To Clone or Not to Clone

Developed by Marcy Merrill

Reading Selections for This Module


Supplementary Readings


Module Description

This unit could occur at the end of a larger unit on genetics in a biology course or as a unit in an English or journalism course. Although it is designed for the beginning of eleventh grade, it could be used for science as early as ninth grade with proper scaffolding and ample background information. The extra readings are included to provide background information for students. The module, which will take approximately two weeks to complete without the supplementary readings, focuses on types of genetic technologies with an emphasis on cloning and stem cells, both their uses and the controversy associated with them.

Module Background

The Said article reports on a company in Sausalito, California—Genetics Savings & Clone—that preserves and banks the genetic material of their clients’ pets in order to clone them in the near future. The article includes quotes from ethicists, animal rights groups, the president of Genetics Savings & Clone, and

Acknowledgments

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their prospective clients. At the end of the article is a step-by-step summary of how cloning is
accomplished by somatic cell nuclear transfer.

The key question “Should cloning be allowed or approved?” has multiple political, ethical, and
personal implications that will be addressed throughout the module.

About the Author

Carolyn Said is a staff writer at the San Francisco Chronicle. As a business reporter, she seeks to
weave people’s personal stories with statistical analyses to illuminate sweeping economic trends,
such as the current subprime mortgage meltdown. During 11 years at the Chronicle, she has
covered the dot-com rise and fall, the California energy crisis, the corporate malfeasance scandals,
and the human fallout from the economic downturn. Her work has received awards from the
California Newspapers Publishers Association, the Northern California Society of Professional
Journalists, and the Peninsula Press Club.

Module Objectives

In addition to the focus on Common Core State Standards, the module targets the skill areas listed
below.

Students will be able to

• Evaluate current issues in science and other content areas through careful consideration of all
  sides to the issue
• Demonstrate an active interest in cutting edge scientific technology and the ways it may impact
  their lives in the future
• Advocate by writing and providing verbal support for a cause or position
• Summarize the steps used to clone organisms
• Explain the differences between reproductive and therapeutic cloning
• Evaluate arguments for and against cloning to develop their own opinions

Along with the Common Core State Standards for English Language Arts and Literacy, disciplinary
content in a biology course will focus on related standards in a genetics unit:

Concept 5. The genetic composition of cells can be altered by incorporation of exogenous DNA
into the cells.

Standard 5c. Students know how genetic engineering (biotechnology) is used to produce novel
biomedical and agricultural products.

Note: The activities for students provided in the Student Version for this module are copied
here in the Teacher Version for your convenience. The shaded areas include the actual activities
the students will see. The use of italics in the shaded areas generally indicates possible student
responses and may be interspersed with notes to the teacher that are not shaded. If there are notes
to the teacher within the shaded areas, they are indicated by italics and parentheses.
Reading Rhetorically

Prereading

Getting Ready to Read

For use prior to or during the module, here are several opportunities for disciplinary knowledge extensions, assessment of the materials, and sites for further exploration or teaching:


2. Introduce the difference between Reproductive and Therapeutic Cloning by providing a definition of each.


4. Show students a timeline of cloning to reinforce that people have been experimenting with this technology since the late 1800s. Tell them about the vote in April 2012 in the Senate to ease the restrictions that had been placed on stem cell research. Remind them that cloning is a very timely issue that we, as a society, will need to make careful decisions about in the near future.

Exploring Key Concepts

The two student activities described here assess what students already know about cloning and provide some background information for students so they can comprehend the text when they begin to read.

Activity 1 asks students to activate their prior knowledge about the key concept by cubing the word “clone.” This activity will serve as a prereading activity to identify previous knowledge and misconceptions about what cloning is. Revisit it at the end of the unit after students have a clearer idea of cloning. Since the module focuses on this term, it is imperative that students have opportunities to explore it by discussing their ideas about its meaning and clear up potential misconceptions. You are encouraged to write with your students. But call time at one-minute intervals.
Activity 1: Exploring Key Concepts—Cubing

Cubing is a vocabulary-building activity for which you will define a standard or a metaphoric cube with a term the teacher posts. The sides of the cube, which you will use to describe the term, are as follows: describe it (using your senses); compare it (to something similar); analyze it (how was it made); apply it (how it is used); associate it (with something from your own experience or past learning); argue for or against it (not both). You will have only one minute to write your responses.

1. After providing the students with the writing instructions given on the six sides of the cube, furnish a model using a related term like sheep or, more specifically, Dolly, and work with your students to create a few examples based on the directions given for the sides of the cube. Possible answers might be as follows:
   
   Example of “Apply it” for the word sheep: They supply wool for clothing; they can be milked to provide food.

   Example of “Compare it” using the word Dolly: She is like a friend, a twin, a sister or brother, even a mirror image of oneself.

2. Write the word clone on the board, and toss the cube or choose a side with which to begin the writing.

3. When all six sides of the cube have been filled, ask students to reread their writing, and to identify their own sentence that best sums up what they already know about clones or cloning.

4. Do a “whip” around the class, with each student (and teacher) sharing his or her sentence without comment to make the reading and listening fast-paced.

5. Afterwards discuss where most of the associations and information came from—newspaper, movies, television, other forms of media.

6. As an informal way to discover what students already know about cloning, collect their cubing activities as a pre-assessment. You can revisit this activity after the postreading activities have been completed.

The second activity, a “Picture Walk,” is a prereading activity for building concepts and providing some background information for the students. You will need to find pictures as listed below to display to the class, either on the computer or on paper.

Spending about one minute per picture, show students each picture: a mouse, goat, cow, sheep, cat, dog, and human.
Activity 2: Exploring Key Concepts—Picture Walk

As you look at each of the following pictures of animals, write down your initial reaction to hearing the news that scientists have successfully cloned each of these.

After you have written your reactions, write a short paragraph answering the following question: “If you could clone any of the mammals you just saw, which one would you choose, and why?”

Remind students to consider their initial reactions from the “Picture Walk” in their answer. Either collect the writings, or ask your students to put them in their notebooks to use at a later time.

Surveying the Text

Surveying the text gives students an overview of what the reading selection is about and how it is organized and presented. Surveying also helps readers create a context for making predictions and generating questions to guide their ongoing reading.

Activity 3: Surveying the Text

1. Look at the title of the article, “Here, kitty-kitty-kitty-kitty: Sausalito firm offers clones for $50,000, signs up 5 cat owners,” and make a prediction about the issue the article may likely present.

   This article reports on a company in Sausalito, California—Genetics Savings & Clone—that preserves and banks the genetic material of their clients’ pets in order to clone them in the near future.

2. Preview the end of the article. What did the author include at the end? What do you think her intention was for this ending?

   “The proof is in the Puddy-cat” certainly does not answer the question about whether cloning is ethical or not...and so the answer is not given at the end.

3. Write out the correct citation of this article for a Works Cited page.


4. Looking specifically at the date of this article, do you think more or different information might be available now? What might be relevant today with this issue? Do a little checking online to see what issues are current in the field of cloning, and jot down some titles of articles you find. Create a class list of titles.
Making Predictions and Asking Questions

Activity 4 helps engage students’ knowledge and experience prior to reading, set purposes for reading, and anchor their thinking in the text. In helping students make predictions, draw their attention to features of the text relevant to the particular genre and rhetorical situation, and ask them to think about the character and identity of the writer, the nature of the audience, and the purpose of the reading. Students can become more aware of how they form predictions by providing evidence from the text they have surveyed.

Ask students to answer these questions and make predictions about the text. After a few minutes of locating quotations and different speakers, model what the statement say, and what position it argues for your students, using the quotations from the article given here. Refer to the statement this essay makes or implies about cloning.

Activity 4: Making Predictions and Asking Questions

1. Scan the article, and notice the different speakers or interviewees. Who are they, and what purpose do these speakers serve?

   Perhaps they are included to provide information about a topic they may be more familiar with than the author and/or the readers, to provide a new voice or opinion on the subject, or to reinforce the author’s point of view. Perhaps they are experts in the science field? Or they might have a large stake in the business.

2. Look at the many voices heard in this article. Peruse the article, and look more carefully at the different speakers of the many quotes used in the article. Skim to locate these quotes rather than read the entire article.

3. Find a quotation then, in a small group or with a partner, identify its speaker and his or her position on cloning. Why do you think the author chose these particular quotations and speakers for this article?

   Genetic Savings CEO Lou Hawthorne, “says he thinks the world is packed with pet lovers …and to replicate these qualities adds to the sum of joy in the world.”

   Jeremy Rifkin, “author of ‘Biotech Century,’ a cautionary work about the Pandora’s box that scientific advances like cloning might open.”

   David Magnus, co-director of the Center for Biomedical Ethics at Stanford University, agreed [with Rifkin.]

Understanding Key Vocabulary

Teaching selected key words crucial to the concepts of the text in advance of reading and then reinforcing them throughout the reading process is an important activity for students at all proficiency levels. Knowledge of these word meanings can significantly shape text comprehension. After students have read the text the first time, they can identify additional key words and
phrases essential for making meaning. Teachers need to understand what the students already know with regards to the main idea or concept of the lesson or unit, what vocabulary students will need to know to comprehend the text, and what they need to do to make sure students know the vocabulary, whether it is in direct instruction, indirect teaching of words, or word play.

This section offers multiple options from which teachers may choose to help students discuss, use, and learn new words. You should choose the activities you use based on the amount of scaffolding the students need to learn the new words.

The first activity here is a vocabulary self-assessment chart that can be used throughout the unit. From this activity, you can gauge students’ increased vocabulary knowledge and application of the new words and concepts. Through the next two vocabulary activities, you will be given ways to extend the self-assessment chart, making use of the definitions the students have now acquired. The last activity in this section calls for students who already know the words to categorize them and consider the categories as a higher-level comprehension activity.

Vocabulary Self-assessment Chart

Use this vocabulary self-assessment chart to identify the words from the text that students do not know and may have trouble using context clues to learn. It will help you determine which words to directly teach before or during the article reading. Students will revisit this chart before, during, and after the reading to increase their awareness of the new or key terms from the reading and to develop their vocabulary.

Activity 5: Understanding Key Vocabulary — Vocabulary Self-Assessment Chart

1. In the column “Prereading,” place either a “+” if you know the word well, a “✓” if you have heard of it and may have an idea of its meaning, or a “?” if you do not know it or have not heard it before.

2. Then, while or just after reading the article, revisit this chart, completing it again in the column that says “During reading,” using the same markings, “⁺,” “✓,” or “?”. 

3. Following the reading and discussion of the text, when it is time to use the vocabulary words in your own writing, you will complete the box labeled “Postreading.”

4. Note: At any point in the process when you are sure of the definition of any of the words, you may write the word down on the line or follow your teacher’s directions.
6. Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

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<thead>
<tr>
<th>Word</th>
<th>Pre-reading</th>
<th>During reading</th>
<th>Post-reading</th>
<th>Definition</th>
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<tbody>
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<td>iconoclastic</td>
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After completing the self-assessment chart, have students discuss which words are content- or discipline- specific and which words are general academic words or terms. For example, *oviduct* is specific to science, whereas *imitation* is a word that can be used in many settings but is a more sophisticated academic vocabulary word.

The following approaches to learning words are important to consider when planning vocabulary instruction:

**Activity 6: Understanding Key Vocabulary—Pairing Opposites**

Using the terms from the self-assessment chart, pair opposite words.

*Possible answers: whimsy and ubiquitous; infancy and octogenarian; fertile and neutered or spayed*

To continue making connections among the new or key vocabulary terms, ask students to categorize the words that fall under the given headings in Activity 7.

**Activity 7: Understanding Key Vocabulary—Categorizing with Established Headings**

Identify words that fall into these categories:

- **Animal surgeries/treatments/general medical terms**
  
  *spayed, neutered, biopsy*

- **Words pertaining to babies/pregnancy**
  
  *infancy, surrogate, embryo, estrus, oviduct, mosaic, fertile, reproduce*

- **Words pertaining to copying**
  
  *imitation, reproduce, replicas*

- **Words pertaining to times of life or age**
  
  *infancy, octogenarian*

Finally, ask students to sort the words from the self-assessment chart into categories where they see connections. This will help them remember the new words as they develop reasons why their meanings are related. Initially, students were asked to sort them into academic terms and science terms. Now they will examine these words more thoroughly.
Activity 8: Understanding Key Vocabulary—Word Sort Activity

Sort the following words into categories of your own choosing (at least three). Write down the categories you selected that connect the words you identified.

<table>
<thead>
<tr>
<th>embryo</th>
<th>octogenarian</th>
<th>deluged</th>
<th>elude</th>
<th>reproduce</th>
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<tbody>
<tr>
<td>iconoclastic</td>
<td>replicas</td>
<td>undermines</td>
<td>oviduct</td>
<td>infancy</td>
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<td>surrogate</td>
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<td>imitation</td>
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<td>fertile</td>
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Reading

Reading for Understanding

Direct students to read through the article to get a sense of the text and to identify main ideas and evidence to support their developing interpretations. Students initially read with the grain, or “play the believing game,” agreeing with the author as they examine their predictions. Ask them to discuss the following questions to revisit their predictions:

- Did the article answer your question?
- Which of your predictions turned out to be true?
- If your prediction was inaccurate, what in the text misled you?
- What surprised you about the article reading?
- What did not surprise you?
- What, if anything, confused you?

Ask students to share their answers to these questions in small groups or as a class.

Depending on the level of scaffolding students need, you may want to encourage them to mark the text with their initial reactions.
Considering the Structure of the Text

Considering the structure of the text, or graphically representing different aspects of the text, helps students gain a clearer understanding of the writer’s rhetorical approach to the text’s content and organization. Such activities often lead to further questions and predictions that will help students analyze and more effectively comprehend what they have read. The following strategies, Mapping the Organizational Structure and Descriptive Outlining, illustrate ways of focusing on text construction.

Mapping the Organizational Structure

Ask your students to map the organization of the text by taking the following steps:

• Draw a line across the page where the introduction ends. Is it after the first paragraph, or are there several introductory paragraphs? Is it in the middle of a paragraph? How do you know that the text has moved on from the introduction?

• Draw a line across the page where the conclusion begins. Is it the last paragraph, or are there several concluding paragraphs? How do you know that the text has reached the conclusion?

• Discuss in groups or as a class why the lines were drawn where they were. In this activity, thinking and reasoning about organizational structure is more important than agreeing on where the lines should be drawn.

Descriptive Outlining

The next step in mapping the organizational structure is to produce a descriptive outline by asking students to make a distinction between the content and rhetorical purpose of each section. When introducing this activity, it is helpful to prepare a text by dividing it into sections determined by the textual organization, and modeling for students what the text says versus what it does (highlighting the difference between content and rhetorical purpose). You will help students identify content and purpose of the text by writing brief statements about the content (what it SAYS) and function (what it DOES) of each chunk of the text you have marked.

1. The SAYS statement summarizes the content of the same stretch of text.

2. The DOES statement identifies a paragraph’s or a section’s function or purpose and should not repeat the content, but instead, focus on the purpose or function in relation to the overall argument.

Sample DOES statements:

• Offers an anecdote to illustrate precious points
• Introduces new reasons to support main argument
• Provides statistical evidence to support claim
• Summarizes the previous section

The purpose of SAYS and DOES statements is to do the following:
• See how the text works at a micro-level, paragraph by paragraph, section by section.
• Use later to analyze someone’s writing or use in your own writing.

Using Descriptive Outlining

There are so many quotations in this text that identifying a thesis is difficult. The students should mark their texts by using marginal notes to express what the short paragraph says on the left and what the passage does on the right. Start with the first sentence and then model with a think aloud. Explain how you would talk through the sentence for meaning and clarity; then write on the margins what the sentence says and does. Here is a sample “Think Aloud” for the students:

“It sounds like science fiction, but it’s not.”

In looking at the first sentence, “It sounds like science fiction, but it’s not,” I wonder how to make connections to the sentence before, but, since there is no sentence before, I need to refer back to the title. The “it” pronoun may make this starting sentence confusing for the readers. I know it does for me. This sentence also biases the reader, who is pushed to agree that cloning—this far out, weird, science fiction concept—is real. Therefore, on the left, I would write that the sentence says that cloning sounds like a weird and made up phenomena, but in reality, it could happen. On the right hand side, I will write how this sentence serves to identify that although cloning sounds odd, it does exist and is real. The sentence tries to persuade me that cloning is real, which is what it does in the text.

Activity 9: Considering the Structure of the Text—Descriptive Outlining

Mark your text by using marginal notes to express what the short paragraph says (on the left) and what the passage does (on the right). We will work on the first example together.

1. “It sounds like science fiction, but it’s not.”

   SAYS:

   DOES:

2. “Any cat owner with $50,000 to spare can pay a Sausalito company, Genetic Savings & Clone, to clone Fluffy or Frisky this year.

   The company already sponsored the first domestic cat clone—a calico named CC (for ‘Carbon Copy’)—two years ago. Now, it is the first to go commercial, this time in its own laboratories, and five paying customers are lined up.
It has promised to produce nine cloned kittens by November. Six will be for clients and three for staff members, who will show off their clones at veterinary shows. None of the customers agreed to be interviewed.”

SAYS:

DOES:

3. “The company got its start when iconoclastic octogenarian John Sperling, who made millions as founder of the University of Phoenix, backed research called ‘the Missyplicity Project’ to clone a beloved husky mix, Missy.

The project was deluged by interested pet lovers, even though dog cloning continues to elude scientists. Genetic Savings says it is on track to clone Missy, who died in 2002 at age 15, this year.

‘We would have had to be dumb not to see a business there,’ said Genetic Savings CEO Lou Hawthorne, a longtime family friend of Sperling, who suggested they turn the project into a for-profit venture.”

SAYS:

DOES:

Drawing Conclusions from Structure
After your students have analyzed the structure of a text, they should prepare to write a summary or rhetorical précis by considering the following questions:

- How are the author’s arguments ordered? (Which arguments come at the beginning, in the middle, at the end?) What is the effect of this on the reader?
- How has the structure of the text helped make the argument clear, convincing, and engaging?

Noticing Language
The purpose of Noticing Language is to make students aware of how particular language features are used in written texts, so they will be both better able to comprehend them and subsequently incorporate these features into their own writing. Revisiting words, phrases, and sentence structures deepens comprehension and builds lexical, semantic, and syntactic awareness. Depending on what your students need, analyzing linguistic features in a text such as verb tense patterns or use of the passive voice can suggest material for instruction. Attending to this information can help students notice features of academic language and then monitor their own understanding and production of those same features.
Activity 10: Noticing Language

Mark words, phrases, or sentences that may still be confusing, writing down brief notes explaining what about them is confusing.

1. Identify grammatical patterns such as verb tenses, time markers (last week, since, tomorrow), modal verbs (can, could, must, might, should), or singular and plural noun forms.

2. Analyze the logical relationships between the parts of sentences by focusing on the following transition words and phrases:
   - Conjunctive adverbs (such as therefore, in addition, similarly, moreover, nevertheless)
   - Coordinating conjunctions (such as for, and, nor, but, or, yet, so)
   - Subordinating conjunctions (such as although, before, because, even though, if, as soon as)
   - Parallel structures (such as using the same pattern of words to show that ideas at the word, phrase, or clause level have the same degree of importance)
   - Other complex phrasing patterns (such as participial phrases, adverbial phrases, absolutes)

3. Practice composing complex sentence structures by creating original sentences following the pattern of a sentence or two from the text.

By observing where students have confusion or patterns of inaccuracy in their writing, you can identify opportunities for instruction and reinforcement.

Annotating and Questioning the Text

Annotating a text enables students to explore more deeply how a text works to inform or persuade its readers. During the initial reading, the recommended strategies encouraged students to read “with the grain,” “playing the believing game.” In rereading, it is helpful if students read “against the grain,” or “play the doubting game.” This is where the conversation shifts and the reader begins to question the text and the author.

As students reread the text, ask them to look for claims and assertions the author, Carolyn Said, makes. Instruct students to go back and read the article again, looking for the summary and argument presented in the article.

Activity 11: Annotating and Questioning the Text

Your second reading should be to question the text, reading “against the grain” and “playing the doubting game.” As you read, look for claims and assertions made by Carolyn Said. Does she back them up? Do you agree with them?
Read the article again, and using a highlighter, mark the following parts of the text:

1. Differences between clone and the original
2. Arguments in favor of cloning (who makes these)
3. Arguments against cloning (who makes these)

In the right-hand margin, write your reactions to the text. At the bottom of the article, write a sentence or two summarizing the main idea of the article.

Finally, ask students to compare their labeling and responses in pairs, trios, or small groups. Remind your students that they will be revisiting their annotations when they begin writing.

**Analyzing Stylistic Choices**

Activity 12 helps students see the linguistic and rhetorical choices writers make to inform or convince readers. The following questions address language use at all levels—word, phrase, sentence, paragraph, and discourse.

**Activity 12: Analyzing Stylistic Choices—Word Level**

Continue with instruction in vocabulary using the self-assessment chart or using the word sort.

1. Using either the words from the self-assessment chart or the word sort after reading the article, locate and identify these word(s) from the article.
2. Read the sentence in which the word(s) appear(s).
3. Remember or guess the meaning according to the context when possible, or break down the word into parts using your knowledge of roots and affixes.

For direct vocabulary instruction, model how to break down words using the following. With *iconoclastic*, demonstrate how to break the word into its two parts: *icon* and *clastic*.

1. Have students guess the meanings of these two parts.
2. Provide the dictionary definition: *iconoclastic*—describing a person who attacks settled beliefs and institutions.
3. Have students go back to the sentence, and ask them if this definition makes sense within the context of the sentence. Ask them what institution or belief the person described by this adjective is challenging.
4. Have students write their own sentences using the word.
5. Go through the rest of the words in a similar manner, breaking down the words whenever possible.
Discourse

Use the questions to help students understand how to use the various stylistic choices to provide a clearer picture for the reader. These questions will guide the conversation.

Activity 13: Analyzing Stylistic Choices—Discourse

1. How would you describe the style of this article? Is it formal? Informal? Academic? Scientific? Conversational? What did she hope to accomplish using this style of writing?

2. The author chooses to use some allusions to other works with the assumption that the readers know these references. Identify some of these references and determine their purpose in the text. Why did the author use these literary references? What does that do to the text? What must the reader know to be able to understand these references?

   Pandora’s Box: the 6th Day (futuristic movie meant to relate cloning to a forward-thinking, yet perhaps science-fictional slant).

3. The author uses names to refer to pets. In the beginning, she refers to cloning “Fluffy or Frisky.” What is the purpose of using these names and what do these names do for the reader?

   They might evoke a heartstring tug as readers identify experiences with these pet names. Her use of these terms also evokes images of a cat and dog, pets similar to one’s very own. The use of these cute and perhaps more familiar pet names, even pet cliché names, helps to establish familiarity with the idea of pets and also that cloning our own pets is now possible.

4. The author uses idioms, clichés, and metaphors for effect at the end of the text. She cites Hawthorne’s speech, “I’m like a pit bull,” “like working in a fishbowl,” and the author’s own, “The proof is in the puddy-cat.” What is her reason for using animal images?

   • By using the metaphor “I’m like a pit bull,” and following it with the reason for the comparison, “I can be relentless in focusing until the problem can be resolved,” students will be able to look for context clues to help them decipher difficult or unknown terms, but the teacher will need to make that connection and demonstrate how the author’s cues provide support for the reader.

   • The intense public interest in his business makes it “like working in a fishbowl.” Using the comparison word “like,” the relationship between the two ideas must be analyzed: interest in his business and working in a fishbowl. By discussing with the students what that picture paints of the restriction of a fishbowl, the glass for viewing, on display, etc., students will be taught to consider this public interest in a more negative light.
To build humor and wit into the end of the text, the author chooses to use a pun, “The proof is in the puddy-cat [rather than in the pudding],” since he is following the animal imagery. Taken from a 1600s adage, the expression has morphed into the proof is in the pudding. Ask the students what this implies (the truth is right there), and then how it relates to the animal image and the closing of the text.

Postreading

Summarizing and Responding

Summarizing the ideas of others accurately is a fundamental element of academic writing. Summarizing is a powerful metacognitive skill that enables readers and writers to synthesize a text’s meaning. It integrates the results of previous reading processes students have engaged in and helps them further understand major ideas and the relationships among them.

1. Ask students to return to their previous highlights or annotations after reading the article, as well as to the descriptive outlining activity to construct a summary using their knowledge of the author’s structure of the text.

2. Following their summarizing of the article they read together, ask students to answer questions pertaining to the article (“Here Kitty-Kitty”). Answers will be placed on the I-CHART (see below). Key questions are written on the top of the chart. Teachers may write them ahead of time or with students. In this example, one box is saved for students to generate a question that is not on the sheet. Add it to the I-CHART for the whole class. You will want to work with the students to complete the I-CHART steps below.

Activity 14: Summarizing and Responding—I-CHART

1. On your I-CHART, read the following questions listed across the top: “What are the uses of cloning?” “Is reproductive cloning right?” “Is therapeutic cloning right?” “What organisms are acceptable for us to clone? Why?” Consider your answers to these questions.

2. Return to the article to find answers to the questions posed on the I-CHART. Record answers on the I-CHART.

3. Discuss the answers to the given questions, justifying your responses. Using the discussion points, write class answers on the class I-CHART when there is agreement. You may change your own I-CHART answers based on the class discussion.
Once the I-CHART is completed for the first article that the class reads together, the class may practice their critical thinking and reading skills by answering these same questions in reference to other articles on cloning and then writing about the issue from multiple perspectives. The I-CHART is their graphic organizer for storing the articles’ information so that they can use their academic language to compare, contrast, and examine key points of each article, discussing in speech and in writing what makes them similar and different from each other.

If you choose to use other articles about the subject, the next step is to hand out new reading(s). You may choose to provide a different reading selection to each group. Readings include the following:

- A press release from former President Clinton on human cloning
- A press release from former President Bush on stem cell research
- Information from the American Association for the Advancement of Science
- Information from the Human Cloning Foundation
- Information from the Center for Genetics and Society
- Information from Learn.Genetics, a Web site at the University of Utah: learn.genetics.utah.edu/gslc/
- An essay titled “Cloning is Moral” from a member of the Ayn Rand Institute

Tell students they will be using the same techniques they used to annotate the first article on a new reading.

Instruct the groups that as they read, they will be looking for the answers to these questions using the article they are reading. They are looking for what the article says at this stage, rather than what they think.

Groups should complete their I-CHART together after reading their assigned article.

You can either collect groups’ I-CHARTs for compiling or have groups write answers for all to see on big paper/overhead. Allow each group to present answers aloud after writing answers on a large paper or the class overhead. The class will complete the I-CHART by getting all of the answers to the questions from all articles. If all the readings are used for the I-CHART, it will look something like the following.
**Activity 15: Summarizing and Responding**

<table>
<thead>
<tr>
<th>Article Title</th>
<th>What are the uses of cloning?</th>
<th>Is reproductive cloning right?</th>
<th>Is therapeutic cloning right?</th>
<th>Which organisms are acceptable for us to clone? Why?</th>
<th>Class question</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Here Kitty-Kitty-Kitty-Kitty”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Arguments for and Against Creating Human Clones”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Press Release from President George W. Bush, 4/10/02”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Why Clone?”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Cloning is Moral”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Press Release from President Clinton 6/9/97”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“American Association for the Advancement of Science (AAAS) Policy Brief”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Human Cloning Foundations Reasons For Cloning Human Beings”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Later, students will use this I-CHART to help provide support to their statements in their letter, their culminating writing, as well as their discussions of the big idea in the module.

**Thinking Critically**

In Activity 16, students move beyond initial reactions toward deeper evaluations of texts by questioning and analyzing the rhetorical choices of the author. The following questions will help students examine rhetorical appeals.

### Activity 16: Thinking Critically

1. Review the I-CHART answers.
   - Using your I-CHART, place a star by the reading with which you agree the most.
   - Identify one answer given on the I-CHART with which you absolutely agree and write why.
   - Which answer do you not agree with and why?
   - Identify an answer with which you somewhat agree and state why. Then, write what would need to be the case for you to fully agree or disagree with it.

2. Discuss the reliability of each source and how this might affect whether you can trust the information from it or not.

3. Answer the logos, ethos, and pathos questions below:

   **Logical Questions (Logos)**
   - Locate major claims and assertions, and ask, “Do you agree with the author's claim that ‘critics say that’s faulty logic?’” Can you identify this faulty logic she refers to?
   - Look at the support for major claims, and ask, “Is there any claim that appears to be weak or unsupported? Which one and why?”

   *David Magnus points out,* “My cocker spaniel, who we had for 15 years, just passed away, and I would do anything to have him back and young again, but it can’t happen.” This is faulty logic if it indeed can happen, and he said he would do anything to have him back.

   *The strongest support for this claim seems to be that cloning does go against one having “a unique life.” Is it critical, however, to have a unique life?*

   - Can you think of counterarguments that the author doesn’t deal with?
   - Do you think the author has left something out on purpose? Why?

   **Ethical Questions (Ethos)**
   - Does this author have the right background to speak with authority on this subject?

   *She has merely done the interviewing to get different thoughts on the matter.*
• Is this author knowledgeable? Smart? Successful?

Carolyn Said won the first place Journalism Award in 2010 for a Business News Story called “Loan changes can hurt credit scores.” The judges said the article was “Very well-written and researched. It is not always easy to write enjoyable business news, but this was both informative and enjoyable.”

Questions about Emotional Appeals (Pathos)
• Does this piece affect you emotionally? What parts?

The story of those pet owners, particularly those whose pets have died definitely plays to the emotions. So do the words like beloved, furry friends, work of art (comparing to their pet), and love of their lives...

In addition, the author uses description to help play off the emotions of the readers in expressions such as “very cute little dogs, red with a curly tail” to provide a warm, soft picture in the reader’s eye.

• Do your emotions conflict with your logical interpretation of the arguments?

Yes, because we tend to think that everyone who loses a pet, which provides them with crucial emotional support, would do anything to get that pet back. The critics, Said points out, are those that believe a pet is gone for good, without considering the possibility of any options. Meanwhile, the author is sharing the fact that this concept is not fictional; rather, it is a real business that actually clones.
Reflecting on Your Reading Process

Reflection is an essential component in learning. Students benefit from discussing what they have learned about how to read and sharing that information with the rest of the class. Reflecting on their own reading process helps students consolidate what they have learned about being a thoughtful and active reader. The following questions may be used to lead a discussion or as the topic for a quickwrite.

**Activity 17: Reflecting on Your Reading Process**

1. What have you learned from joining this conversation? What do you want to learn next?
2. What reading strategies did you use or learn in this module? Which strategies will you use in reading other texts? How will these strategies apply in other classes?
3. In what ways has your ability to read and discuss texts like this one improved?
4. How has your understanding of cloning changed after having read this article?

Connecting Reading to Writing

Discovering What You Think

**Considering the Writing Task**

In the workplace, the audience and purpose for writing are often very clear. While school is a preparation for various workplaces and real world activities, writing assignments frequently involve an invented audience and purpose. A well-designed writing prompt can minimize the sense of pretense and model the basic elements of an actual rhetorical situation. The assignment will be the frame that your students use to decide what they will write about and how they will use the material from the texts they have read.
The following are some strategies to help your students read the assignment carefully:

- Identify key verbs in writing assignments and define the nature of the support they should provide.
- Specify the topic or focus of the text they are going to write. Is the topic specified for them? Do they have choices to make about it?
- Determine the rhetorical purpose of the writing. Is the author informing or reporting? Is the author persuading the readers of something? Help students recognize how the purpose of the assignment will affect the type of writing they will do.

The questions in Activity 18 will help students consider the writing task.

Activity 18: Considering the Writing Task

Answer these questions to discover more about the purpose of the assignment:

- In addressing this prompt, are you informing or reporting?
- Are you trying to persuade your readers of something?
- In what genre are you being asked to write?
- Since it is a letter, in what ways is it different from an essay, a report, an email?
- What considerations will you need to make to write your assignment in letter format?
- What are the reader expectations for this genre?
- What is your rhetorical purpose?
- What is your timeline for completing the assignment in reasonable steps?
- How will the assignment be graded. On the basis of what criteria will your written work be evaluated? Do you understand each criterion?

Remind your students to read the assignment for information about process and deadlines. You may want to help them sketch out a timeline for completing the assignment in reasonable steps.

The goals of this writing assignment are to see if students can clearly construct an argument (for or against cloning based on the readings) that takes into account the reliability of the sources and the part of the argument that they most appreciate. They are to demonstrate an understanding of cloning technologies and how they can be used to provide evidence to support their argument and be able to write a letter. Given these goals, students will need practice and instruction in writing a formal letter, writing an expository essay, using support from sources in texts, and in revising and editing writing.

Hand out the writing prompt and rubric. Go over these with the class to make sure they understand the assignment. Tell them about the due dates for the rough draft and final draft.
Remind students of the prompt, directions, and text, and ask them to highlight these in three different colors on their assignment sheets.

Discuss what it means to write a letter to a senator. Explain or remind students how to construct a persuasive letter with a heading, greeting, body, closing, and signature. Show an example.

**Activity 19: Writing Prompt—Cloning**

Cloning human beings has been a hot topic of debate over the last few decades. This debate became even more heated after the first adult animal was cloned, producing Dolly the sheep. Everyone asked, “Are humans next?”

Those who are in favor of human cloning argue that cloning could work miracles and improve people’s lives. Infertile couples wishing to have a baby could increase their chances of pregnancy; diseases like Alzheimer’s and cancer could be cured by using stem cells harvested from cloned human embryos; or it may even be possible to clone a loved one that has been lost to us. Those who oppose human cloning fear the ethical and moral questions that will have to be answered, and how the technology will be used.

In the article you read, entitled “Here Kitty-kitty-kitty-kitty,” many of the arguments for and against the cloning of animals were posed. In class, different perspectives on the issue of both reproductive and therapeutic cloning were discussed.

Imagine that a bill has just come up in the U.S. Senate that would allow the use of taxpayer money to fund both therapeutic and reproductive cloning research of all animals including humans. Write a letter to your senator expressing your approval or disapproval of this subject. Explain your reasons using current research or articles to support your views, and let your senator know how you would like her to vote, should a vote arise on the subject. You should cite evidence from the article(s) you read, from what you have learned about genetics (particularly your knowledge of how genes are influenced by environment), and from your own personal experiences.

You should use the format on the next page to construct your letter. Make at least four arguments to support your position. At least one of the arguments should be a response to statement from someone on the opposite side of the issue from you. For example, if you are against cloning, you might write, “Those who support cloning say…, but this argument is wrong because…”

Here are some general questions you may want to think about as you write your letter:

- Are you for or against both types of cloning, therapeutic and reproductive? What are your reasons?
- Do you think we should allow research in one type but not the other?
- How might these technologies be used?
- Does cloning really make an exact copy of a person?
- Would allowing one type of cloning lead to allowing the other type?
Directions for Writing Supporting Evidence

1. In small groups, write down the evidence you have in your notes to support or refute cloning. It is perfectly fine to have disagreements among group members, but having a respectful conversation is critical to your thinking process.

2. Think about strategies and questions to address the audience of the essay.
   a. Consider what most people know and think about the topic of your paper.
   b. If you intend to change the opinions of the readers, including the senator, consider your persuasive techniques, both logical and emotional. Discuss with classmates some techniques you have considered using in your writing.
   c. How much do you think the senator and his or her staff know about cloning?
   d. Why should they care about it?
   e. What concerns would they have about your plan? Does it cost money? Would it violate anyone's privacy?
   f. What kinds of persuasion do you think you will need to help them understand your point of view?
   g. Which would be the best evidence?

Another Consideration is the Letter Format or Genre

You should use the correct and formal letter format. A sample letter is here for you to use as a template.

Sample Letter Format:

Date
Senator’s Full Name
United States Senate
Washington DC, 20510
Dear Senator Last Name,
In the first paragraph, you should identify yourself and the reason you are writing the letter.

The following paragraphs should explain how you want them to vote and why. In these paragraphs you will explain your four arguments using evidence from the articles, from what you have learned about genetics and cloning, and from your own personal experiences and/or ideas. You should use at least two other readings, separate from the article we all read, to cite evidence in support of your position. There should be about one paragraph per argument. However, you may write more.

In the conclusion, restate how you want your senator to vote on the bill, and summarize your overall position in one or two sentences.
To find the senators’ names and addresses, use this Web site: <http://www.senate.gov/general/contact_information/senators_cfm.cfm?State=CA>.

Ask students to examine the assignment for information about how they will be graded. What criteria will be used to evaluate their written work? Do they understand each criterion?

**Taking a Stance**

In this section, students will determine what their stance is toward the issues and the material. Essentially, they will begin to state their opinions from multiple perspectives in order to clarify their own position. The writing assignment frames the readings in a new way.

**Activity 20: Taking a Stance**

Begin to explain to a partner your stance or position in response to the prompt. The listening partner needs to ask for clarification if the answers given are not specific enough. Some questions to guide this process follow:

1. What is the gist of your argument in one or two sentences? Turn these sentences into a working thesis statement.
2. What is your main claim at this point in time?
3. How do your ideas relate to what others have said?
4. What arguments or ideas are you responding to?
5. What evidence best supports your argument? What evidence might you use in relation to what others say about your argument? How does it support your argument?
6. What background information does the reader need in order to understand your argument?
7. What will those who disagree with you have to say about your argument? What evidence might they use to refute your ideas?
8. How did your views change during the reading? What factors caused you to change? Could you use these factors to change someone else’s views?

Students who are ready to write could opt to have their partners write the answers to the questions above instead of sharing them orally. Often their understanding of the information they have generated about the rhetorical context may (and frequently will) change. Revisiting the rhetorical context at different stages of the writing process can lead to a deeper and more complex...
understanding of the topic and its significance. Looking at the situation from multiple perspectives can help students identify their own stance. This requires students to take an alternate position or see the situation from another point of view.

**Trying on Words, Perspectives, and Ideas**

One way to practice looking at the situation from multiple perspectives is to engage students in an activity in which they adopt different personas. First, give each student a persona or perspective to represent. The perspectives could be based on the writers of the articles they have been reading or sources quoted in them, but they could also be based on other people they know or know of, such as the teacher, the school principal, the President of the United States, or even a movie actor or a rock star. Then, give your students some questions based on the issues raised by the articles they have been reading.

**Activity 21: Trying on Words, Perspectives, and Ideas**

Try to answer these questions from a perspective other than your own. These could be policy questions (What should we do about _______?) or value questions (Is ______ good or bad?).

The task is to think

- “What would ________ say about this?”
- “How would ________ answer this question?”
- What words would he or she use?

Use vocabulary from the articles in your adopted position. At the end of the activity, restate what you really think about cloning.

**Gathering Evidence to Support Your Claims**

Students can select evidence by returning to the readings, their notes, their summaries, their annotations, their descriptive outlining, and other responses in order to highlight information they may use to support their claims and refute the claims of those who disagree. In addition, at this point, they should be sure, especially given the technical and controversial nature of this topic, what their opinion on the matter is. This activity promotes clear and quick thinking about the subject.

**Activity 22: Gathering Evidence to Support Your Claims**

Given a four-minute time frame, jot down the answers to the following questions in quickwrite format.

- Are you for or against both types of cloning, therapeutic and reproductive? What are your reasons?
• Do you think we should allow research into one type but not the other?
• How might these technologies be used? Misused?
• Does cloning really make an exact copy of a person?
• Would allowing one type of cloning lead to allowing the other type?

Then, ask students to get into groups of three or four to discuss their responses. Give them an additional four minutes for discussion in this focused and short time frame.

Have students return to their seats to add, delete, or change their previous answers. This will better prepare them to consider the issues around cloning before being concerned with writing a long paper. Their ideas will flow and will be clarified as they continue to write and probe their own thinking about the topic. They then move to find evidence to support their views. Some of these questions to help them move to identifying evidence and gaining a deeper evaluation of the evidence are as follows:
• How closely does this piece of evidence relate to the claim it is supposed to support?
• Is this piece of evidence a fact or an opinion? Is it an example?
• If this evidence is a fact, what kind of fact is it (statistic, experimental result, and quotation)?
• If it is an opinion, what makes the opinion credible?
• What makes this evidence persuasive?
• How well will the evidence suit the audience and the rhetorical purpose of the piece?

Getting Ready to Write

Students add relevant ideas and observations from their own experience to the evidence that they have gathered. To help clarify their idea of what cloning is, they will cube the word again. Now that they have studied the term, this activity provides students with an opportunity to explain what cloning is in their own words, so they can write about it with authority. See procedure for Activity 1. Collect students’ papers when completed for informal assessment, but give the papers back to students so they can use it in their writing assignment.

Activity 23: Getting Ready to Write

Use your cloning cube to help you begin your writing assignment. When you have completed the six sides, craft a working definition of the term for yourself.
Describe it (using your senses).

Compare it (to something similar).

Analyze it (how was it made).

Apply it (how it is used).

Associate it (with something from your own experience or past learning).

Argue for or against it (not both).

After responding to the readings, collecting notes, and adding observations, students are now prepared to extend their thinking and develop content. As they take notes at this point, students should look to see if they have written words and sentences they may want to use in a first draft.

Writing Rhetorically
Entering the Conversation

Composing a Draft

For most writers, writing is a multi-draft process. As they create their first draft, writers take risks, explore ideas, and think on paper, knowing that they will have an opportunity later to revise and edit. When students plan to turn in their first draft as the final draft, they often pursue correctness and completion too early. If it is clear from the beginning that revision is an important part of the writing process, students can experiment with tentative positions and arguments that can be evaluated, refined, and sharpened in a later draft. While students will want to keep their audience in mind throughout the writing process because thinking about audience is a guide to effective writing, the first draft is generally “writer-based” and discovery-oriented in that it serves to help the writer think through the issues and take a position. The first draft is often where students find out what they really think about a particular issue or topic.
to support analysis, reflection, and research.
10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

**Writing**

1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
   a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence.
   b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience’s knowledge level, concerns, values, and possible biases.
   c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create

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**Considering Structure**

No rigid formula will cover all of the writing that students may be asked to do, but almost all writing has a beginning, middle, and end—even lab reports and journal articles have well-established standard sections and subheadings. In this case, the genre of writing is a letter. Therefore, some helpful hints for many of your students who may need more support in writing in this genre are given below.

**Activity 24: Considering Structure**

As you begin to organize your letter, the following guidelines might remind you to include key elements.

**The Beginning or Introduction**

- Includes the sender’s information, address, and date
- Includes the recipient’s name, position, and address
- Is addressed to an authority from the correct level of government
- Has a clear salutation
- Directs readers’ attention to the topic or issue the writing addresses
- Establishes the importance of the topic and letter
- Provides background information that the audience may need
- Introduces the thesis, purpose, or main claim of the writing in order to suggest how the piece will be developed

**The Body**

- Has three sections:
  - Section 1 – Identification of the writer’s concern and reasons for the chosen audience
  - Section 2 – Explanation of the issue and outlines of at least two viewpoints/supports
  - Section 3 – Outline of the preferred solution(s) and request of appropriate action
- Contains supporting evidence that is relevant to the concern being expressed
cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

e. Provide a concluding statement or section that follows from and supports the argument presented.

2. Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

a. Introduce a topic or thesis statement; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

CA

b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic.

c. Use appropriate and varied transitions and syntax to link the

- Has sufficient evidence to support the opinion
- Explains, illustrates, and develops the topic or issue
- Contains as many paragraphs as are necessary to develop the ideas
- May have sections and subheadings in some types of writing
- Contains examples or arguments supported by evidence
- Quotes, paraphrases, or summarizes other texts in support of the purpose of the writing
- May present and analyze data
- Addresses counterarguments or alternative positions or explanations
- Uses words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims

The Conclusion
- Includes a complimentary closing (thank you and request for action)
  – Includes the writer’s name and may include some reference to advocacy in the closing, such as “A Concerned Citizen”
- Uses words and phrases that are appropriate to the purpose and audience
- Persuades the intended audience to acknowledge the concern and consider the proposed solution(s)
- Connects the writing to some larger claim or idea
- Points the reader to the next steps or new questions raised by the writing
- Identifies the conclusion the writer has reached and its significance
- Evaluates or analyzes the conclusions drawn
- Explains the implications of the major point of the letter
Using the Words of Others (and Avoiding Plagiarism)

Students need practice choosing passages to quote, leading into these quotations, and responding to them so that they are well integrated into their own text. Paraphrasing passages is another important skill in academic writing; some students avoid paraphrasing because it requires an even greater understanding of the material to put it in their own words. Students can practice these skills by choosing quotations, paraphrasing them, and then discussing whether they agree or disagree, and why. This can be done in a pair or group activity in which students choose quotations and then help each other paraphrase them.

One of the most important features of academic writing is the use of the words and ideas from written sources to support the writer’s own points.
There are essentially four ways to incorporate words and ideas from sources: quoting, paraphrasing, summarizing, and synthesizing. Students need to learn these along with a format for presenting other authors’ materials. Also, in this article, students should note how many quotations are woven into the article Said writes; these provide information about cloning for her readers. Students should be guided to attend to how she crafts her sentences, weaving in the quotations with her own thoughts and opinions.

First, you can help students notice all the quotations that the author does use. Then, after looking at a few examples, ask students to choose a passage from the text they would use to support their opinion of cloning. Ask students to first write the passage down as a correctly punctuated and cited direct quotation. Second, they paraphrase the material in their own words with the correct citation. Finally, they respond to the idea expressed in the passage by agreeing or disagreeing with it and explaining why, again with the correct citation. It is easy to see if the students understand the material by looking at the paraphrases. Later, they can use this material in their letter.

**Activity 25: Using the Words of Others (and Avoiding Plagiarism)**

Before exploring what the people who were interviewed said about the issue of cloning, answer the following questions:

1. Look to see how many times the author uses the word *said* or *says*.
2. What might have been the author’s reason for using the words *said* and *says* so often?
3. Together, list some verbs that could take the place of *says*. Then change some of the references to *said*, and discuss the impression the new verbs have on you as the readers.
4. Would you recommend changing the verbs the author uses, or keeping *said* and *says*?

Next, ask students to do a writing exercise to provide practice at citing a quotation, writing a paraphrase, or writing a response to a section of the text. It is best for you to model an example first, and then have the class work with you to try one. Ask students to pair up to try this again before they set out to do it for their letter.

**Activity 26: Using the Words of Others—Quote, Paraphrase, Respond**

1. Choose a passage from any of the articles you have on cloning that you might be able to use in your proposal. You may want to choose passages that you strongly agree or disagree with.
2. Write each passage down as a correctly punctuated and cited direct quotation. Note that when you punctuate a quote, if the parenthesis with the citation information is in the middle of a sentence, put any necessary punctuation marks, such as a comma or semi-colon, after the parenthesis. If the quotation is at the end of the sentence, put the period after the citation parenthesis. Think of the citation information as part of the sentence.

3. Paraphrase the material in your own words with the correct citation format.

4. Respond to the idea expressed in the passage by agreeing or disagreeing with it and explaining why, again, with the correct citation.

Examples for modeling with students:

“Hawthorne says he thinks the world is packed with pet lovers eager to follow suit. Studies show that a quarter of the 60 million pet-owning households would consider cloning their furry friends, he says. Genetic Savings hopes to be cloning thousands of pets annually in five years, when the cost should be down to $10,000 for cats, $20,000 for dogs, he says” (Said par. 9).

To paraphrase this quotation, I might discuss how it relates to how many people seem interested in cloning their pets and how more people will be willing to clone their pets in the next five years when costs may be low (Said par. 9).

To summarize, I might say that while I agree that there are many pet lovers who might consider cloning a pet, the amount of money to do so is nearly impossible for most people (Said par. 9). It seems that people, as a whole, accept life’s terms: we are born, and we die; therefore, as much as we may love our pets, we can get a new one for much less cost than cloning our old one.

Negotiating Voices

The goal of negotiating voices is for students to be able to distinguish their ideas from those of their sources and to make clear their stance in relationship to those sources. In the section above, students practiced selecting useful and interesting material, punctuating direct quotations, and recasting the language for paraphrases and summaries. The following activity can help students put direct quotations, indirect quotations, concepts, facts, ideas, and opinions from other writers into their own texts while keeping all the voices distinct.

Using Model Language

One strategy to help your students orchestrate the different voices of their sources is to give your students models for language they might use to integrate and situate those other voices. Students often are confused when they discover that their sources disagree. How can they put these dissonant voices in conversation with one another? You might give your students introductory language, such as the following frames:
The issue of cloning has several different perspectives. These are...

Experts disagree on what to do about cloning because________________.

You might then give them language that introduces ideas from particular speakers in the article:

- Jeremy Rifkin, author of *Biotech Century*, feels strongly that…
- According to Duane Kraemer, a professor of veterinary medicine…
- David Magnus, co-director of the Center for Biomedical Ethics at Stanford University, believes that…
- Tom Minot, 56, a vice president of marketing at a Silicon Valley company, uses the argument of…

Contrary views can be signaled by adding transitional phrases:

- However, the amount of attempts made by Kraemer shows...
- On the other hand, millionaire John Sperling has spent...

The student writer then adds his or her own voice to the mix:

- Although some argue for _______, others argue for _______. In my view…
- Though researchers disagree, clearly…

Many similar frames for introducing the words and ideas of others and signaling a stance on those ideas can be found in *They Say/I Say: The Moves That Matter in Academic Writing* by Gerald Graff and Cathy Birkenstein. Students might also create their own set of frames by looking at language used by professional writers.

**Activity 27: Negotiating Voices—Listing Models and Signal Phrases**

Now you will put direct quotations, indirect quotations, concepts, facts, ideas, and opinions from other writers in your own texts, keeping the voices distinct. Your goal is to make the relationships between the ideas clear as well as clarifying who is saying what.

1. Consider why the author uses quotations from others so often. What “moves” is she making by using these words? How does she make these writing moves so that each quotation flows into her prose and provides evidence for her claims?

2. Using the cloning article, in which the writer summarizes or synthesizes several different perspectives and argues for his or her own position, underline phrases that signal relationships among different ideas and perspectives.

3. Make a list of these phrases that you can use in your own writing to support your views.
4. Try out the sentence frames to present evidence to support an argument. Refer back to the article’s quotations to find support for your writing.

5. Return to the text again, and select two quotations from people the author interviewed that back up one idea you have about cloning. Make sure that both quotations support the idea you choose. Turn your idea about cloning into a heading and cite the two quotations. Then, write a response or a conclusion that shows you can use the words of others to support a claim of your own. This writing is meant to be brief and should be no longer than a paragraph. Use your sentence frames to help you write academically and support your opinion.

While Rifkin, author of Biotech Century, and Magnus, co-director of the Center for Biomedical Ethics at Stanford University, both discuss how much they loved their pets and would do just about anything to get them back, both know it is impossible and inappropriate in many ways.

Revising and Editing

Revising Rhetorically

Most students equate revising with editing, but more advanced writers understand that revision involves “re-evaluating” the concepts of the paper: the use of information, the arrangement of arguments, and the development and significance of ideas. Revision, as both a reading activity and a writing activity, is based on an assessment of how well the writing has communicated the writer’s intentions—the argument or ideas of the text. Revising for rhetorical effectiveness requires writers to address issues of content and structure before they address sentence level issues such as word choice and grammatical accuracy by editing.

As you craft the supporting statements and evidence for your letter, revisit the questions posed earlier and be sure you have answered them fully and with supportive statements in the letter.

Activity 28: Revising

These questions are designed to help you revise your writing. While they are written in first person, they can be modified so partners or small groups can engage in workshop writing using these questions.

1. Have I responded to the assignment?
2. Have I made my purpose for this letter clear?
3. Have I discussed to what extent I was for or against both types of cloning, therapeutic and reproductive? Have I given ample reasons? Have I used statements of logos and pathos?
4. Have I considered in what ways we should allow research into one type of cloning but not the other?
5. Have I explained how these technologies could be used?
6. Have I addressed concerns from those in opposition of this issue?
7. Does my letter address my purpose of persuading the intended audience to acknowledge the concern and consider the proposed solution(s)?
8. Have I defined cloning in this letter for those who may not know the term in the way I wrote about it?
9. Have I defined cloning in my own words accurately and concisely? Have I employed words and phrases from the article and/or from my new vocabulary in the writing to help address this topic? Are these words used appropriately with my purpose, audience, and style in mind?
10. What should I keep? What is most effective? What could I get rid of? Did I use irrelevant details? Was I repetitive?
11. What should I add? Where do I need more details, examples, and other evidence to support my points?
12. Are parts of the letter confusing or contradictory? Do I need to explain my ideas more fully?
13. What should I rethink? Was my position clear? Did I provide enough analysis to convince our readers?
14. How is the tone? Am I too overbearing, too firm, patronizing?
15. Have I addressed differing points of view?
16. Does the conclusion show the significance of the issue?
17. Is my documentation correct? Have I documented all material that was borrowed, whether it is quoted, paraphrased, summarized, or synthesized? Have I included all the necessary material in the Works Cited or Bibliography page?

Revising Rhetorically

A rhetorical approach to revision can help your students understand that revision is a strategic, selective process; what writers choose to revise depends on the ultimate purpose of their writing.

Activity 29: Revising Rhetorically

A rhetorical analysis of a rough draft requires the writer to assess writing based on the purpose of the writing, the message of the argument, the needs of the audience, and the ethos the writer adopts.

Here are some questions that support a rhetorical assessment of a draft:
1. Is there any claim that appears to be weak or unsupported? Is the evidence in support of claims, sufficient, relevant, and convincing?
2. As a writer, what kind of impression am I creating in this paper?
3. How can I create that impression better?
4. What do I need to add to make this happen?
5. Is my ethos persuasive enough?
6. In this conversation, do I seem to be an insider or an outsider?
7. How will my readers see my stance toward the material from my sources?
8. Will they think I agree or disagree with the topic?
9. Am I an objective reporter of the facts?
10. How can I show this stance better?
11. What is the rhetorical situation? Who is my audience, and what is my argument?
12. What evidence have I found for this support? These could include facts, statistics, statements from authorities, personal experience, anecdotes, stories, scenarios, or examples. Have I utilized my notes from activities completed earlier in the unit?
13. How much background information do my readers have or need to understand this topic and my thesis?
14. What types of evidence and appeals does this audience value most highly?
15. How can I establish my own authority to address this issue? What credibility do I have with this audience?
16. If readers were to disagree with my thesis or the validity of my support, what would they say? How can I address their concerns?
17. What are the most important factors contributing to either the success or failure of the argument?
18. What is the most relevant feedback I have received about this audience and context?

Revision Workshops

You can stimulate effective conversations about student writing by scaffolding revision workshops that target specific concepts for revision (i.e., paragraph continuity, effective introduction strategies, or signposts for logic). When teachers are able to demonstrate moves good writers engage in during revision, they invite students into discussions about writing that develop revision skills.
Considering Stylistic Choices

Writers can make stylistic choices in order to enhance the clarity of their messages, make emotional connections with readers, and establish their ethos. These choices draw readers in or push them away. Students can consider the effectiveness of their stylistic choices by responding to the following questions:

• How will the language you have used affect your readers’ response?
• Which words or synonyms have you repeated? Why?
• What figurative language have you used? Why did you use it?
• What effects will your choices of sentence structure and length have on the reader?
• In what ways does your language help convey your identity and character as a writer?
• Is your language appropriate for your intended audience?

Editing the Draft

While the first draft of an essay is generally writer-based, as writers revise they create writing that has the reader in mind and is more reader-based. At this point, they will need to address surface level issues such as grammar and usage errors, sentence clarity, sentence variety, word choice, and various other stylistic features. Students benefit from instruction that targets particular constructions and asks them to make observations about those constructions. Identifying and practicing these constructions and conventions constitutes a major part of an individual’s editing knowledge.

Students can consult either an Online Writing Lab (OWL) or a grammar/usage handbook for explanations of any rules or conventions that confuse them. The Purdue Online Writing Lab is one of the best and most
or contested usage, consulting references (e.g., Merriam-Webster’s Dictionary of English Usage, Garner’s Modern American Usage) as needed.

2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
   a. Observe hyphenation conventions.
   b. Spell correctly.

Writing

5. Develop and strengthen writing as needed by … editing … (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grades 11–12.)

comprehensive resources available for editing. You also might consider marking student papers exclusively for one skill at a time, letting the skills accumulate as the term progresses.

Activity 30: Editing the Draft

You will now need to work with the grammar, punctuation, and mechanics of your draft to make sure your essay conforms to the guidelines of standard written English.

Individual Work

Edit your draft on the basis of the information you have received from your teacher or a tutor.

The following suggestions will also help you edit your work:

- If possible, set your letter aside for 24 hours before rereading to find errors.
- If possible, read your letter aloud to a friend so you can hear your errors.
- Focus on individual words and sentences rather than overall meaning. Take a sheet of paper and cover everything except the line you are reading. Then, touch your pencil to each word as you read.
- With the help of your teacher, figure out your own pattern of errors—the most serious and frequent errors you make.
- Only look for one type of error at a time. Then go back and look for a second type, and if necessary, a third.
- Use the dictionary to check spelling and confirm that you have chosen the right word for the context. Refer back to the vocabulary from the beginning of the unit, and check to make sure you used the new words and specifically the scientific terms correctly and appropriately.

Responding to Feedback

To revise their writing, students need feedback. The most valuable point for students to receive feedback is before they revise and edit so they can actively apply what they learn from your response to the next draft. One particularly effective time for instructor response is after students have produced their first revised, “reader-based” draft.

After students have written the first draft of the letter, provide feedback to them. Then, let them return to the letter to make changes based on your remarks.

For a second draft or read, ask students to share their next draft with a peer in class. If you allow students to determine their own partner, be sure to ask them to be honest and not just kind. If you choose partners, make sure they are critical, yet kind. In either case, students should follow a procedure to accomplish the task of revising each other’s paper without it becoming an editing task.
Activity 31: Responding to Feedback

Pairs should read each other’s letters quietly to themselves and follow these steps:

- Share with your partner what you understood was the point of the letter.
- Next, identify your partner’s supporting evidence in the letter.
- Be sure to explain what the conclusion asks of you, the reader.

If you—as the reader—cannot find these elements in your partner’s paper, your partner—as the writer—will then know what still needs to be included in the letter.

Below are some common ways to respond.

- Use a preprinted evaluation form (rubric) to respond to your students’ writing and include notes in the margin that correspond to the marks on the evaluation form.
- Annotate the paper, focusing on the two to three most important aspects or features of the text (so as not to overwhelm students with too much feedback at once), and make a summary comment at the end that supports the annotations in the body of the paper.
- Meet one-on-one with each student and review the strengths and weaknesses of the paper. In this situation, you and the student might each keep an index card to track the kinds of changes being made on each paper over time.

In addition to looking at the content and form of the letter, you should also make sure that students following the directions for the letter and that the writing assignment is complete.

Activity 32: Partner Responses

These are questions posed to you, as the writer, but they could easily be posed to your partner about his or her paper.

- Did you follow the format that was given as a model?
- Did you make at least four arguments to support your position?
- Did you make at least one argument a response to an argument on the opposite side of the issue from you?
- In the first paragraph, did you identify yourself and the reason you are writing to them?
- Did you explain how and why you want the senator to vote?
- Did you explain your four arguments using evidence from the article, other readings, what you have learned about genetics and cloning, and/or your own personal experiences and/or ideas? Of these, did you include at least two other readings, separate from the article we all read, to cite evidence in support of your position?
• Did you restate how you want your senator to vote on the bill, and summarize your overall position near the end of the letter?
• Did you write this in correct and formal letter format? Did you include a date, the last name of the senator, a return address, a closing, etc.?

Minimal Marking

Sometimes there is no time, or no need, for the full responses noted above. A more minimalist response can address global concerns by answering the two questions below and underlining a few targeted errors.
• What is the best thing about this draft?
• What is the biggest overall difficulty with this draft, and how could it be improved?

Local concerns can then be addressed by underlining errors and having students attempt to identify and correct them. For students with few errors, the teacher might underline all of them. For students with many errors, the teacher might identify a particular type of problem that is causing the most confusion or distraction and underline only that pattern of error. In other words, the teacher might write something like “I am underlining sentence fragments. Please try to correct them. If you have questions, please ask.”, and then underline fragments throughout the paper. Some teachers simply put a checkmark in the margins to indicate that there is a problem in a particular line.

Acting on Feedback

When students get their papers back with feedback, ask that they consider all of the feedback they got from various peers, instructors, and others, and make decisions about what changes they are going to implement. Some questions for them are
• What are the main concerns my readers had in reading my draft?
• Do all of the readers agree?
• What global changes (thesis, arguments, evidence, and organization) should I consider?
• What do I need to add?
• What do I need to delete?
• What sentence-level and stylistic problems do I need to correct?
• What kinds of grammatical and usage errors do I have? How can I correct them?
It is useful for instructors to model this revision process with a sample paper. When students can observe and collaboratively participate in how to move from feedback to revision, they are better able to internalize the moves proficient writers make in revision and subsequently engage in these moves independently.

### Reflecting on Your Writing Process

Reflection is an essential component in learning. Students benefit from discussing what they have learned about how to write and sharing that information with the rest of the class. This activity supports shared understanding of key terms, important moments and moves in developing writing, and generalizations that organize students’ approaches to writing. Reflection allows students to articulate their attitudes and assumptions about literacy and the role it plays in their developing academic identities.

You may want to direct reflection by asking the questions in Activity 33 and/or some of the following questions:

- What have you learned about your writing process?
- What were some of the most important decisions you made as you wrote this text?
- How did “writing about your writing” influence the way you developed your text?
- In what ways have you become a better writer?

### Activity 33: Reflecting on Your Writing Process

When you have completed your own essay, answer these six questions:

1. What was most difficult about this assignment?
2. What was easiest?
3. What did you learn about arguing by completing this assignment?
4. What do you think are the strengths of your argument? Place a wavy line by the parts of your essay that you feel are very good.
5. What are the weaknesses, if any, of your paper? Place an X by the parts of your essay you would like help with. Write any questions you have in the margin.
6. What did you learn from this assignment about your own writing process—about preparing to write, about writing the first draft, about revising, and about editing?