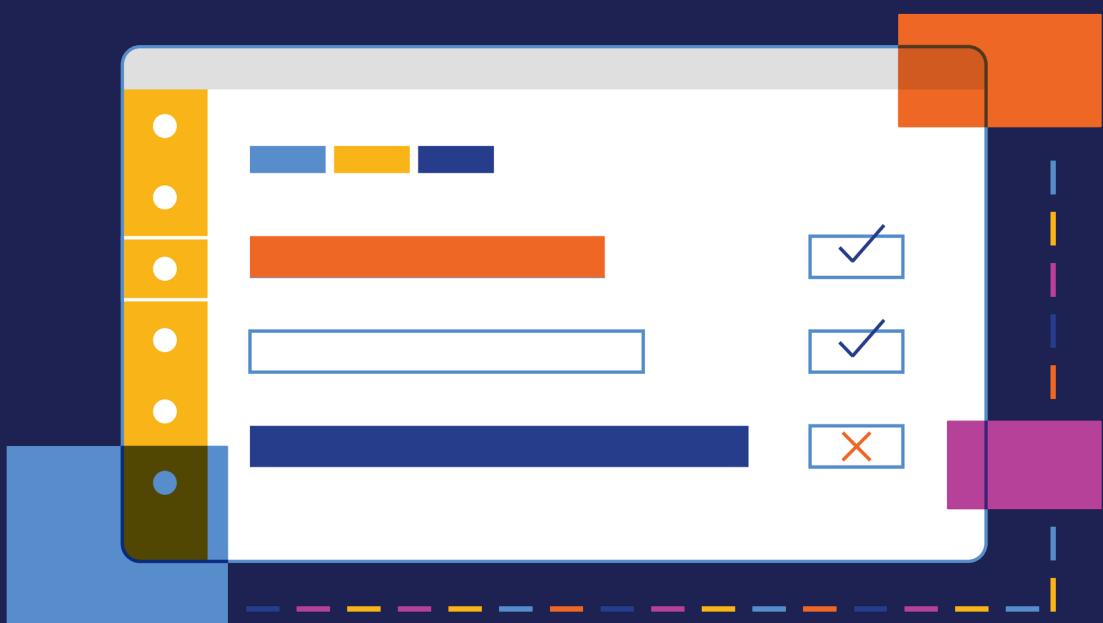




eBook

# How to Write Better Test Questions



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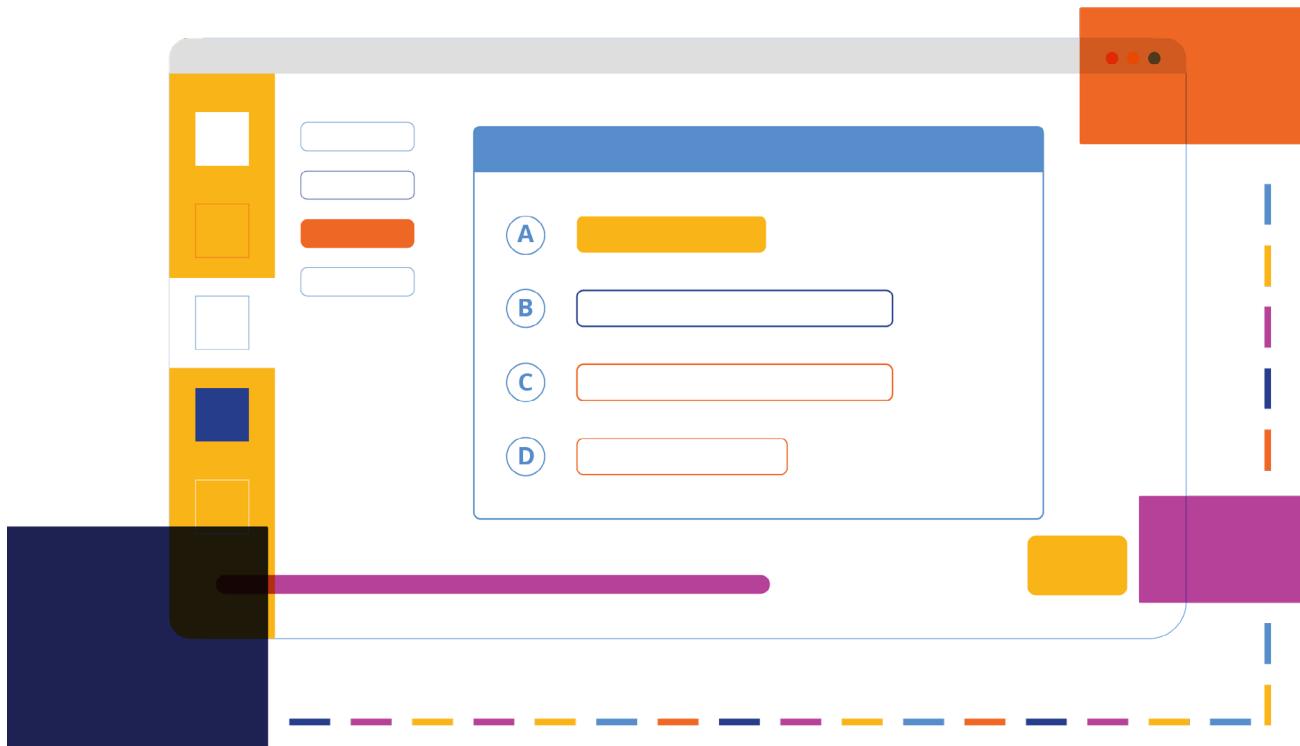
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# Multiple Choice Questions

How they work

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Tips for writing them



# When to use multiple-choice questions

- Associating & comparing
- Terms & definitions
- Problem solving
- Recalling concepts & information
- Vocabulary

## Parts of a multiple-choice question

They generally consist of a question with three or more answers to choose from – one is the correct answer, and the others are “distractors.”

Question 1	2 pts
What year was the first professional baseball game played?  <input type="radio"/> 1863 ← <b>Distractor</b> <input type="radio"/> 1869 ← <b>Correct Answer</b> <input type="radio"/> 1872 ← <b>Distractor</b> <input type="radio"/> 1889 ← <b>Distractor</b>	

Example mockup from an Instructure Canvas question format.

# Tips for writing multiple-choice questions

Multiple-choice questions are very common for online tests because they're extremely versatile and can be used for testing high-level knowledge and in-depth understanding.

## Don't use "all of the above" or "none of the above" as choices

These statements make it easier to guess the answer.

"**All of the above**" means that a student just needs to identify two of the correct choices to get the answer right.

"**None of the above**" doesn't mean that the student knows the correct answer – just that they can recognize wrong answers.

## Answers shouldn't overlap

Answers should be independent of one another, with no overlap.

### Less Effective

Question 1	2 pts
WCAG AA's minimum contrast ratio is_____.	
<input type="radio"/> 4.5:1	
<input type="radio"/> 4.5:1 - 6:1	
<input type="radio"/> 6:1 - 7.5	

### More Effective

Question 1	2 pts
WCAG AA's minimum contrast ratio is_____.	
<input type="radio"/> 4.5:1	
<input type="radio"/> 6.0:1	
<input type="radio"/> 7.5:1	

Example mockups from an Instructure Canvas question format.

# Tips for writing multiple-choice questions

## Remove any element of subjectivity

### Less Effective

Question 1	2 pts
The best benefit of assistive learning technology is that:	
<input type="radio"/> Students can access learning materials	
<input type="radio"/> Students can engage with course materials	
<input type="radio"/> Students with blindness can read text on the screen	

### More Effective

Question 1	2 pts
A screen reader is an assistive learning technology that translates on-screen information into _____ or _____.	
<input type="radio"/> Speech; Braille	
<input type="radio"/> Transcriptions; Captions	
<input type="radio"/> Graphics; Images	

Example mockups from an Instructure Canvas question format.

In the less effective example, the student is left with three acceptable but subjective answers to a broad question. The “best” feature for some can be irrelevant to others.

## One subject per question

Using one subject for each question helps keep things focused and concise for the student.

# Tips for writing multiple-choice questions

**Don't give away the answer with the wording and structure of the question**

Small mistakes can give away the correct answer, even with no context of the subject.

## Question Format

The example below includes three blank lines, which gives away the answer of New York City because the other options are two words or less.

Question 1	2 pts
<p>The Statue of Liberty is located in _____. _____.</p> <ul style="list-style-type: none"><li><input type="radio"/> Chicago</li><li><input type="radio"/> New York City</li><li><input type="radio"/> Philadelphia</li><li><input type="radio"/> Los Angeles</li></ul>	

Example mockup from an Instructure Canvas question format.

A better way to present this question is to use one solid line as the blank space.

# Tips for writing multiple-choice questions

## Sentence and Answer Format – Titles

Even with no context of the event or the potential attendees, you can probably guess the correct answer based on the titles before the blanks and the order of the names.

Question 1	2 pts
The event was attended by Mr. _____ and Ms. _____	
<input type="radio"/> Joe Smith; Susan Jones	
<input type="radio"/> Bridget Miller; John Williams	
<input type="radio"/> Fans; Employees	

Example mockup from an Instructure Canvas question format.

For this question, a simple way to improve it is to remove the title before the blank.

# Tips for writing multiple-choice questions

## Word Format – Plural & Singular

Since the company purchased 500, that inherently means that the correct answer will be plural, which excludes option A, which is written in a singular format.

Question 1	2 pts
<p>The company purchased 500 _____ and _____.</p> <p>_____</p> <p>_____</p> <p>_____</p>	
<ul style="list-style-type: none"><li><input type="radio"/> Computer; Webcam</li><li><input type="radio"/> Microphones; Keyboards</li><li><input checked="" type="radio"/> Screen readers; Mouse pads</li></ul>	

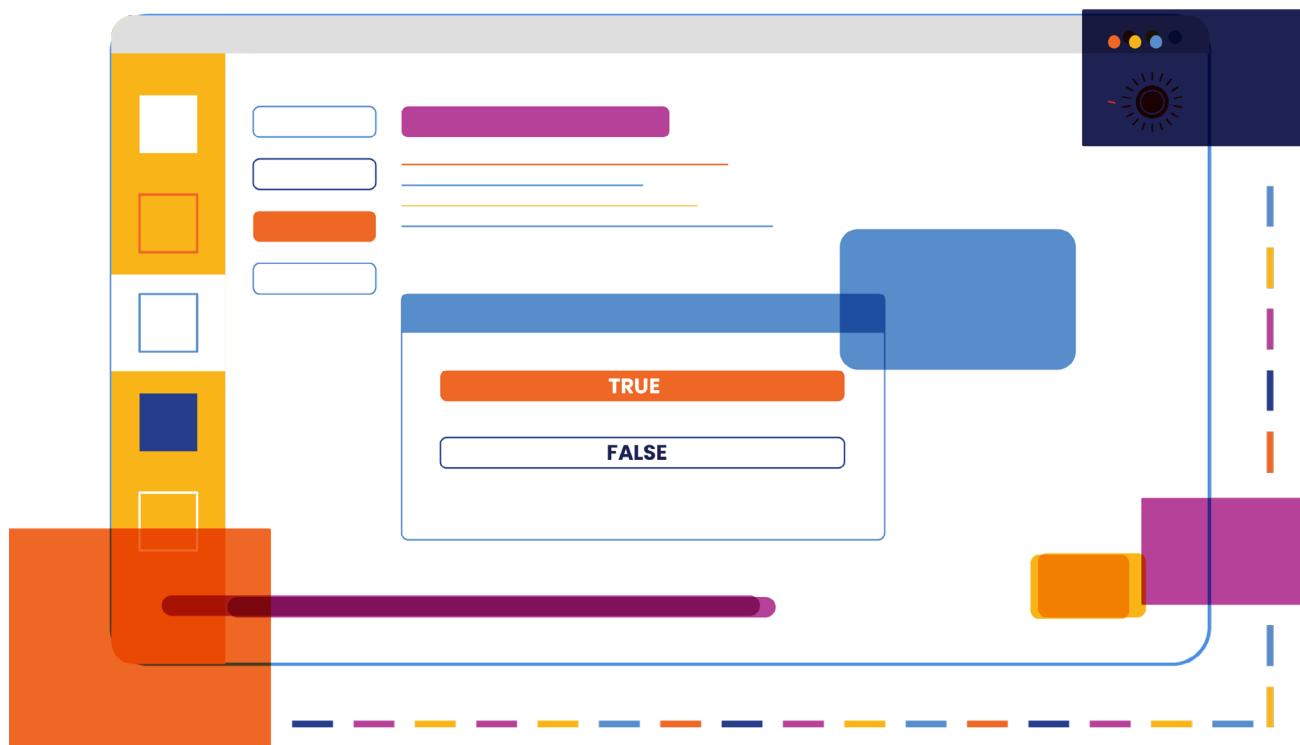
Example mockup from an Instructure Canvas question format.

Aside from using a consistent plural/singular format for each answer, you could also create answers that account for both singular and plural options:  
e.g., Computer(s); Webcam(s)

# True or False Questions

When to use them

Tips for writing them



# When to use true-or-false questions

True-or-false questions may seem simplistic, but when used correctly, they can effectively test in-depth understanding of information through:

- Analyzing items and statements
- Recall of information & concepts
- Surveys & feedback
- Terms & definitions

However, writing true-or-false questions can be tricky because small word choices can change the meaning of a statement.

# Tips for writing true-or-false questions

## Statements must be 100% true or 100% false

Leave no room for interpretation or subjectivity. Each statement should be explicitly true or false.

### Less Effective

#### Question 1

The elements of water sometimes include hydrogen and oxygen.

2 pts

True

False

### More Effective

#### Question 1

2 pts

The elements of water are hydrogen and oxygen.

True

False

Example mockups from a Blackboard Learn question format.

The less effective example implies that water may sometimes include elements other than hydrogen and oxygen.

# Tips for writing true-or-false questions

Pay attention to small words that can completely change the meaning of a sentence

## Modal verbs

Modal verbs can help describe the possibility, ability, intent, and necessity of a main verb.

**Examples of modal verbs:** can, may, could, should, would.

**Here's how a modal verb can change a sentence:**

- **No modal:** I run every day.
- **With modal:** I can run every day.

Running every day and having the ability to run every day are two very different things. Having the ability to run every day doesn't mean that you actually do run every day.

- **The example with no modal** states a fact: the person runs every day.
- **The example with a modal** states that the person is capable (can) of running every day, not that they do.

## Absolute words

Similar to modal verbs, absolute words can change the meaning of a sentence entirely.

**Examples of absolute words:** never, always, all, must

**Here's where you have to consider if something is absolutely 100% correct or if it's just a general statement.**

- **With absolute:** The man never goes running.
- **Without absolute:** The man rarely goes running.

### Which sentence is truly accurate?

Does the man literally never run, or is it just rare that he runs?

**Note:** Some sentences can include both modal and absolute words, which can cause confusion for the student.

**e.g.:** The man usually never goes running.

## Watch for double negatives

Double negatives make a test question confusing for anyone.

### Example of a double negative used in a true-or-false statement:

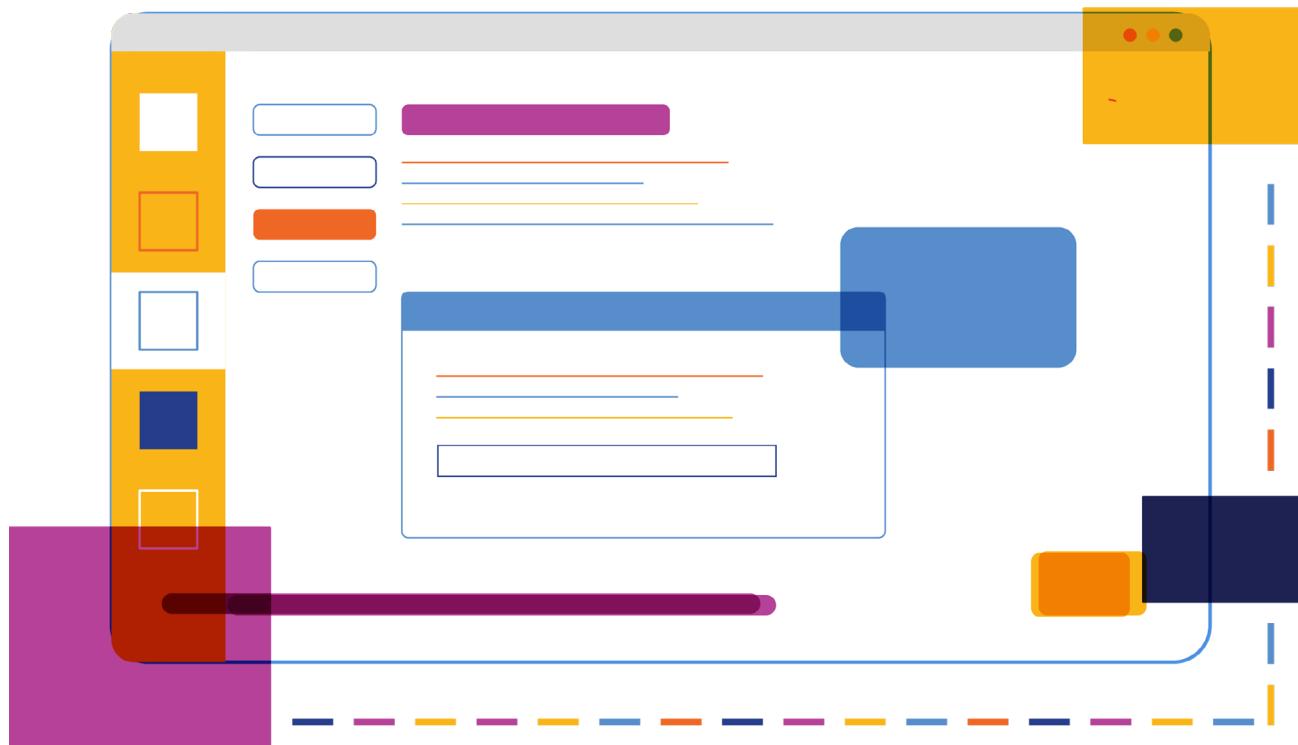
- **Less effective statement:** The man was not unhappy that the rain stopped.
- **More effective statement:** The man was happy that the rain stopped.

The less effective example is confusing, right? The first negative word in that sentence is "not" and the second negative is the prefix "un." When you combine the two negatives, "not unhappy" is canceled out and changes to a positive.

# Fill-in-the-blank Questions

When to use them

Tips for writing them



# When to use fill-in-the-blank questions

Fill-in-the-blank test questions provide an objective way to measure true understanding of the answer rather than recognizing the answer to a multiple-choice question when they see it.

- Terms & Definitions
- Problem Solving
- Recalling concepts & information
- Vocabulary

However, writing true-or-false questions can be tricky because small word choices can change the meaning of a statement.

## Tips for writing fill-in-the-blank questions

### Don't start a statement with a blank

Blanks should be included toward the end of the statement instead of the beginning.

#### Less Effective

Question 1	2 pts
_____ is composed of the chemical elements hydrogen and oxygen.	<input type="text"/>

#### More Effective

Question 1	2 pts
The chemical elements hydrogen and oxygen combine to create _____.	<input type="text"/>

Example mockups from an Instructure Canvas question format.

## Don't use too many blank spaces

Too many blank spaces can overwhelm students and potentially lead to incorrect answers. Try to only use 1-2 blank spaces per statement.

## Make sure the statement and answer grammatically align

### Less Effective

Question 1	2 pts
A structure that is built over something so that people can cross is called an _____.  <input type="text"/>	

### More Effective

Question 1	2 pts
A structure that is built over something so that people can cross is called a(n) _____.  <input type="text"/>	

Example mockups from an Instructure Canvas question format.

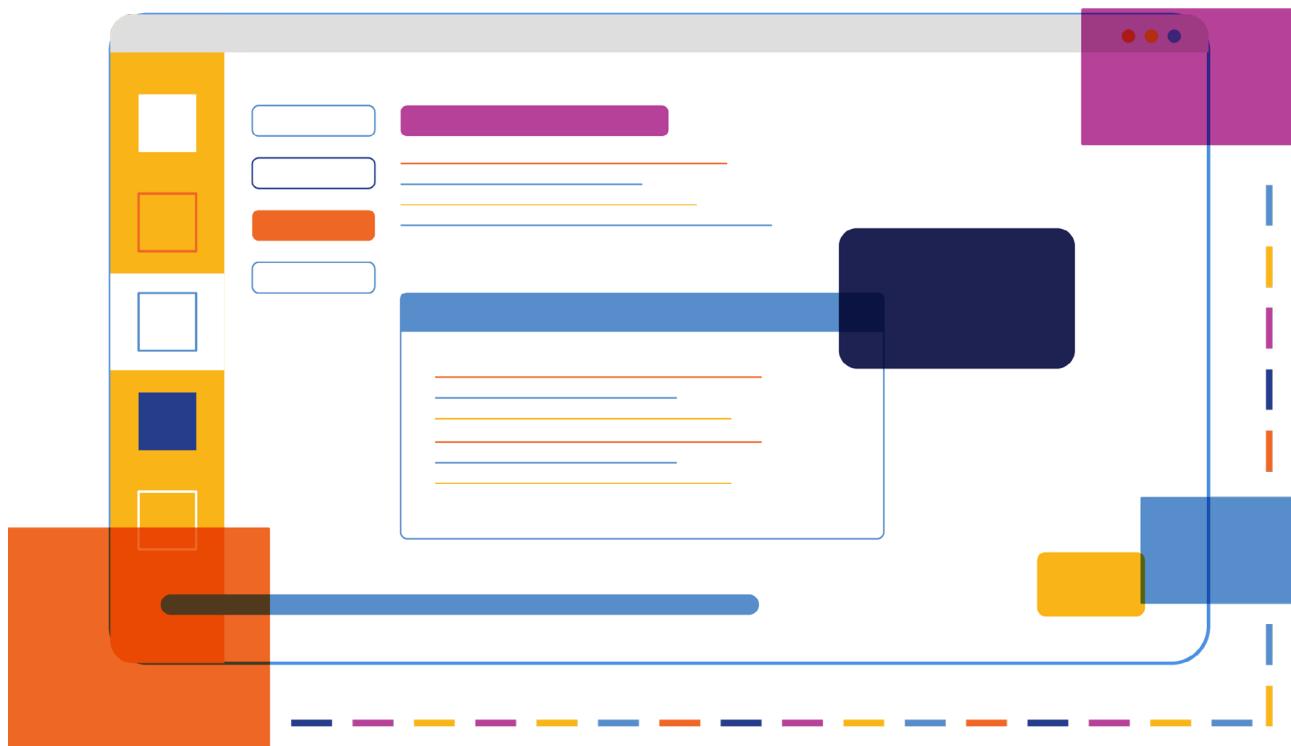
(**Correct answer:** bridge)

The article “an” before the blank space usually indicates that the answer starts with a vowel, which is confusing because the answer doesn’t start with a vowel.

# Written Test Questions

When to use them

Tips for writing them



# When to use written test questions

Written test questions can be more time consuming to review, but they're an effective way to allow students to expand their thoughts and tie-in other concepts.

- Associating & comparing
- Authentic assessment
- Terms & definitions
- Problem solving
- Recalling concepts & information
- Vocabulary
- Student feedback



# Tips for better written test questions

## Intentionally frame your questions based on the goal

- **Less effective:** "Discuss the benefits of process-improvement methodologies."
- **More effective:** "Compare the benefits of Six Sigma and Agile to determine which methodology is the best option for a software company."

## Words to help frame the purpose of your essay question:

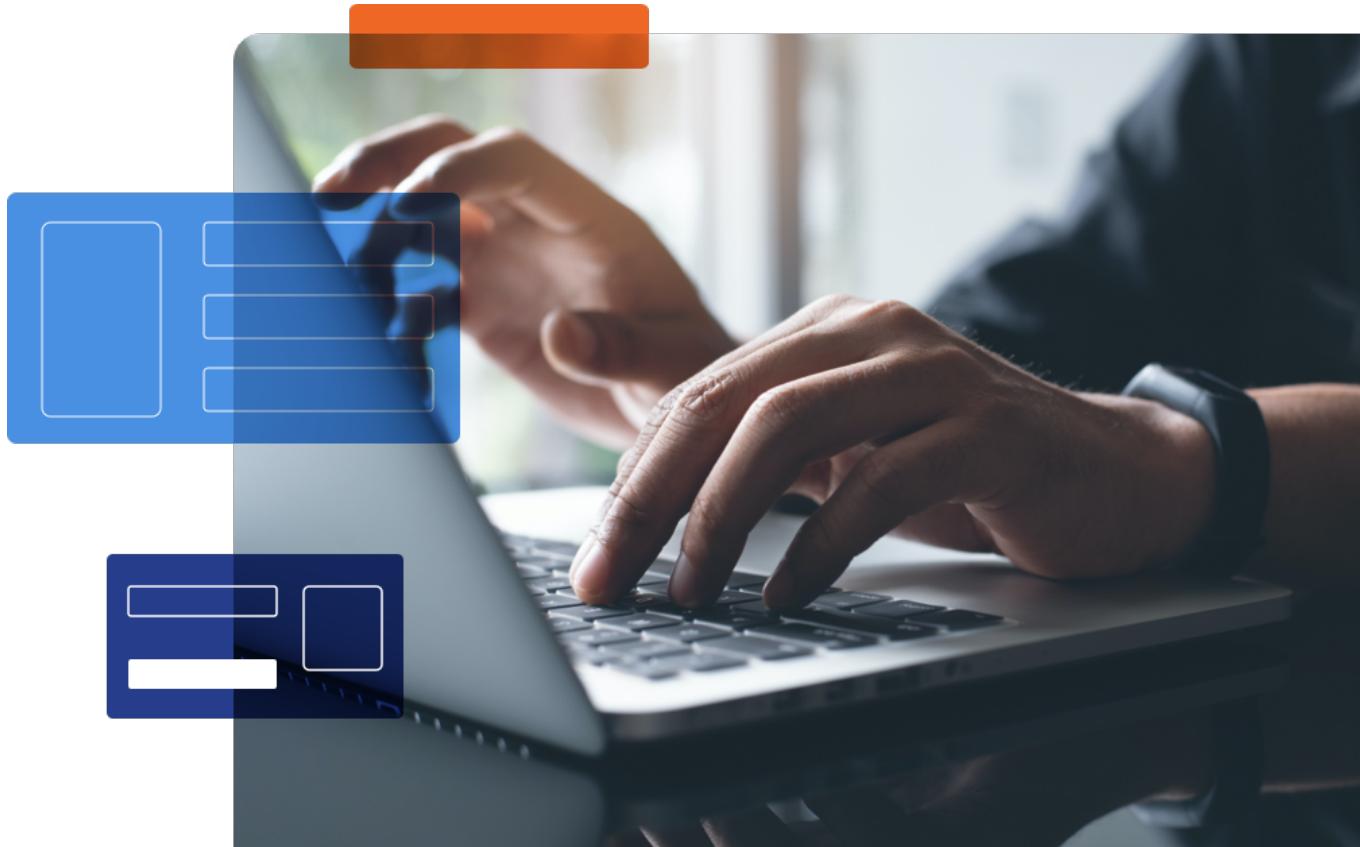
- Group/classify/categorize
- Compare and contrast
- In your own words, define
- List five ways to
- Define
- Summarize

## Words and phrases to avoid when creating an essay question:

- Discuss
- Detail
- Speak to/about

## Use blind grading (anonymous grading)

Blind grading, sometimes called anonymous grading, can help remove grading bias because students submit their tests without a name or number. You can set this up in most modern LMSes by turning on anonymous grading at the course level. Doing so will hide the students' names before grading and automatically distribute the test score back to them.



## Tips for better written test questions

### For longer essay questions, focus on broad topics

Instead of focusing on one specific item for a longer written response, focus on larger topics. This approach allows students to demonstrate complex understanding by associating items across a broad range of topics.

### Provide the same questions to all students

Instead of listing four essay questions and requiring students to answer two, just provide two questions. This approach helps consistently measure student performance and ensure fairness during grading.

# Tips for better written test questions

## Set expectations and prepare students

### Good response vs poor response

Give examples of what makes a good response or poor response. What aspects should be addressed? What can make or break an answer?

### Technical information

Give students context about time limits, general response length, how to get support, etc.

### Detail the formatting expectations

- **Typed responses:** Tell students what fonts should be used, which processor (Word Doc, Google Docs, etc.), what font types to use, font sizes, and line spacing.
- **Hand-written responses:** Tell students what type of paper to use, pen color, and any other details that will help ensure that they're on track.

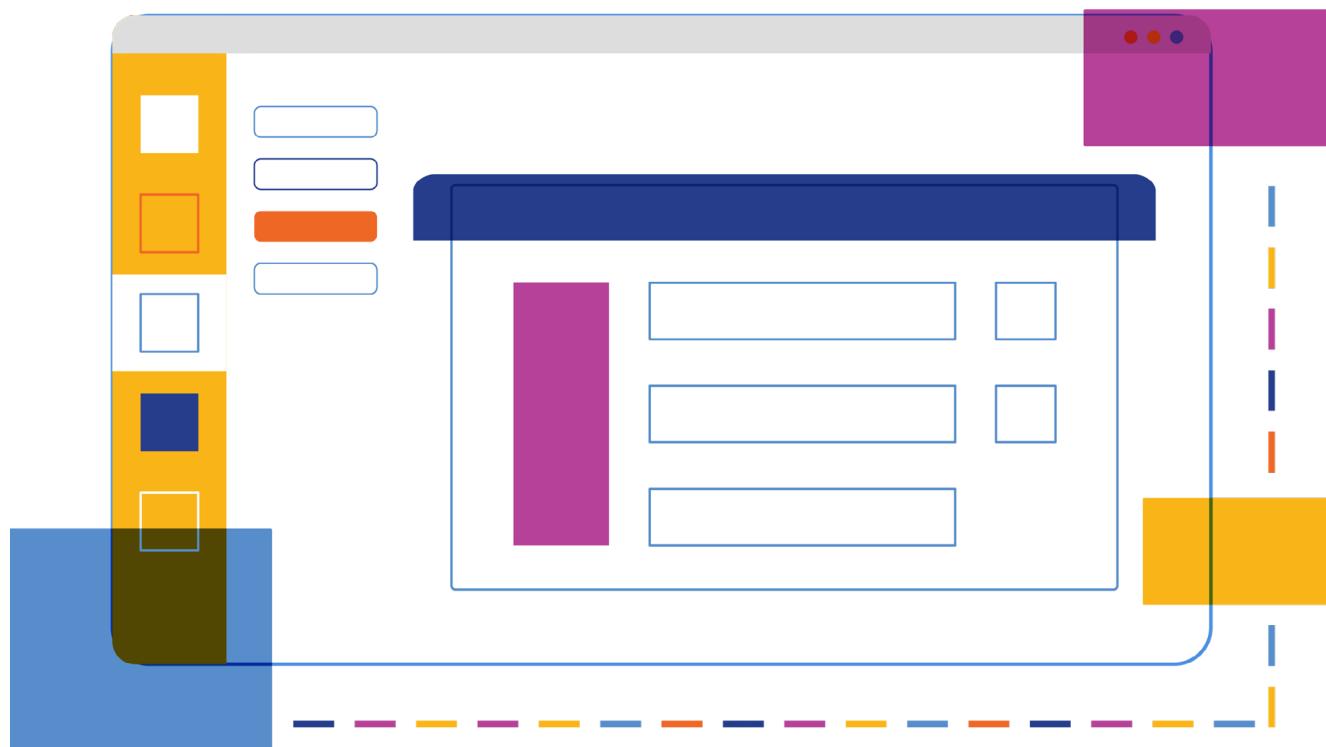
## LMS Tip:

Most modern LMSs have workflows and settings that allow students to easily upload their handwritten essays, notes, and scratch paper.

# Matching Test Questions

When to use them

Tips for writing them



# When to use matching questions

Matching test questions are an effective way to test knowledge in a variety of scenarios that cover a large amount of content, such as:

- Terms and definitions
- Scenarios and responses
- Causes and effects
- Parts and functions
- Vocabulary

Objective & Instructions

Prompts, Premises, Scenarios

**Question 1** 2 pts

Match the assistive device that's commonly used for each disability type.  
Click on the numbered disability type under Column A and then click a letter under Column B that's commonly used for the specific disability type.

Prompts	Answers
Visual	Choose a match
Hearing	Graphic Organizer
Motor/Mobility	Screen Reader
Learning	Captioning
	Eye Tracking
	Font Reader
	Contrast Checker

Answers & Responses

Example mockup from a Blackboard Learn question format.

# Tips for creating matching test questions

## Include more answers than prompts

Using more answers than prompts removes the ability for students to answer by process of elimination.

## Structure and format shouldn't give away the answer

Avoiding this problem can be especially tricky in matching-test questions. In the example below, the second prompt option is relatively easy to guess because the answer includes the first name "Mary" which is typically a female name. Resolve by removing "female" from the second prompt option and/or removing first names from the answers.

The mockup shows a question card for "Question 1" worth "2 pts". On the left, under "Prompts", there are three options: "Pop Artist", "Female Impressionist", and "Impressionist". On the right, under "Answers", there is a dropdown menu labeled "Choose a match" and five listed names: Salvador Dalí, Claude Monet, Vincent van Gogh, Andy Warhol, and Mary Cassatt. The "Female Impressionist" prompt is highlighted with a dashed border.

Prompts	Answers
Pop Artist	Choose a match
Female Impressionist	Salvador Dalí
Impressionist	Claude Monet
	Vincent van Gogh
	Andy Warhol
	Mary Cassatt

Example mockup from a Blackboard Learn question format.

# Tips for creating matching test questions

Prompts/answers should be clearly identifiable with no overlap

The prompts in the less effective example below are vague and most answers could apply to a few different prompts.

## Less Effective

**Question 1** 2 pts

Match the animal to their diets.

Prompts	Answers
Largest animal	Choose a match
Domesticated animal	<input type="radio"/> Horse
Mostly carnivore	<input checked="" type="radio"/> Cow
	<input type="radio"/> Cat
	<input type="radio"/> Dog
	<input type="radio"/> Chicken

## More Effective

**Question 1** 2 pts

Match the animal to their diets.

Prompts	Answers
Exclusively a carnivore	Choose a match
Often referred to as man's best friend	<input type="radio"/> Horse
Produces milk used in most common dairy products	<input checked="" type="radio"/> Cow
	<input type="radio"/> Cat
	<input type="radio"/> Dog
	<input type="radio"/> Chicken

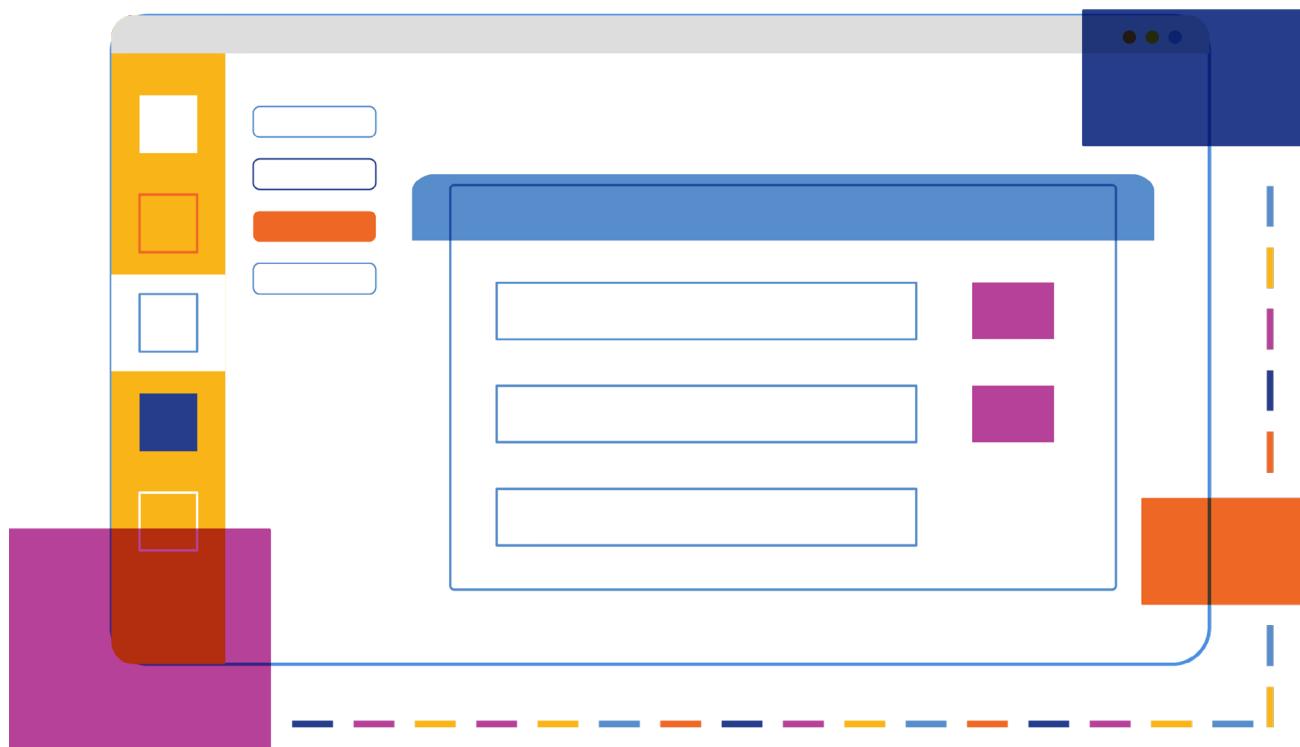
Example mockups from a Blackboard Learn question format.

- **Largest animal on the farm:** The answer comes down to a cow or horse. But the type of cow or horse impacts the answer.
- **Domesticated animal:** The go-to responses are both dogs and cats, but some people consider any farm animal “domesticated.”
- **Mostly carnivore:** Again, the go-to responses are both dogs and cats, but pigs can also consume meat.

# Rank-and-Order Questions

When to use them

Tips for writing them



# When to use rank-and-order questions

These questions ask students to rank or order a list of items based on chronological order of dates, steps, or level of importance. They're especially dynamic because students can respond in a few ways that combine with other question types, such as the student dragging and dropping numbers into the correct order or matching a step with the correct order.

- Chronological order of events
- Steps to complete a task
- Understanding the importance of an item

## How to write rank-and-order test questions

### Keep questions and items on the list focused

If a student has to chronologically order 15 historical events, they may get overwhelmed before they even start.

Instead, divide the 15 events into three sets of five events.

### Give context about what's highest or lowest, first or last, best or worst, most important or least important.

- **Less effective:** Rank the importance of work-life balance from 1-10.
- **More effective:** Rank the importance of work-life balance according to the survey from the ABC Company case study. 1 is the most important ranking. 10 is the least important.

# **Tip: Use ranking questions as a tool to gather student feedback**

You can use them to gather general course feedback or provide very specific questions based on activities.

## **General rank question:**

<b>Question 1</b>	<b>2 pts</b>
Rank which course activities you found most interesting from 1-3. 1 being the most interesting. 3 being the least interesting.	
1. Virtual group projects	⋮
2. Completing a real project using ABC industry software	⋮
3. Developing a portfolio of work	⋮

## **Specific-activity question**

<b>Question 1</b>	<b>2 pts</b>
Rank which Six Sigma topics you need the most help with before the final exam. 1 being the least help needed. 3 being the most help needed.	
1. Understanding the DMAIC process	⋮
2. The differences between Six Sigma and Lean Six Sigma	⋮
3. Why Six Sigma is used instead of other methodologies	⋮

Example mockups from an Instructure Canvas question format.

# Authentic Assessments

How they work

When to use them

Tips for writing them



# What is Authentic Assessment?

Authentic assessment is becoming increasingly popular because, rather than simply recalling information, students are actually completing real-world tasks and activities that demonstrate their knowledge and expertise.

## Online Authentic Assessments:

- Virtual presentations and demonstrations using a webcam
- Completing a project using industry software
- Creating a portfolio of work
- Game-based activities
- Essays
- Course participation in debates and discussions

## Tips for creating authentic assessments

1. Write a 1-2 sentence summary that identifies the key objectives of the assessment
2. Divide the summary sentence into separate parts
3. Create a list of what students should know for each section
4. Determine which authentic assessment tasks and activities students can complete to demonstrate their knowledge
5. Pick which assessment activities to use and create a detailed rubric

# Here's an example of how to create an authentic assessment:

## 1–2 sentence summary of key objectives of the assessment

Students will demonstrate understanding of the human skeletal system and basic knowledge of joints.

## Divide the summary sentence into separate parts

Students will demonstrate understanding of the human skeletal system and basic knowledge of joints.

### Students will demonstrate:

**Part 1:** Understanding of the human skeletal system

**Part 2:** Basic knowledge of joints

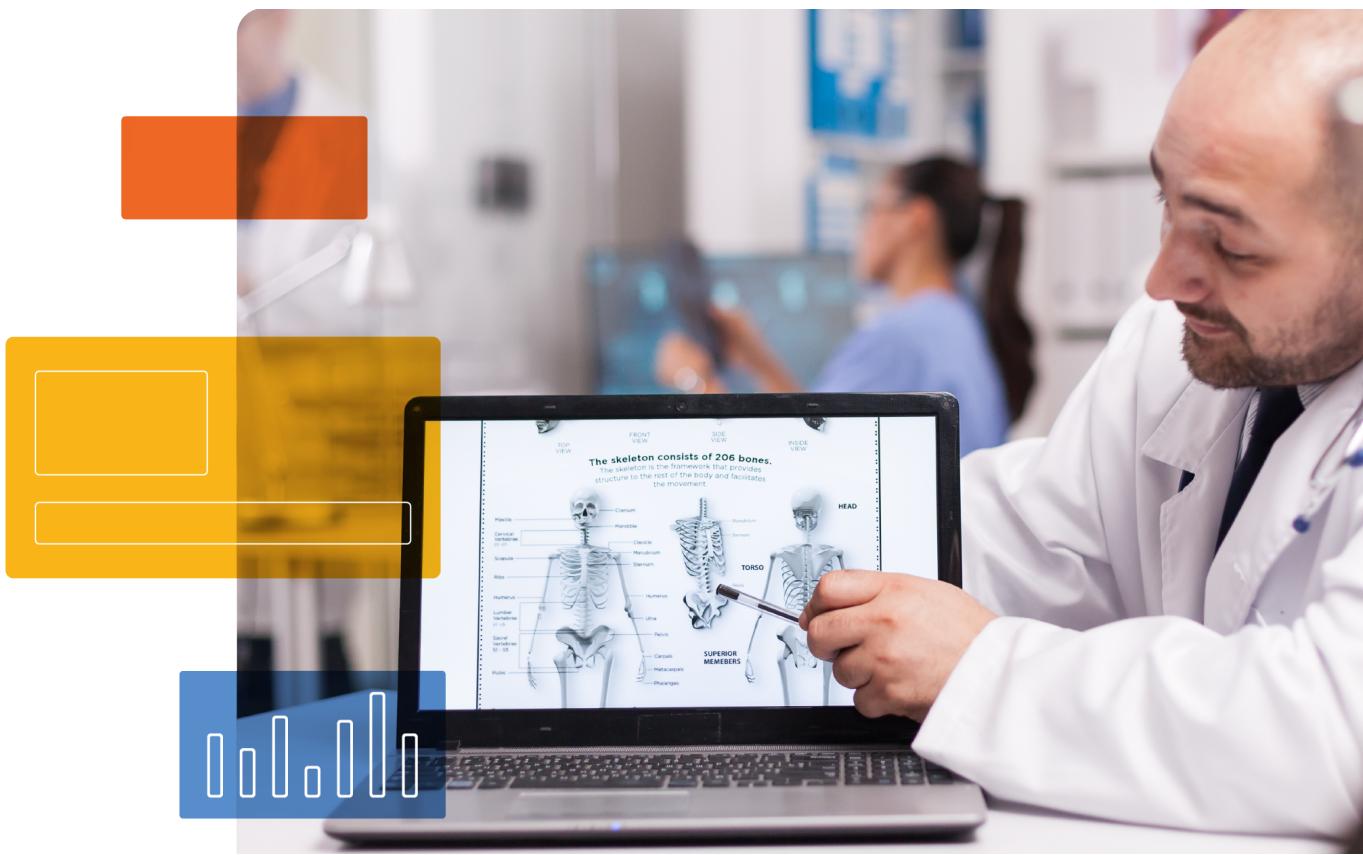
## Create a list of what students should know for each section

### Part 1: In-depth understanding of the human skeletal system

- The name of each bone in the skeletal system
- The five types of bones

### Part 2: Basic knowledge of joints

- Name of each joint type
- Basic anatomy of a joint and how it works



## Determine the tasks and activities students can complete to demonstrate their knowledge

Here are potential activities for Part 1 of this authentic assessment example:

### **Part 1: In-depth understanding of the human skeletal system**

#### **The name of each bone in the skeletal system**

- **Video recording:** Identify each bone in the skeletal system by pointing to it on an illustration or small replica of a skeleton.
- **Game-based activity:** Use a game on [website/software] and match the name to the appropriate bone in the skeletal system.

#### **The five types of bones**

- **Written – short answers:** Summarize each type of bone (250 words or less for each).
- **Video recording:** Identify the five types of bones, explain the differences, and point to three examples of each type on the skeleton illustration or small replica.

## Pick the assessment activities to use and then create activity descriptions and rubrics

After you decide which activities students will complete, create detailed activity descriptions and rubrics for each portion of the assessment.

### Example authentic assessment activity description

For this example, the instructor asks students to record a video of themselves identifying each bone in the skeletal system by pointing to it on an illustration or small replica of a skeleton.

**Description: Use your webcam to record a video where you'll identify each bone in the skeletal system by pointing to an unlabeled illustration or a small replica.**

- To identify the bone, use a pen or pencil as your pointer. The pointer will help clearly identify the bone you are selecting.
- After you point to the specific bone, clearly state the name of the bone using its correct pronunciation.
- You will identify each bone in different sections of the skeleton, starting with the top of the skull and progressively working your way down.

### The order of sections will be:

- |                           |                         |
|---------------------------|-------------------------|
| <b>1.</b> Skull           | <b>5.</b> Hand          |
| <b>2.</b> Shoulder Girdle | <b>6.</b> Pelvic Girdle |
| <b>3.</b> Torso           | <b>7.</b> Leg           |
| <b>4.</b> Arm             | <b>8.</b> Foot          |

**Provide a rubric for the assessment activity that details how it will be graded and the associated points, as you'll see in the example below.**

<b>Authentic Assessment Rubric</b>				
<b>Criteria</b>	<b>Ratings</b>			<b>Pts</b>
Accurately Identified Each Bone	<b>5 pts Full Marks</b>	<b>3 pts Meets Expectations</b>	<b>0 pts No Marks</b>	<input type="text"/> / 125 pts 
Followed the Correct Identification Order	<b>5 to &gt;3pts Full Marks</b>	<b>3 to &gt;0pts</b>	<b>0 pts No Marks</b>	<input type="text"/> / 50 pts 
Clear & Understandable Audio/Video	<b>5 to &gt;3pts Full Marks</b>	<b>3 to &gt;0pts Meets Expectations</b>	<b>0 pts No Marks</b>	<input type="text"/> / 25 pts 

Example Blackboard Learn rubric mockup.

# Overall online testing tips for instructors



# Keep accessibility in mind for each assessment activity

**Are there other ways students can complete each activity regardless of their disability or condition?**

If the assessment activity involves a spoken component, how can students with speech impairments complete it?

**Are all technologies in your online course compatible with assistive technology?**

Do the LMS, third-party platforms, and online proctoring software integrate with [assistive technology](#)?

**What resources do students need to complete the activities?**

Can every student afford a welcome/microphone? If not, do they have access to any other resources?

# Use online proctoring to create a fair test environment

While online tests are convenient, they can also pose challenges to protecting academic integrity.

Students can use cell phones or other browsers to look up test answers, use their notes, or even have another person take the exam for them.

## Online exam proctoring can help deter and prevent students from cheating by:

- Detecting cell phone use
- Identifying when test questions have been leaked on the internet
- Monitoring student behavior with video
- Verifying student ID
- Detecting voices and sounds
- Providing instructors with detailed reporting and recordings

In addition to the benefits listed above, Honorlock's online proctoring solution combines AI software with live human proctors to protect academic integrity while still supporting students and faculty.

Our AI monitors each student's exam session and alerts a live proctor to join the session if it detects any potential academic dishonesty.

This blend of AI and human review delivers a less intimidating and non-invasive proctored testing experience for the student because they aren't constantly being watched.

# Create clear test rules and instructions

Along with creating effective test questions, you need to [make test rules and instructions](#) that are clear and concise. Both are equally important to your students' success and testing experience.

## Here are some examples of what to do and not do when you make test rules and instructions

### Explicitly state what students can and cannot do

- **Don't do:** Don't talk with your friends or family during the test.
- **Do:** No talking during all tests.

**In the "Don't do" example,** the student may think: "my classmate isn't really my friend or family, so it's okay to talk to them for help."

- **Don't do:** No other devices can be on your desk during this test.
- **Do:** Remove all other electronic devices from the testing room/area, such as cell phones, tablets, ereaders, computers, smart watches.

**In the "Don't do" example,** the student may think: If my cell phone is in my lap, it's technically not on my desk.

## Tell student what to expect

Provide details about time limits, number of attempts, and how to get support.

### If the test is remotely proctored, explain what that means for students:

1. Describe how the process works
  - How they'll verify their ID
  - What they need to get set up and started (i.e. system requirements)
2. What can be flagged
3. [How online proctoring helps](#) them during the test

# Use frequent practice tests to help reduce test anxiety

Along with not knowing what to expect, a main cause of [student test anxiety](#) is related to concerns about technology.

**“My professor set up a practice test the week before the first real test. The practice test listed out all of her expectations and requirements. On my first real exam, I was fully prepared for the online proctoring experience since I knew what to expect.”**

- Student quote in a post-exam [student test anxiety survey interview](#)

# **Choose to Proctor with Integrity & Humanity**

Our purpose isn't to simply catch cheating - we strive to create a better online testing experience that supports students and protects academic integrity.



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