7.3 Changes

In the following sections, two of the major new feature areas; discussions and algorithmic questions, are detailed.

Discussions

Discussions are completely new in ANGEL 7.3. We have introduced dozens of new features that are designed to better facilitate teaching and learning, as well as to reduce the amount of time required for instructors to manage discussion forums. The following sections touch on some of the highlights.

New Features

The new discussions offer dozens of new features, most of them centered on the following areas:

- **Scoring power**. New scoring rubrics allow instructors to create a score for a user automatically based on the user's discussion participation and/or the scores achieved on individual posts.
- **View modes**. ANGEL 7.3 supports three view modes: threaded, nested, and search view.
- **Usability**. New view and navigation filters allow users to view and navigate quickly between messages; 15 different filters allow the user to view and act on any subset of messages. Forum directions are viewable at all times.
- **Flexibility**. Discussion setup is now more flexible than ever. Discussions can be configured to meet a much wider range of use cases—including housing all discussions in a course within a single discussion forum.
- **Management**. New inline grading (including quick replies), batch grading, and Search mode make finding and acting on messages very efficient. At-a-glance view gives the instructor immediate perspective on the activity within a discussion.

The following sections highlight some of the major updates and answer questions you may have about how the new discussions will affect your courses.

Scoring

ANGEL LMS 7.3 makes grading discussions significantly easier with inline grading and new scoring rubrics. New features include the following:

- **Inline grading.** Instructors can grade directly in the interface. Clicking any post opens a grading interface that includes a new quick comment option. Once the instructor has opened a grading box, using the Score Next button saves the current score and takes the user to the next score box automatically.
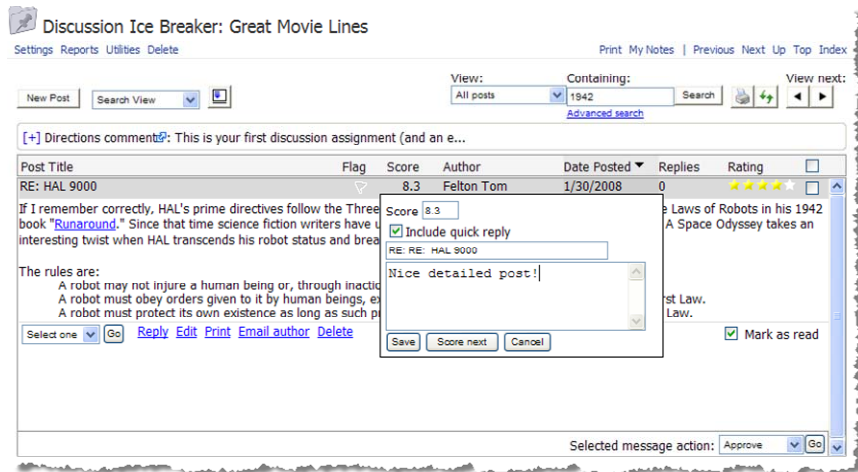
- **Scoring rubrics.** Instructors can create rubrics that evaluate and create a score based on a student's quantitative participation data (posts, replies, replies to the posts, average peer rating) and qualitative data (average instructor score.)
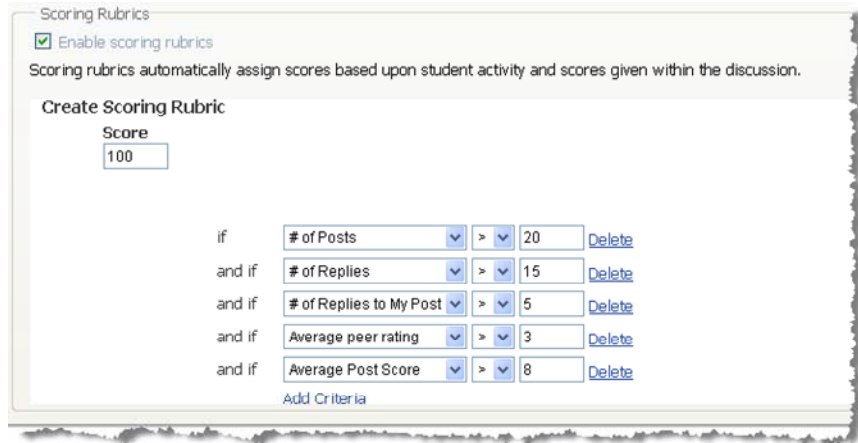
- **Preview grades.** Instructors can review discussion statistics and adjust as necessary before posting all to the gradebook. Rubric scores can be copied to the Grade column with a single click.

New Discussion Item

Grade Discussion   Print

Copy from Rubric

User Name	Total Posts	Replies Generated	Average Peer Rating	Points Earned	Points Possible	% Points Earned	Rubric Points	Gradebook Grade (# / 100)	Comments
Anderson, Mary	9	7	3	203	250	81%	81		
Bills, Thomas	13	10	4	246	251	98%	98		
Chesher, Vickie	25	19	3	217	252	86%	86		
Garcia, Susan	45	34	4	195	253	77%	77		
Harris, Elizabeth	18	14	4	178	254	70%	70		
Holt, Greg	58	44	5	179	255	70%	70		
Jones, Michael	18	14	3	159	256	62%	62		
McFarl, Jason	31	23	2	239	257	93%	93		
Robinson, Dorothy	45	34	2	248	258	96%	96		
Taylor, Thomas	24	18	3	205	259	79%	79		
Thomas, Patricia	23	17	2	174	260	67%	67		
Duff, Cecilia	14	11	3	180	261	69%	69		
Johnson, John	42	32	5	178	262	68%	68		
Martin, Jennifer	5	4	3	258	263	98%	98		
Martinez, Margaret	57	43	4	230	264	87%	87		
Moore, Joseph	53	40	3	175	265	66%	66		
Neely, Michael	40	30	4	229	266	86%	86		

Save to Gradebook   Save   Cancel

View Modes

Users can view their discussion forums in three different modes:

- **Threaded mode.** In threaded mode, the message is displayed in a view pane near the top of the page. Clicking a message subject line (or navigation button) loads the message. All response, grading, and management options for instructors and students are available within the view pane.

- **Nested mode.** In nested mode, clicking the subject line (or navigation button) of a message opens or closes the message in line. This option allows the user to view the text of all messages in context of the discussion thread. Users can open or close all messages or individual messages as desired.

Messages matching the search criteria are presented with body text open.
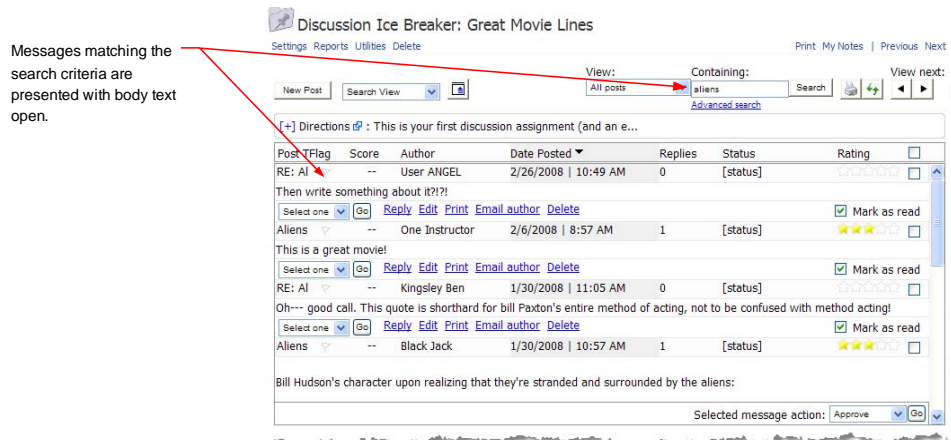
- **Search mode.** Search mode lets users find messages via the combination of Search and View filters. Combining searching with the ability to filter results by any of the navigation options allows users to find exactly the messages desired. Instructors have the ability to select messages and manage/grade them in batches.

All body text visible for efficient browsing.
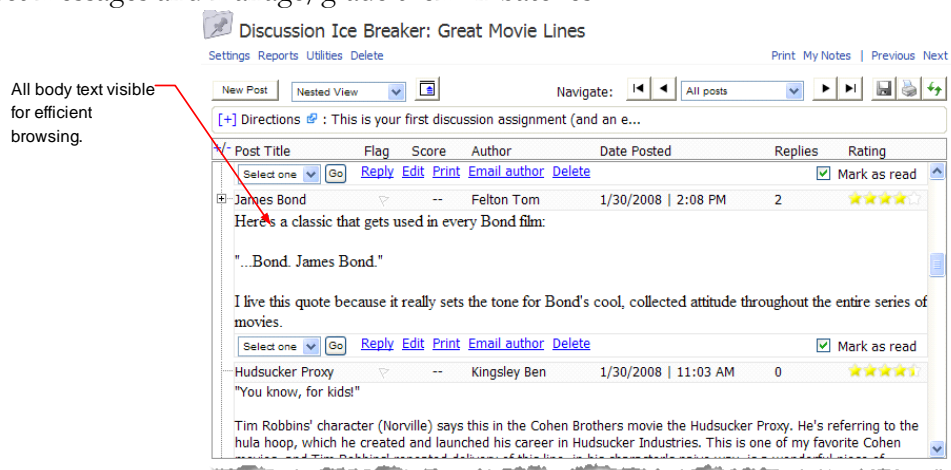
Usability

Fifteen different filters allow users to view, navigate, and act on any subset of messages. Following are some favorites:

- **Consistent navigation.** All navigation and search controls are organized at the top of the page.
- **Message navigation.** Users can quickly filter the message view and navigation with the following options:
  - Student options
    - All posts
    - Unread posts
    - Read posts
    - My posts
    - Replies to my posts

- Draft posts
- Flagged posts
- Posts with attachments
    - o Instructor options
        - Pending
        - Approved
        - Rejected
        - Ungraded
        - Graded
        - Locked
        - Deleted messages

Note: Users can set any view to be their default view.

- **Discussion directions.** Directions are always visible to the user and are fully expanded the first time a user enters a discussion.
- **Message controls.** New message controls allow users to expand or collapse and sort discussion messages.
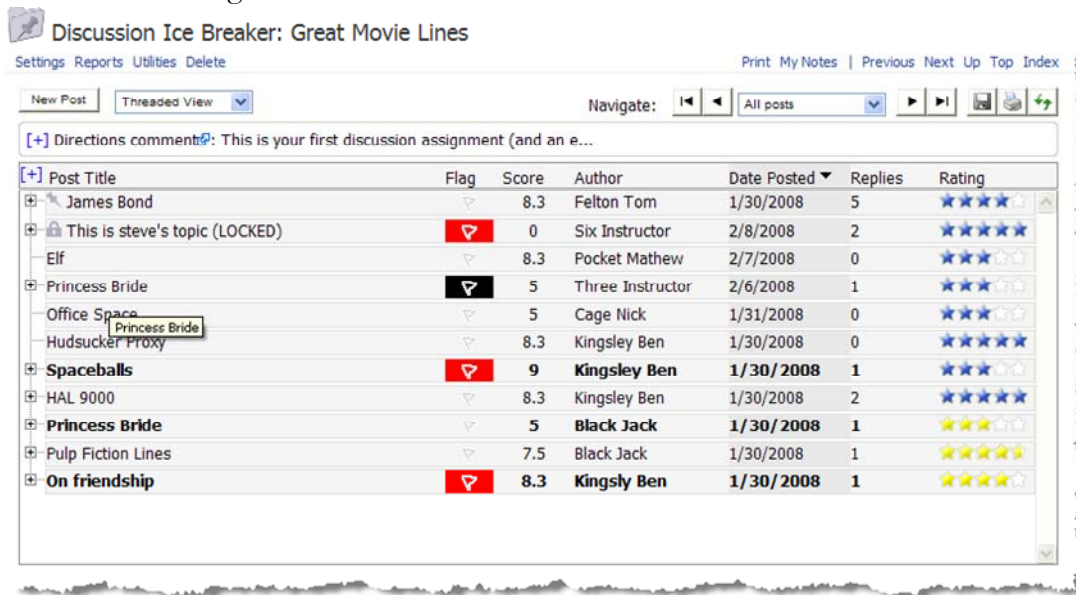
Flexibility

Discussions now offer more flexible configuration and management controls. New tools allow instructors to organize all course discussions in a single discussion instance, control default views, and assign moderator rights to anyone in the course.

1. **Flexible configuration**. Discussions can function in threaded or nested modes—or allow users to switch between modes.
2. **New topic posts**. Instructors can determine who is able to post new topics within the forum. This feature is useful if the instructor wants to limit students to responding to instructor posts.

3. **Peer rating**. An optional peer rating tool allows users to rate (and instructors to track) the value of one another's posts.

4. **Choose moderators**. Instructors can designate students as forum moderators, along with course editors and course assistants.
5. **Task notifications**. Instructors can determine which discussion tasks are tracked on their Tasks list.
6. **Custom post colors**. Instructors can choose to have their posts—as well as their moderator's posts—appear in different colors, making it easier for students to spot instructor posts.
7. **Reply subjects**. Instructors can take control of the endless RE: strings by forcing new subject lines for replies to a message with "RE:" in the subject.
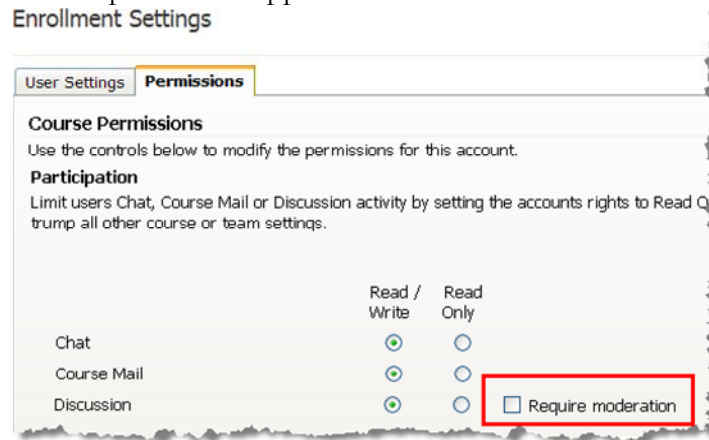

Management

For instructors, the new discussions features offer greatly enhanced tools that reduce the amount of time spent managing discussions and increase visibility into class behavior.

- **Discussion control.** Instructors can set all posts to be approved prior to display, or require only certain students' posts to be approved.

- **Batch operations.** Search and message filters allow users to find messages, select all or specific messages, and then apply any of the following actions in one step:
  o Approve/Reject
  o Score
  o Move
  o Make Sticky/Unstick
  o Lock/Unlock
  o Mark as Read/Unread
  o Delete/Undelete
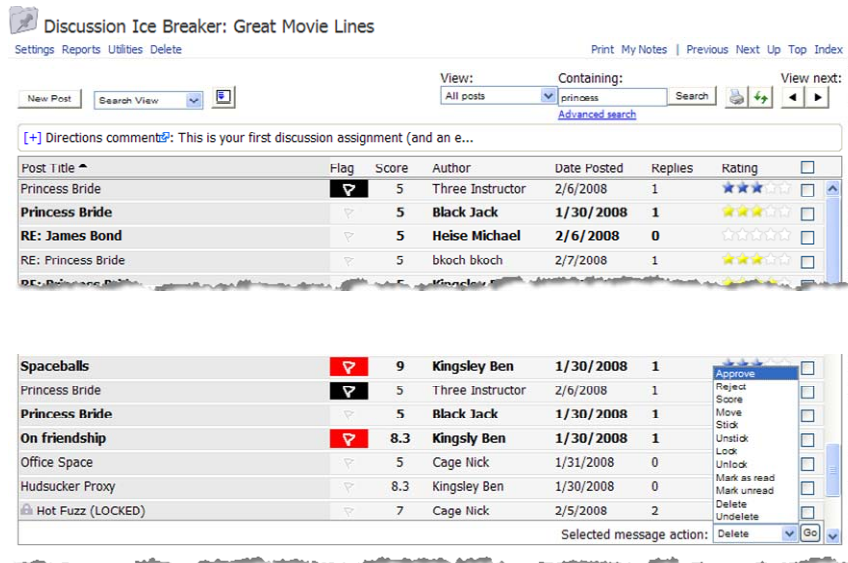
- **At-a-glance view.** Provides users with a quick graphical view of discussion performance and trends.
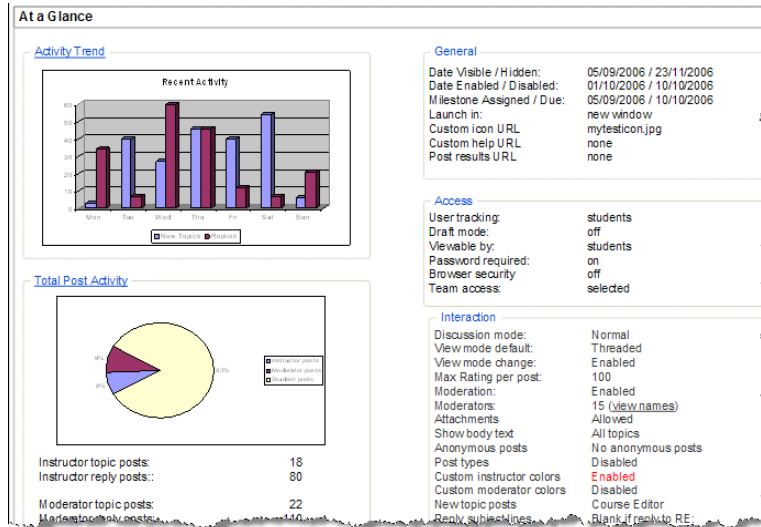
- **Schedule instructor posts.** Instructors can create posts in advance and schedule the post date.

Discussions FAQ

What is the default setting for moderation?

By default, moderation is set to approve all messages automatically. You can reject messages in this mode just as you would in a fully moderated discussion; you just do not have to approve every message before it appears within the discussion. This arrangement gives you a bit more flexibility in how you manage your discussions.

When importing a discussion from ANGEL 7.2, will extra features such as peer review or flags in these new discussions be enabled by default?

No. When you import discussions from version 7.2, the features that are unique to ANGEL 7.3 will be disabled via their respective options on the Settings page. You can enable those features after import.

Is there still a Discussions Wizard?

No. The Discussions Wizard has been replaced with a simple mode selector where you can choose Normal, Post First, Team Journal, Private Journal, Hot Seat or Fishbowl mode. For Hot Seat and Fishbowl modes, all team selections are done via a configuration screen within the Settings > Interaction page.

Mode: Hot Seat Mode   Configure

Discussion Views: Normal
    Private User Journal   low users to switch b
Instructor Rating Score: Private Team Journal
    Fishbowl Mode
Allow Attachments: Hot Seat Mode
    Post First
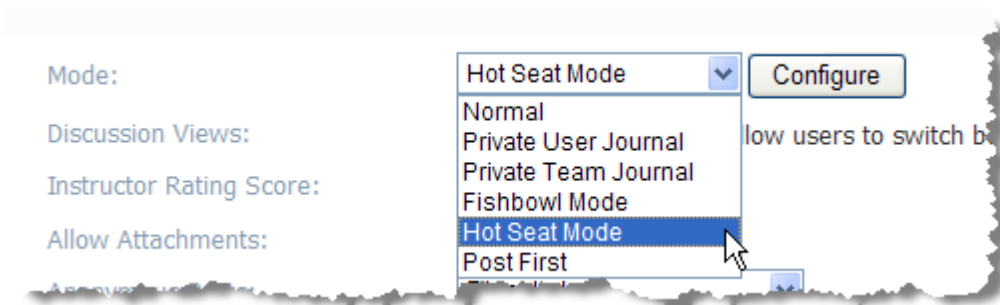
Can students see the instructor's score for their posts?

The instructor can see the scores assigned for every post. Students can see only the scores assigned to their posts.

Do scoring rubrics affect the gradebook?

No. Scoring rubrics are designed to assist the instructor in assigning a final grade. Instructors can copy the results of the scoring rubric to the Grade column with a single click.

Is there a difference in how the system performs in threaded mode vs. nested mode?

Yes. Threaded mode is the faster of the two modes. Nested mode allows you to view all the message bodies in a discussion at the same time.

In threaded mode, discussions download and render all the subject lines for the forum. Individual messages then are called from the server as they are viewed. This leads to faster initial load time and faster rendering times.

In nested mode, the subject lines are downloaded, as is the body text for every message in the forum. Thus, nested mode downloads and renders substantially more data upon initial load. The benefit is that once it's loaded, you can browse and view every message locally.

Can we view rejected or deleted messages?

Yes. If an instructor rejects or deletes a message, that message can be viewed by switching into Search mode, selecting from the view filter to view deleted or rejected messages, and then searching the forum.

Can old message boards (from ANGEL 6.3 and earlier) be imported into the new discussions?

ANGEL 7.3 will import discussions in ANGEL 7.2 format. Older message boards must be updated to version 7.2 format prior to importing into ANGEL 7.3.

Can we print or archive discussions locally?

Yes. The new discussion forums allow you to print or save your forums as PDF files. By using the view filters or Search mode to refine what is presented, you can filter what is printed or saved. ANGEL will print (or save to PDF) exactly the message configuration you have viewable in your message area.

Can I house all my class discussions in one discussion?

Yes. You can configure discussions to allow only instructors to make top-level posts; thus, you can control the top-level topical areas of your discussion under which students must make their posts.

How are peer ratings calculated?

A student can rate any post as many times as desired, but only the last rating is used in calculating the average rating for that post. Thus, students are allowed only one rating vote per post.

Algorithmic Questions

Algorithmic questions provide instructors with the ability to create formula-based questions that automatically generate randomized replacement values for variables and calculate the correct answer(s) for each student who completes a question.

Algorithmic questions typically are used in disciplines with a quantitative aspect, such as chemistry, physics, or economics. This type of question is useful in two ways:

- **Helps prevent cheating:** Questions and answers are always randomized for each student.
- **Supports drilling:** Students can practice one mathematical concept repeatedly with different values and answers, in order to achieve mastery of that particular concept.

This question type is meant as a replacement for the calculated question type in ANGEL LMS quizzes for versions 7.1 and 7.2.

New Features

Within algorithmic questions, based on settings entered by the question creator, ANGEL replaces variables and calculates answers on the fly when the student views the question. The number of permutations for a given question can be effectively infinite. In addition to this general approach, there are several other areas of note:

- **WebEQ/Question text variable replacement.** An instructor can author question text with variables to be replaced based on the settings provided. If a WebEQ equation is included in the question text, any variables included in it also will be replaced algorithmically.
- **Dependant variables.** Instructors can create variables to be used as the basis for *another* variable before being calculated and used for a formula to determine the correct answer for a question.
- **Automated performance rubric.** You can set up multiple conditions to evaluate student answers that support varying degrees of precision. This approach allows for an unlimited number of partial credit and unit synonyms scenarios.
- **Functions, constants, and operators.** Algorithmic questions support a wide range of algebraic and trigonometric functions and commonly used constants (such as pi) and operators (for example, +, –, logical NOT).
- **Import from WebCT.** Algorithmic questions allow for the import of calculated questions from WebCT CE 4.

Instructor Experience

Instructors can create algorithmic questions by using a new algorithmic question editor. This question editor takes a similar approach to the other assessment question editor pages, but with algorithmic-specific

settings. The following illustration shows a portion of the question editor; callouts refer to the additional details below.

1. **Variable replacement in question text.** Variables entered in the question text (for instance, {y}) are randomly replaced with a value when the student receives the question. Variables in WebEQ equations also can be replaced.
2. **Random variables.** Random variables correspond to the variables entered in the question text. Each random variable can be defined as either a continuous range or a discrete list. Continuous range variables select a random value between a minimum and maximum range. (Rounding options include decimal places and significant figures.) Discrete list variables are selected randomly based on a specific list of values entered by the instructor.
3. **Answer variables.** A formula is entered for each answer variable to define the correct answer(s) for a question. Formulas are entered in ASCII math format, which is a plain-text method for entering mathematical expressions. Answer variables can be dependent upon random variables *and* preceding answer variables, if desired.

4. **Grading rubrics.** Set one or more criteria to define how ANGEL will evaluate student answers automatically. You also can add multiple criteria to grant partial credit based on three evaluation methods: equals, rounding, or tolerance. Enter multiple unit synonyms to ensure that students receive full credit when multiple answers are acceptable.

Grading Rubrics ④
Define the correct answer(s) for each Answer Box.

☐ Answer Feedback
☐ Use Same Rubric for All Answers

Enter answers for answer box #1

☒ **Answer a)**   Answer   Units   Case-sensitive?
value of {t1} ⌄   hr   ☐

Evaluate using
Equals ⌄

☒ **Answer b)**   Units
hours
Answer   Case-sensitive?
value of {t1} ⌄   ☐

Evaluate using
Equals ⌄

Add [1] more answer(s).

Student Experience

1. **On-the-fly question generation.** All students receive a unique question based on the settings provided by the instructor, ensuring that variables and answers are different every time. This true algorithmic generation is ideal for drilling exercises, and to prevent students from cheating on tests.
2. **Feedback.** Feedback can be offered at the answer box and question level.
3. **Correct answers and credit.** The correct answers, as calculated, are displayed.

① Assessment 1

1. A car's average speed is 45 km/hr. How long will it take the car to travel 15 km?

[3]   units [hours]

[Submit] [Save and Continue Later]

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② Assessment 1

Points Awarded	90
Points Missed	10
Percentage	90%

✖ **1.** A car's average speed is 45 km/hr. How long will it take the car to travel 15 km?

[3]   units [hours]

② → **Feedback:** Refer to Chapter 3 of your textbook, page 45-46.

Points Earned: 0/10

③ **Correct Answer(s):** .33 hours

[Continue]

Algorithmic Questions FAQ

I still have questions about how to use algorithmic questions. What other help resources are available?

- **Contextual help when editing an algorithmic question.** Each field name is linked. Clicking a link opens a new window that provides additional details about that field.
- **Instructor reference guide.** For complete information about the creation and use of algorithmic questions, we have added a new section to the instructor reference guide, available by clicking the question mark in the Power Strip in ANGEL.
- **Sample algorithmic questions.** We have provided a series of discipline-specific questions meant to show a few concrete examples of how algorithmic questions can be set up to achieve certain results. These questions can be imported into one of your assessments for review by searching or browsing your question bank.

- **Video tutorial.** A video tutorial, showing the steps to create a basic algorithmic question, can be accessed from the algorithmic question editor page.

My institution is not using ANGEL assessments. Can I still use algorithmic questions?

No. Algorithmic questions have been designed specifically to work with ANGEL's assessment capability, which was released in the 7.2 version of the software. However, you still have the option of using the Calculated Question Wizard in quizzes, if desired.

Can I migrate ANGEL calculated questions (in quizzes) to algorithmic questions?

No, but you *can* migrate ANGEL calculated questions into an assessment as a question set, which is the same way that calculated questions are handed in quizzes.

What is the WebEQ Equation editor?

The WebEQ Equation editor is a tool used to create and insert mathematical formulas into a question's text. The advantage of using this tool is that formulas can be displayed as they would typically be presented (as opposed to ASCII math, for example). This tool is available anywhere the HTML editor is displayed; in the case of algorithmic questions, this includes the question text and other fields.

Can I enter variables in a WebEQ equation to be replaced algorithmically?

Yes. Simply enter in braces any variable you want to have replaced, like this: {y}. Then define each variable as a random variable or answer variable.

Why are there two types of random variables?

The two types of random variables—continuous range and discrete list—support two distinct methods of having ANGEL replace the variables when a question is presented to students.

- Continuous range variables should be used when you want a variable to be replaced with *any* value between a range of two numbers, and you are confident that the value selected will allow ANGEL to evaluate the formula entered successfully (for example, avoiding division by zero or other potential problems.)
- Discrete list variables should be used when you need to maintain control of the specific values that ANGEL will randomly select when replacing a variable.

What is ASCII math?

ASCII math is a plain-text method for entering mathematical expressions, and is how answer variables are entered for algorithmic questions. Following is an example of an ASCII math expression:

{d}/{v}

To use ASCII math to support more complicated expressions, refer to the contextual help next to the Formula field, which provides details about syntax for operators, constants and functions, etc.

Why "answer variables"? Why not call them "answers" or "formulas"?

The term *answer variable* includes the word *variable* because these fields can be used for two purposes:

- Defining the correct answer for the question
- Creating a variable to perform a formula-based calculation for "stepped operations" (dependant variables)

Note: For more information about the use of dependant variables, see the instructor reference guide.

Can students enter fractions for an answer?

No. Students must enter answers as decimal values.

Can I regrade an algorithmic question?

Yes, but as with other assessment question types, certain elements of the question cannot be changed when regrading; for instance, the random variables and answer variables.

Why would I need to enter more than one answer in the grading rubric?

One example of why you'd enter multiple answers for a rubric is if you want to award students different points based on how close they came to answering a question correctly. For example, you could create one answer that awarded 100% of the points for a question when the student provided the *exact* answer, and 50% of the points when the student was within a *certain range* of the correct answer (using rounding or tolerance options).

Another example would be when there are multiple correct (or partially correct) ways to enter units.
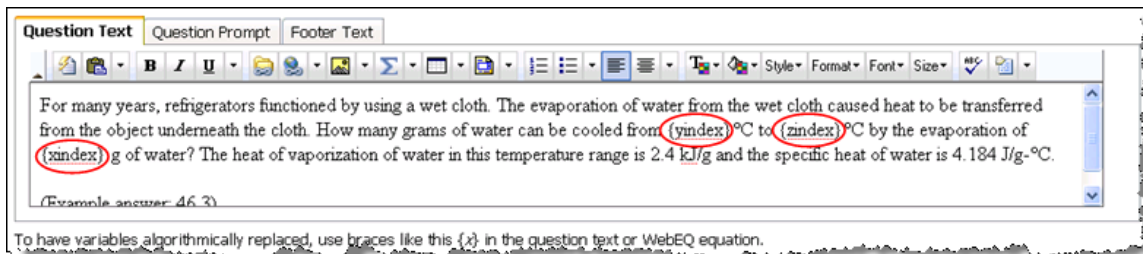
Can I import calculated questions from WebCT?

Yes. Using the Course Import Wizard within ANGEL, you can upload a valid WebCT CE 4 content package, which will convert WebCT quizzes into ANGEL assessments or quizzes.

Some of the algorithmic questions in my course were imported from WebCT. What do I need to know about how these questions will behave?

When calculated questions are imported from WebCT as algorithmic questions, you don't need to change anything as long as you want the question to work exactly as it did in WebCT. However, it is always a good idea to preview an imported question before assigning it to students, to ensure that the question behaves as expected.

If you want to make changes to the question once it is in ANGEL, there are several issues to consider. When importing a WebCT question, the primary goal is to reproduce exactly the student experience in WebCT. In order to accomplish this, a number of changes are required:

- **Question text:** The variables in the question text to be replaced are all changed to use the format {xindex}, where x is the original name of the variable from the WebCT question (see screenshot below). The following items describe why this variable name change is required.

- **Random (discrete list) variables.** All of the WebCT calculated question variables are imported into ANGEL as discrete list variables. As described earlier, the question text's variables actually point to an "index" version of these variables, but the original values for each variable as defined in WebCT are all intact.

- **Random (continuous range) variables.** As a convenience, ANGEL also creates continuous range variables based on the WebCT calculated question's variable settings. However, these continuous range variables are not used by default. If you like, you can alter the question text's variables to point to these continuous range variables, but this is not necessary for the question to work as created in WebCT.
- **Special "index" random variables.** To accurately simulate the behavior of WebCT's calculated questions, an "index" is required in order to have the algorithmic question choose random variables that are associated to each other. There is one {indexall} random variable, which is always a continuous range variable between 0 and N, where N is the total number of possible variable combinations from the original WebCT question. The randomly generated {indexall} value (for instance, 0, 1, 2, etc.) is used to select the appropriate discrete list variable(s) brought over from the WebCT question, which are handled as answer variables (see the next item).

Special "index" answer variables. These are displayed as answer variables, such as {xindex} {yindex}, and so on, where x is the variable name as defined in the WebCT question. The formula for these answer variables follows a consistent format: {x}[{indexall}]. By referring to the random variable {x}, and appending an index value between 0 and N, the appropriate discrete list variable value can be selected consistently for the purposes of calculating the answer to the question (which uses the {xindex} variables).