

Calibrated Peer Review[®] (CPR) Authoring Manual



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OVERVIEW

Calibrated Peer Review® (CPR) is a web-based management tool that enables discipline-based writing with peer review in classes of any size. It provides a mechanism for students to practice higher-order skills such as synthesis, analysis, and evaluation. In writing, students synthesize, organize, and articulate their knowledge. The peer reviewing process then allows them to confront other ways of thinking about the topic and to refine and reflect on their own understanding.

There are many reasons why you might want to add writing and peer-reviewing assignments to your class. Before you can begin writing a CPR assignment, you need to choose a topic, and the topics you choose and how you write the assignment will be governed by your motivation for implementing this technology. Some of the reasons cited by instructors include:

- Frustration with student difficulties in learning a specific concept with current instructional strategies
- A need—either self-imposed or externally mandated—to put writing into a curriculum
- A desire to integrate methods of instruction that give students new opportunities for critical thinking in the discipline
- A personal interest in exploring new ways to invigorate a course
- An opportunity for students with different learning styles to demonstrate mastery of the course material
- An opportunity for students to collaborate with and learn from peers is sufficient to excite the adoption of new pedagogical techniques
- An ability for students to learn and experience the role of peer review in advancing scientific knowledge
- A way to get students to think critically about the complications of the communication process

CHOOSING CPR TOPICS

Once your instructional reasons for using CPR are set, choosing a topic for the specific writing task follows logically.

Experienced CPR authors have found that three key features make an effective assignment topic. Because a full assignment requires additional student time beyond the writing, the topic must be

- significant and central to the course,
- appropriate for a writing assignment, and
- interesting and challenging, but not overwhelming for students.

The topic must have sufficient depth that not only the writing stage but also the reviewing stages of the assignment probe higher level concepts of a topic and contribute to student

learning. Otherwise, students rightly find the assignment, in general, and the reviewing process, in particular, a waste of their time. Students learn how to evaluate their peers' documents by reviewing three carefully crafted samples, which include not only an exemplary text but also two that contain common student errors and misconceptions.

The centerpiece of the Calibrated Peer Review process, which includes the three crafted examples, is the faculty-developed assignment.

A complete Calibrated Peer Review assignment consists of nine sections integral to the instructional design of the assignment and four sections used in the CPR program's search functions for quickly locating a relevant assignment. The former are seen and used by students as they engage in the assignment process; the latter are seen by potential authors and users and are publicly available to non-users.

The instructional design of the nine student sections can be considered a lesson plan for the assignment:

- The **Title** identifies the topic.
- The **Learning Goals** specify the objectives and purpose of the assignment.
- **Hyperlink Resources**, including links to web sites and files, provide students with the study materials for the assignment.
- **Guidance for Studying Source Materials** and the **Guidance for Writing Your Text** give students specific instructions on how or what to study in the resources.
- The **Writing Prompt** indicates what is expected in the essay they will write.
- Three **Calibration Essays** serve as strong, mediocre, and poor models or typical student examples of the writing task. These form the basis for training students to become competent reviewers.
- The **Calibration Questions** identify the critical points and issues that are expected to be addressed in a text response to the writing task. The questions may also explore common misconceptions students hold or errors that they make.
- The **Calibration Answer Keys** include explanations of why the three calibration samples do or do not meet the evaluation criteria that you expect from the class. Since each student receives specific feedback on their training success, the explanations become personalized instruction that hones student understanding of the topic.

Figure 1 below shows the "Table of Contents" for an assignment, and the following pages contain

- a detailed description of the purpose of each section of an assignment, and
- the best practices that have been developed to make the element a meaningful and useful part of an assignment.

As you complete a section, you will need to specify whether you have completed it or it is still a "work-in-progress." Either way, this table will keep a record of when you last saved the element and its status as finished or not. An assignment cannot be used until all required parts are finished. Even though the program will operate with the optional

elements unfinished, we do not recommend that you leave them incomplete. They provide students with the support structures they need to learn most effectively from the writing elements and reviewing process.

HOME LOG OUT Calibrated Peer Review® Central Assignment Library

[« Back to Manage Assignments](#)

Author Assignment

Title: New Assignment (created 5/4/2016 6:21:31 PM)

[Preview Assignment](#)

Overall status: Not finished

Last edited at:

Task	Requirement	Status	Last Saved
1. Assignment Settings			
» Edit Title	Required		
» Describe Assignment	Required		
2. Learning Goals			
» Create or Edit Learning Goals	Optional		
3. Source Materials			
» Describe Source Materials	Required		
» Create or Edit Hyperlink Resources	Optional		
4. Instructions			
» Create or Edit Guidance for Studying Source Materials	Optional		
» Create or Edit Guidance for Writing Your Text	Optional		
» Create or Edit Writing Prompt	Required		
5. Calibration Assessments			
» Create or Edit Calibration Essays	Required		
» Create or Edit Calibration Questions	Required		
» Create or Edit Answer Keys and Feedback	Required		

Figure 1: The “Table of Contents” of a newly-created, empty assignment

SECTION 1: ASSIGNMENT SETTINGS

EDIT TITLE

The title, entered as seen in Figure 2 below, should be both interesting and informative. It should pique student interest without being trite. Choose a title that will give both the student and another instructor a good idea of the topic of the assignment. Any instructor can change a title for local use when the assignment is moved to a CPR Local web site during the set up or activation of an assignment for class use. If you have a catchy title that does not “search” well, mention it in the description section of the assignment so others can activate the assignment locally.

HOME LOG OUT Calibrated Peer Review® Central Assignment Library

Edit Title

Save and Close Save Mark this task: More work needed Finished Clear Changes

Task status: **Not yet saved**

Last saved at:

Title:

File Edit Insert View Format Table

New Assignment (created 5/4/2016 6:21:31 PM)

Enter up to 256 characters.

Tip: The title of your assignment will be visible to others when they search the assignment library. To make it easier for them to read their search results and to find an assignment they may wish to use, we strongly suggest the following guidelines for choosing and formatting a title.

- Don't use bold or underlined text, or change the color of the text in the title. Italics are acceptable when referring to books, movies, works of art, the scientific names of animals and plants, and so on. You may use subscripts and superscripts.
- Don't include the name or number of the course for which you are writing this assignment. Also don't include the quarter or semester. This information will be useless to instructors at other institutions. Add this information when you activate the assignment for your own class.
- Don't choose a vague title that makes others guess what your assignment is about. For example, the title "First Writing Assignment for ART208" says nothing about the assignment other than the course number, which isn't very useful. The title "Analysis of Renoir's *Skaters in the Bois de Boulogne*" is a much better choice!

Figure 2: The page used to edit an assignment's title.

EXAMPLES

Maintaining Equilibrium

This is too general. Many disciplines use the term equilibrium. This title is not likely to narrow the search for potential instructors.

Close your Eyes and Lift One Foot

This is probably too specific for searching; it is great for intriguing students.

The Physiology of the Inner Ear and its Role in Maintaining Equilibrium

More pedantic and less interesting for students but a much better title for the Assignment Library. Suggest the former title in the assignment's description.

DESCRIBE ASSIGNMENT

The four sections in the Assignment Description form the basis for the search function, which allows potential users and authors to locate assignments and ascertain their relevance. These sections are also included in the tracking of derivative works of assignments and in creating the citation tree, which provides recognition of the scholarly work of assignment authors in creating original and derivative works.

HOME	LOG OUT	<i>Calibrated Peer Review® Central Assignment Library</i>
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Describe Assignment

Mark this task: More work needed Finished

Task status: Not yet saved

Last saved at:

Description:

File Edit Insert View Format Table

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A ▾ A ▾
☰ ☱ ☲ ☳ ☴ ☵ ☶ ☷
🔗 Ω

Enter up to 1024 characters.

Tip: Direct your description to other faculty who may want to use your assignment in the course, not to students in your course.

Subject: African Studies ▾

Tip: If the category is too broad, add the more specific area in the keywords.

User level: Grade School (6-12 Years) ▾

Tip: If more than one category applies, select the one you will use the assignment for. Identify the breadth of levels possible in the description.

Keywords:

File Edit Insert View Format Table

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B *I* U x₂ x²
A ▾ A ▾
☰ ☱ ☲ ☳ ☴ ☵ ☶ ☷
🔗 Ω

Enter up to 256 characters. Separate your keywords with commas.

Example: solar system, planets, asteroids, comets, meteoroids

Tip: Your keywords are used in the assignment search tool by authors and instructors.

Figure 3: The page used to describe an assignment.

DESCRIPTION

Only authors and instructors, not students, see the description section of the assignment. Use this section to expand on the information found in the keywords, title, subject, and user levels. The description should summarize the assignment within the discipline, a curriculum, and the citation tree if it is a modification of another assignment. The texts in the descriptions of all the assignments are searchable from the assignment library search function.

The more complete your description of the assignment, including how it fits into the curriculum and the discipline, the more likely others will find it and use or modify your assignment leading to a citation for you. Experience using the assignment is also helpful to new instructors.

EXAMPLES

This exercise requires students to review the basic structure/function of microtubules in a eukaryotic cell. Then students are expected to use printed and Internet resources to learn and describe in some detail the types of motor proteins that interact with microtubules to generate force and motility in the cell. Students should discuss the structure/function of the classes of motor proteins and the mechanisms used by these proteins to generate motility.

This assignment relates common terms used in organic chemistry for describing molecular structure. A description of the shape of the molecule p-cyanobenzyl alcohol serves as the vehicle to bring the concepts together. This version is designed for students in an introductory organic chemistry class. An alternate version of the assignment, which discusses the shape of the molecule without relying on nomenclature, can be located through the "general chemistry" keyword.

The assignment introduces students to nanotechnology through C₆₀. A lecture video narrated by Sir Harry Kroto describes his role in the discovery, and spectroscopic identification of C₆₀ prior to the Nobel Prize award for this discovery. Students carry out a brief web search to identify current uses of C₆₀. Proper citation of web sites is stressed.

The assignment requires students to explain qualitative and quantitative exercises on concepts governing resistors in series and in parallel. No calculus is required.

Tone and complaint letter for a technical writing class. Requires students to analyze an audience, plan a letter, and write the letter.

KEYWORDS

Since the free-response keyword section has a 256-character limit, carefully choose words and phrases that identify content and disciplinary topic.

EXAMPLES

buffer, equilibrium, acid, base, CO₂, blood, pH

mass spectroscopy, isotope effect, compound identification

analytical, acid-base titrations, titrations, polyprotic acids, titration curve

science education, evolution, misconceptions, teaching

USER LEVEL

This category increases the efficiency of the search process for an assignment that might be relevant for a course. Even though many assignments can be used for different courses depending on the purpose of an assignment and the role CPR plays in a curriculum, there is general uniformity on what is traditionally taught at what level in each discipline.

Using the drop-down list, select the user level that you intend for your own use and specify any other levels in the description of the assignment.

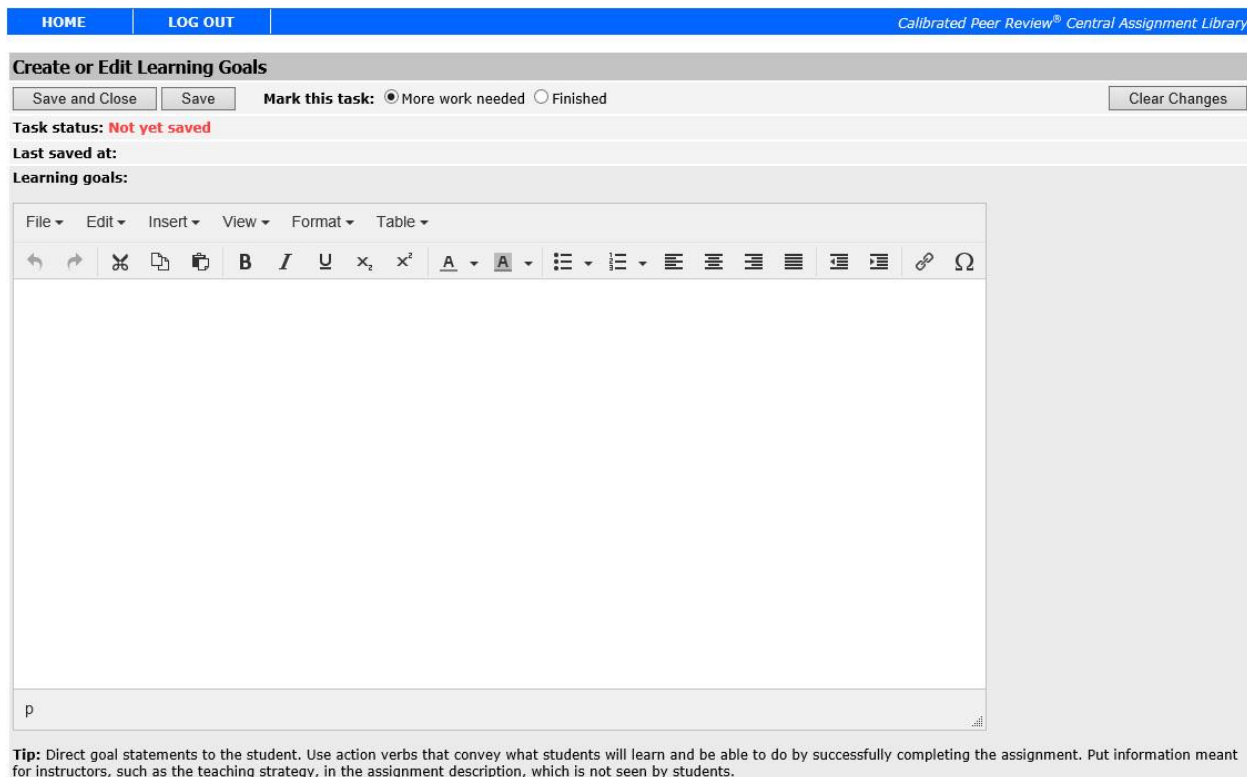
SUBJECT

This list is based on the subject categories developed for the UCLA library electronic database. In disciplines where a large number of assignments exist (for example, Chemistry and Biology) a further breakdown has been included. Finer-tuned categories will be added in other disciplines when the number of assignments in a broad subject area becomes large. The sub-category identification in the descriptions will be used for fine tuning this list.

SECTION 2: LEARNING GOALS

CREATE OR EDIT LEARNING GOALS

The learning goals are likely to evolve as you develop an assignment. In a finished assignment they should be clearly written using action verbs that convey to students what they will learn (be able to do) by successfully completing the assignment. Direct the statements to the student (see examples below). Any description of the teaching strategy of the assignment, which will be part of an Instructors' Guide, should be put in the assignment description, which is not seen by students.



HOME LOG OUT Calibrated Peer Review® Central Assignment Library

Create or Edit Learning Goals

Save and Close Save Mark this task: More work needed Finished Clear Changes

Task status: Not yet saved

Last saved at:

Learning goals:

File Edit Insert View Format Table

Undo Redo Cut Copy Paste Bold Italic Underline Subscript Superscript Text Color Background Color Bulleted List Numbered List Indent Outdent Link Unlink

p

Tip: Direct goal statements to the student. Use action verbs that convey what students will learn and be able to do by successfully completing the assignment. Put information meant for instructors, such as the teaching strategy, in the assignment description, which is not seen by students.

Figure 4: The page used to edit an assignment's learning goals.

In your assignment, you can focus your goals on "writing-to-learn" or on "learning-to-write" or both. If you are going to factor writing performance in as part of the grade, you need to specify this in the goals and provide web links or handout resources on grammatical and

writing topics so students have a refresher on writing basics and understand your expectations.

EXAMPLES

LIST FORMAT

Through this writing assignment you will learn to

- Define a confidence interval
- Know when to use the normal table
- Know when to use a t-table
- Interpret confidence intervals

In this assignment, you will

- Read a short article on the many conflicting factors that affect the decision to ban DDT, a compound that pollutes but also has very beneficial effects
- Evaluate the global social and economic issues that affect the decision to totally ban DDT
- Write a paragraph in which you develop a balanced, logical assessment of a global problem

STATEMENT FORMAT

The goals of this assignment are to perform standard thermodynamic calculations for the water-gas shift reaction, to use the results of the calculations for pertinent predictions, and to learn about some uses for the products of the reaction.

This assignment is designed to make you think about the use of both non-violence and violence as justifiable ways of changing inequities in government practices or beliefs. The assignment also focuses on using evidence to support arguments in expository writing.

SECTION 3: SOURCE MATERIALS

DESCRIBE SOURCE MATERIALS

The most versatile assignments provide a set of resources that address different student learning styles. Interactive tutorials, highly visual web sites, and written material that complement a text or lecture provide new opportunities for students to study a topic in a variety of formats. Selection of resources is therefore very important.

There are advantages and disadvantages to multiple resources. With just one resource, all students have the same background and are likely to be more consistent in their responses to the writing prompt. This helps in the training in the calibrations and in the confidence they have in their peer reviews. If, however, that one resource is not effective in teaching the material for some students, they will have trouble with the writing assignment.

A large number of resources also introduce difficulties for students. Some students will feel they need to study all of the resources. If they are redundant, then this is seen as a waste of time and introduces frustration.

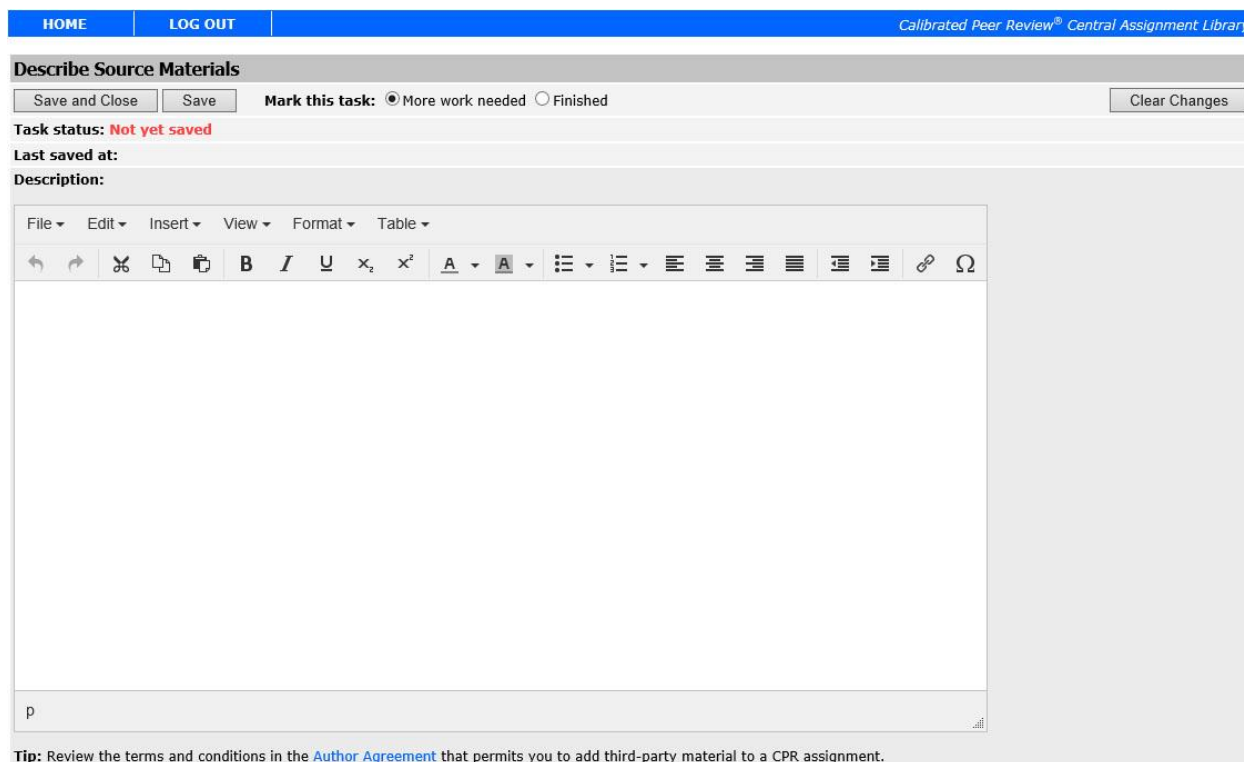


Figure 5: The page used to describe an assignment’s source materials.

EXAMPLES

MIXED SOURCES

The source material for this assignment is the appropriate chapters in your textbook that discuss thermodynamic variables along with tables of standard values for enthalpy, entropy, and free energy. In addition, Internet resources provide background material concerning the specific reaction of interest.

ONLINE SOURCES

The source material is comprised of two web sites, an interview, and an article from Discover. The sources build in complexity, starting with a simple introduction to key terms and working up to an article that ties all the information together.

Make sure that you read all of the articles and incorporate your understanding of the concepts from each into your essay. Exploration of additional links is optional.

MIXED SOURCES THAT INCLUDE AN EMPHASIS ON WRITING

The source material for the original assignment listed only the article reference. A revision of the assignment led to a more useful set of resources for students who

have varying backgrounds in analytical chemistry and an indication to all students that the quality of the writing was part of the evaluation of the revised assignment.

- The main source material for this assignment is a short article in "Analytical Chemistry" describing a new method for detection of EDTA in blood. The issue of the need for accurate analysis of EDTA levels in blood was raised in the O. J. Simpson murder trial. The reference for the article is Sheppard, R.; Henion, J. "Determining EDTA in Blood" Anal. Chem. 1997, 69 (15), 477A-480A. An electronic version of the article is available by clicking on the link in the "Source Material Resources" section. However, this site will only be accessible to you if you are working on a computer that is connected through an institution, which has a site license for this journal from the American Chemical Society.
- Two online resources give additional information about the techniques used in the research article.
- Three web links describe the components of a scientific abstract, help with grammar and mechanics, and a reference on plagiarism. Many other sources both in texts and online are available.

CREATE OR EDIT HYPERLINK RESOURCES

The title of the resource will become a link to the site. Include a phrase or statement that describes the resource, and indicate its support role for the assignment.

If you are using your CPR assignment to evaluate student writing, as well as field-related content knowledge, then this is a good place to link to writing center resources, handouts, online punctuation tutorials, or other free resources that may help students with the mechanics of their work.

Just as with the information you list under your source materials, be conscientious about the number of links you offer your students.

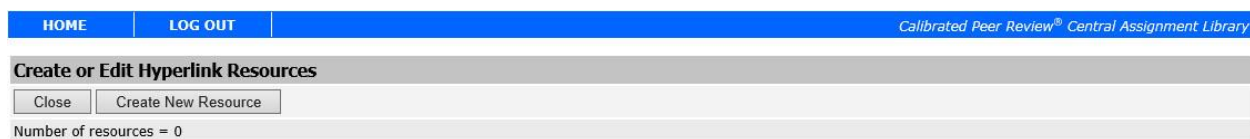


Figure 6: The page that keeps track of an assignment's hyperlink resources.

HOME LOG OUT Calibrated Peer Review® Central Assignment Library

Create or Edit Hyperlink Resource

Save and Close Save **Mark this task:** More work needed Finished Clear Changes

Task status: **Not yet saved**

Last saved at:

Title:

File Edit Insert View Format Table

Enter up to 256 characters.

Tip: The title of the resource will become a link to the site. Include a phrase or statement that describes the resource.

URL:

Enter up to 256 characters.

Example: <http://www.ucla.edu/>

Description:

File Edit Insert View Format Table

Enter up to 1024 characters.

Figure 7: The page used to edit a hyperlink resource.

EXAMPLES

GOOD VARIETY AND OPTIONS

[Evolution and Natural Selection](#) - A thumbnail definition written by MDs for MDs for the purpose of understanding Darwinian Medicine.

URL: <http://www.gate.net/~rwms/EvoDefinition.html#evolution%20definition>

[Evolutionary Medicine](#) - A brief introduction to evolutionary medicine.

URL: <http://www.chester.ac.uk/~sjlewis/DM/TEXTS/TEXT1.HTM>

[PBS interview with Paul Ewald](#) - Using Darwinian medicine, particularly with infectious diseases.

URL: http://www.pbs.org/wgbh/evolution/library/01/6/text_pop/l_016_06.html

[Dr. Darwin](#) - Discover article on evolutionary medicine. Make sure you read the entire article (you have to click on the links at the bottom of each page to work through the article page by page).

URL: http://www.findarticles.com/p/articles/mi_m1511/is_n10_v16/ai_17449605

TOO TERSE

http://med.stanford.edu/news_releases/2006/may/stomach-cancer.html

<http://news-service.stanford.edu/news/2006/may24/med-cancer-052406.html>

ONE MAIN SOURCE WITH OPTIONAL BACKGROUND ON CONTENT AND WRITING

[Determining EDTA in Blood](#) - This is a 1997 article from the journal "Analytical Chemistry." If your academic institution has a site license for this journal from the American Chemical Society you will have access to an electronic version of the article from a computer on your campus, or through an Internet connection through your academic institution. If necessary, consult your campus library for further information about accessing the publication.

URL: <http://pubs.acs.org/hotartcl/ac/97/aug/det.html>

[Capillary Electrophoresis](#) - This optional resource gives background information with animations on Capillary Electrophoresis (CE). EOF is the acronym for electroosmotic flow. An animation of the EOF process can be found if "Theory" is selected from the menu bar on the left of this resource.

URL: http://www.chemsoc.org/ExemplarChem/entries/2003/leeds_chromatography/chromatography/cze.htm

[Mass Spectroscopy Introduction](#) - This optional resource gives a brief description of the technique of mass spectroscopy.

URL: <http://www.chem.uic.edu/web1/ocol/spec/MS1.htm>

[Writing an Abstract for a Scientific Paper](#) - The first section of this web page succinctly describes the components of an abstract for a scientific paper.

URL:

[http://web3.uwindsor.ca/kits/eichhorn/59141a/vck13materials.nsf/467dadf398d63ead8525676d005c149d/e2f7dfad1f8e1062852573ba0055fe49/\\$FILE/How%20to%20write%20an%20abstract.pdf](http://web3.uwindsor.ca/kits/eichhorn/59141a/vck13materials.nsf/467dadf398d63ead8525676d005c149d/e2f7dfad1f8e1062852573ba0055fe49/$FILE/How%20to%20write%20an%20abstract.pdf)

[Plagiarism](#) - A Student Guide to Academic Integrity that briefly defines plagiarism and describes some activities that are included in this definition.

URL: <http://www.deanofstudents.ucla.edu/StudentGuide.pdf>

[Grammar, Punctuation, and Spelling](#) - This interactive tutorial provides help for common grammatical errors that college students frequently make when writing.

URL: <http://owl.english.purdue.edu/handouts/grammar/>

SECTION 4: INSTRUCTIONS

GUIDANCE FOR STUDYING SOURCE MATERIALS

(Formerly known as Student Instructions)

Furnishing students with guidance on what to focus on when studying the resources will make the learning process more efficient and effective for the students. Your instructions should provide students with the information they will need to complete outlines of their essays that satisfy the guidelines for writing the text as well as the information specified in the "Writing Prompt."

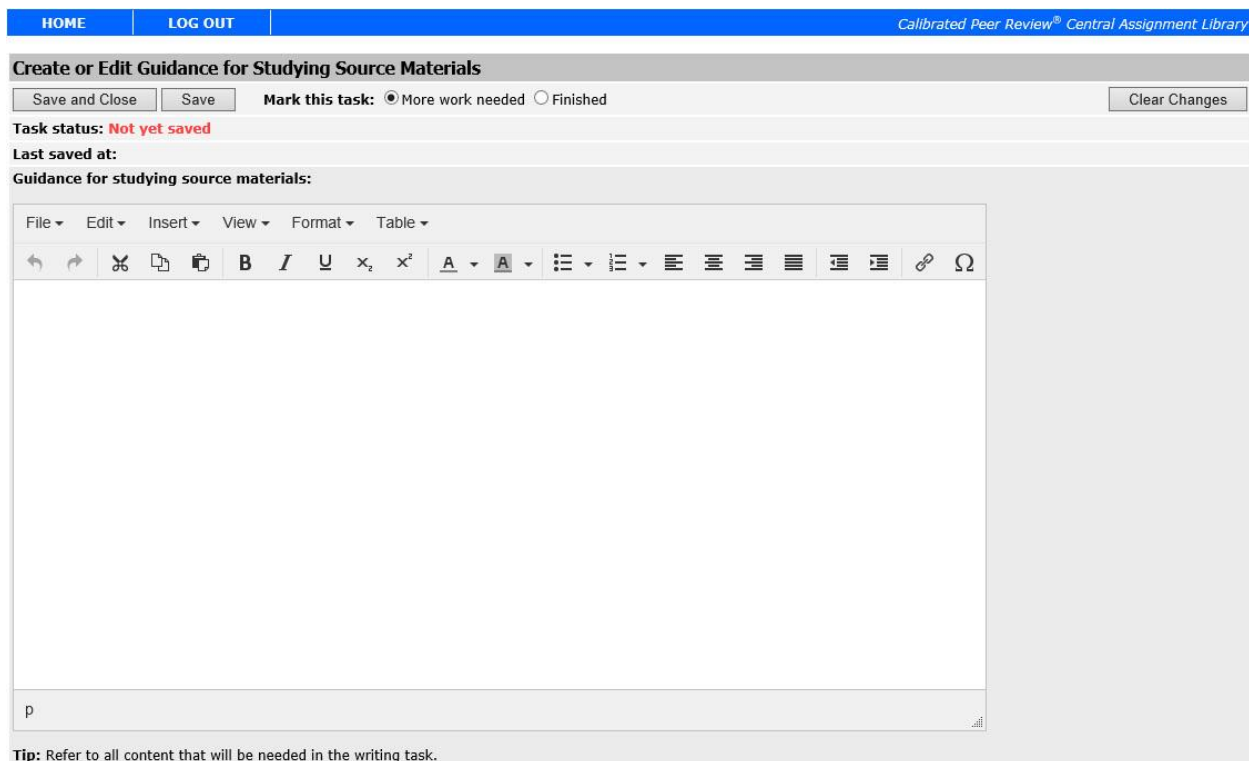


Figure 8: The page used to edit the guidance for studying source materials.

EXAMPLES

LIST FORMAT

When reading the proposal that you will write a review for, identify

- the central focus of the proposal
- the major methods that will be employed
- the intellectual merit of the project
- the broader impact resulting from project

Follow the link under "Source Material – Resources" to the web site about nuclear technology. The site is quite large and contains more information than you need for the assignment (including some advanced nuclear physics).

Feel free to explore the web site as much as you'd like, but you should pay particular attention to the following sections, which contain the information you will need to write your essay:

- The Physics. Click on the terms: Binding Energy, Radioactive Decay, Fission, and Fusion
- Weapons and Warfare. Follow the link to the sub-heading about: *Nuclear Weapons* (focus on the sections towards the end on the *Atom Bomb* and the *Hydrogen Bomb*).
- Nuclear Energy. Read through entire section.

If you are having trouble understanding some of the terminology that you see at this web site, you may also want to read through the introductory sections about nuclear chemistry in your textbook.

STATEMENT FORMAT

The sources for this assignment build in complexity, starting with a simple introduction to key terms and working up to an article that ties all the information together. Make sure that you read all of the articles and incorporate your understanding of the concepts from each into your essay.

ACTIVITY FORMAT

In studying the interactive animation resource consider the issues raised by the following questions:

- What does a phase diagram represent?
- What is the significance of the regions of a phase diagram?
- How is a typical phase diagram laid out? Where are the three regions relative to each other? What other important features are present?
- What is the nature of the particles' motion, organization and proximity in the three phases?
- What are the particles doing at a phase boundary?
- Where do multiple phases exist at the same time?
- What changes occur in the piston and cylinder diagram as the temperature or pressure changes?

GUIDANCE FOR WRITING YOUR TEXT

(Formerly known as Guiding Questions)

Use this section to call student attention to the significant points to address and the questions to think about while writing. The guidance should address both content and style issues and be thorough enough to give students the framework of an outline for their essays. In fact, this section should serve as a self-assessment guide for students to ensure they have included the salient points needed.

As an author you will derive your calibration questions from the guidance you have given students in this section. There should be a direct parallel between the items indicated here as to what students should consider and/or include and the questions asked in the rubric for evaluating the essays.

HOME LOG OUT Calibrated Peer Review® Central Assignment Library

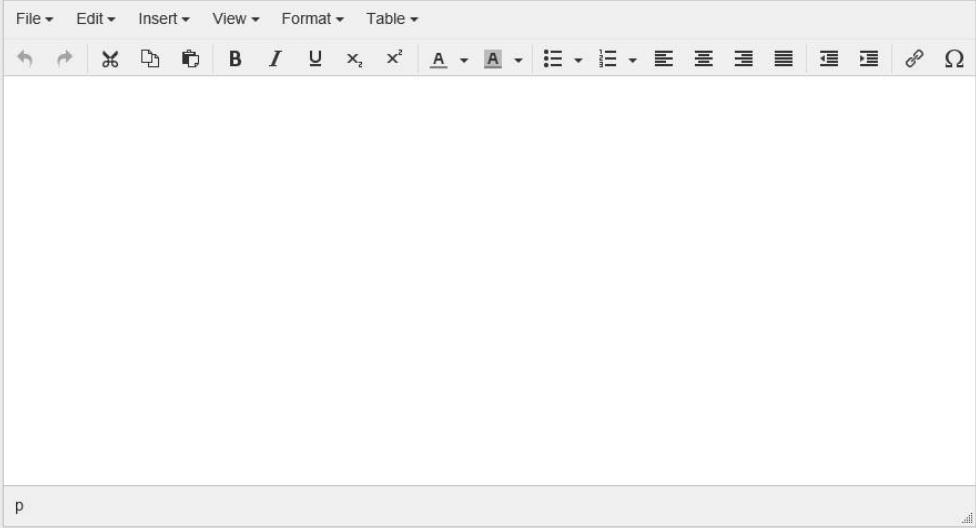
Create or Edit Guidance for Writing Your Text

Save and Close Save Mark this task: More work needed Finished Clear Changes

Task status: **Not yet saved**

Last saved at:

Guidance for writing your text:



Tip: Make sure all items assessed in the rubric are included in more general terms in this section.

Figure 9: The page used to edit the guidance for writing text.

EXAMPLES

LIST FORMAT

Write an essay to describe John Steinbeck, the author and the man. In your essay:

- Cite biographical details that reveal what kind of person he is.
- Describe at least two personality traits and support each with a quote or biographical reference.
- Describe at least two character traits and support each with a quote or biographical reference.
- Did he hold any opinions or principles that seemed to guide his life?
- To support your description, use two quotes from the short stories "Flight," and "Leader of the People," and from his Nobel Prize acceptance speech.

STATEMENT FORMAT

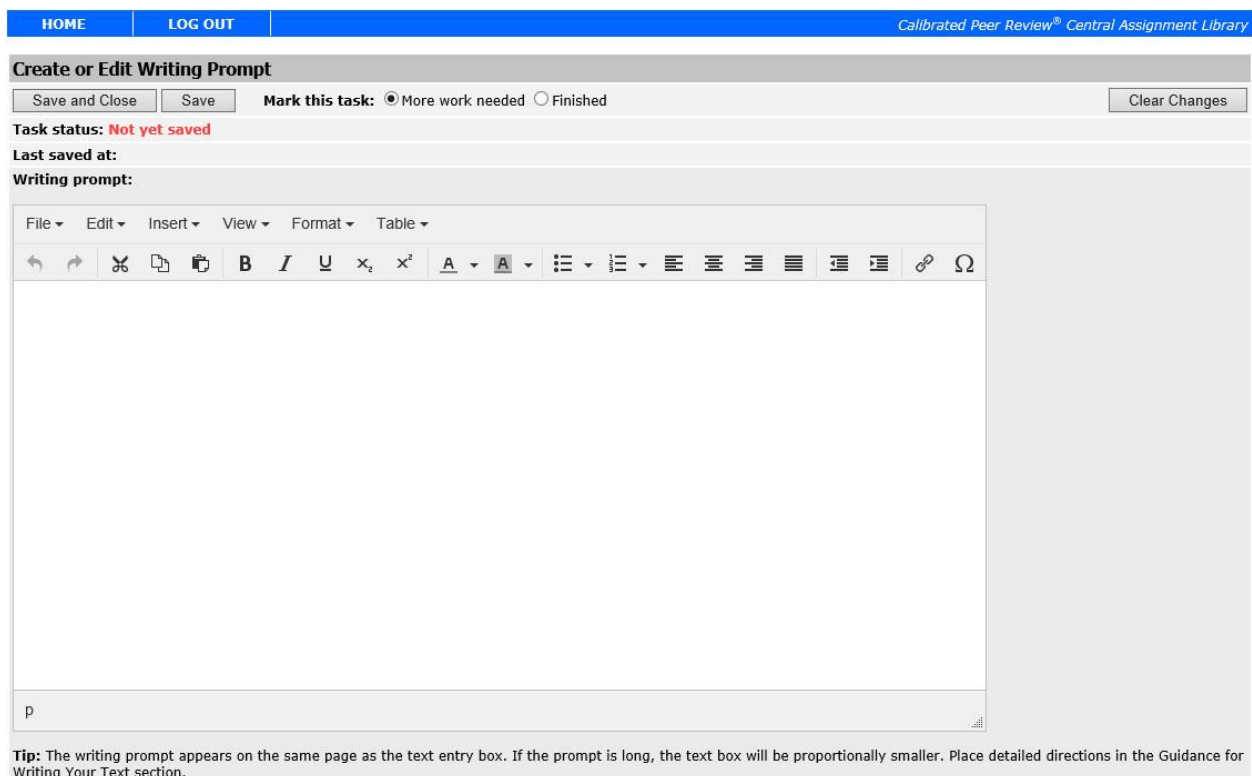
In preparing the outline for your abstract include the four components of an abstract: An introduction, including the hypothesis of the research; the method used to obtain the data; a summary of the research findings; and the implication of the scientific work.

REFERENTIAL FORMAT

When you have finished exploring the web site and have answers to all of the questions in that section, organize your answers so as to provide a coherent response to the writing prompt below.

WRITING PROMPT

The directions, which are entered in this section of the assignment, should concisely describe the specific writing task. The directions should also identify for the students, or reiterate if addressed earlier, who the audience is for the essay and the expected format. This is a good place to remind students to note the allowed word count, to write essays offline and save them, and to pass essays through a spell-checker before submitting them.



HOME LOG OUT Calibrated Peer Review® Central Assignment Library

Create or Edit Writing Prompt

Save and Close Save Mark this task: More work needed Finished Clear Changes

Task status: **Not yet saved**

Last saved at:

Writing prompt:

File Edit Insert View Format Table

Undo Redo Cut Copy Paste Bold Italic Underline Subscript Superscript Text Color Background Color Bulleted List Numbered List Indent Outdent Link Unlink

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Tip: The writing prompt appears on the same page as the text entry box. If the prompt is long, the text box will be proportionally smaller. Place detailed directions in the Guidance for Writing Your Text section.

Figure 10: The page used to edit the assignment's writing prompt.

EXAMPLES

Write a paragraph of the required length describing nuclear fission and its uses in our society. Pay particular attention to the issues raised in the guiding questions, but remember that you are writing an integrated essay, and not just answering a list of questions.

Write an abstract of the article entitled "Determining EDTA in Blood." Follow the guidelines for writing an abstract given in the instructions and resources. Remember that an abstract is not a detailed summary. Economy of words is important, and your

abstract must fall in the required word count range. Write your assignment in a word processor and save it before pasting it into the CPR text box.

Use the questions in the *Guidance for Writing Text* to carefully craft an “abstract” section for your research proposal. The section must be at least 200 words but not more than 250 words.

SECTION 5: CALIBRATION ASSESSMENTS

CALIBRATION ESSAYS

Calibration Essay	Status	Last Saved
» High-Quality Essay		
» Middle-Quality Essay		
» Low-Quality Essay		

Figure 11: The page that keeps track of the assignment’s calibration essays.

Save and Close Save Mark this task: More work needed Finished Clear Changes

Task status: **Not yet saved**

Last saved at:

High-Quality Essay Word count: 0 Click Save to update word count

Essay:

File Edit Insert View Format Table

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Tip: The three essays should be comparable in length and provide a range of evaluation ratings.

Figure 12: The page used to edit a calibration essay.

The three calibration essays train students to be peer reviewers of this assignment. As such they need to understand the components of an “ideal” answer to the writing task and also the common errors and misconceptions that they may encounter in their peers’ work. All of

the calibration essays need to be able to be analyzed with the evaluation rubric defined by the calibration questions.

Depending on the nature of your discipline and the goals of the assignment, the calibration essays may give three different approaches to the same writing prompt or may all address one scenario. In either case, the students should see a range of essays (high, medium, and poor quality), which will mirror the expected class performance. Note, however, that experience has shown that a severely grammatically flawed essay will mask more complicated errors in organization, structure, argumentation, and content.

The three essays should be comparable in length and provide a range of evaluation ratings.

CALIBRATION QUESTIONS

The evaluation criteria specified in the questions and the holistic rating for the overall writing task form the centerpiece of the assignment. It is these items that assess student understanding of the topic, critical thinking skills, and academic writing ability.

The basis for each question should be found in the writing prompt or the guidance for writing sections earlier in the assignment. Each of the criteria should be addressed properly in at least one of the calibration essays so that students have been trained to recognize a well-developed response before they encounter their peers' essays.

Questions about the essays should be worded to allow the intent of the author to be valued rather than specific words be stated. Avoid questions that have two possible answers unless the question is set up in a multiple-choice format and each of the possible choices is unambiguous. Include in each question the specific correct concept you are looking for in the essay. This is necessary in case students don't yet know the correct response to the question.

Student explanations of "yes/no" answers provide a valuable source of feedback to peers particularly if they will use the CPR essay as a draft for a final revised paper. Asking students to coherently explain the rationale for their evaluations of components of an essay also assists the reviewer in developing higher-order thinking and articulation skills.

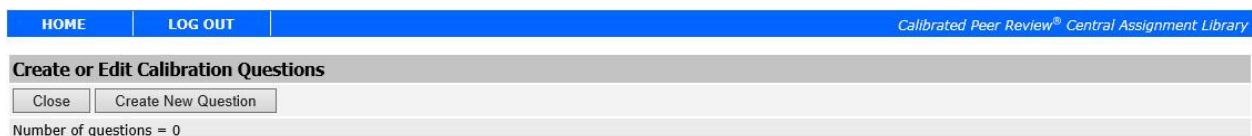


Figure 13: The page that keeps track of the assignment's calibration questions.

HOME		LOG OUT		Calibrated Peer Review® Central Assignment Library	
Create or Edit Calibration Question					
Save and Close		Save		Mark this task: <input checked="" type="radio"/> More work needed <input type="radio"/> Finished	
Clear Changes					
Task status: Not yet saved					
Last saved at:					
Question:	<div style="border: 1px solid gray; padding: 5px;"> File Edit Insert View Format Table Enter up to 1024 characters. Tip: Be sure to include the concept that you want evaluated in the stem of the question. </div>				
	Answer set: <ul style="list-style-type: none"> <input type="radio"/> Yes / No <input type="radio"/> None / Some (1 or 2) / Many (more than 2) <input type="radio"/> A / B / C (You must define these choices in your instructions) <input type="radio"/> A / B / C / D (You must define these choices in your instructions) 				
Explanation required:	<input type="checkbox"/> Student must explain his or her answer to the question during peer reviews Tip: During peer reviews only, a text box labeled "Explain your answer:" will appear below the question.				

Figure 14: The page used to edit a calibration question.

EXAMPLES

YES/NO FORMAT, EXAMPLE 1

Is the triple point clearly described?

This question is too general.

What if the triple point is described clearly, but incorrectly?

What if the student grading the essay does not know what the triple point really is?

Is the triple point clearly described as being the combination of temperature and pressure at which all three phases are present at the same time?

The question is now too specific. Students interpret very literally. If the essay states "The triple point is the set of conditions where all of the phases can exist together" students may mark it as wrong since the words temperature and pressure are not mentioned even though the statement does accurately describe the triple point.

Is it clearly indicated that all three phases are present at the same time at the triple point?

The verb "indicate" in the calibration question now leads the reviewer to the concept that is being looked for, not the specific words. In this question, the triple point is defined so the correct answer is present, but it is not too specific.

YES/NO FORMAT, EXAMPLE 2

Is the number of significant figures correctly indicated for all three measurements?

Again this is too general and does not assist the student who may not yet know the correct answer.

Are the number of significant figures indicated as 2 for 0.0034 g and 120 yd, and 4 for 150.0 m?

While this sentence is grammatically correct, many students will read it as if there is no identification of the number of significant figures for 120-yd.

Are the number of significant figures indicated as 2 for both 0.0034 g and 120 yd, and 4 for 150.0 m?

The meaning is now unambiguous.

ANSWERS REQUIRING EXPLANATIONS FOR PEERS' ESSAYS ONLY

Does the text predict absorptions for functional groups or structures that are not present in 1-methyl-1-cyclohexene? For example, does the text indicate there should be an absorption for an aromatic carbon-carbon double bond (arene), or stretches or bends for hydrogen atoms bonded to carbon atoms in an aromatic system? If **Yes**, explain why the prediction is incorrect; if **No** insert "No incorrect absorptions predicted" in the text box that will be present when you are reviewing peers' work.

Use this option judiciously. Remember that students will need to write three responses for each of the questions where explanations are required. If this option is selected, the program will automatically insert a text box with the statement, "Explain your answer:" when the student reaches the peer review stage of an assignment.

Explanations are not prompted during the calibration training or when the students are assessing their own work. If you want to give directions on what feedback to provide, be sure to specify in the question that explanations are required only for the peer reviews.

MULTIPLE CHOICE QUESTIONS

Does the letter follow the three structural principles of an informal letter?

1. The correspondence is put in context with an engaging opening. For example, does the letter mention that it is a response to a letter from Chris, or respond to the informal friendly questions?
 2. The relevant information is related in a logical and coherent manner. Does the body of the letter address the main question asked in the original letter?
 3. There a suitable conclusion. Does the letter summarize the end of the formal correspondence and invite further interactions with Chris?
- A. All three principles are included.
B. Two of the three principles are included.
C. Only one of the principles is included.

D. None of the standard principles of an informal letter are included.

Both the stem and the item choices must be included in the question.

ANSWER KEYS AND FEEDBACK

Each of the calibration questions must be answered for each of the three training essays. A detailed explanation of why you have answered the question as you did is critical to the success of the training. This feedback, given to students when they are learning to evaluate essays, refines and clarifies their understanding.

Even if an answer seems obvious to you, prepare your response as if a student had answered otherwise. Only in this way is every student presented with a complete explanation and rationale for what you see as complete, incomplete, correct or incorrect responses to the questions for that essay.

You are strongly encouraged to have a colleague review each of the essays using the calibration keys. If there is disagreement between your answer and your colleague's on any question, or if your colleague feels uncertain about an answer, the essay or the calibration question has to be revised. If experts cannot decide how to answer a question, students will certainly have difficulty. Ambiguity is not good in the training. Students will encounter this when they review their peers' work. By then they should feel more confident in their understanding.

Calibration Essay	Status	Last Saved
» High-Quality Essay		
» Middle-Quality Essay		
» Low-Quality Essay		

Figure 15: The page that keeps track of the answer keys.

HOME	LOG OUT	Calibrated Peer Review® Central Assignment Library
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Create or Edit Answer Key and Feedback

Save and Close Save Mark this answer key: More work needed Finished Clear Changes

Answer key status: **Not yet saved**

Last saved at:

High-Quality Essay

Questions

Questions not completed: Number 1

Question 1. Rate this text.

Answer:

10 (Highest)
 9
 8
 7
 6
 5
 4
 3
 2
 1 (Lowest)

Feedback:

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B *I* U x_2 x^2 A A

p

Enter up to 1024 characters.

Tip: Specify what is incorrect or incomplete or where in the text a correct answer is located.

Figure 16: The page used to edit an answer key and feedback for students.

EXAMPLES

Is the molecular equation correctly written as

$$\text{Pb}(\text{NO}_3)_2(\text{aq}) + 2\text{KI}(\text{aq}) \rightarrow \text{PbI}_2(\text{s}) + 2\text{KNO}_3(\text{aq})?$$

Answer: Yes

Feedback for students: The molecular equation is written and identified correctly. None of the species are written as ions and the physical state of each chemical species is indicated correctly.

Are specific examples given when a dose is beneficial for substances versus when a dose is high enough to cause damage?

Answer: Yes

Feedback for students: The first paragraph discussed the effect on humans versus fungal spores.

To what degree does the essay correctly describe and critique the strength of the test reliability?

- A. Essay presents and appropriately critiques the strength of the test reliability
- B. Essay only describes the reliability as reported in the text

C. Essay does not address the test reliability

Answer: B

Feedback for students: The essay mentions the lack of reliability for the Stroup test, but confuses reliability with validity.

Does the text mention any differences between the construction of diesel and gasoline engines?

Answer: No

Feedback for students: While there is a mention about the greater weight of diesel engines and their use in heavy equipment, there is nothing about differences in construction between gasoline and diesel engines.

Are specific misconceptions identified and contrasted with the "correct" explanation?

Answer: Yes

Feedback for students: An example is giraffe-neck lengths. A student believed that giraffe-neck length changes when the neck-fighting winner mates. The belief that beneficial bodily changes developed over a lifetime are transmitted directly to offspring is a misconception. Evolution is a change in the genetics of a population, not individual families, with the passage of each generation.