

***Understanding Learning
Objectives and Mapping
Assessments
Student Guide***

June 2026

Center for Development of Security Excellence

Contents

Lesson 1: Course Introduction	1-1
Overview	1-1
Lesson 2: Instructional Foundations.....	2-1
Lesson Introduction	2-1
Purpose of Training.....	2-1
Bloom’s Taxonomy	2-3
Knowledge Checks	2-6
Conclusion	2-6
Lesson 3: Learning Objectives	3-1
Lesson Introduction	3-1
Overview	3-1
Effective Learning Objectives.....	3-3
Knowledge Checks	3-5
Conclusion	3-7
Lesson 4: ABCD Objectives	4-1
Lesson Introduction	4-1
ABCD Format.....	4-1
Knowledge Checks	4-6
Conclusion	4-7
Lesson 5: Assessments	5-1
Lesson Introduction	5-1
Types of Assessments	5-1
Test Items.....	5-3
Knowledge Checks	5-3
Conclusion	5-4
Lesson 6: Mapping Objectives and Assessments	6-1
Lesson Introduction	6-1
Relating Objectives and Assessments.....	6-1

Rubrics	6-2
Objectives and Assessments.....	6-4
Knowledge Checks	6-6
Conclusion	6-6
Lesson 7: Course Conclusion	7-1
Conclusion	7-1
Appendix A: Answer Key	A-1
Lesson 2 Knowledge Checks	A-1
Lesson 3 Knowledge Checks	A-2
Lesson 4 Knowledge Checks	A-3
Lesson 5 Knowledge Checks	A-5
Lesson 6 Knowledge Checks	A-6

Lesson 1: Course Introduction

Overview

Course Overview

Welcome to the course, Understanding Learning Objectives and Mapping Assessments. This course is designed to help you create learning objectives and to map those objectives to assessment items, so that you can develop effective training solutions.

It covers the foundational concepts of designing effective instruction, and how that connects to creating learning objectives that align with outcomes and assessments. You will then learn how and why to map each assessment item to a learning objective.

Course objectives:

- Given examples, determine the relationship between learning outcomes, learning objectives, and learning domains, with 75% accuracy.
- Using the ABCD format, evaluate the efficacy of learning objectives, with 75% accuracy.
- Given training example details, determine the appropriate use of summative and formative assessments, with 75% accuracy.
- Based on knowledge level, map assessment items to objectives, with 75% accuracy.

Lesson 2: Instructional Foundations

Lesson Introduction

Lesson Objectives

This lesson provides an overview of instructional basics, including learning outcomes, backwards design, and hierarchical learning.

Lesson objectives:

- Given a scenario, differentiate between a learning outcome and a learning objective, to 75% accuracy.
- Given a scenario, determine the corresponding revised Bloom’s learning domain, to 75% accuracy.

Purpose of Training

Lesson Outcomes

There are many elements to developing training. To help illustrate some of these elements, let's use a building analogy.

At first, the entire scope of a training development project may seem quite large and even nebulous, starting out as a broad concept or idea. For our analogy, let's say the broad idea or concept is simply to teach an audience how to build something. You need to sharpen the focus of the broad concept. Before any training development takes place, it is important to identify the purpose of a training event. That is, *why is this training needed?*

For our building analogy, the concept of “build something” needs a sharper, more specific focus – something with a purpose. Perhaps the audience needs to know how to build something from start to finish using a basic material, such as wood. This would be the training goal. Training goals tend to be broad.

A big part of training development is breaking down large and broad concepts into smaller and smaller chunks, so that the goals can actually be achieved. From the general idea to the training goal, we are then able to determine the learning outcomes. Learning outcomes are broad and define what the learner should know or do after completing a training event. A needs assessment, which helps to determine what the outcomes, scope, and competencies should be for the training.

Outcomes also specify *behaviors* that should occur as a result of the training, which bridge the performance gap identified in the needs assessment. A **learning outcome** is a statement of broad goals explaining what the learner is supposed to know by the end of the training. In our wood-building analogy, we might select a specific item to build, such as a birdhouse. The learning outcome would be to be able to build a wooden birdhouse, from start to finish. Of course, there is a lot of knowledge and tasks required to accomplish a learning outcome, like building a birdhouse. This is why learning outcomes get broken down further into learning objectives, which we'll review later on.

Learning Outcomes Purpose

Why use learning outcomes? Learning outcomes serve several purposes. Learning outcomes inform the instructional design and development of a learning event. This includes the various elements of a training, such as the learning objectives, learning activities, and the presentation mode. There are various presentation modes, such as web-based, in-person instructor-led, synchronous, asynchronous, blended, and so on.

Let's review a couple learning outcome examples.

- A general example of a learning outcome is *to be able to safely drive a motor vehicle*.
- An example from this course you're in now is *to be able to create learning objectives in ABCD-format*.

Notice how these examples are broad yet can inform the specifics and direction of a course.

Backwards Design Overview

There are many ways to approach training design and instructional choices. However you decide to approach it, it is important to always keep the end-goal in mind. Your learning outcomes represent the overall end-goal for your training.

One approach to designing training is to begin by prioritizing the end, that is, the intended learning outcomes, instead of the content or topics. This is known as backwards design.

Backwards design creates a clear purpose in training. Using this strategy ensures content choices are purposeful and aligned with the intended training outcomes, and will support effective learning transfer, avoiding excess or extraneous content.

Remember it is critical to consider the format and mode of your training from the very beginning. Keep it in mind throughout your design and development. These presentation and delivery decisions will impact what instructional strategies and methods you can use to achieve your training outcomes.

Backwards Design: Learning Objectives

With backwards design, the learning outcome informs the specifics of how to reach that outcome via learning objectives. Learning objectives break down a training's intended learning outcome into measurable statements of understanding. Learners must meet objectives to achieve the final outcome.

A **learning objective** is a clear, measurable statement of behavior or performance the learner must master to determine that the desired learning has occurred.

Note that learning outcomes differ from learning objectives. Learning outcomes *inform* learning objectives. Backwards design also allows you to determine what acceptable evidence of learning or achievement of training goals looks like, before creating the instructional content and activities to meet those needs.

Format and Mode

Let's examine some examples of format and mode and how they can impact various aspects of training.

In web-based training (WBT), briefings or lecture-style informational training can be very successful. However, online training will limit practical, hands-on activities simply because this instructional delivery mode restricts certain performance-based learning opportunities. Instructors may or may not be available to answer student questions or to provide support during training. Consider how instructors will be available to support and provide feedback to learners, such as via messaging or email.

Consider assessment types and formats. These need to align with the instructional format and mode. For example, essay responses are one way to assess learner comprehension. However, if the training is not instructor-led, how will learners receive specific feedback? How will essay responses be assessed? If an instructor cannot be available for this activity, implement other assessment methods.

For further instruction on training formats and modes, see the *CDSE ADDIE course*.

Bloom's Taxonomy

Bloom's Taxonomy Overview

Bloom's Taxonomy is a framework that presents a learning hierarchy. The hierarchical approach to training development and assessing learning asserts that lower or foundational levels of cognition, such as knowledge, are first required to be able to build upon and expand knowledge to higher, more complex levels of understanding.

Benjamin Bloom, et al, developed a hierarchical system of classification for levels of cognition, beginning with knowledge as the base or foundation of all other learning. This knowledge leads to comprehension, followed by application of that knowledge and comprehension. From there, higher, more complex levels of understanding or learning transfer can occur, including analysis of the information, followed by synthesis, and finally, evaluation.

Since it was first published in 1956 and developed into a handbook for education objectives in 1969, Bloom's Taxonomy became a widely used foundational aspect of education.

Bloom's Revised Taxonomy

Now that you are familiar with Bloom's Original Taxonomy, let's take a look at the version that is more commonly used today. In 2001, Bloom's Taxonomy was revised by Lorin Anderson and David Krathwohl. This revision, known as the Revised Bloom's Taxonomy, re-focuses certain aspects of Bloom's original foundations and incorporates information from more current educational psychology. The Revised Taxonomy follows a similar structure to the original. Lower orders of thinking or cognition remain at the foundation and are built upon as it moves up to higher orders of thinking, from Remember, to Understand, to Apply, then to Analyze, Evaluate, and finally, Create.

Bloom's Original Taxonomy (1956)	Bloom's Revised Taxonomy (2001)
Evaluation	Create
Synthesis	Evaluate
Analysis	Analyze
Application	Apply
Comprehension	Understand
Knowledge	Remember

In this revised version, the six nouns are replaced by verbs, synthesis is removed, evaluation is shifted down a level, and create is added as the top, highest level or order of thinking. At the lowest order of thinking in the taxonomy, knowledge becomes remember, comprehension becomes understand, application becomes apply, and analysis becomes analyze. Synthesis is then replaced with evaluate and, at the highest level, evaluation is replaced with create.

Learning Domains

Now let's analyze the Revised Bloom's Taxonomy.

First, facts and information need to be learned and remembered before concepts can be understood. With this foundation the learner may then be able to apply that information, analyze various points of information, then evaluate content, and ultimately create based on the preceding foundational levels of cognition.

Each of these levels of cognition are also known as a **learning domain**.

Visit course resources, to access a job aid with example verbs for each of these learning domains that can support you in developing learning objectives or tasks.

Taxonomy Example

Let's apply the Revised Bloom's hierarchy to an example of learning you may recall from your own early childhood.

Think back to when you first learned to read and write. Before you could learn how to read, you needed to remember the letters of the alphabet and understand the sounds each letter could make. Eventually, you were able to apply that knowledge by actually reading and even analyzing what you read, learning grammatical rules, interpreting information, and more. You could then evaluate what you read, determining errors, context, and more. Finally, you were able to create your own work by writing.

Bloom's Revised Taxonomy (2001)	Taxonomy Example
Create	Write
Evaluate	Determine errors
Analyze	Interpret content
Apply	Read
Understand	Sounds
Remember	Letters

Knowledge Checks

Knowledge Check 1

Sofia is a junior in high school and is starting a driver's education course this week. She's never been in the driver's seat before. Here is a statement from that course:

By the time the course is over, the student should be able to drive a car safely through town.

Is this statement a learning outcome, a learning objective, or learning domain?

Select the best response. Check your answer in the Answer Key at the end of this Student Guide.

- Learning objective
- Learning outcome
- Learning domain

Knowledge Check 2

Sofia is a junior in high school and is starting a driver's education course this week. She's never been in the driver's seat before. Here is a statement from that course:

By the time the course is over, the student should be able to drive a car safely through town.

Which learning domain level does this statement reflect?

Select the best response. Check your answer in the Answer Key at the end of this Student Guide.

- Understand
- Apply
- Evaluate
- Remember

Conclusion

Lesson Summary

You have completed the *Instructional Foundations* lesson.

Lesson 3: Learning Objectives

Lesson Introduction

Lesson Objectives

This lesson introduces learning objectives. It also covers what makes learning objectives effective and how to develop them.

Lesson objective:

- Given a scenario, determine whether a learning objective is effective, to 75% accuracy.

Overview

Definition and Benefits

Once learning outcomes are determined for a training event, the next step in designing instruction is to develop learning objectives (LOs).

If the learning outcome is the big-picture, end-result of training, then learning objectives are the steps it takes to reach that end-result. *What does the learner need to know or be able to achieve to reach that end goal or learning outcome?* The answer to this question is provided via learning objectives.

LOs must be both clear and measurable. Each objective defines a behavior the learner needs to be able to demonstrate. These components of an objective allow us to assess whether the desired learning has occurred.

LOs provide clarity and focus to the training developers, instructors, and learners. LOs also provide instructors and learners with clear training expectations. This includes its design and instructional methods, content and learning activities, as well as which assessment types are appropriate.

LOs help instructors articulate criteria to learners by specifically stating what they should be able to do, how they will do it, and what they will be assessed on. For students, objectives provide purposeful guidance and expectations for how their learning or performance will be assessed and what they will be assessed on.

Next, we'll take a look at the two levels of learning objectives.

TLOs and ELOs

There are two levels of learning objectives, terminal and enabling. LOs should be singular, not compound. As part of ensuring each LO is measurable, it should measure a single action or behavior, not multiple actions.

Terminal learning objectives (TLOs) answer the question, what does the learner need to know to reach the learning outcome? TLOs are higher level objectives that apply to an entire course or module. You should develop TLOs after establishing learning outcomes for the training.

TLOs are broad, yet still measurable behaviors the learner must achieve. Establish TLOs before developing enabling learning objectives (ELOs). These *enable* the learner to master part of the TLO. ELOs answer the question, what does the learner need to know to move towards achieving this TLO?

ELOs must also be clear and measurable – and more specific than TLOs. They support learners and move them towards meeting a TLO by breaking down the criteria of the TLO into smaller, more detailed steps or elements. This enables the learner to achieve the higher level TLO one step at a time.

LO Examples

Let's take a look at learning objective examples, using the learning outcome: *The student will be able to drive a car safely through town.*

Recall that TLOs answer the question, what does the learner need to know to reach the learning outcome? For a student to be able to drive a car safely through town, what broad and measurable statement might cover what they need to know or be able to accomplish?

For example, for a student to drive safely through town, the student must be able to drive safely—period. A TLO for the course might be: *After completing the Driver's Education course, learners will be able safely drive an automobile, given instructions, at 75% accuracy.*

This is a broad objective. It's not specific enough to enable appropriate learning transfer for the student. This needs to be broken down – or chunked – into smaller, measurable objectives that enable the learner to accomplish this broad objective. Typically, multiple ELOs are needed to support a TLO.

Consider what the student needs to know or be able to do to meet the TLO—that is, to be able to drive safely. An example of an ELO in this case might be: *After completing this lesson, learners will be able to identify the standard controls in an automobile, while seated in the driver's seat of the instructor's vehicle.*

Note the difference in specificity between the two levels of learning objectives. Also notice that the TLO supports the learning outcome, while the ELO supports the TLO.

- **Learning outcome:** The student will be able to drive a car safely through town.
- **TLO:** After completing the Driver’s Education course, learners will be able safely drive an automobile, given instructions, at 75% accuracy.
- **ELO:** After completing this lesson, learners will be able to identify the standard controls in an automobile, while seated in the driver’s seat of the instructor’s vehicle.

Effective Learning Objectives

Elements

There are elements and specific qualities that define an effective learning objective. Conversely, a lack of these elements and qualities may result in ineffective learning objectives, and consequently, ineffective training. Effective learning objectives answer at least three questions: who, what, and how.

“Who” refers to the student or learner of the content. This may be as broad as “student” or may be more specific, such as, “hearing impaired driver’s ed students.” Part of the analysis phase of instructional design should answer specifics around the training event’s audience.

Recall our earlier example of an ELO: “Learners will be able to identify the standard controls in an automobile, while seated in the driver’s seat of the instructor’s vehicle.”

- The “who” in this example is “learners.”
- “What” refers to the noun or action to be taught. In the example shown here, “what” refers to “the standard controls in an automobile.”
- “How” refers to the action verb and the conditions which allows for learning transfer, as well as measuring that learning transfer. In this example, the action verb is “identify” and the condition is “while seated in the driver’s seat of the instructor’s vehicle”.

Later in the course, we’ll look at another way to structure learning objectives, adding a fourth element – *how much*.

Now that you’ve viewed the elements of effective learning objectives, let’s look at their qualities.

Qualities

Effective learning objectives need to have certain qualities. Learning objectives must be relevant. They must be realistic and measurable. Learning objectives need to be written in a way that is both clear and concise. They need to measure a singular action and they need to be specific.

Relevant

First and foremost, each learning objective needs to be *relevant*. This means it should be *required* to achieve the learning outcome. Do not include extraneous learning objectives that do not support the specific learning outcome.

In the driver's ed course example, objectives include elements of driving safely. They would *not* include an objective to change a tire.

Realistic

Given what you know about these learners and the training, is it *realistic* for the learner to achieve the learning objective?

In the driver's ed example, it is realistic that a student will be able to identify the standard controls in a vehicle by the end of the lesson.

Measurable

Learning objectives must be measurable. This means the objective must include *a type of performance*, so that achievement of a learning objective may be *proven*. One of the ways to ensure a learning objective is measurable is through verb choice.

For example, the verb "understand" is not measurable. Whether something has been understood is not something that can be specifically measured. You can, however, measure that something has been *identified*.

Clear & Concise

Ensure learners and instructors can interpret the learning objectives, by writing them clearly and concisely. Objectives should be easy to understand and should only include the information that is *needed* and no more.

In the driver's ed TLO example, the word "safely" is included for clarity. The ELO example includes "standard controls," but excludes a list of those controls, for conciseness.

Singular

Learning objectives should identify a singular, measurable action and no more than that.

Each of the driver's ed examples measure a single action:

- TLO: "safely drive"
- ELO: "identify standard controls"

Perhaps you determine that parallel parking needs to be a part of that course. Parallel parking is its own measurable action; it should have its own learning objective.

Specific

Learning objectives need to be specific. The level of specificity should match what is required to achieve the learning outcome.

Learning outcomes are broad goals. TLOs are more specific and determine how to measure those goals. ELOs are even more specific than TLOs, as they determine the specific measurable elements or steps that allow learners to meet TLOs.

In our driver's ed examples, the TLO focuses on driving *safely*. This specific piece of information impacts the course elements, stressing safety as a final outcome for the learner. It will be mentioned directly or otherwise implied throughout the course. The ELO mentions the *instructor's* vehicle as opposed to simply stating "vehicle."

Knowledge Checks

Knowledge Check 1

Question 1 of 2. Consider this learning outcome: *To be able to make a pizza from scratch.*

One possible TLO might be: *Given the ingredients, learners will make pizza dough from scratch, to above average quality.*

Does this TLO have all three minimum elements (who, what, how) of an effective learning objective?

Select the best response. Check your answer in the Answer Key at the end of this Student Guide.

- Yes
- No

Question 2 of 2. Consider this learning outcome: *To be able to make a pizza from scratch.*

One possible TLO might be: *Given the ingredients, learners will make pizza dough from scratch, to above average quality.*

Is this TLO relevant, realistic, and measurable?

Select the best response. Check your answer in the Answer Key at the end of this Student Guide.

- Yes
- No

Knowledge Check 2

Question 1 of 2. Consider this TLO: *Given the ingredients, learners will make pizza dough from scratch, to 70% accuracy.*

One possible ELO might be: *Given a recipe, accurately measure and blend the ingredients, according to instructions.*

Is this ELO concise and clear?

Select the best response. Check your answer in the Answer Key at the end of this Student Guide.

- Yes
- No

Question 2 of 2. Consider this TLO: *Given the ingredients, learners will make pizza dough from scratch, to 70% accuracy.*

One possible ELO might be: *Given a recipe, accurately measure and blend the ingredients, according to instructions.*

Is this ELO specific and singular?

Select the best response. Check your answer in the Answer Key at the end of this Student Guide.

- Yes
- No

Conclusion

Lesson Summary

You have completed the *Learning Objectives* lesson.

Lesson 4: ABCD Objectives

Lesson Introduction

Lesson Objectives

This lesson focuses on learning objectives in the ABCD format, breaking down each element and how to combine them effectively.

Lesson objective:

- Given a scenario, create effective learning objectives in the ABCD format, to 75% accuracy.

ABCD Format

Purpose

We just learned about the specific elements and qualities of effective LOs in Lesson 3. Now we will take a look at how you can create effective LOs by using a more formal format to systematically meet certain required elements.

The ABCD format is one way to meet the elements needed to ensure learning objectives are effective. The ABCD format includes four elements.

- First, it defines the **audience** for the training event. This is the “who” requirement.
- Next, it describes the **behavior** the learner will be able to perform after completing the training. This meets the “what” requirement.
- The **conditions** – or the “how” requirement – define the circumstances under which the learner will perform the behavior.
- Finally, it specifies the **degree** to which the learner will be able to perform. This adds a new element – how much – and is particularly useful when training needs have a minimum requirement, such as a passing score.

Using the ABCD format simplifies creating effective LOs by providing specific elements. This clarifies learning requirements for instructors and expectations for learners. Let’s take a closer look at each of the elements in the ABCD format.

Audience

The “A” element of ABCD learning objectives is for the Audience. It identifies the audience for the training. Identifying the training event’s audience makes it clear who the training is intended for. The audience identified in the learning objective may be broad and general, or it may be very specific. The level of specificity varies based on the training needs. The audience may be identified broadly as “students” or “learners.” When identifying a more specific audience, you might include the particular course or program, specific participants, or graduates rather than simply “students.” For example, driver’s ed students, participants in the XYZ certification program, or graduates of the Master’s in Military Art and Science degree program.

Let’s dive a little deeper into “audience.”

Understand Your Audience

You don’t want to simply *identify* the audience in the learning objectives. You want to *understand* the target audience for the training. This understanding allows you to design objectives *and training* based on what you know about the audience.

Here are some questions to consider, to gain an understanding of the training’s target audience.

- What is their initial level of understanding of the content?
- Is this brand-new information to them? Is it refresher training?
- Is it building upon existing knowledge?

Consider the training delivery method. Will the learners access the course in person? Online only? Or is the course a hybrid of the two? You also need to consider whether the course will be instructor-led for all of the training, some of it, or not instructor-led at all.

Are there special needs within this audience? For example:

- Is there a potential language barrier?
- Are there sensory challenges, such as vision or hearing impairments that should be considered in the training?
- Are there social, economic, or cultural differences to be considered?

Understanding your audience is critical to designing successful objectives, assessment items, activities, and the training itself. Keep these details in mind as you design and develop various elements of training.

Behavior

The “B” element of ABCD learning objectives is Behavior. This element describes how the student will accomplish the work to achieve the overall learning outcome. Identifying the desired behaviors for the training event and learning objective serves several purposes. It focuses the content and methods of instruction. It provides expectations to the instructor and student. Behavior identifies what students will be doing that can be assessed, observed, and measured.

Identify the Behavior

As previously mentioned, identifying appropriate behaviors is a key component of creating effective ABCD objectives.

The behavior in a learning objective must be observable and measurable. For example, it’s not possible to observe or measure the verbs “understand” or “know,” but you can observe and measure the verbs “identify” and “create.”

The behavior needs to directly support achievement of the learning outcome or associated terminal learning objective (TLO). The behavior in one TLO directly supports that outcome: learners will be able to safely drive an automobile.

- Outcome: The student will be able to drive a car safely through town.
- TLO behavior: Learners will be able to safely drive an automobile.
- ELO: Learners will be able to identify the standard controls in an automobile.

A single training event may address one or multiple learning domains. Each learning objective must apply the appropriate learning domain and applicable verb. For example, ELOs cannot be at a higher level than the TLO they support, but they can be at the same level or a lower level, as needed. In the driver’s ed examples, the TLO is at the same level as the outcome – apply.

Ensure the behaviors identified and their associated verbs align with the training modality. For example, online training may not allow for a hands-on activity or verbal explanation. However, hybrid training may have more options. If the driver’s ed course is a hybrid, with some classroom or online learning and hands-on activities, “identify standard controls” could be done on paper and in an actual vehicle.

Condition

The “C” element of ABCD learning objectives is Condition. Identifying the learning objective’s conditions creates specificity by describing the circumstances under which the learning will occur.

This may include incorporating resources or materials needed to complete a task or activity, such as a scenario or a job aid. For example, a condition for solving an equation may be, “using a standard calculator.”

The condition for each learning objective should be based on the:

- Learning objective’s needs
- Requirements of the learning outcome
- Limitations of the training modality

Let’s take a look at these same conditions in context with their related behaviors:

- Solve a linear equation, *using a standard calculator*
- State the cause of the historical event, *using your textbook*
- Solve the word problems, *using paper and pencil*
- Properly connect the plywood pieces, *given a hammer and nails*
- Identify north *while outdoors*
- *Given a scenario*, determine the correct next steps

Degree

The “D” element of ABCD learning objectives is Degree. The degree defines the minimum level required to meet the objective. This creates specificity and clarity as to what level of understanding is expected from the student.

The degree should be *reasonable* while also taking other items into account. When defining the degree for the objective, consider the *criticality* of the learning outcomes. Not all outcomes are as critical as others. Also take into account the audience’s *pre-existing knowledge*. For example, are the learners beginners or experts? Is this refresher training, or is it a certification requirement?

Finally, the levels of criticality can be applied to degree using time, accuracy, or quality. Here are some examples:

- Time:

- Within one minute
- In less than an hour
- Accuracy
 - At least two correct
 - With 75% accuracy
 - With 100% accuracy
- Quality
 - To at least “acceptable” quality per the rubric

Combining the Four Elements

Now that we’ve taken a closer look at each of the elements, it’s time to combine those four elements to create learning objectives in the ABCD format.

Remember that A is for audience – the who of the learning objective. B is for behavior – the what – and includes the verb and needs to be relevant to the level of the learning domain. C is the condition – the how – or circumstances under which the learning will occur, including any materials or resources to be provided. Lastly, D is for the degree – the how much – or minimum required. It may be measured in time, accuracy, or quality.

Let’s return to the driver’s ed ELO example. After completing this lesson, learners will be able to identify the standard controls in an automobile, while seated in the driver’s seat of the instructor’s vehicle, to 75% accuracy.

The audience in this example is “learners.” The audience should also be the same among all learning objectives within a training event. Since “learners” has been selected for the audience in the driver’s ed example, “learners” would be used in each of the learning objectives throughout the course.

The behavior in this example is “identify the standard controls in an automobile.” It’s clear and concise. It is also a measurable and observable behavior, that aligns with the appropriate learning domain level.

The condition here is “while seated in the driver’s seat of the instructor’s vehicle.” Training may include learning in a classroom, from a book, or from an online lesson, but the learner will ultimately be evaluated from inside the instructor’s vehicle.

The degree in this example is “to 75% accuracy.” Remember that degree is based on the learner’s pre-existing knowledge and criticality.

Notice that the ABCD elements make up almost the entire learning objective. Once you have these elements in place, structure the learning objective so that it makes sense grammatically and add anything else you might need.

Knowledge Checks

Knowledge Check 1

Consider the following scenario. You are tasked with developing a course with the learning outcome: Create a classic pizza from scratch.

The course will teach amateur home cooks. Who might the audience be for this training in an ABCD objective?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- Chefs

- Cooks
- Learners
- Students

Knowledge Check 2

Consider the following scenario. You are tasked with developing a course with the learning outcome: Create a classic pizza from scratch.

What might be some appropriate behaviors for each TLO?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- Develop your own method of shaping the dough
- Experiment with different temperatures
- Create dough from scratch
- Create sauce from scratch
- Toss and shape dough

Knowledge Check 3

Consider the following scenario. You are tasked with developing a course with the learning outcome: Create a classic pizza from scratch.

What might be some appropriate conditions for objectives?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- Given the ingredients
- Given written instructions
- Make dough from scratch
- Pre-heat the oven to the appropriate temperature
- Using the brick oven
- Without guidance

Knowledge Check 4

Consider the following scenario. You are tasked with developing a course for amateur home cooks, with the learning outcome: Create a classic pizza from scratch.

What might be some appropriate degrees for objectives?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- To average quality or above, based on the rubric
- To excellent quality or above, based on the rubric]

- To 100% accuracy]
- Within 1 hour
- Within 3 hours

Conclusion

Lesson Summary

You have completed the *ABCD Objectives* lesson.

Lesson 5: Assessments

Lesson Introduction

Lesson Objectives

This lesson focuses on assessments: different types of assessments, their purposes, and best practices when developing them. It will also define and distinguish between formative and summative assessments.

Lesson objectives:

- Given a scenario, determine whether formative assessment is appropriate, to 75% accuracy.
- Given a scenario, determine whether summative assessment is appropriate, to 75% accuracy.

Types of Assessments

Overview: Types of Assessments

The California Department of Education defines **learner assessment** as the ongoing process of gathering evidence of what each student actually knows, understands, and can do. Assessments are a critical part of formal instruction. They validate whether or not learning is taking place or has occurred, which helps to identify students who need additional support.

There are two broad types of learner assessment—formative and summative. Each has distinct purposes and uses.

- Formative assessment is used *during* learning. It assesses *for* learning.
- Summative assessment occurs *after* learning. It is an assessment *of* learning.

Let's take a closer look at each.

Formative Assessment

Formative assessments measure whether a student is making progress towards meeting objectives. These may take different forms, depending on the reason for assessment.

Formative assessments can help to diagnose student needs to help support instructional choices. One example of this type of formative assessment is a pre-test. Formative

assessments also allow instructors to monitor student progress of learning. Instructors can then provide appropriate feedback to support student progress toward meeting learning objectives. Knowledge checks, questioning techniques, quizzes, brainstorming activities, and other informal assignments may be used for this purpose. Formative assessments can help improve student focus, attention, and comprehension by allowing learners to be more engaged throughout the learning process.

Formative assessments should be non-evaluative and provide information that allows the instructor to offer learners descriptive feedback to help foster learning. If graded, they should only be graded for completion or have low stakes, because their purpose is to assess and gather information about student progress toward learning.

Summative Assessment

Summative assessments measure what learning has occurred. They are used to evaluate student performance of the learning objectives, such as in post-tests or exams. Summative assessments may also evaluate the effectiveness of the training itself. Were the learning objectives met? Was all necessary content covered to the required level and instructed in the appropriate way? You can determine this by gathering data from student assessments, a specific training event, or across multiple occurrences of a training event.

Summative assessments are evaluative and graded. They contribute to the student's overall grade and are an official measure of learning.

Assessment Forms

There are several different types of formative and summative assessments.

Pre-tests are one example of formative assessments. These provide a measure of what the student already knows and where knowledge or performance gaps may exist. Other common formative assessments given during instruction include knowledge checks and quizzes, as well as discussions, informal learning activities, and reflections. These help to determine how students are progressing and what gaps remain. They also provide opportunities for feedback and remediation.

Summative assessments may include post-tests, which are given after instruction. These measure the learners' achievement of the objectives. When used with a pre-test, a post-test can also provide valuable data about the effectiveness of a training intervention. More authentic forms of summative assessment may include papers, essays, portfolios, presentations, and products.

Test Items

Types

You're probably familiar with the different types of test items, such as true or false questions, multiple choice questions, fill-in-the-blank items, matching items, sequencing questions, essay responses, and scenario-based questions.

Each of these test item types have their own benefits and limitations. For example, true and false questions are considered among the simplest assessment types and are used to assess the two lowest learning domains, remember and understand. Therefore, true/false questions are often avoided unless assessing lower domains and less critical information. Essays, on the other hand, assess critical thinking and a learner's ability to apply knowledge or analyze and evaluate information.

True and False

- Can be very easy question types to develop.
- However, since there are only two answer options, the student has a 50/50 chance of answering correctly, even by guessing.
- Because of the limited response options, it is difficult to truly assess learning with this type of question.
- **Example**
 - Learning objective is a synonym for learning outcome.
 - True
 - False

Multiple Choice

- Better gauge of student learning than True/False questions.
- Take longer to develop than True/False questions.
- Developing effective distractors can take time.
- The effectiveness of these types of questions often lies in the quality of the distractors (incorrect answer options).
 - Writing good distractors requires a balance of *possible* choices without being too easy or intentionally confusing.

- Don't provide "throw-away" answers, which are answers that are very obviously incorrect.

- **Example**

What is the purpose of a learning objective?

- To identify the purpose of a course
- To develop assignments for learners
- To identify what needs to be achieved to reach the learning outcome

Fill-in-the-Blank

- Good way to gauge student learning.
- Can be a challenge in online assessments, considering that the student may have the correct answer, but mistype it somehow, i.e., misspellings or incorrect case usage.
- **Example**

A _____ determines what needs to be achieved to reach the course goal.

Learning objective is a synonym for learning outcome.

- Learning objective
- Design plan
- Learning outcome
- Training mode

Matching

- Can be a powerful way to gauge learning.
- You can test multiple items within a single question.
- Can take some time to develop.
- These types of questions can sometimes affect how the student answers future questions. Take care to not give anything away in the question and answers.
- **Example**

Match each term with the appropriate example.

- a. Learning outcome
- b. TLO

- c. ELO
- 1. Operate a vehicle.
- 2. Utilize safety features.
- 3. Safely drive a car.

Sequencing

- Very useful to gauge understanding of a sequence of events, a hierarchy, or similarly ordered information.
- These types of questions can sometimes affect how the student answers future questions. Take care to not give anything away in the question and answers. For example, if you list all five steps of a process in one question, but have later questions that ask the student to identify what steps occur, this “giveaway” can create a false assessment of student understanding.
- However, since there are only two answer options, the student has a 50/50 chance of answering correctly, even by guessing.
- Because of the limited response options, it is difficult to truly assess learning with this type of question.
- **Example**
Number the steps in the correct order.
 - Start the car.
 - Check mirrors.
 - Put car in gear.
 - Put on seatbelt.

Essay

- Great way to gauge student understanding of concepts, events, or complex information.
- Someone must be available to review each essay response.
- Assessing essay responses takes significantly longer than grading multiple choice or true / false questions.

- The training format needs to be considered here. In online training, is an instructor available? If so, will that instructor be available for grading essay responses?
- **Example**
In 3 paragraphs, explain the importance of observing the speed limit.

Scenario-Based

- Good way to present information for the student to really consider, providing fictional or real-world situations against which to apply their knowledge.
- Takes time to write scenarios that are realistic.
- Consider whether reusing scenarios from the training itself is valuable during assessment, or if new scenarios would be better for your training's purposes.
- **Example**
Sarah, a new teen driver, is driving on the highway for the first time. She needs to successfully merge on and off an exit. What steps does she need to take to safely achieve her goal?

Alignment

When choosing the types of test items, and when writing the test items themselves, ensure they align with learning objectives, including the appropriate learning domain level. Each test item type and the test item itself should also apply the appropriate level of rigor for the training and the learning objective. Rigor should be based on the criticality of the content.

There is a delicate balance that must be struck within all test item types. You do not want to make questions more difficult than necessary, but also you don't want them to be so easy that either the correct answers or incorrect distractors are obvious. Keeping this balance in mind, more critical information may require more challenging assessment types. The more open-ended assessment items are, the more challenging they can be.

Best Practices

As you design training, including assessments, it is important to follow best practices. Here are best practices to follow for assessments and why they matter.

Ensure you design and write clear assessment items. The assessment’s purpose should be clear. What are you trying to assess and why? The question and any answer choices must be easily understood. Avoid using content designed to confuse students, including outright trick questions. Your purpose is to assess, not to confuse. Ensure instructional text is present and clear, such as “select all that apply” or “match the most appropriate pairings.” If there is a lack of clarity in these areas, assessment results may not be clear – or even valid. As a best practice, make sure to re-read content, including questions, answers, and instruction text to help ensure it will be clear to others.

Ensure assessment items, including questions and correct answer choices, align with the training content. Verify that all questions and correct answers are clearly presented in the training content. Asking questions about content that was not specifically covered or that was not clearly emphasized leads to student confusion and frustration. Every assessment item should directly align with a learning objective. Assessment items should be at the same domain level as the learning objective. The learning domains build on each other and must be assessed accordingly. For example, formative assessment items may assess lower domain levels, as instruction and learning build to the ultimate domain level within the objective. Summative assessment items must be at the same domain level as the learning objective. Do not assess learning at a higher domain level than the learning objectives that are being assessed. Rigor of assessment items should be appropriate for the training content presented.

Finally, provide clear and timely feedback on assessments and individual assessment items, as well as remediation, if appropriate. Delaying feedback or providing vague feedback is not beneficial to the student.

Knowledge Checks

Knowledge Check 1

Consider this scenario. You’re halfway through presenting a weeklong module to a class. Which form of assessment might you use and why?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- Formative: to provide students with feedback and remediation as needed
- Formative: to support student learning
- Summative: to determine if they’ve learned the key points so far
- Summative: to determine if your teaching strategy is working

Knowledge Check 2

Consider this scenario. You've completed teaching your class a module on an important topic. You need to assess if they've learned what is required from the module. Which form of assessment might you use and why?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- Formative: to provide students with feedback and remediation as needed
- Formative: to support student learning
- Summative: to determine if they've learned the key points so far
- Summative: to measure training effectiveness

Conclusion**Lesson Summary**

You have completed the *Assessments* lesson.

Lesson 6: Mapping Objectives and Assessments

Lesson Introduction

Lesson Objectives

This lesson focuses on how to connect learning objectives to assessment items. It also introduces rubrics as a mapping tool.

Lesson objective:

- Given a scenario, map an assessment item, based on knowledge level, to a learning objective, to 75% accuracy.

Relating Objectives and Assessments

Relating Objectives and Assessments

Recall that each learning objective supports the learning outcome. Content is developed based on the learning objectives. Assessment items are based on both the content and the learning objective. To ensure the learning objectives are met, it is important to assess learners directly on those objectives.

How To

To align learning objectives and assessment items, ensure that the objectives are measurable within the context of the training and the training format.

Next, make sure that the content within the training addresses each learning objective. This may seem obvious, but it is easy to get away from the focus of the training during development. Always go back and review your content to ensure each objective is specifically and completely presented.

Make sure each assessment item aligns directly to a learning objective and that you assess every objective at least once. The connection between an objective and an assessment item should be clear and obvious. Additionally, each assessment item needs to assess the correct domain level or learning verb of the objective. Recall, for example, that “identify” and “apply” are from two different domain levels. If an objective calls for the learner to identify something, but the assessment item asks the learner to apply something, or vice versa, the two do not align.

Lastly, ensure that learners can answer each assessment item correctly, given the content in the training. This does not mean you cannot change the context of questions, such as providing a different scenario than may have been in the training. But it does mean that the student should be able to directly apply the information they learned in the training to answer the question correctly.

Apply

Let's take a look at an example objective and two assessment items. Consider the objective, "Learners will identify the correct steps to make a pizza with 80% accuracy."

The first potential assessment item for this objective is a practical application: Make a pizza using the correct steps. Let's evaluate whether it appropriately assesses the objective: identify the correct steps to make a pizza. This item does assess whether the learner knows the steps. The objective uses the verb "identify" and the assessment item uses the verb "make." "Identify" corresponds to Bloom's levels Remember and Understand. "Make" corresponds to the Apply level. Since we cannot assess at a higher domain level than the objective calls for, this assessment item does not appropriately align with the learning objective.

Let's take a look at a second assessment item. This item asks the learner "which steps". This is assessing at the same level of learning domain as "identify." The verb in the objective, identify, is being assessed, and the assessment item has the same subject as the objective – steps for making pizza. The second assessment item does align with the objective.

Rubrics

Rubrics

A rubric can help to establish and communicate expectations of objectives and assessment. It is a tool that defines the criteria to enable learners to meet learning objectives. In other words, rubrics are one way of mapping objectives to assessment. Rubrics provide transparency, clarity, and simplicity to the students, so they know exactly what the grading criteria expectations are in advance.

In this simple example, students know that they will receive one of three grades for an essay assignment: did not meet, partial, or complete. Rubrics also provide the required level of specificity for grading and expectations. Without a rubric, students and the instructor might not be clear on grading. With a rubric, the grading and criteria are crystal clear.

Did not meet	Partial	Complete
---------------------	----------------	-----------------

Did not turn in essay	Turned in essay	Turned in essay
Did not meet any requirements: <ul style="list-style-type: none"> • 1 page • Fewer than 5 grammatical errors • Fewer than 3 inaccuracies 	Met 1 or 2 requirements: <ul style="list-style-type: none"> • 1 page • Fewer than 5 grammatical errors • Fewer than 3 inaccuracies 	Met all requirements: <ul style="list-style-type: none"> • 1 page • Fewer than 5 grammatical errors • Fewer than 3 inaccuracies

In this example, students need to turn in the essay and meet one to three requirements. It should be one page long, have fewer than 5 grammatical errors, and have fewer than 3 inaccuracies. This will result in either an incomplete, partial, or complete grade. Based on these criteria, a student knows exactly what grade to expect and what they need to do to achieve that grade.

Samples

Rubrics are typically presented in a table format, providing grading for each criteria level met or not met. They generally contain the elements to be evaluated and how each of the criteria will be evaluated.

In the example below, the elements to be evaluated include the argument or thesis, and critical thinking or analysis. The grading for this example ranges from A, Excellent, at 90-100%, to D or F, Failure, at 69% or lower. There are two criteria that will be evaluated for the argument and thesis element and there is one criterion that will be evaluated for the critical thinking or analysis. In order for the student to receive an A on this assignment, they need a strong and specific argument, easily identifiable to the reader, and major points and research need to reinforce the argument throughout the paper. In addition, there needs to be a clear presentation of critical thinking related to the issues, substance, points raised, and arguments.

Take a moment to review the different elements. Visit course resources to access a job aid with a blank template of a rubric.

Element Evaluate d	A-Excellent 90-100%	B-Good 80-89%	C-Below Standards 70-79%	D/F-Failure 69% or below

Argument or Thesis	Strong and specific argument easily identifiable for reader Major points and research reinforce the argument throughout the paper	A solid argument identifiable to reader Most points reinforce the argument throughout the paper	Generalized or vague argument not readily apparent to reader Some points reinforce the argument, but most body paragraphs fail to reinforce the argument	No identifiable argument to reader Body paragraphs lack cohesion and fail to express a uniform idea
Critical Thinking or Analysis	Clear presentation of critical thinking related to the issues, substance, points raised, and arguments	Demonstrates critical thinking well, but could develop some points or explore others in greater depth	Shows some critical thinking, but overall shallow analysis of topic-must subject delve deeper into subject	Fails to demonstrate critical thinking, shallow discussion of subject

Objectives and Assessments

Objectives and Assessments

During training, it's important to use both formative and summative assessments. It's also important to assess every terminal learning objective (TLO) and every enabling learning objective (ELO).

Achieving all ELOs does not necessarily mean that the TLO has been fully achieved. For example, a student may be able to meet all ELOs separately but may or may not be able to meet the TLO.

Let's return to our driver's ed example.

- TLO: After completing the Driver's Education course, learners will be able safely drive an automobile, given instructions.
- ELO: After completing this lesson, learners will be able to identify the standard controls in an automobile, while seated in the driver's seat of the instructor's vehicle.

In this example, a student may be able to identify all controls – and all other ELOs, for example, starting the car, using safety equipment, or pulling out of a parking spot. But can the student then combine all of these elements to achieve the TLO: safely drive an automobile? This is why it's important to verify that learners meet all learning objectives by the end of a training event. This may be done with a final exam, which may be written, oral, or application-based, depending on the content. In this driver's ed example, an application-based exam would be appropriate.

Assessment Types and Items

Let's apply the assessment guidance we've covered using this ELO from the driver's ed course. After completing this lesson, learners will be able to identify the standard controls in an automobile, while seated in the driver's seat of the instructor's vehicle. This ELO has a condition of being in an instructor's vehicle. This means that a practical assessment is necessary to fully assess this objective.

However, other types of assessments can occur prior to that, such as written or oral. In a written assessment, for example, you could display a photo, drawing, or icons of standard controls inside a vehicle. You may use a simpler assessment earlier on in instruction such as true and false questions. For example, true or false? The control labeled A is the turn signal. Different assessment types could include matching, circling, or labeling on the image itself. One assessment item might read, circle the four standard controls you must check prior to starting the vehicle. You might use the verb "label" instead of "circle." You could also label each standard control with letters. You could then have multiple choice, matching, or fill-in-the-blank questions. For example, Which of the following controls corresponds to label A? Turn signal, Headlights, Stereo, or Hazard Lights.

Visit course resources to access a job aid with sample assessment items in alignment with sample learning objectives.

Knowledge Checks

Knowledge Check 1

Consider the scenario: You are tasked with developing assessment items for a household management course.

Which of the assessment items below directly align to this objective?

Given bills and income, learners will be able to create a household budget, to 80% accuracy.

Select the best response. Check your answer in the Answer Key at the end of this Student Guide.

- Select the steps for making a household budget.
- Identify the missing elements from the sample budget.
- Draft a budget for this household.
- Match the elements of a budget to their purpose

Knowledge Check 2

Consider the scenario: You are tasked with developing assessment items for a safe driving course.

Which of the following verbs align with the domain level for this ELO and could be used in an assessment item?

ELO: Identify the six rules of safe driving.

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- Select
- Apply
- Demonstrate
- Write
- Identify

Conclusion

Lesson Summary

You have completed the Mapping Objectives and Assessments lesson.

Lesson 7: Course Conclusion

Conclusion

Summary

This course introduced you to instructional foundations, including learning outcomes and domains, Bloom’s Taxonomy, and backwards design. It familiarized you with the elements of effective learning objectives, learning objectives in the ABCD-format, and various types of assessments, including formative and summative. Finally, the course covered the importance of mapping learning objectives to assessments and how to do so.

When designing learning objectives and assessment items, start with the end in mind—the big-picture goal—and work backwards from there. Ensure the content you develop is clear and concise, as well as reasonable, measurable, and achievable within the bounds of your training event. Following these basics will help ensure the success of instructors and students.

Lesson Review

Here is a list of the lessons in the course.

- Course Introduction
- Instructional Foundations
- Learning Objectives
- ABCD Objectives
- Assessments
- Mapping Objectives and Assessments
- Course Conclusion

Lesson Summary

Congratulations! You have completed the Understanding Learning Objectives and Mapping Assessments course.

You should now be able to perform all of the listed activities.

- Given examples, determine the relationship between learning outcomes, learning objectives, and learning domains, with 75% accuracy.

- Using the ABCD format, evaluate the efficacy of learning objectives, with 75% accuracy.
- Given training example details, determine the appropriate use of summative and formative assessments, with 75% accuracy.
- Based on knowledge level, map assessment items to objectives, with 75% accuracy.

To receive course credit, you **MUST** take and pass the Understanding Learning Objectives and Mapping Assessments examination, with a score of 75%. You can access the exam from the course page on CDSE's LMS platform, STEPP.

Appendix A: Answer Key

Lesson 2 Knowledge Checks

Knowledge Check 1

Sofia is a junior in high school and is starting a driver's education course this week. She's never been in the driver's seat before. Here is a statement from that course:

By the time the course is over, the student should be able to drive a car safely through town.

Is this statement a learning outcome, a learning objective, or learning domain?

- Learning objective
- Learning outcome (correct response)
- Learning domain

Feedback: *The student should "be able to drive a car safely through town" is a big picture, desired result from the course; it is a learning outcome.*

Knowledge Check 2

Sofia is a junior in high school and is starting a driver's education course this week. She's never been in the driver's seat before. Here is a statement from that course:

By the time the course is over, the student should be able to drive a car safely through town.

Which learning domain level does this statement reflect?

- Understand
- Apply (correct response)
- Evaluate
- Remember

Feedback: *Being able to drive a car corresponds with the "apply" level learning domain.*

Lesson 3 Knowledge Checks

Knowledge Check 1

Question 1 of 2. Consider this learning outcome: *To be able to make a pizza from scratch.*

One possible TLO might be: *Given the ingredients, learners will make pizza dough from scratch, to above average quality.*

Does this TLO have all three minimum elements (who, what, how) of an effective learning objective?

- Yes (correct response)
- No

Feedback: *The TLO has all the elements of an effective learning objective. “Learners” answers “who,” “pizza dough” answers “what,” and “make” answers “how.”*

Question 2 of 2. Consider this learning outcome: *To be able to make a pizza from scratch.*

One possible TLO might be: *Given the ingredients, learners will make pizza dough from scratch, to above average quality.*

Is this TLO relevant, realistic, and measurable?

- Yes (correct response)
- No

Feedback: *This TLO is relevant, as it relates directly to the learning outcome. It is realistic in that it can be achieved within a single course – whether online or in person. It is measurable, with “make” being an appropriate, measurable verb.*

Knowledge Check 2

Question 1 of 2. Consider this TLO: *Given the ingredients, learners will make pizza dough from scratch, to 70% accuracy.*

One possible ELO might be: *Given a recipe, accurately measure and blend the ingredients, according to instructions.*

Is this ELO concise and clear?

- Yes (correct response)
- No

Feedback: *The language of the ELO is clear and concise as it can be interpreted by learners and instructors.*

Question 2 of 2. Consider this TLO: *Given the ingredients, learners will make pizza dough from scratch, to 70% accuracy.*

One possible ELO might be: *Given a recipe, accurately measure and blend the ingredients, according to instructions.*

Is this ELO specific and singular?

- Yes
- No (correct response)

Feedback: *While this ELO is appropriately specific, it is not singular. There are two actions that must be measured in this ELO: measure the ingredients and blend the dough. These two measurable actions would be better served through two distinct learning objectives, whether at the TLO or ELO level.*

Lesson 4 Knowledge Checks

Knowledge Check 1

Consider the following scenario. You are tasked with developing a course with the learning outcome: *Create a classic pizza from scratch.*

The course will teach amateur home cooks. Who might the audience be for this training in an ABCD objective?

- Chefs
- Home cooks (correct response)
- Learners (correct response)
- Students (correct response)

Feedback: *Home cooks, learners, and students could all be used as the audience. Chefs is not appropriate because it implies an expert cooking level, and we know these are amateur home cooks.*

Knowledge Check 2

Consider the following scenario. You are tasked with developing a course with the learning outcome: *Create a classic pizza from scratch.*

What might be some appropriate behaviors for each TLO?

- Develop your own method of shaping the dough
- Experiment with different temperatures
- Create dough from scratch (correct response)
- Create sauce from sauce (correct response)
- Toss and shape dough (correct response)

Feedback: *Creating the dough and the sauce from scratch, as well as tossing and shaping the dough are all appropriate behaviors. They align with the outcome and its learning domain level – create. Experiment and develop do not align with the “classic” element in the outcome.*

Knowledge Check 3

Consider the following scenario. You are tasked with developing a course with the learning outcome: *Create a classic pizza from scratch.*

What might be some appropriate conditions for objectives?

- Given the ingredients (correct response)
- Given written instructions (correct response)
- Make dough from scratch
- Pre-heat the oven to the appropriate temperature
- Using the brick oven (correct response)
- Without guidance (correct response)

Feedback: *Given the ingredients, given written instructions, using the brick oven, and without guidance are all potential conditions for objectives in this course. They each align with the learning outcome. Make dough and pre-heat the oven are not conditions, but are actions to be measured.*

Knowledge Check 4

Consider the following scenario. You are tasked with developing a course for amateur home cooks, with the learning outcome: *Create a classic pizza from scratch.*

What might be some appropriate degrees for objectives?

- To average quality or above, based on the rubric (correct response)
- As quickly as possible
- In the oven
- Within 1 hour (correct response)
- Within 3 hours (correct response)

Feedback: *To average quality or above, within 1 hour, and within 3 hours each define a specific minimum requirement of time, accuracy, or quality for creating the pizza from scratch. "As quickly as possible" or "in the oven" do not define a specific minimum requirement or "degree" for creating the pizza.*

Lesson 5 Knowledge Checks

Knowledge Check 1

Consider this scenario. You're halfway through presenting a weeklong module to a class. Which form of assessment might you use and why?

- Formative: to provide students with feedback and remediation as needed (correct response)
- Formative: to support student learning (correct response)
- Summative: to determine if they've learned the key points so far
- Summative: to determine if your teaching strategy is working

Feedback: *Formative assessments are used to inform and support, as well as provide opportunities for feedback and remediation.*

Knowledge Check 2

Consider this scenario. You've completed teaching your class a module on an important topic. You need to assess if they've learned what is required from the module. Which form of assessment might you use and why?

- Formative: to provide students with feedback and remediation as needed
- Formative: to support student learning

- Summative: to determine if they've learned the key points so far (correct response)
- Summative: to measure training effectiveness (correct response)

Feedback: *Summative assessments measure what learning has occurred, as well as training effectiveness.*

Lesson 6 Knowledge Checks

Knowledge Check 1

Consider the scenario: You are tasked with developing assessment items for a household management course.

Which of the assessment items below directly align to this objective?

Given bills and income, learners will be able to create a household budget, to 80% accuracy.

- Select the steps for making a household budget.
- Identify the missing elements from the sample budget.
- Draft a budget for this household. (correct response)
- Match the elements of a budget to their purpose

Feedback: *Drafting a household budget aligns directly with the objective.*

Knowledge Check 2

Consider the scenario: You are tasked with developing assessment items for a safe driving course.

Which of the following verbs align with the domain level for this ELO and could be used in an assessment item?

ELO: *Identify the six rules of safe driving.*

- Select (correct response)
- Apply
- Demonstrate
- Write
- Identify (correct response)

Feedback: *Select and identify are at the correct domain level to assess the behavior in the learning objective.*