



## Alternative Item Types: Frequently Asked Questions

The purpose of the Commission on Dental Competency Assessment (CDCA) administered American Association of Dental Examiner's (ADEX) exam is to gather statistical information used to make measured assessments of the knowledge, skills, and abilities possessed by and necessary for entry-level dentists.

Over the course of the next 6 months, CDCA will be evaluating alternative item types on the DSE (Diagnostic Skills Exam) OSCE examination. The purpose of introducing these item types is to leverage technology to better enhance the measurement of diagnosis and treatment planning and related clinical judgments in order to better represent people who are just entering practice. As part of this process, we will be collecting data on alternative item types to ensure that they function appropriately both from a content cognitive processing and empirical characteristics prior to their operational use. As with all introductory questions appearing on the examination, results will be psychometrically evaluated for validity and reliability, ensuring we meet the standards set forth for competency testing.

### What types of items might appear on the test?

Items in the DSE OSCE will include multiple choice (traditional/single response); multiple choice (multiple response), extended match, drop down, fill in the blank, hot spot and drag and drop questions.

### What is a multiple choice/multiple response (MR) question?

This item format is similar to a multiple choice item; however, the multiple response item consists of a question with more than one correct response. The question will always indicate how many responses are correct. The examinee is asked to indicate correct responses.

The example below shows a multiple response question.

### Is there partial credit for MR questions?

Partial credit may be awarded on this type of question, however, due to benchmarks established by ADEX and the various States boards of dentistry standards, final scores are not rounded up. In the example shown the candidate would be awarded points for two out of three correct responses, or .66 of 1 point.

A client has right homonymous hemianopsia secondary to a CVA several months ago. Deficits in the client's right visual field interfere with the client's ability to participate in IADL. One of the client's goals is to improve visual perceptual skills to be able to resume a hobby of cooking meals using recipes from a favorite cookbook. Which adaptive strategies should the COTA teach the client to use in order to achieve this goal?

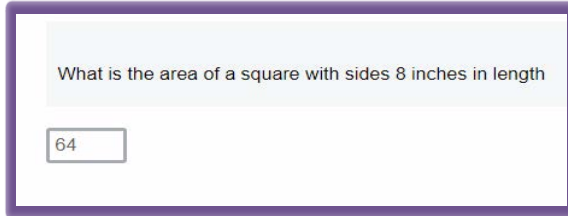
**Correct responses for Sample Question 1 are noted in bold text.**

- ☒ **A. Place boundary markers on the right side of the printed recipe.**
- ☒ B. Use a fluorescent pen to highlight key words in the recipe instruction.
- ☒ **C. Place a ruler under each line of print that is being read on the recipe.**
- ☐ D. Scan the page to search for the first letter of each word in the recipe.
- ☐ E. Direct eye gaze towards the left margin of the recipe instruction page.
- ☐ **F. Mark off each step of the recipe instructions as it is completed.**

### What is a fill in the numerical blank (FB) question?

The examinee is asked to respond to a question by typing in a numerical response.

The example below asks for the area of a square. The calculation does not need to be shown, nor does the unit of measure need to be recorded.



#### Will a calculator be available?

An on-screen calculator will be available within the test application.

You will have the opportunity to practice accessing this calculator in an exam navigation tutorial at the start of your examination session.

### In what form should fill in the numerical blank answers be entered?

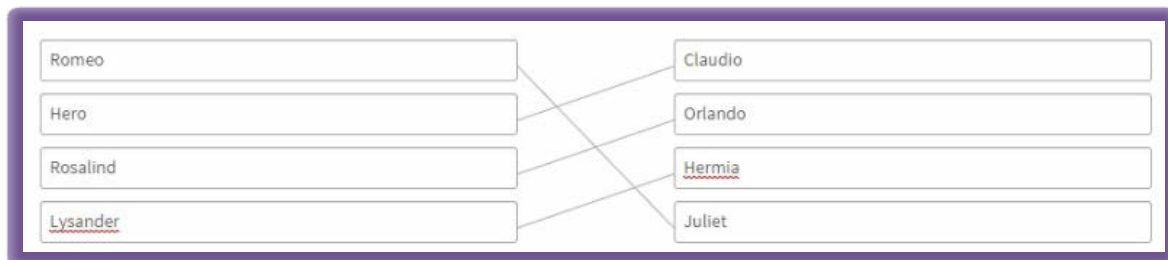
Only numerical responses will be accepted as correct. The word form of numbers (“two,” “four,” “eighty-nine”) will NOT be counted as correct.

The units of the numerical response (e.g., kg, mL, mL/kg, etc.) will be indicated in the question stem. The units will also appear to the right of the response text box as in the example. Examinees should NOT enter the units in the response as it will NOT be counted as correct. Character entry will be limited to the number of characters in the correct response.

### What is an extended match (EM) item?

The examinee is asked to click and then match one column of questions to another. Directions are provided in the question. Question tasks include matching responses to targets or placing responses in a specified order.

The example below is an extended match item. It asks the examinee to match the couples in literature. The examinee is supposed to click on a name in one column and match it with another.

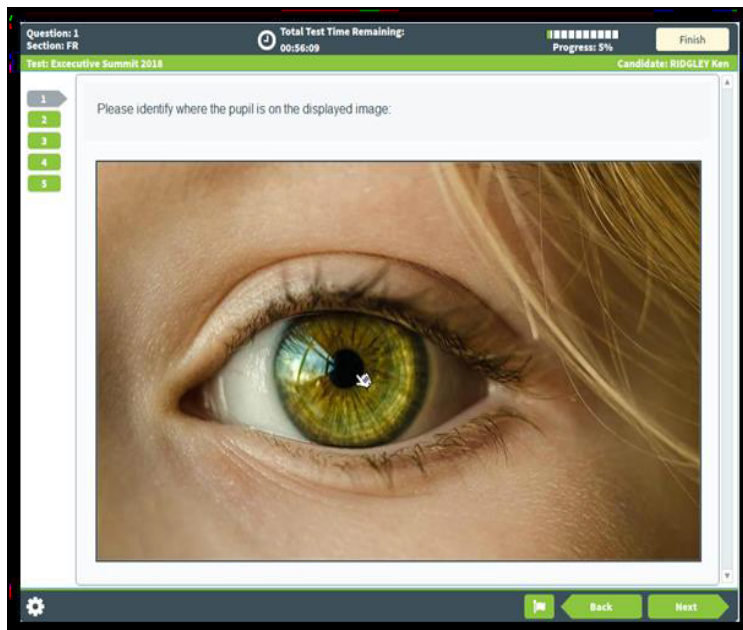
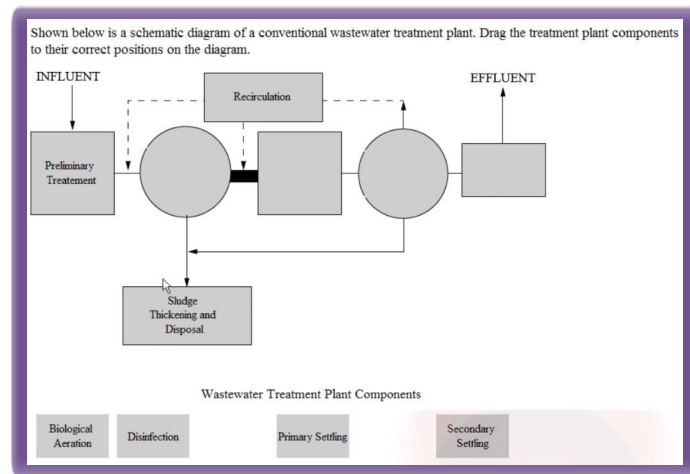


## What is a Drag and Drop (DD) item?

These item types will ask you to sort, order or group like items. In the example below, a diagram is shown with no labels, or some missing parts. Examinees will be expected to refer to the image and use the cursor to click and pick up, then drop the labels. This type of question could also be used to sort, order, or express relationships.

### If I make a mistake with a DD item, can I start the question over?

At any time, the examinee may “undo” the matches he/she has made by dragging responses back to their initial positions. If you are unsure, and want to move on, mark the question for review later. Partial credit is not awarded.



## What is a Hot Spot question?

In this item format, the examinee is presented with an image or a figure. The examinee is asked to select a region on the image or figure that corresponds to the prompt in the question stem. To select the region, the examinee simply clicks the correct region with the mouse. To change the answer, the examinee can click on the existing marker and drag it to a different location.

An example of a hotspot question is shown below. The correct answer is to move the cursor and click on the pupil.

While a question may be valued at more than one point, only one area can be chosen on any one image as correct. You will not get to highlight an entire area on an image, so be as precise as possible when making your selection. You may move the cursor around and select another part of the image at any time before moving on with a final selection.



## What are Drop Down Box questions?

Some questions may be asked in a way that provides a drop down list of possible responses, but more than one element must be recorded as correct for credit to be given.

In the example below, the test taker is asked about a quote from Abraham Lincoln. While information is relayed within the question, the spaces left blank reveal drop down boxes with possible answers. Drop down boxes do not have any effect on each other and will not change based on an earlier answer within a question. Partial credit is not awarded for questions of this type.

"Four [ ] and [ ] years ago" is the beginning of the [ ] delivered by [ ]

## What function do the alternative item types have in the DSE OSCE?

Alternative item types are added to the DSE in order to further enhance the traditional multiple-choice format. The alternative format helps ADEX more accurately and efficiently assess important areas of entry-level knowledge that are difficult to assess in a traditional multiple-choice format.

## How does the inclusion of alternative items improve the assessment of the ability of entry-level dentists?

Alternative item formats will allow examinees to effectively demonstrate important knowledge area competencies in a way different from the standard multiple-choice item format. Often, alternative item formats are more reflective of actual practice.

For instance, the ability to make accurate diagnoses from a radiograph is a very important entry-level skill. The examinee is not able to simply recognize or guess the correct answer from a set of provided response options when more than one condition is present and each is scored.

## Do alternative items undergo the same validation and quality control procedures as traditional multiple-choice questions?

Yes. The alternative item types that will appear initially as pilot questions. Before any item appears on any ADEX examination, it is reviewed by a committee of subject matter experts to determine if the question represents current and valid entry-level knowledge.

Like multiple-choice items, the alternative items are empirically evaluated before becoming a part of the operational question bank. Also, like multiple-choice items, the alternative items must satisfy stringent psychometric and statistical criteria before being included as operational (i.e., scored) questions on the examination.



### **What other professions or testing programs make use of alternative item types?**

Certification and licensure examinations carried out by the National Board of Medical Examiners (USMLE), American Board of Medical Specialties, nursing specialties, accountants (CPA exam), IT specialists, architects, and many trades use a combination of assessment formats, which feature alternatives to traditional multiple-choice items. Since 2003, the National Council Licensure Examination (NCLEX) has used the same types of alternative item types that now appear on the NCE and SEE. In all of these cases, the assessment method has been found to be psychometrically sound.

### **What percentage of exam items will be in the alternative formats?**

There are no fixed number of alternative questions that each examinee will receive. All of the questions on the test, regardless of the format, are designed to assess entry-level ability, and it is not necessary to “balance” alternative item types appearing on the exam with those in a traditional multiple choice format. The DSE OSCE will continue to be content-based according to the test blueprint. Traditional, multiple choice questions will remain part of the examination and are not being completely phased out.

### **Does the inclusion of alternative item types make the exam harder?**

No, it will not. The passing standard is applied in the same way for all candidates. Empirical evaluation subsequent to the introduction of the alternative items, has shown that the alternative item types, on average, are comparable to multiple choice items.

### **How is examinee performance scored on alternative items?**

Where traditional multiple choice items are worth a single point each, alternative item types may have different point values. The number of points needed to satisfy requirements to demonstrate your proficiency have not changed.

### **Will I need more time to answer the exam items in the alternative format?**

The test will be timed to last you approximately four (4) hours in length. While some new item types will take longer to complete, they may count for additional points, and thus eliminate other questions you would have taken.

The DSE OSCE is divided into two sections with a short break in between. The two exam sections will cover a total of three areas of study, and the exam is designed to progressively assess more complex levels of diagnosis and treatment planning knowledge, skills, and abilities. Alternative item types may appear at any time during the exam.



### **Does the use of alternative item types change the general format of the DSE OSCE?**

No. Even with the utilization of the various alternative item types, the format remains exactly the same. Pilot questions that are being tested for use in future versions of the examination may be added but are not included in, nor do they affect the candidate's final score. Time needed to take the examination already accounts for pilot questions. In general, the three areas of study the DSE OSCE focuses on are as follows: 1. Patient Evaluation (PE): designed to assess the candidate's abilities to recognize critical clinical conditions or situations encountered regularly in the general practice of dentistry (30 score points), 2. Comprehensive Treatment Planning (CTP): designed to assess the candidate's abilities to recognize critical clinical conditions or situations encountered regularly in the general practice of dentistry, and also to identify the appropriate treatment options required for the clinical condition or situation depicted in simulations (60 score points), 3. Periodontics, Prosthodontics, and Medical Considerations (PPMC): designed to assess the candidate's abilities to recognize critical clinical conditions or situations encountered regularly in the general practice of dentistry and to formulate appropriate treatment options in a more integrated fashion than in the CTP subsection (60 score points). Simulations of patients are made through photographs, radiographs, images of study and working models, laboratory data and other clinical digitized reproductions. The exams are still taken on a typical PC workstation at approved Prometric Test Centers.

### **I have only practiced multiple-choice items. How should I prepare for the alternative item types?**

Items will generally be intuitive to examinees. The alternative item formats should not substantially change the way one prepares for the examinations. Proper preparation should consist of a comprehensive, broad-based review of the curriculum and subject matter throughout an accredited training program. Simple review of how to answer different types of questions does not provide adequate preparation. The concepts assessed will continue to represent entry-level knowledge of a dentist in general practice. An examinee possessing knowledge of these concepts will be able to correctly answer test questions, regardless of their format.