. A zoo is where animals are kept for public display. That might work, but let me look at the rest of the answer choices first.

A museum is a home for art like a zoo is a home for animals. Also, a museum allows for the public display of art like animals are publicly displayed in a zoo. I think museum is the best answer yet. But I still want to look at the other choices.

A fair might have art for sale, but zoos don't usually sell animals to people, so that relationship doesn't work.

A vault may hold art, but it usually has other important things as well. It is not designed just for art. A zoo is designed to hold animals, so vault doesn't seem like the right answer.

After carefully looking at all the answer choices, I'm going to choose **museum** as the best answer. Do you understand why I chose **museum**?

(Check to make sure that all students have selected answer choice C and clarify any confusion.)

P4

Look at the next practice question. I want you to try this one by yourself. Think about which answer choice relates to the word **seldom** in the same way that **often** relates to **many**. Only one word in the bottom row should fit the analogy. If more than one word fits the analogy, look for another way that the words relate. If you find an answer, circle it in your booklet.

(Make sure students have enough time to solve the problem on their own. Then **SAY**:)

How is **often** related to **many**?

(Encourage responses. Call on a few students to answer. The correct answer is something like "Often describes something that *happens a lot*, and many shows that there are *a lot of something*. Often describes time and many describes amount." Wait for a correct answer, then **SAY**:)

You are correct. **Often** is a term for something that happens a lot, and **many** is a term for having a lot of something. **Often** describes a high frequency and **many** describes a high number. Which answer choice relates to **seldom** in the same way that **many** relates to **often**?

(Encourage responses. If someone chooses the correct answer, few, SAY:)

Yes, **few** is a term for a small number of something like **seldom** is a term for something that happens a small number of times. I have **few** absences because I **seldom** miss school. But I have **many** books because I **often** read. **Often** and **many** describe large amounts, but **seldom** and **few** describe small amounts.

(Check to make sure that all students have selected answer choice J. If necessary, explain why other answers are not as good as **few**. It can also be helpful to consider other options. For example, suppose "some" were on answer option. Why would "few" still be a better answer?)

P5

Look at the next practice question. Try to solve this practice question on your own.

(Make sure students have enough time to solve the problem on their own. If students do not understand the words, please clarify. Then **SAY**:)

5	$cab \to fare : diner \to$							
	A eat	B food	C receipt	D menu	E bill			

How is a **cab** *related to* **fare**?

(Encourage responses.)

When you ride in a cab, you pay a fare for the trip. Which word in the bottom row goes with diner in the same way that cab goes with fare?

(If someone chooses the correct answer, bill, **SAY**:)

You are correct. Why did you pick bill?

(Encourage responses.)

Bill is the best answer because when you eat at a **diner**, you pay a **bill** for your food and the service.

(If someone chooses any of the other answer choices, **SAY**:)

Why did you pick ____?

(Allow the student to share his or her reasoning.)

Well, ____ isn't the right answer because it does not describe the money owed for services received.

(Check to make sure that all students have selected answer choice E and clarify any confusion.)

P6

Look at the last practice question. Try to solve this practice question on your own.

6	arid o dry : soaked o							
	J wet	K damp	L moist	M humid	N water			

(Make sure students have enough time to solve the problem on their own. If students do not know the words, please clarify. Then **SAY**:)

How are the words arid and dry related?

(Encourage responses.)

Arid means very **dry**. If a desert is arid, it is extremely dry. Which word relates to **soaked** in the same way that **arid** relates to **dry**?

(If someone chooses the correct answer, wet, **SAY**:)

You are correct. But why did you pick **wet**?

(Encourage responses.)

Wet is the best answer because if something is **soaked**, it is extremely **wet**. Wet is the general term, and soaked is a specific amount or degree of wetness meaning very wet.

(If someone chooses any of the other answer choices, SAY:)
Why did you pick?
(Allow the student to share his or her reasoning.)
Well, isn't the right answer because it is not a more general term for soaked in the same way that dry is the more general term for arid.
(Check to make sure that all students have selected answer choice J.)
(Note that examining all options is part of figuring out the relationship. For example, wet, damp, moist, humid, and water are all associated with moisture. But the only word that more generally defines or describes the state of something that is soaked is the word wet.)
Many students who answer this question incorrectly pick the word damp. Why do you think they

(Encourage responses.)

pick damp?

Damp and soaked are both associated with water, and they are both degrees of wetness. But damp means only slightly wet. Soaked means completely wet.

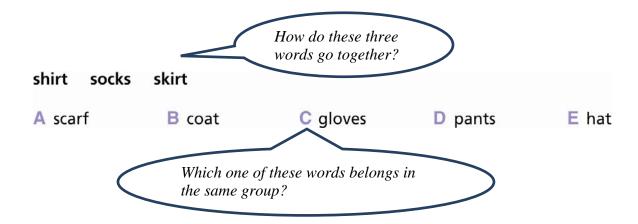
(Clarify any confusion, if needed.)

Test 3: Verbal Classification, Levels 9-12

Part 1: Overview of Verbal Classification

The Verbal Classification test requires students to infer how several words are alike and then pick the answer choice that belongs in the same category. Typically, there are many ways that the concepts or objects expressed by the words could be alike. Some categories capture relatively superficial similarities such as "All of the words are colors" whereas other categories capture unique similarities such as "All of the words are pastels." As students mature cognitively, they are able to detect more abstract and nuanced similarities. Using language to make more refined inferences is essential for learning, comprehension, and question solving. Teaching students strategies for making better inferences will improve their skills in these and many other domains.

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



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

- Think of a rule or category that describes the similarities among the first three words. For example, all of the words refer to pieces of clothing.
- Test the rule on each answer choice, eliminating answer choices that do not fit the rule. Only one answer choice should fit the inferred rule or category.
- Look for a more precise rule or category if more than one answer choice fits the rule. It is important to find the rule that most precisely describes the words. For example, "pets" is more precise than "animals", and "dresses" is more precise than "clothing."

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

• Students might select a word or object that reminds them of one of the words or objects in the first row, often relying only on appearance. For example, a student may pick "scarf" because it begins with an "s" like the words in the first row in the question above.

- Students may find a rule or category that fits more than one option and not go back to determine a more narrow or precise rule. For example, "clothing" describes all of the answer choices above, so a more precise rule is required.
- Students might choose an answer that is the name of the category and not another member of the category. For example, suppose that one of the options were "clothing". Students may select this as the answer because they recognize the first three words as articles of clothing.

Part 2: Verbal Classification Practice Test Script

The following script covers many issues that will help students do their best on the test. Read aloud the text printed in *blue italics*: these are directions to the students. Directions for you are in parentheses and should NOT be read aloud. Feel free to modify the script to ensure that students understand what they are supposed to do and how to do it.

(Make sure each student has a practice booklet. Then **SAY**:)

Open your practice booklet to page 2.

(Check that all students have the correct page.)

Each question in the Verbal Classification test has two rows of words. You must decide which word in the second row belongs in the same group as the words in the first row.

P1

Let's do the first practice question.

1	Indian Arctic	Atlantic				
	A African	B Asian	C Australian	D Pacific	E Polar	

What are the words in the top row?

(Encourage responses and say the words aloud.)

The words are **Indian**, **Arctic**, and **Atlantic**. How are all of these things the same?

(Encourage responses.)

They are all names of oceans. The Indian Ocean is between Africa, India, and Australia. The Arctic Ocean is near the North Pole. The Atlantic Ocean touches the east coast of North America.

What are the words in the bottom row?

(Encourage responses and say the words aloud.)

They are African, Asian, Australian, Pacific, and Polar.

Which word from the bottom row belongs in the same group as the words in the top row? Which answer choice is also an ocean?

(Encourage responses. If someone chooses Pacific, SAY:)

Pacific is also a name of an ocean, which is why it's the best answer.

(If someone chooses African, Asian, Australian, or Polar, SAY:)

That is not the best answer. Is it a name of an ocean?

We must find the word that goes best with the words in the top row. All of the words in the top row are names of oceans, so the answer we pick must also be a name of an ocean.

(Check to make sure that all students have selected answer choice D. Make sure students understand what they are supposed to do and clarify any confusion, if needed.)

P2

Let's do the second practice question.

2	vanilla chocolate I		Neapoli	Neapolitan			
	J sherb	et K	cone	L strawberry	M twist	N sundae	

Think about how all the words in the top row go together. What are the words in the top row?

(Encourage responses and say the words aloud.)

The top row reads vanilla, chocolate, and Neapolitan. How are these things the same?

(Encourage responses and conversation about why they are the same. The correct response is that they are all flavors of ice cream.)

Now look at the words in the bottom row. What are they?

(Encourage responses and say the words aloud.)

They are **sherbet**, **cone**, **strawberry**, **twist**, and **sundae**. Which word in the bottom row fits best with the words in the top row? Which word in the bottom row is also a flavor of ice cream?

(Encourage responses. If someone chooses the correct answer, strawberry, **SAY**:)

You chose **strawberry** because it is a flavor of ice cream like the words in the top row. You're right. That is the best answer.

(If someone chooses sherbet, **SAY**:)

Sherbet is a category or type of cold, creamy dessert like ice cream, but it is not the best answer because it is not a flavor of ice cream.

(If someone chooses cone, **SAY**:)

Cone isn't the best answer. Although a cone holds ice cream, it is not a flavor of ice cream.

(If someone chooses twist, **SAY**:)

Twist *is two flavors of ice cream mixed together, so it cannot be the right answer.*

(If someone chooses sundae, **SAY**:)

A **sundae** is a dessert made from ice cream, but it is not a flavor of ice cream.

(Check to make sure that all students have selected answer choice L.)

P3

Look at the third practice question. Listen carefully while I solve this question. I will tell you what I am thinking so you will know how to answer similar questions.

3	shirt socks	skirt			
	A scarf	B coat	C gloves	D pants	E hat

First, I'll look at the words in the top row.

They are shirt, socks, and skirt. Let me think, how are these three words like each other?

All of the words start with "s" and have five letters. But is there another way that they are alike?

I know. All three words are types of clothing. Maybe that's the right rule. Let me look at the answer choices in the bottom row.

Well, scarf starts with an "s" and has five letters, so it could work. But I should look at all of the answer choices before picking one.

A coat is a piece of clothing. So, coat might be a good answer if the rule is types of clothing.

Gloves are also clothing. I probably need to look at how the things in the top row are alike again. But first I'll look at the other two words.

Pants are also clothing. A **hat** is also a piece of clothing. Now I really need to look at what makes the words in the top row alike. I need to find a more precise rule for grouping the words in the top row.

A shirt, socks, and a skirt are all pieces of clothing. What else do they have in common?

I know! You could wear all of them when you change out of your pajamas before leaving for school. They are important/primary pieces of clothing. The shirt covers the upper body, the

socks cover feet, and the skirt covers legs. You would need to wear all of them to school.

(Point to the answer choices as you **SAY**:)

Now, I can look at the words in the bottom row.

Scarf is not the best answer because you can go to school without a scarf. It is not an important or necessary piece of clothing. What about the **coat**? You might need a coat in winter, so maybe it is the best answer. I am going to look at the other choices again before I choose an answer.

Gloves are not as important to wear as a coat is, so they are not the best answer. The next choice is pants. Pants are more important than a coat because boys cannot go to school without pants. Pants are an important primary piece of clothing. Pants are the best answer now. The last choice is hat, which is not as important to wear as pants.

I think **pants** are the best answer, so I will circle answer choice D in my test booklet. I'm glad I looked at all of the answer choices a second time because I almost chose the wrong answer. Do you understand why I chose **pants**?

(Check to make sure that all students have selected answer choice D and clarify any confusion.)

P4

Look at the next practice question. I want you to try this one by yourself. Think about how the three things in the top row are alike. Think about how we use each one. When you have an idea, look at the words in the bottom row. Only one answer choice in the bottom row should fit the rule for the things in the top row. If more than one answer fits your first rule, look for a more precise way that the things are alike. If you find an answer, circle it in your booklet.

4	bumper	seat belt	helmet			
	J fender	Ka	air bag	L visor	M wiper	N mirror

(Make sure students have enough time to solve the problem on their own. Then **SAY**:)

How are the three things in the top row like each other?

(Encourage responses. Call on a few students to answer. The correct response is that they all "keep you safe or protect you in an accident.")

Which word from the bottom row belongs in the same group as the words in the top row?

(Encourage response. If someone chooses the correct answer, air bag, **SAY**:)

You are correct. The **air bag** is the best answer because it can keep you from getting hurt in an accident, like all of the things in the top row.

Look at the next practice question. Try to solve this practice question on your own.

5 bus train	airplane			
A ship	B bicycle	C buggy	D tractor	E motorcycle
(Make sure students How are the three v		-		n. Then SAY :)
(Encourage respons	, in the second second			
bus takes many peo	ple around town o irplane flies man	or from city to cit y people from on	y. A train takes m	ple at the same time. A nany people on short or er. Which word in the
(Encourage respons	es. If someone ch	ooses the correct	answer, ship, SA	Y :)
You are correct. Bu	t why did you pich	k the ship?		
(Encourage respons	es.)			
Ship is the best ans	wer because it tak	kes many people j	from place to plac	e.
(If someone choose	s any of the other	answer choices,	SAY:)	
Why did you pick th	e?			
(Allow the student	so share his or her	reasoning.)		
Well, the isn't	the right answer	because it does n	ot transport many	people at the same time

(Check to make sure that all students have selected answer choice A. If necessary, explain that examining the choices is part of figuring out the rule. For example, the bicycle, buggy, tractor, and motorcycle are all forms of transportation. But all of the options are modes of transportation, so this rule does not eliminate any of the options.)

Look at the last practice question. Try to solve this practice question on your own.

6	touchdown	home run	goal			
	J net	K refere	e	L foul	M penalty	N basket

(Make sure students have enough time to solve the problem on their own. If students do not understand the words, please clarify. Then **SAY**:)

How are the three things in the top row like each other?

(Encourage responses.)

All of the things in the top row are terms for points scored in a sport. A **touchdown** scores points in football. A **home run** scores points in baseball and softball. And a **goal** scores points in soccer and hockey. Which word in the bottom row belongs in the same group?

(Encourage responses. If someone chooses the correct answer, basket, **SAY**:)

You are correct. But why did you pick basket?

(Encourage responses.)

Basket is the best answer because it is a term for points scored in basketball.

(If someone chooses any of the other answer choices, **SAY**:)

Why did you pick the ____?

(Allow the student to share his or her reasoning.)

Well, the _____ isn't the right answer because it does not score points in a sport.

(Check to make sure that all students have selected answer choice N. Note that examining the options is part of figuring out the rule. For example, net, referee, foul, and penalty are all words used in sports. But all of the options are words used in sports, so this rule is too general.)

(If many students have incorrectly chosen net as the answer, **SAY**:)

Many students who answer this question incorrectly pick **net**. Why do you think they pick **net**?

(Encourage responses.)

Net is the first answer. It is important to look at all of the answer choices so you are sure you have the most precise rule and you choose the correct answer.