

Topic 4A

I Think, Therefore IM, Text Messaging: Bane or Boon?

(2 lessons)

911 PAW TMB
Translated:
Urgent! Parents are watching! Text me back.

Wat RU ^ 2, DY
wana gt za?
Translated:
What are you up to? Do you want to get a pizza?

There are two lessons in this topic. In these two lessons, students look at formal and informal writing and decide if the impact of text messaging is positive or negative by examining its uses and reading articles with different perspectives about its value and impact. The first lesson may also introduce EAL students to text messaging language in English. Some of the specific academic tasks are: making notes, using notes to explain information, working on pronunciation, comparing and contrasting, summarizing, taking

part in discussions, deducing the meaning of unknown words and word groups, recognizing implications, understanding a discussion by recognizing lexical, grammatical and discourse devices, skimming and scanning, finding relevant information, quoting and citing, paraphrasing, supporting an argument, offering evaluative comments, using appropriate spelling and punctuation, presenting information, writing a critique, using academic writing style, and planning an answer.

n D cookies of lyf, pal ur D chocl@ chips

Translated: In the cookies of life, pal, you're the chocolate chips!

Outcomes

SLO 2.1.3 Use developing control of grammatical features...

SLO 2.1.4 Refine pronunciation to increase intelligibility...

SLO 2.4 Use the steps of the writing process...

SLO 5.1 Identify common themes and symbols...

SLO 5.3 Analyze ways in which language and text affect... contemporary culture.

SLO 5.4 Show understanding of the effect of cultural background...

SLO 6.1.3 Use directed attention...

SLO 6.1.5 Use selective attention...

SLO 6.1.6 Use self-monitoring to check...

SLO 6.2.7 Use elaboration...

SLO 6.2.10 Use translation...

SLO 6.2.12 Use inferencing to guess the meanings...

SLO 6.3.2 Use co-operation...

Instructional and Learning Sequence

Sequence 1

I Think, Therefore IM

Activation

To connect with Mrs. MacLeod’s discussion about the past, students are each given a copy of **Handout 3-10: “English Spelling is Torchur.”**

- a) Choose a student or students to read the article out loud. Students will discuss the difficulties of English spelling and pronunciation. (This article may be difficult for them to read. Can they say why?) What do they think about the prediction in the article? Obviously, this prediction has not come true, but has English spelling changed in any way? In formal writing? Informal? Guide students to mention instant messaging.
- b) Discuss the language of instant messaging.
- c) Have students respond to these questions individually. Create a glossary of text messaging terms on the board. (If students do not use English text messaging, they will need the resources in the Teacher Notes and References column.) Continue by asking students: Is there a pattern in the language of text messaging? (elimination of vowels, use of phonetic spelling, one letter stands for a single word, symbols, etc.) Are these patterns similar in text messaging shorthand in your first language? What are the advantages of this form of language? (speed of communication) Would you/do you use it in school assignments? When? Is it formal or informal writing? What is the impact of this shorthand? Positives? Negatives? (Answers will vary.)

Language Features

Vocabulary

befuddle, linguists, simplification, economizing, phonetic

Idiom: be the norm

Abbreviations: text-messaging shorthand in English

Structures

Present tense: use of definite article—do not use with the expressions “text messaging” and “instant messaging”

Discourse Features

Language to express opinion: I think...; I believe...; My opinion is...

Language of discussion: to agree, disagree, interrupt, add information, summarize

(Continued on page 65)

Student Learning Tasks

Teacher Notes and References

a) Listen or read **Handout 3-10**: “English Spelling is Torchur.” (C)

b) Discuss the language of instant messaging. (C)

Ask:

- 1 Do you use MSN or ICQ?
2. Do you instant message your friends?
3. Do you use text-messaging terms?
4. Do you text message in your first language?
5. Do you text message in English?

c) Respond to the questions individually. (I)



Handout 3-10: “English Spelling is Torchur”

You may want to refer to one of the following websites for text messaging abbreviations:

<www.mpsmits.com/highlights/cyber_slang.shtml>

<www.newbie.org/reference/abbrev.html>

Language Features	(Continued)
	<p>Pronunciation</p> <hr/> <p>use of stress and intonation</p> <p>word thought patterns</p> <p>linkage and reduction</p> <p>Specific problematic sounds: note the use of linkage in the original Descartes statement that allows for the new one used in the title of the lesson (I think, therefore I am ~ I think, therefore IM).</p>



Outcomes	Instructional and Learning Sequence
<p>SLO 1.1 Engage with increasingly difficult oral and/or visual texts...</p>	<p>Text Messaging Activity</p> <p>Step 1. Distribute copies of Handout 3-11: “Internet Shorthand” and direct students to the article “I Think, Therefore IM” obtained from the website provided.</p>
<p>SLO 2.1.2 Use standard Canadian spelling...</p>	<p>a) Have students read the titles of both articles. The first is straightforward; the second requires background knowledge and an understanding of punning/play on words.</p>
<p>SLO 2.1.3 Use developing control of grammatical features...</p>	<p>b) Have students discuss the second title and try to make sense of it. Add background information as necessary for your students.</p>
<p>SLO 4.1 Use language to encourage...</p>	<p>Tell students that this title is an example of how people play with famous quotations in North America. Give them some other examples:</p>
<p>SLO 4.2 Communicate effectively to work with others...</p>	<ul style="list-style-type: none"> • A convicted criminal: I think, therefore I’m damned.
<p>SLO 4.5 Experience and consider academic texts...</p>	<ul style="list-style-type: none"> • A basketball star: I think, therefore I slam (dunk).
<p>SLO 4.6 Respond to and critique a variety of individual perspectives...</p>	<ul style="list-style-type: none"> • A con artist: I think, therefore I scam.
<p>SLO 5.4.2 Begin to interpret NA approaches to humour</p>	<ul style="list-style-type: none"> • A disorganized or lazy student: I think, therefore I cram. (The play on words can be on the word “think,” as well.) Can students think of any more on their own?
<p>SLO 6.2.1 Use resourcing to access...</p>	<p style="text-align: right;"><i>(continued on page 68)</i></p>
<p>SLO 6.2.3 Use grouping of items to classify...</p>	
<p>SLO 6.2.4 Use note taking...</p>	
<p>SLO 6.2.11 Use transfer...</p>	
<p>SLO 6.2.12 Use inferencing to guess the meanings...</p>	
<p>SLO 6.3.2 Use co-operation...</p>	

Student Learning Tasks

- a) Read the titles of **Handout 3-11: “Internet Shorthand”** and the article “I Think, Therefore IM.” (I)
- b) Discuss the second title. (C)

Teacher Notes and References



Handout 3-11: “Internet Shorthand”

Appendix 15: Tone Vocabulary

Reading: “I Think, Therefore IM.” To access, go to <www.nytimes.com/learning/teachers/lessons/archive.html>.

Type in the search box “I think, therefore IM.” The lesson “generation TeXt” will come up. At the top right-hand side of the page, you will see the heading “Related Article.” Click on this to get the article.



The original quotation “I think, therefore I am” is attributed to Rene Descartes, French philosopher and mathematician.

The original Latin phrase is *cogito ergo sum*.

This is an opportunity to talk about North American culture and humour.

Outcomes	Instructional and Learning Sequence
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(continued)

- Step 2.** Group students in quads. Have them work together to read **Handout 3-11:** “Internet Shorthand” and the Internet article, “I Think, Therefore IM.”
- a) They should first try to decipher the new vocabulary through use of context clues or knowledge of word families and affixes. After they have done as many as they can, they may each take an equal number of the unfamiliar words that affect their ability to understand the articles and find the meanings to share with group members.
 - b) As they read the articles, ask them to answer the following:
 1. Decide what the tone of each piece is. State it in one word.
 2. Explain the attitudes of each author toward text messaging.
 3. List the words or expressions that helped you understand their attitudes.
 4. Predict why each writer has his or her specific attitude about text messaging. We know one writer is a teacher. Speculate on what the profession of the other writer might be.
 5. Discuss which author you might like better as a person and explain why.
 - c) Have students share their answers with other groups.

Language Features	<p>Vocabulary</p> <p>From “Internet Shorthand”: spawned, legitimate, neologisms, arbitrary, abbreviations, distinguish, oblivious, mere, sheer ignorance, discarded, obligation, decoded, arrogantly, dignified, juvenile, propensity, reluctantly, concede, exceptions, real-time, time constraints, emoticons, acronyms, abomination, linguistic anarchy</p> <p>From “I Think, Therefore IM”: plagued, lingua franca, errant, abbreviating, unconsciously, nurtured, milieu, assault, arc, deprived, unrepentant, facile, passé, lingo (focus on words borrowed from other languages)</p>
	<p>Structures</p> <p>In questions: use of imperatives that are often used in academic tasks</p> <p>In a discussion task: use of present and future hypothetical; use of appropriate person (first or third); use of hypothetical words and phrases (If ~ then, I think, I believe, I’m pretty sure, perhaps, maybe, probably, etc.)</p> <p>Punctuation: use of commas and semicolons in Descartes’ statement and in the wordplay examples</p>

Student Learning Tasks

- a) Individually find the meaning of unfamiliar words. **(I)**
- b) In quad groups, read **Handout 3-11: “Internet Shorthand”** to decipher the new vocabulary through the use of context clues or knowledge of word families and affixes. **(G)**
- c) Share your answers with other groups. **(G)**

Teacher Notes and References

Handout 3-11: “Internet Shorthand”

Outcomes	Instructional and Learning Sequence
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- SLO 2.1.1** Analyze and edit texts...
- SLO 2.1.2** Use standard Canadian spelling...
- SLO 2.3** Produce a variety of short and extended text forms...
- SLO 4.3** Use clear and respectful language...
- SLO 4.6** Respond to and critique a variety of individual perspectives...
- SLO 5.6** Evaluate texts...
- SLO 6.1.2** Use organizational planning...
- SLO 6.1.6** Use self-monitoring to check...
- SLO 6.2.5** Use deduction and induction...
- SLO 6.2.12** Use inferencing to guess the meanings...
- SLO 6.3.2** Use co-operation...

Step 3: Direct students’ attention to the difference between formal and informal (conversational) writing discussed by both authors. Tell them you are going to give them a chance to practise each.

- a) Ask students to first write three to five sentences as if they were chatting to or instant messaging a friend about the following topic: “Why Having Access to the Internet Is So Important.” They can use abbreviations and polite slang. Give them five minutes to do this.
- b) Have students answer the same question as if they were writing the first paragraph of a formal essay. They must begin with a hook, follow with connecting sentences, and end the paragraph with a thesis statement as has been taught. Give 5 to 15 minutes to do this task.
- c) Let pairs of students peer-edit for each other.
- d) Continue the discussion about text messaging. If formal writing is the usual preference in school assignments, is there any place for conversational style like text messaging? When? Will text-messaging shorthand creep into students’ formal pieces and make students less proficient writers? (These discussion questions will prepare students for the next lesson.)

Writing

- a) Have students choose one of the readings and write an email to the author, critiquing the article. (Both express strong opinions, so this can be discussed, but the “Internet Shorthand” negative piece is particularly good for discussion about bias.)

Language Features	Structures
	Use of the definite article to describe the specific parts of an introduction to an essay: the hook, the connecting sentences, the thesis statement
	Discourse Features
	text messaging shorthand; format of an introduction – hook, connecting sentences, and thesis statement; format of an email
	Expressions for discussion while peer editing: to give advice, ask questions, make positive comments, give constructive criticism, add information

Student Learning Tasks**Teacher Notes and References****Assignment**

- a) Write three to five sentences as if chatting or instant messaging about the following topic: “Why Having Access to the Internet Is So Important.” **(I)**
- b) Answer the same question as if you were writing the first paragraph of a formal essay. **(I)**
- c) “Peer-edit” by following the criteria established in class. **(G)**
You should
 - comment on the hook (Does it create interest?)
 - comment on the connecting ideas (Do they link the hook and the thesis?)
 - comment on the thesis statement (Is it clear; does it address the topic?)
- d) Once you have finished and shared your work, continue to discuss text messaging. **(G)**

Writing

- a) Choose one of the readings and write an email to the author, critiquing the article. **(I)**



Review writing introductions and creating thesis statements.

Review how to recognize bias.

Review the format of an email.

Outcomes

SLO 2.3 Produce a variety of short and extended text forms...

SLO 5.4.2 Begin to interpret NA approaches to humour

SLO 5.6 Evaluate texts...

SLO 6.2.3 Use grouping of items to classify...

SLO 6.2.5 Use deduction and induction...

SLO 6.2.6 Use substitution to select alternate approaches...

SLO 6.2.7 Use elaboration...

SLO 1.2 Respond to texts with increasing independence...

SLO 1.7 Evaluate a given text...

SLO 2.1.3 Use developing control of grammatical features...

SLO 2.3.1 Use the structures and language features...

SLO 3.1 Seek, organize, and synthesize information...

SLO 4.1 Use language to encourage...

SLO 5.2 Analyze and use the appropriate level of formality...

SLO 6.2.3 Use grouping of items to classify...

SLO 6.2.9 Use summarization...

SLO 6.2.11 Use transfer...

SLO 6.2.12 Use inferencing to guess the meanings...

SLO 6.3.2 Use co-operation...

Instructional and Learning Sequence

Roundup

a) Students might like to try to create their own play on words or twist to Descartes' famous quotation. They could make up a twisted quotation for different famous characters that are familiar to them. An example for Homer Simpson might be: I think, therefore I eat doughnuts.

OR

b) Have students make a list of text messaging shorthand that might be useful in taking notes. Use these symbols in future note-taking assignments.

Language Features	Structures
	appropriate punctuation for the reworked Descartes statement
	Discourse Features
	useful text messaging symbols for note taking
	Pronunciation
	Musical device terms: rhymes, approximate rhyme

Sequence 2

Text Messaging: Bane or Boon?

Activation

Students will recall the discussion about text messaging and its uses from the previous day.

- a) Have students list the main points from the previous day's discussion:
- Text messaging is shorthand and informal.
 - Most writing in school is formal.
 - Text messaging shorthand is useful for taking notes.
 - Text messaging shorthand is not acceptable (by most) in formal writing.
 - Will text messaging shorthand affect the quality of students' formal writing?

Language Features	Discourse Features
	Discourse markers: to agree, to add information, to synthesize and clarify, to question, to state opinion
	Hypothetical expressions: If...then, perhaps, maybe, probably, I think, I'm pretty sure

Student Learning Tasks**Assignment**

- a) Create a play on words or twist to Descartes' famous quotation.

OR

- b) Make a list of text messaging shorthand that might be useful in taking notes. Use these symbols in future note-taking assignments.

- a) List the main points from the previous day's discussion. (I)

Teacher Notes and References

Poetry/Musical Devices: If you want students to work on rhyming in English, have them create a wordplay based on rhyming with “think,” or “am,” or both. They may use approximate rhymes, as well.

Outcomes

SLO 1.1 Engage with increasingly difficult oral and/or visual texts...

SLO 1.2 Respond to texts with increasing independence...

SLO 1.6 Interpret a range of texts...

SLO 2.3 Produce a variety of short and extended text forms...

SLO 2.3.1 Use the structures and language features appropriate to the text type...

SLO 6.1.3 Use directed attention...

SLO 6.1.5 Use selective attention...

SLO 6.2.4 Use note taking...

SLO 6.2.5 Use deduction and induction...

SLO 6.2.9 Use summarization...

SLO 6.2.12 Use inferencing to guess the meanings...

Instructional and Learning Sequence

Main Activity

Students will now read some articles about the effect of text messaging language.

Step 1: Distribute handouts for each group of three students. Individual members of each group get a copy of a different handout. Provide a set of key vocabulary words for each article (teacher-prepared). Choose key words that students do not know, but that will be useful in discussion and writing for this lesson and module.

- a) Have students work individually reading their own articles, skimming articles, and then scanning for the main ideas. They take notes to record the main points made by the author, also noting research or facts that support the argument. They should ask for help if necessary from group members.

Discuss possible graphic organizers to arrange information from the readings.

Language Features

Vocabulary

bane, boon, and other words chosen by the teacher

Student Learning Tasks

Teacher Notes and References

- a) Skim and scan one of the handouts. Record main points, and note the research or facts that support the argument on a graphic organizer. (I)



Handout 3-12: “Bane or Boon: The Impact of ‘Text Messaging’ on Student Writing”

Handout 3-13: “Text Messaging: Boon or Bane”

Handout 3-14: “Text Messaging No Effect on English Proficiency: Study”

Outcomes	Instructional and Learning Sequence
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SLO 2.1.3 Use developing control of grammatical features...

SLO 2.3.1 Use the structures and language features appropriate to the text type...

SLO 3.1 Seek, organize, and synthesize information...

SLO 4.3 Use clear and respectful language...

SLO 4.5 Experience and consider academic texts...

SLO 5.7 Select and present ideas ...keeping in mind the intended audience.

SLO 6.1.3 Use directed attention...

SLO 6.1.5 Use selective attention...

SLO 6.2.7 Use elaboration...

SLO 6.2.11 Use transfer...

SLO 6.3.1 Use questioning for clarification...

Step 2: Students form Expert Groups of two, consisting of people who have done the same reading.

- a) Using their notes and the texts, if necessary, they discuss their reading, explaining their understanding and comparing and adding to their notes as appropriate.

Step 3:

- b) Students go back to their Home Groups of three and, using ONLY their notes, explain the main points of their readings to each other. All students take notes about the two other readings. New vocabulary should also be shared and noted. (This is a good time to remind students to use the strategy of questioning for clarification as discussed in SLO 6.3.1.)

Step 4:

- c) Students meet as a class and share information from all the readings.

Language Features	<p>Discourse Features</p> <p>Expressions for discussion: to introduce new ideas and vocabulary, to explain, to question, to restate, to offer opinion, to add information, to agree or disagree, etc.</p>
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Student Learning Tasks

Teacher Notes and References

- a) With a partner, explain your understanding and add to your notes about the handout you read. **(P)**

- b) In your original group of three, explain the handout you read using your notes. Make notes on the other two readings. **(G)**

- c) Share information with the class. **(G)**

Outcomes	Instructional and Learning Sequence
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- SLO 1.2** Respond to texts with increasing independence...
- SLO 1.4** Show an awareness of organizational patterns...
- SLO 2.1.1** Analyze and edit texts...
- SLO 2.1.3** Use developing control of grammatical features...
- SLO 2.3.1** Use the structures and language features appropriate to the text type...
- SLO 2.3.2** Demonstrate increasing awareness of... rhetorical forms...
- SLO 4.6** Respond to and critique a variety of individual perspectives...
- SLO 5.6** Evaluate texts...
- SLO 6.1.2** Use organizational planning...
- SLO 6.1.5** Use selective attention...
- SLO 6.2.7** Use elaboration...
- SLO 6.2.9** Use summarization...
- SLO 6.2.13** Use recombination...

Writing Activities

1. Have each student write a four- to five-sentence summary of each article, using two new vocabulary words in each. They will vary their sentence types and use combining forms.

OR

2. Have students choose one article and critically evaluate the arguments made by the author. They will use knowledge gleaned from all the articles to make their evaluation. Students must use at least two direct quotations, properly citing their sources.

Language Features	Vocabulary
	appropriate new vocabulary words to be used in writing assignments
	Discourse Features
	format for quoting and citing quotations; format of a critique
	Academic Language Functions
	summarizing, evaluating and citing

Student Learning Tasks**Assignment**

Write a four- to five-sentence summary of each article, using two new vocabulary words in each. **(I)**

OR

Choose one article and critically evaluate the arguments made by the author. Use at least two direct quotations, properly citing the sources. **(I)**

Teacher Notes and References

This is an opportunity for a mini-lesson on writing critiques.

Outcomes

SLO 2.1.1 Analyze and edit texts...

SLO 2.1.2 Use standard Canadian spelling...

SLO 2.1.3 Use developing control of grammatical features...

SLO 2.3.1 Use the structures and language features...

SLO 2.4 Use the steps of the writing process...

SLO 3.1 Seek, organize, and synthesize information...

SLO 6.1.2 Use organizational planning...

SLO 6.1.5 Use selective attention...

SLO 6.1.6 Use self-monitoring to check...

SLO 6.1.8 Use self-evaluation to check...

SLO 6.2.7 Use elaboration...

SLO 6.2.9 Use summarization...

Instructional and Learning Sequence

Roundup

Students could:

Write a journal entry discussing the importance of instant messaging in their lives.

OR

Choose one of the strategies they used in this lesson that really helped them complete it successfully. Write about the strategy and how they used it.

OR

Compare the shorthand used in text messaging to that used in their first language. Also, discuss whether this shorthand is infiltrating formal writing.

Student Learning Tasks

Teacher Notes and References

Assignment

Write a journal entry about the importance to you of instant messaging.

OR

Write about a strategy that helped you and how you used it.

OR

Compare the shorthand used in text messaging to that used in your first language.

English Spelling Is Torchur

Some predikshuns just don't cum troo. Consider ower confusing English spelling. Ask any EAL stoodent, and he or she can give you lots of eggsamples. How about bough or colonel or knife? It's pretty klear that English is meant to befuddle.

In 1900, linguists thought that American English could use some simplification and economizing. According to the *Ladies Home Journal* of December 1900, by the year 2000 there would be no C, X, or Q in the alphabet. Their reasoning was there would be no need for these letters. They predicted that phonetic spelling would be the norm and that English would be the language most often spoken in the world, with Russian being the second most common language.



Internet Shorthand

The Internet has spawned a whole new subdivision of the language. I do not refer to legitimate neologisms, such as “.com” or “dotcom,” “website,” and “homepage,” but to the new shorthand that looks like this: “Thnk u 4 ur msg i rly preshate it” (Thank you for your message. I really appreciate it.).



This kind of arbitrary use of abbreviations and (more or less) phonetic spelling makes several statements about the author, none of them complimentary: 1) He or she is lazy. Just how much effort is required to use the shift key to distinguish the pronoun *I* from the letter *i* or to mark the first word of a sentence? 2) He or she is probably a bad speller and wants to hide this unpleasant truth. 3) He or she is oblivious to the function of punctuation, regards it as mere decoration, and therefore has (from sheer ignorance) discarded it. 4) He or she is unaware that the purpose of writing is to communicate as clearly as possible with the reader, not to present symbols to be decoded. A writer’s first

obligation is to make the reader’s task easy. Writing in code arrogantly ignores this silent contract that exists between reader and writer.

Furthermore, this style of writing (though style is too dignified a term for it) reveals a juvenile propensity to adopt anything that is new, with no consideration to whether it is good or bad. It says: “Whoa! Look at me! Ain’t I trendy and cute.” Sorry, baby, you “ain’t”; you are just an annoying and immature hack, with no comprehension of or respect for civilized communication.

I reluctantly concede some minor exceptions. For instant messaging or real-time, online communications—particularly those that are one-to-one—shorthand is permissible because of time constraints, provided the parties in the exchange both (or all) agree to it. For expressing emotional reactions visually (via emoticons or agreed-upon acronyms such as LOL for Laughing Out Loud), Internet lingo has a limited value.

Otherwise, Internet shorthand is an abomination. It is linguistic anarchy, a frightening symbol of the “dumbing down” of communication.

LOL

: -)

: - O

Source: <<http://www.grammarmudge.cityslide.com/page/page/232347.htm>>.

Bane or Boon: The Impact of “Text Messaging” on Student Writing

February 14, 2003

Adapting to a world of ever-shorter screens and ever-longer laundry lists of activities, today’s tech-savvy teens are creating a whole new language of abbreviations as they use cell phones and computers to correspond via short electronic communications called “text messages.” But the rise of this new form of alphabet-soup shorthand has educators debating its effect on students’ writing habits.

The text messages on 13-year-old Margarete Stettner’s cell phone are filled with shortcuts like “G2G” for “got to go” and “LOL” instead of “laughing out loud.” Even when she isn’t using her phone, the lingo sometimes makes its way into what she writes.

“It does affect, sometimes, how I do my schoolwork,” the teen from Hartland, Wis., said as she shopped in a mall, where cellular phones are as common as low-cut jeans. “Instead of a Y-O-U, I put a U.”



That alarms some educators and linguists, who worry that the proliferation of text messaging—where cell phone users type and send short messages to other phones or computers—will enforce sloppy, undisciplined writing habits among American youths. Other experts, though, don’t think the abbreviations will leave their mark on standard English.

In June 2001, wireless phone users sent 30 million text messages in the United States, according to the Cellular Telecommunications and Internet Association, an industry trade organization. By June 2002, that number had increased to nearly 1 billion.

The method is most popular among teenagers, according to Upoc Inc., a New York-based firm that helps users of mobile devices share information on everything from the rapper Bow Wow to celebrity sightings. A study by Upoc in 2001 found 43 percent of cellular phone users ages 12 to 17 used text messaging, compared with 25 percent of those ages 30 to 34.

These teenagers, hampered by limited space and the difficulty of writing words on numeric phone keypads, helped create the text-messaging lingo.

Words are abbreviated (“WL” for “will”), and common phrases become acronyms (“by the way” turns into “BTW”). There are even dictionaries to sort out the meaning of, say, “AFAIK” (“as far as I know”).

“SOL” can mean “sooner or later” or “sadly out of luck,” but if you’re unclear on which was meant, simply message back a “W” (“what”) or “PXT” (“please explain that”) for a clarification.

Jesse Sheidlower, principal editor of the U.S. office of the Oxford English Dictionary, said text messaging is going through the natural progression of language.

(continued)

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Bane or Boon: The Impact of “Text Messaging” on Student Writing (continued)

Much text-messaging lingo was first used in instant-messaging programs on personal computers, and some phrases, such as “**SWAK**” for “**sealed with a kiss**,” have been used for decades, Sheidlower said.

As text messengers discover and share new abbreviations and acronyms, the language becomes familiar to a growing population of cell phone users. And as more people use the lingo for text messaging, Sheidlower said, it is more likely to spill into speech or writing.

That worries American University linguistics professor Naomi Baron, who said text messaging is another example of a trend in written communication.

“So much of American society has become sloppy or *laissez faire* about the mechanics of writing,” Baron said.

Problems arise when people use the casual language in other forms of written communication, such as email, in which the sender might not receive the message for some time, or writings in which the reader might not even know the author, she said.

But other linguists said a simpler, more relaxed vernacular is acceptable for talking or text messaging.

“Language and languages change,” said Carolyn Adger, director of the Language in Society Division of the Center for Applied Linguistics in Washington, D.C. “Innovating with language isn’t dangerous.”

And besides, Adger said, text messaging—like email and instant messaging—is making it easier for people to communicate.

“I think that all of this stuff is really wonderful, because it’s expanding the writing skills of people,” she said.

Chris Mahoney, director of technology for the Lake Hamilton School District in Arkansas, agreed.

“I think the students are actually writing more and are benefiting from instant messaging, simply because it encourages them to write and it is something they are interested in,” Mahoney said. “They are using acronyms, but writing more than they would in a normal note or paper. Students are verbalizing and learning communication skills while using these new technologies. Teachers are holding students to the same grammatical standards in formal writing and, for the most part, do not accept linguistic shortcuts in their classrooms,” he added.

Text messaging hardly appears to have hurt written language in Europe, where 10 billion text messages are sent each month, said Charles Golvin, senior analyst with Forrester Research.

In fact, as more adults began using text messaging in Britain and Germany, the lingo fell out of favour, said Alex Bergs, a visiting linguistics professor at the University of Wisconsin-Milwaukee. Even teenagers use the language for only a while, he said.

One teen in Milwaukee, college student Jeremy Rankin, spends quite a bit of time using wireless devices in his job at a cell phone store. The 18-year-old admits he sometimes finds himself abbreviating when he types.

“I might do it by accident, but I don’t think that’s a problem as far as school papers go,” he said. “I proofread my stuff.”

Text Messaging: Boon or Bane

By Ruby Jane L. Cabagnot

The proliferation of text messaging, as short message service (SMS) is known locally, has created a whole new culture in the country—it changes the way we communicate in more ways than we are aware of.

Yet, even as this phenomenon seeps into our society, opinions and sentiments are divided on whether this technological advancement is a boon or bane.

This new culture belongs to the Gen-txt community—as one local mobile phone service company has aptly described the people that have created for themselves a different way of communicating. And as the texting-proficient would put it: *cd vwls dspr frm lng'ge altgthr? or cd evry wrd wd b nw abbrvtd?*

Peter Fernandez, information technology professor at the Asian Institute of Management, expressed ambiguous feelings towards this texting boom, which he claims is already a culture here in the Philippines. He attributed the cradle of this culture to a medium that is relatively cheap and something that anybody can use—even “people who don’t know how to spell properly.”

“Text messaging is already a generational culture here in the Philippines, no matter how much we deny or ignore the fact,” he said.

DUBIOUS DISTINCTION

Analysts said that there are about 4.5 million mobile phone users in the country today, and that among them about 60 million text messages are being exchanged in a day.

“It has been (an) accepted (fact) that the capability in English communications of high school or even college students is quite lacking, and I think that this could even be exacerbated by this technology,” he said.

But Mr. Fernandez believed that since cultural problems generated by the wrong use of SMS are technology-driven, then chances are new technology would be the one to provide solutions. “With the availability of a much more convenient way of a correcting mechanism, then the minor de-skilling brought about by text messaging might be corrected gradually,” he added.

Selwyn Clyde Alojipan of Mosaic Communications and a sometime high school teacher could not agree more, pointing out that “as technology advances, it will be possible to enhance the current SMS-input interface (keypads) with either dictionary-aided shortcuts, voice recognition, or other still-to-be-discovered means.”

But although he believes that the extremely abbreviated spelling mode of texting might eventually fade away, he qualified in his email remark to *I.T. Matters* that people could still continue to communicate this way “even when the need for this has passed, if it has become so ingrained in people.”

QUESTIONABLE SKILL

He is not overly concerned about that, however, because as he said “as with any popularly accepted activity of social convention, breaking or bending the spelling and grammar rules of our languages requires enough knowledge on what rules you can break, so that you can get away with it without being shunned.”

Mr. Alojipan pointed out that “this type of activity can be done better by those who know the rules of language well than by those who do not. For instance, instead of asking “do you understand” you can now type, “do u undrstnd or Gets mo?” (Did you get it?), which is a major saving texting effort.” The examples are endless: BCNU (be seeing you); XLNT (excellent); CUL8R (see you later); OIC (oh, I see); etc.

“I’m actually thrilled that a new form of communication is being developed by the people which matches their daily needs. It does not mean that traditional skills in English and Filipino spelling (or grammar) will necessary weaken,” Mr. Alojipan said.

There are those who do not share his sentiments, however.

One speech teacher observed that although this use of SMS seems to enhance the creative skills of students, particularly when they try to think of ways to abbreviate or shorten words, it could likewise erode or stunt the vocabulary of students because they could soon start using simple words to express themselves.

Text Messaging: Boon or Bane (continued)

Ateneo de Manila high school teacher, Paul Anthony Villegas, for one, has seen the effect of the kind of language use in texting on the essays of some of his students, who would tend to write, for example, the words: 4u or 2gthr yrs l8r or cd u ndrstd wat m tlkng abt hr?

ALARMING PROPORTIONS

More alarming, he said, is not only the way these students would delete certain letters—mostly vowels—in certain words, but how they would also use shortcuts on sentence construction conventions. “Some students get too comfortable and apply the kind of shortened language in their compositions,” he noted.

Mr. Villegas expressed concern that if this were to become habitual and embedded in a student’s mentality, he might find it difficult to write better compositions, formal letters, or—worse still—documents and reports in an increasingly interdependent and fiercely competitive global economy.

La Salle Greenhills High School principal Lilia Vengco admitted that some teachers have complained of finding SMS language on some of their students’ compositions, especially when text messaging started to become so popular among the youth.

Still, she downplayed the supposedly negative effect of this SMS technology on the educational formation of her wards. “I would like to think that they really know the correct spelling and grammar structure. And besides, we do not tolerate that kind of language in this school,” she said.

To discourage the use of texting language in essays and compositions, both schools said they give deductions on a student’s grade, while the use of mobile phones during and in-between classes has been banned.

Some high schools students say, however, that it is the “in” thing to do nowadays and the “shorter it is, the better,” although they claimed they would be the first ones to say that SMS form is not the proper way to write English or Tagalog.

Mst f d tym dey usd ds knnd f lng’ge 2 tlk 2 1 anthr nt lly n txt bt evn n wrtng ltrs 2.

Others even added that this “new skill of shortening words” helps them whenever they have to take down dictations.

But while Mr. Alojipan stressed that in order for someone to play around with spelling, he or she must have a relatively good understanding of spoken or written language, he admitted that “students should be guided that each form or mode of communication has its uses, advantages, and disadvantages, and that they must make sure that no matter how they send the message, it must still be understood by the recipient.”

DANGER OVERSTATED?

Still, one is compelled to ask about the implications, if any, of the texting culture on the educational formation of our youth today—never mind the so-called professionals because, as AIM professor Mr. Fernandez said, they already have at least developed their communication skills.

“I am not saying that it will reduce our capability in communicating in English, but the form, specifically the written form, might be affected,” Mr. Fernandez said.

He warned that rules are even more stringent in written than oral form in most languages.

One sure effect, he said, is that “English becomes ugly.

“It gets into your system, and if it gets into your system then chances are you are going to use it when you write, and this would impact (on) the college and high school students more profoundly, considering that text messaging is being widely used by these people,” Mr. Fernandez said.

On the other hand, he said that this technology is creating a sense of community and making it easier for people to communicate with one another.

“There is also a positive impact, so the question is: with the minimal de-skilling that you get out of these technology—is it big enough to not justify the positive impact?” he asked.

Mr. Alojipan, for his part, opined that the “feared spelling and grammar breakdown is not a problem and won’t cause the collapse of Filipino society.”

Text Messaging No Effect on English Proficiency: Study

THE PRACTICE of using abbreviated spelling and grammatical shortcuts when sending short text messages on mobile phones had little or no impact on the senders' proficiency in the English language, a Philippine university study said.

The study, which involved 433 freshmen English students from De La Salle University in Manila and the University of the Philippines campus in Los Baños, Laguna, south of Manila, found that there were no significant differences in the grammar and spelling scores of mobile phone owners and non-owners.

Study author Mildred Rojo-Laurilla, an assistant professor at De La Salle University's department of English and applied linguistics, also found that students were still able to discern the difference between conventional English and the abbreviated English used in "texting."

The study found that respondents used a mix of English and Filipino words whenever they sent text messages.

The study's results were released amidst concerns that the abbreviations and phonetic spelling that text messaging users employed to get around tight character limitations and cumbersome phone keyboards would affect their ability to write conventional English.

President Gloria Macapagal-Arroyo, saying the country was losing its proficiency in English, recently ordered that English be reinstated as the medium of instruction in Philippine schools instead of Filipino.

Source: <http://www.inq7.net/inf/2003/feb/03/text/inf_2-1-p.htm>. Author unknown.



Topic 4B

Recreation and Technology: Computer Game Geeks:

How Playing Video Games Affects Recreational and Study Time

(2–3 lessons)

In these lessons, students will fill out an anticipation guide about the impact of video and computer games; watch and take notes about a video of two students discussing their personal use of and ideas about computer and video games; create and administer surveys, analyze and graph the results of surveys; read articles about various research studies regarding the impact of playing video and computer games; and give mini-lectures about them. Some of the other main academic tasks are: making and using notes to speak from; using intelligible pronunciation;

introducing a topic; sequencing; exemplifying; restating; summarizing and concluding; stating a point of view; listening to a lecture; understanding parts of a lecture through lexical, grammatical, and discourse indicators; understanding intonation and emphasis in speech; deducing the meaning of unfamiliar word groups; distinguishing the main ideas from supporting detail; reading critically; understanding graphs and tables; using visuals to clarify relationships; describing graphs; reporting; drawing conclusions; and using standard spelling and grammar.

Outcomes	Instructional and Learning Sequence
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SLO 1.1 Engage with increasingly difficult oral and/or visual texts...

SLO 1.2 Respond to texts with increasing independence...

SLO 1.3 Develop and express a personal position in a variety of ways...

SLO 2.1.3 Use developing control of grammatical features...

SLO 4.1 Use language to encourage...

SLO 6.1.7 Use problem identification...

SLO 6.2.7 Use elaboration...

SLO 1.4 Show an awareness of organizational patterns...

SLO 1.5 Examine and interpret various visual media...

SLO 2.3.1 Use the structures and language features...

Sequence 1

Activation

Ask students how many of them play computer and video games. Refer them to the anticipation guide (**Handout 3-15: “Anticipation Guide: Playing Computer Games”**). Point out the directions on the guide and have students fill out the guide individually.

- a) Group students in triads to discuss each statement in the guide. They must come to a consensus in their rating as a group. Share the ratings as a class.
- b) In the large group, have students discuss the attraction of video games and the positive and negative aspects of playing them. Record responses. Tell students they will be watching a video clip of two students in Canada who discuss their involvement with computer and video games.
- c) Prepare them by previewing some of the vocabulary they will encounter.

Language Features	<p>Vocabulary</p> <p>Nouns: incentive, obsession, competition, self-control, pro-gaming, animation</p> <p>Adjectives: self-disciplined, inept, inactive</p> <p>Expressions: interpersonal skills, social interaction, alleviate stress, hand-eye coordination</p> <p>Idioms: being hooked on, kill time, kick the habit</p>
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- d) Give students the graphic organizer (**Handout 3-16: “Graphic Organizer: Kevin and Joo”**) to fill out as they watch and listen to the video clip. Tell students that the first speaker is Kevin and the next speaker is Joo. Review good note-taking skills. Also, encourage students to use their text-messaging shorthand discussed in the previous lesson. Play the clip once. Check for comprehension. Play it again, if necessary, for students to complete their graphic organizers.

Language Features	<p>Discourse Features</p> <p>Creating point-form notes using shorthand: symbols, abbreviations</p>
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Student Learning Tasks

- a) In triads, discuss and come to consensus about each statement in **Handout 3-15**: “Anticipation Guide: Playing Computer Games.” Share rating with class. **(G) (C)**
- b) Discuss the attraction of video games and the positive and negative aspects of playing them. **(C)**
- c) Participate in the teacher-prepared previewing activity. **(G)**
- d) Fill out **Handout 3-16**: “Graphic Organizer: Kevin and Joo” as you watch and listen to the video clip of two students discussing their involvement with computer and video games. **(I)**

Teacher Notes and References



Handout 3-15: “Anticipation Guide: Playing Computer Games”



Note: You might want to prepare a fill-in-the-blank activity, creating sentences that will help the students use context to guess the meanings of the new words and expressions. (Put the first letter of the word or expression in the blank as a clue if needed.) Include a bank of words from which students can choose.



Handout 3-16: “Graphic Organizer: Kevin and Joo”

Resource Video: *Kevin and Joo*



A copy of the resource video can be obtained from the Manitoba Education, Citizenship and Youth website at www.edu.gov.mb.ca/ks4/cur/diversity/eal.

Outcomes	Instructional and Learning Sequence
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SLO 1.3 Develop and express a personal position in a variety of ways...

SLO 1.4 Show an awareness of organizational patterns...

SLO 1.6 Interpret a range of texts...

SLO 1.7 Evaluate a given text...

SLO 4.3 Use clear and respectful language...

SLO 6.15 Use selective attention...

SLO 6.2.7 Use elaboration...

- e) Ask students about their ability to comprehend and take notes. What helped them? (Did they mention the following interviewer techniques: introduction of new questions, clarification, exemplification, and summarization?) What hindered them? (Did they mention the pronunciation and grammar of the one student who was not quite as strong as the other?)
- f) As a class, have students discuss their notes from the video. Also, have them share their note-taking shorthand. Ask students how computer games affected the physical fitness, recreation time, and study time of these two students.
- g) Have students respond personally to this question: Did/do computer games have a positive or negative effect in your own life?

Language Features	<p>Vocabulary</p> <p>Expressions for discussion: to express opinion, to agree, to disagree, to add information, to question, etc.</p>
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Student Learning Tasks

Teacher Notes and References

- e) Take part in discussion about comprehending and note taking. **(C)**

- f) Discuss your notes from the video and share your note-taking shorthand. **(C)**

- g) Respond personally to this question: Did/do computer games have a positive or negative effect in your life? **(I)**

Outcomes	Instructional and Learning Sequence
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- SLO 1.4** Show an awareness of organizational patterns...
- SLO 1.5** Examine and interpret various visual media...
- SLO 2.1.4** Refine pronunciation to increase intelligibility...
- SLO 2.2** Use several visual techniques...
- SLO 3.1** Seek, organize, and synthesize information...
- SLO 4.4** Manage group action...
- SLO 5.2** Analyze and use the appropriate level of formality...
- SLO 6.1.2** Use organizational planning...
- SLO 6.2.3** Use grouping of items to classify...
- SLO 6.2.5** Use deduction and induction..
- SLO 6.2.7** Use elaboration...
- SLO 6.2.9** Use summarization...

Homework Assignment

Using the suggested materials and the information from this lesson:

- a) In groups of three, students will create a survey. They must decide what aspect of playing computer games they want to explore and what their target group is. They may want to consult the survey instrument created by James D. Ivory for ideas (**Handout 3-17: “Survey Instrument”**). Then, they must create a set of survey questions. They must decide how many people they will survey. On their own time, students administer their surveys to their chosen group.
- b) Once the surveys are complete, each group of students must decide how to visually represent the results.

They will share, interpret, and come to conclusions about their results with the whole class. They must decide how to compile all the results and represent them statistically.
- c) Once this is decided, students will record their statistical information on poster board to be displayed in the classroom.

Language Features	Vocabulary
	<p>Math vocabulary and statistical vocabulary: target group, sample, random selection, simple random sampling, stratified random sampling, accidental random sampling, valid, results, sort, tally, compile, line graph, pie chart, bar graph, stacked bar graph</p>
	Discourse Features
	formulating survey questions

Student Learning Tasks**Teacher Notes and References****Assignment**

- a) In groups of three, create a survey about computer games. **(G)**
- b) Decide how to visually represent your results. **(G)**
- c) Record your statistical information on poster board. **(G)**



Appendix 14: Tips for Wording and Ordering Survey Questions

Handout 3-17: “Survey Instrument”



Brainstorm as a class if students are having difficulty thinking of or deciding upon a focus for their survey. Certainly one focus should be the impact of computer games on recreational time and physical fitness.

Try to have each group focus on something different.

Outcomes

SLO 1.4 Show an awareness of organizational patterns...

SLO 1.6 Interpret a range of texts...

SLO 2.1 Show sufficient control over linguistic structures...

SLO 2.1.4 Refine pronunciation to increase intelligibility...

SLO 2.3.3 Produce effective oral presentations.

SLO 3.3 Quote from or refer to sources...

SLO 5.7 Select and present ideas ...keeping in mind the intended audience.

SLO 6.1.2 Use organizational planning...

SLO 6.1.5 Use selective attention...

SLO 6.1.6 Use self-monitoring to check...

SLO 6.1.8 Use self-evaluation to check...

SLO 6.2.4 Use note taking...

SLO 6.2.9 Use summarization...

Instructional and Learning Sequence

Alternate or Additional Activity

Internet articles may be assigned (see Teacher Notes and References for some examples) to give students some idea of the kinds of research done concerning the playing of video/computer games.

- a) Divide the class into four groups.
- b) Choose the articles you want to use.
- c) Assign one of the articles to each group to read.
- d) Students highlight the articles and record the main points made by each author.
- e) They look up key vocabulary after trying to guess the meanings through knowledge of affixes and root words, and through context clues. Each group's eventual goal is to summarize the points made by the author.
- f) Groups then share their points with three other classmates in the form of a mini-presentation or lecture. Groups work together to decide what the main points in their summaries should be.
- g) Students also design a note-taking graphic organizer for classmates to use as they listen to the summaries being presented. In order to prepare for lecturing, group members must decide on the types of organizational signals they will use, so that fellow students will be able to follow their lectures. Each group member practises his or her lecture in front of the other group members, who offer praise and constructive criticism.

(continued on page 102)

Student Learning Tasks

Read the assigned article, highlight and record the main points made by each author. (G)

Share summaries with three other classmates as a mini-presentation or lecture. (G)

Design a note-taking graphic organizer for classmates to use as they listen to the summary. (I)

Teacher Notes and References



Internet Resources: “Video Games and Their Effects” at: <www.mediascope.org/pubs/ibriefs/vge.htm>

“Video Games Good for You” at: <<http://news.bbc.co.uk/1/hi/technology/2943280.stm>>

“Can Video Games Ease Physical Pain?” at: <http://news.com.com/2102-1043_3-993323.html?tag+st_util_print>

“Video Games Hone the Mind” at: <www.cbsnews.com/stories/2003/05/28/tech/printable555921.shtm01>

“Video Games Help Hyperactive Children” at: <<http://news.bbc.co.uk/1/hi/sci/tech/894673.stm>>

“Video Games: Cause for Concern?” at: <<http://news.bbc.co.uk/1/hi/uk/1036088.stm>>

“Study Surprise: Video Games Enhance College Social Life” at: <www.usatoday.com/tech/news/2003-07-06-games_x.htm>

Additional science-related idea: At <<http://scienceforfamilies.allinfoabout.com/features/videogameexperiment.htm>> there is a science experiment by C.J. Brassington about whether video games affect blood pressure. Students may want to conduct an experiment like this themselves.



Choose the readings that are of interest to your class or have students choose them.

Alternately, let students find readings in which they are interested.

Outcomes	Instructional and Learning Sequence
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(continued)

- h) Form new groups of four in which each member is an “expert” on one article. Group members take turns guest-lecturing to the other group members, who record information on the graphic organizers designed for this purpose. Each lecturer reviews the graphic organizers to see how much information he or she was able to impart to the listeners.
- i) Listeners give each lecturer feedback about the clarity of the lecture.
- j) Discuss the activity in terms of strategies used, successes, and problems. Keep track of these ideas for the next time an activity like this is done.

Language Features	Vocabulary
	as needed to understand each reading
	Structures
	<p>Punctuation pauses in speech: use of commas after introductory or parenthetical phrases or words, shown by a pause in speech</p> <p>use of appropriate tense; appropriate use of article; essential and non-essential clauses; combining structures</p>
	Discourse Features
	<p>Order of ideas/changing to the next point in a sequence: to introduce..., next, another idea, furthermore, to conclude, OR first, second, third, fourth, finally, last, etc.; exemplification: an example is...; for example,..., a ~, or ~, etc.</p> <p>Adding information: in addition, furthermore, also, etc.</p> <p>Restatement: in other words, thus, therefore, to restate, to reiterate, etc.</p> <p>Summarizing: to sum up, briefly, the main points/ideas are, etc.</p>

Roundup

Students may write a personal response to one of the articles, summarize what they have learned, or state their own opinions about playing computer and video games.

Language Features	Discourse Features
	<p>To state opinion: In my opinion~; I believe~; according to...; after reading...I think/believe/agree/disagree~; I am convinced that...;etc.</p>

SLO 1.3 Develop and express a personal position in a variety of ways...

SLO 2.3 Produce a variety of short and extended text forms...

SLO 6.2.7 Use elaboration...

SLO 6.2.9 Use summarization...

Student Learning Tasks

Teacher Notes and References

Group members take turns guest-lecturing to the other group members. (G)

Give feedback about the clarity of the lecture. (I)

Discuss the strategies used in this activity. (G)

Assignment

Write a personal response to one of the articles and summarize what you have learned. (I)

OR

State your own opinions about playing computer and video games. (I)

Anticipation Guide: Playing Computer Games

Directions: Rate each statement according to the Strongly Agree/Strongly Disagree continuum and explain your choices. (You may be asked to write about them on a separate sheet of paper.) Then, in your groups, discuss each statement. You must come to consensus in your rating. (Optional: Ask two people outside your high school and over 19 years of age to rate these statements. How do their answers compare with yours?)

1. Playing computer games affects players more positively than negatively.

- strongly disagree disagree depends agree strongly agree

2. Most players cannot exert self-control in limiting the amount of time they play computer games.

- strongly disagree disagree depends agree strongly agree

3. Playing computer games helps develop important skills.

- strongly disagree disagree depends agree strongly agree

4. Playing computer games does not have any impact on one's level of physical fitness.

- strongly disagree disagree depends agree strongly agree

5. Computer games are only a passing fancy.

- strongly disagree disagree depends agree strongly agree

6. Playing computer games is a social activity.

- strongly disagree disagree depends agree strongly agree

7. Playing computer games can cause physical problems.

- strongly disagree disagree depends agree strongly agree

Graphic Organizer: Kevin and Joo

Questions	Kevin	Joo
Began playing when?		
Reasons for playing?		
How many hours per day?		
Effect of video games on students' lives? Recreation? Studying? Physical fitness? Socializing?		
Any positive aspects?		
Effect on obsessed/addicted players?		
Plans to control habit?		

Survey Instrument

This is a survey designed to gather information on students' video game habits. This survey is completely anonymous. Please do not put your name on the survey, but answer all questions as completely and honestly as possible. Thank you for your help. Your responses are a valuable contribution to this research.

For the purposes of this survey, "video games" refers to any electronic game that you play strictly for entertainment, alone or with others. This may include home video consoles (Playstation, Nintendo, etc.), computer games of all types (Solitaire, Doom, etc.), online games (Everquest, MUDs), arcade games, or any other type of electronic games you play for amusement.

1. When was the last time you played a video game?

TODAY THIS WEEK THIS MONTH THIS YEAR LESS RECENTLY NEVER

2. About how many times in an average week do you play video games? _____ times
3. About how many hours per week do you think you spend playing video games? _____ hrs.
4. What is the approximate value of the video games and related equipment in your home? \$ _____
(Do not include computers or other equipment purchased primarily for other purposes.)

5. Among your leisure activities, where would you place video games?

MOST IMPORTANT VERY IMPORTANT SOMEWHAT IMPORTANT
NOT VERY IMPORTANT NOT AT ALL IMPORTANT

6. How often would you say video games have taken time away from other activities?

VERY OFTEN OFTEN OCCASIONALLY RARELY NEVER

7. How and to what extent has time spent playing video games affected your performance in school?

VERY NEGATIVELY SOMEWHAT NEGATIVELY NO EFFECT ON SCHOOL
SOMEWHAT POSITIVELY VERY POSITIVELY

8. Has playing video games affected other aspects of your life? (Check all that apply)

_____ WORK
_____ OTHER HOBBIES/PROJECTS
_____ SLEEP
_____ HYGIENE
_____ CHORES
_____ SOCIAL LIFE
_____ RELATIONSHIPS
_____ OTHER (PLEASE DESCRIBE)

IF YOU DID NOT CHECK ANY CHOICES ON QUESTION 8, SKIP TO QUESTION 10

IF YOU CHECKED ANY CHOICES ON QUESTION 8, PLEASE ANSWER QUESTION 9:

(continued)

Source: <<http://www.unc.edu/~jivory/app.html>>. Cited from James D. Ivory's master's thesis, University of Wyoming. Reprinted by permission.

Survey Instrument (continued)

9. How has playing video games affected the above aspects of your life?
 VERY NEGATIVELY SOMEWHAT NEGATIVELY NO EFFECT AT ALL
 SOMEWHAT POSITIVELY VERY POSITIVELY
10. Overall, how much is your general productivity affected by time spent playing video games?
 MUCH LESS PRODUCTIVE LESS PRODUCTIVE NO EFFECT AT ALL
 MORE PRODUCTIVE MUCH MORE PRODUCTIVE

11-16: Complete these items by indicating how true you think the statements are about YOU :

11. I wish I did not play video games as much as I do.
 STRONGLY DISAGREE DISAGREE UNSURE/NEUTRAL
 AGREE STRONGLY AGREE
12. I would be better off if I spent less time playing video games.
 STRONGLY AGREE AGREE UNSURE/NEUTRAL
 DISAGREE STRONGLY DISAGREE
13. My video game play bothers other people I know.
 STRONGLY DISAGREE DISAGREE UNSURE/ NEUTRAL
 AGREE STRONGLY AGREE
- 14 I would be healthier if I played fewer video games.
 STRONGLY DISAGREE DISAGREE UNSURE/ NEUTRAL
 AGREE STRONGLY AGREE
- 15 I think that other people may become addicted to video games.
 STRONGLY DISAGREE DISAGREE UNSURE/NEUTRAL
 AGREE STRONGLY AGREE
- 16 I am addicted to video games.
 STRONGLY DISAGREE DISAGREE UNSURE/NEUTRAL
 AGREE STRONGLY AGREE
17. What is your age? _____
18. What is your gender? M F
19. What is your class standing?
 FRESHMAN SOPHOMORE JUNIOR SENIOR
 2nd DEGREE GRAD OTHER
20. Where do you live while attending school?
 DORMITORY/UW HOUSING GREEK HOUSING OFF-CAMPUS ALONE
 OFF-CAMPUS WITH OTHERS WITH FAMILY/PARENTS OTHER
21. When do you expect to graduate? (Term and year) _____



**Topic 5A
Biotechnology:
GM Foods**

(1 lesson)

This lesson introduces students to extensive vocabulary for the topic of biotechnology. Students will read critically from a selection of differing viewpoints. They will complete a survey (Likert Scale); follow the flow of an argument; analyze reporting verbs for implied attitude; consider

audience, purpose, and context; and read abstracts to determine the main ideas. They will synthesize information to discuss and write a short text about a controversial topic. They may design an information brochure.

Outcomes

- SLO 6.1.1 Use advanced organization...
- SLO 6.1.6 Use self-monitoring to check...
- SLO 6.2.7 Use elaboration...
- SLO 6.2.10 Use translation...
- SLO 6.2.12 Use inferencing to guess the meanings...
- SLO 6.2.3 Use grouping of items to classify...

SLO 1.3 Develop and express a personal position in a variety of ways...

SLO 5.6 Evaluate texts...

SLO 6.2.1 Use resourcing to access...

Instructional and Learning Sequence

Sequence 1

Activation

Have a Word Splash on the board when students arrive.

Allow students a few minutes to discuss the words with each other. Remind them of clues to meaning, such as affixes. Pronounce the words. Allow students to consult dictionaries if desired.

- a) Ask students to predict the topic of discussion. Remind them that each topic area has essential vocabulary words.
- b) Have students sort the words according to part of speech; add other common forms (e.g., manipulate [verb]— manipulation [noun]). If desired, also sort them into positive, negative, and neutral words.

Language Features

Vocabulary

For Word Splash: biotechnology, manipulate, gene, genetic, engineering, crops, combination, breed, livestock, traits, select, alter, DNA, modify, resistant, create, species, cloning, diversity, risk, label, potential, tamper, controversy, dilemma

- c) Ask students to complete **Handout 3-18:** “Biotechnology Attitudes Survey.”
- d) Discuss the meaning of any questions as necessary, but avoid discussing the issues at this time.
Students keep the Handout for later discussion.

Language Features

Discourse Features

survey format

Academic Language Functions

reading critically

Optional

“The Basics and Beyond” website features interactive tutorials on DNA and genetic manipulation that can be downloaded. It can be used to enrich students’ background knowledge. It offers animations and text concerning various aspects of genetics.

Student Learning Tasks

Teacher Notes and References

- a) Predict the topic of discussion based on the words in the Word Splash. **(I)**
- b) Sort the words according to part of speech; add other common forms. **(C)**

c) Complete **Handout 3-18: “Biotechnology Attitudes Survey.”** **(I)**

d) Discuss the meaning of any questions as necessary. **(C)**

If required, read the tutorials on DNA.



Handout 3-18: “Biotechnology Attitudes Survey”



Students will be reading and discussing different viewpoints; emphasize the responsibility of the reader to actively question and weigh all alternatives.



Many applications of scientific knowledge are very controversial, and biotechnology is no exception. When we read or hear discussions or reports about a controversial topic, it’s important to read and listen critically.



Internet Resource: “The Basics and Beyond” at: <http://gslc.genetics.utah.edu/units/basics/>



The readings in this lesson contain many different reporting verbs. Compile a list on the board as you encounter them in context. Note the attitude towards the speaker or information that each verb implies.

Outcomes	Instructional and Learning Sequence
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SLO 6.1.1 Use advanced organization...

SLO 6.1.5 Use selective attention...

SLO 1.1 Engage with increasingly difficult oral and/or visual texts...

SLO 1.4 Show an awareness of organizational patterns...

SLO 1.6 Interpret a range of texts...

SLO 2.3.2 Demonstrate increasing awareness of... rhetorical forms...

SLO 5.6 Evaluate texts...

SLO 6.23 Use grouping of items to classify...

Sequence 2

Introduction

Use the article **Handout 3-19: “Genetic Engineering—Introduction”** or one of your choice in a science textbook as a reading assignment.. The article should include the related ethical and social dilemmas.

The questions here are based on the Handout 3-19 article, but may be adapted to fit a different one. The stress is on critical reading skills: distinguishing viewpoints and following thought flow.

- a) Explain the context of the article (see Teacher Notes and References column).
- b) Preview the introduction and subheadings. What will be the main ideas of this article? What do you expect to read in each named section? Why does the reader always need to watch for possible bias in a current topic like this one?

Naming: Note the use of reporting verbs that communicate attitudes and colour the reader’s beliefs (see Language Features column).

How does the discussion of names reflect different beliefs about the technology?

Ethics: Using two columns, have students list the arguments for and against genetic engineering. Find the discourse markers that move the reader between the arguments.

OR

Cut apart the paragraphs in the section and have students reassemble them using text cues.

Overall, do you think there is a bias for or against the technology expressed here? How have the multiple contributors developed a balance of views?

Language Features

Discourse Features

The readings in this lesson contain many different reporting verbs. Compile a list on the board as you encounter them in context. Note the attitude towards the speaker or information that each verb implies.

Examples of reporting verbs: admit, concur, question, object to, report, argue, explain, cite, propose, suggest, insist, claim, announce, stress, add, complain, state, call for

The usual pattern in English sentences is to move from given or known information to new information. The known information often appears as the complete subject, with the new information forming the complete predicate.

discourse markers of attitude

Academic Language Functions

reading critically

detecting point of view

Student Learning Tasks

Think about and predict what the article will address based on the preview questions for **Handout 3-19**: “Genetic Engineering—Introduction.” **(I)**

Using two columns, list the arguments for and against genetic engineering. Find the discourse markers that move the reader between the arguments. **(I)**

OR

Reassemble paragraphs using text cues. **(G)**

Discuss whether there is a bias for or against the technology expressed in the article. **(C)**

Teacher Notes and References



Handout 3-19: “Genetic Engineering—Introduction”



Students will be reading and discussing different viewpoints; emphasize the reader’s responsibility to actively question and weigh all alternatives.

Internet Resource: Wikipedia: The Free Encyclopedia at: <www.wikipedia.org>
Wikipedia: The Free Encyclopedia is a unique, freely available online information source in an encyclopedia format. One of its distinguishing characteristics is that it is open for anyone to contribute and edit; therefore, articles are only as accurate as the contributors have made them. The wiki community (wiki—pronounced “wickie” or “weekee”) has safeguards against wild inaccuracy and vandalism built into its protocol, and often articles, as they go through the editing process, become very informative and well-balanced. However, there is controversy in the academic world as to whether anything in Wikipedia should be considered authoritative. Articles contain extensive links to other Wikipedia entries, and there are areas built in to discuss the article and to see the history of the entry. This is an excellent context for students to practise critical reading skills. The learning experience here could be extended to students creating their own Wikipedia contributions.

The contents are “copyleft”; that is, they “can be copied, modified, and redistributed as long as the new version grants the same freedoms to others and acknowledges the authors of the Wikipedia article used” (by a direct link).

Optional: If students have computer access, view the discussion behind this page. (Note: POV= point of view; NPOV= neutral point of view). Discuss how the contributors have attempted to reshape the article according to their understandings and viewpoints.

Outcomes

SLO 2.1 Show sufficient control over linguistic structures...

SLO 2.3 Produce a variety of short and extended text forms...

SLO 6.1.2 Use organizational planning...

SLO 6.1.4 Use functional planning...

SLO 6.2.8 Use imagery in the form of mental or actual pictures...

SLO 6.2.11 Use transfer...

SLO 1.4 Show awareness of organizational patterns...

SLO 6.1.5 Use selective attention...

SLO 6.1.6 Use self-monitoring to check...

SLO 6.1.7 Use problem identification...

SLO 6.1.8 Use self-evaluation to check...

SLO 6.2.1 Use resourcing to access...

SLO 6.2.5 Use deduction and induction...

SLO 6.2.12 Use inferencing to guess the meanings...

Instructional and Learning Sequence

Writing Task

Have students write a short paragraph about a plant-animal combination they would like to see, making sure that each sentence connects with the previous one, and that each moves from given to new information.

Language Features	Structures
	use of articles (review)
	Discourse Features
	given to new pattern
	cohesive devices

Ask students to look at the chart on **Handout 3-20**: “Genetic Engineering: Thought Flow Exercise,” which is a set of jumbled sentences from a two-paragraph passage from **Handout 3-19**: “Genetic Engineering—Introduction.”

Using the clues in the sentences themselves, find sentence 1 of the first paragraph and draw an arrow to connect it to the second. Continue to sequence the sentences. What clues (discourse markers) help you? Where should the paragraph division be placed?

With the reassembled paragraph, discuss the pattern of given–new as it relates to other sentences in the reading.

Language Features	Academic Language Features
	moving from given to new information
	following the flow of text

Student Learning Tasks**Teacher Notes and References****Assignment**

Write a short paragraph about a plant-animal combination you would like to see. (I)

Look at the chart of jumbled sentences. Find sentence 1 of the first paragraph and draw an arrow to connect it to the second. Continue sequencing the sentences. (I)



Handout 3-19: “Genetic Engineering—Introduction”

Handout 3-20: “Genetic Engineering: Thought Flow Exercise”



The usual pattern in English sentences is to move from given or known information to new information. The known information often appears as the complete subject, with the new information forming the complete predicate.

Outcomes

SLO 1.1 Engage with increasingly difficult oral and/or visual texts...

SLO 1.2 Respond to texts with increasing independence...

SLO 1.3 Develop and express a personal position in a variety of ways...

SLO 1.4 Show an awareness of organizational patterns...

SLO 4.1 Use language to encourage...

SLO 4.5 Experience and consider academic texts...

SLO 4.6 Respond to and critique a variety of individual perspectives

SLO 5.6 Evaluate texts...

SLO 6.23 Use grouping of items to classify...

SLO 6.2.4 Use note taking...

SLO 6.2.7 Use elaboration...

SLO 1.6 Interpret a range of texts...

SLO 3.1 Seek, organize, and synthesize information...

SLO 3.2 Develop and implement a plan for researching...

SLO 4.5 Experience and consider academic texts...

SLO 5.6 Evaluate texts...

SLO 6.2.1 Use resourcing to access...

SLO 6.2.12 Use inferencing to guess the meanings...

Instructional and Learning Sequence

Sequence 3

Discuss with the class the need to consider WHO says WHAT and TO WHOM when reading any type of informative writing, but especially when it is about something controversial.

Exercise 1

Reading critically. Explain to the class that they will be reading excerpts from different reports about genetically modified GM foods.

- a) Read one excerpt as a group and fill in the chart with information from the article. Discuss findings, focusing on the words that communicate attitude (tone).
- b) Read the other excerpts individually or together, and continue to fill in the chart.

Language Features	Academic Language Functions
	reading critically
	reading to determine main idea considering audience, purpose, context

Exercise 2

Read an abstract. **Handout 3-21: “GM Foods—The Debate”** consists of abstracts drawn from a number of sources. Examine the format. What information do they give? Using the WHO, to WHOM, and WHAT model, determine the probable attitude of each article towards GM foods.

Language Features	Discourse Features
	form of an abstract
Language Features	Academic Language Functions
	using key words to search a database
	narrowing search terms
	reading as abstract determining writer’s attitude

Student Learning Tasks

- a) Read one excerpt as a group. Fill in the chart. Discuss findings. **(6)**
- b) Read the other excerpts individually or together, and continue to fill in the chart. **(1) (6)**

Read **Handout 3-21**: “GM Foods—The Debate” and determine the probable attitude of each article covered using the “Who, What, and to Whom” model.

Teacher Notes and References



Provide students with other readings on GM foods. Find several short reports, either online or in magazines, of news and developments in GM foods. Be sure to include a variety of perspectives and audiences.

Is the report written from a first-hand perspective? Is it a research article written by scientists for other scientists? Is it written by scientists for the general public? Is it rewritten by a reporter for a popular publication (and does that publication have a stand)? Is it written by or for an organization that supports one side or another? Writers and readers do not always have the same goal—the critical reader is alert to the factors that may affect the transmission of information. It is important to read more than one point of view on an issue, if possible. A discussion could link to the concept of primary and secondary sources.



Handout 3-21: “GM Foods—The Debate”



When you are researching a topic, you may use a database or an index of publications. These may be general or specialized. Using your key words, you may find many more references than you can use. How do you narrow your search? The abstract or summary of an article should give you the topic, purpose, scope, and content of the writing. “Descriptive” abstracts do not give the conclusions or recommendations of the article, while “informative” abstracts do.

You should be able to discern the writer’s attitude about the topic from the abstract.

Outcomes	Instructional and Learning Sequence
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SLO 2.1 Show sufficient control over linguistic structures...

SLO 3.1 Seek, organize, and synthesize information...

SLO 3.3 Quote from or refer to sources...

SLO 6.1.2 Use organizational planning...

SLO 6.1.4 Use functional planning...

SLO 6.2.13 Use recombination...

SLO 1.5 Examine and interpret various visual media...

SLO 5.1 Identify common themes and symbols...

SLO 6.2.8 Use imagery in the form of mental or actual pictures...

SLO 6.2.12 Use inferencing to guess the meanings...

Writing Task

Have students write a paragraph that compares several different viewpoints on GM foods as reflected in the readings or the abstracts. Use several of the reporting verbs listed in this lesson.

Language Features	<p>Discourse Features</p> <ul style="list-style-type: none"> expressions of comparison use of reporting verbs
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Viewing

Have students examine political cartoons about genetics. Discuss: How do cartoons help express the public's concerns?

Student Learning Tasks**Teacher Notes and References****Assignment**

Write a paragraph that compares several different viewpoints on GM foods as reflected in the readings or the abstracts. **(I)**

Examine political cartoons about genetics. How do cartoons help express the public's concerns? **(C)**

**Appendix 11: How to Analyze Editorial Cartoons**

Political cartoons on the topic of genetic engineering (teacher-provided); possible source: <<http://cagle.slate.msn.com/politicalcartoons/CanadaTour/main.asp>>. Search under “Topics” for “Genome.”

Outcomes

SLO 1.2 Respond to texts with increasing independence...

SLO 5.4 Show understanding of the effect of cultural background...

SLO 6.2.2 Use repetition to imitate a language model...

SLO 6.2.7 Use elaboration...

SLO 6.2.12 Use inferencing to guess the meanings...

SLO 1.3 Develop and express a personal position in a variety of ways...

SLO 2.1 Show sufficient control over linguistic structures...

SLO 2.3 Produce a variety of short and extended text forms...

SLO 4.3 Use clear and respectful language...

SLO 5.2 Analyze and use the appropriate level of formality...

SLO 6.1.4 Use functional planning...

SLO 6.1.6 Use self-monitoring to check...

SLO 6.3.2 Use co-operation...

SLO 2.4 Use the steps of the writing process...

SLO 4.1 Use language to support..

SLO 6.1.4 Use functional planning...

SLO 6.1.6 Use self-monitoring to check...

SLO 6.2.7 Use elaboration...

Instructional and Learning Sequence

Optional Reading

Follow the instructions in the Teacher Notes and References column to prepare a short article of your choice on GM foods that uses some of the vocabulary previously introduced.

Ask students to read the article independently, noting the words in bold, and then complete a gapfill exercise.

Note: Readings that discuss activities around GM foods in the students' country of origin will be especially relevant. The goal is to recycle vocabulary.

Language Features

Vocabulary

academic words from the selected article

Optional Speaking

Have students informally debate GM foods.

Optional Extension

Students work in groups to design an informational brochure about an application of biotechnology that is used in food production in their home country or Canada.

Language Features

Discourse Features

expressions of agreement/ disagreement/concession
brochure design

Roundup

Have students write a paragraph in their journal, expressing their personal opinion on GM foods.

Learning Log

Name and describe one learning strategy you used successfully in this lesson.

Student Learning Tasks

Read independently, noting the words in bold, then complete a gapfill exercise based on the text. **(I)**

Informally debate GM foods. **(G)**

OR

Work in groups to design an informational brochure about an application of biotechnology that is used in food production in your country of origin or Canada. **(G)**

Assignment

Write a paragraph in your journal, expressing your personal opinion on GM foods. **(I)**

In a Learning Log, describe one learning strategy you used successfully in this lesson. **(I)**

Teacher Notes and References

A recent, short article on GM foods that uses some of the vocabulary previously introduced (teacher-provided). Prepare a version with academic words highlighted and a gapfill exercise by using the tools at “Using the Academic Wordlist” [<www.nottingham.ac.uk/~alzsh3/acvocab/>](http://www.nottingham.ac.uk/~alzsh3/acvocab/) or “Compleat Lexical Tutor” at: [<www.lextutor.ca/>](http://www.lextutor.ca/) (choose the Vocabprofile).

Arguments for and against GM foods may be found at Wikipedia, at: www.wikipedia.org.

Biotechnology Attitudes Survey

On a scale of 1 to 4, mark your response to each statement.

Strongly agree	Agree	Disagree	Strongly disagree
1	2	3	4

a) Farmers have been doing genetic engineering for thousands of years as they breed traits they want in crops and livestock.	1	2	3	4
b) The potential danger in genetic engineering is far greater than the danger of using chemicals in agriculture.	1	2	3	4
c) Foods that contain genetically modified ingredients should be clearly labelled.	1	2	3	4
d) Genetic engineering may decrease the diversity of plant and animal species.	1	2	3	4
e) Improvements in food production achieved through biotechnology could help feed millions of hungry people.	1	2	3	4
f) It's acceptable to change genes between plant species and between animal species, but scientists should not change genes between plants and animals.	1	2	3	4
g) Scientists should not try to change the genes of human beings.	1	2	3	4
h) If I had a serious disease that could be treated by injecting me with genetic material from a frog, I would let the doctors treat me.	1	2	3	4
i) It would be acceptable to choose the characteristics of our children through genetic engineering, if it were possible.	1	2	3	4
j) Biotechnology research should be controlled by the government.	1	2	3	4

Genetic Engineering—Introduction

Genetic engineering, genetic modification (GM), and gene splicing (once in widespread use but now deprecated) are terms for the process of manipulating genes in an organism, usually outside of the organism's normal reproductive process.

It often involves the isolation, manipulation, and reintroduction of DNA into model organisms, usually to express a protein. The aim is to introduce new genetic characteristics to an organism to increase its usefulness, such as increasing the yield of a crop species, introducing a novel characteristic, or producing a new protein or enzyme. Examples are the production of human insulin through the use of modified bacteria and the production of new types of mice like the OncoMouse (cancer mouse) for research, through genetic redesign.

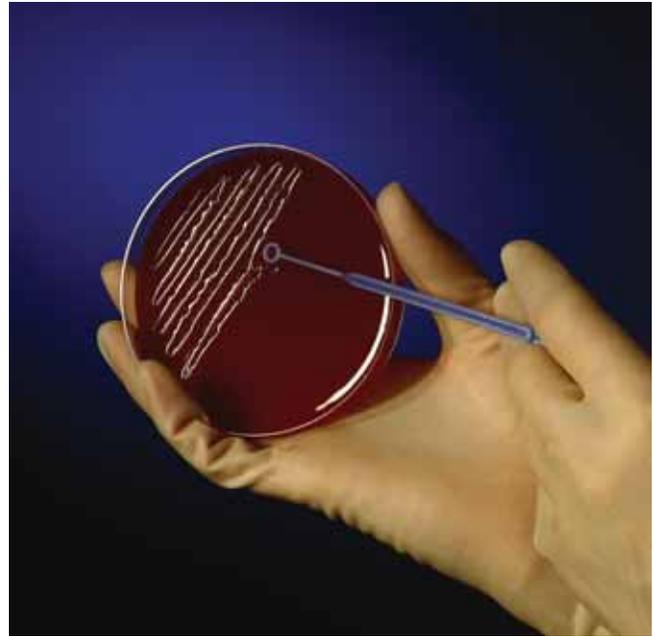
Since a protein is specified by a DNA segment or gene, future copies of that protein can be modified by changing the gene's underlying DNA. One way to do this is to isolate the DNA, cut it, and splice in a different DNA segment. Daniel Nathans and Hamilton Smith received the 1978 Nobel Prize in physiology or medicine for their isolation of restriction endonucleases, which are able to cut DNA at specific sites. Together with ligase, which can join together fragments of DNA, restriction enzymes formed the initial basis of recombinant DNA technology.

Naming

Genetic modification or genetic manipulation are claimed to be neutral and possibly more technically correct terms for what is claimed, controversially, to be genetic engineering. Opponents question whether the concept of "modification," with its implications of progress, are applicable here.

Many opponents of the use of the term "genetic engineering" argue the operations of genes in combination with cell biochemistry are rather poorly understood and sometimes lead to unexpected side effects.

Reluctance to recognize this field as "engineering" has become popular in the anti-globalization movement and safe trade movement, and is also widely held by most Green parties, and the major



parties of France and Germany, which have resisted any agricultural policy favouring genetically modified food. These groups tend to resist the label "engineer" as applied to such genetic modification most strongly.

Defenders of the term "genetic engineering" argue that animal husbandry and crop breeding are also forms of genetic engineering that use artificial selection instead of modern genetic modification techniques. It is politics, they argue, not economics or science, that causes their work to be closely investigated, and for different standards to apply to it than to other fields of engineering. These scientists, however, do not object to the term "genetic modification" as applied to what they do, although it is sometimes used to deny them the status of professionals serving society in an ethical manner, which is one implication of the term engineer.

The term "genetic engineering" is sometimes informally abbreviated as "genengineering."

Ethics

Genetic engineering proponents argue that the technology is not harmful and necessary for food production to continue to match population growth. However, some argue that it's not a problem of food production but of food distribution, and that the population growth is actually a result of uneven distribution of food (and wealth). *(continued)*

Source: <http://en.wikipedia.org/wiki/Genetic_engineering>. This article is licensed under the <<http://www.gnu.org/copyleft/fdl.html>> GNU Free Documentation License.

Genetic Engineering Introduction (continued)

Others oppose genetic engineering on the grounds that genetic modifications may have unforeseen consequences, both in the initially modified organisms and their environments. For example, certain strains of maize have been developed that are toxic to plant-eating insects (e.g., bt corn). However, when those strains cross-pollinated with other varieties of wild and domestic maize, the relevant genes were passed on in unintended ways. This modified the very gene pool from which the maize was derived.

Anti-genetic-engineering groups propose that genetic releases such as this represent the opening of a Pandora's box which may ultimately accelerate the collapse of the modern system of agriculture, decreasing rather than increasing the food supply. They say that with current recombinant technology there is no way to ensure that genetically modified organisms remain under control, and the use of this technology outside of secure laboratory environments carries grave risks for the future.

Many also fear that certain types of genetically engineered crops will enable the elimination of all biodiversity in the cropland; herbicide-tolerant crops will for example be treated with the relevant herbicide to the extent that there are no wild plants ("weeds") able to survive, and plants toxic to insects will mean insect-free crops. This could result in major declines in other wildlife (e.g., birds), which depend on weed seeds and/or insects for food resources. The recent (2003) farm scale studies in Britain found this to be the case with GM sugar beet and GM oilseed rape, but not with GM maize (though in the last instance, the non-GM comparison maize crop had also been treated with environmentally damaging pesticides subsequently [2004] withdrawn from use in the EU).

Proponents of current genetic techniques as applied to food plants cite the benefits that the technology can have, for example, in the harsh agricultural conditions of third world countries. They say that with modifications, existing crops would be able to thrive under the relatively hostile conditions, providing much needed food to their people. While submitting that precautions should be made to ensure that any modified crops are contained, they say that their genetically engineered crops are not significantly different from those modified by nature or humans in the past, and by extension are not dangerous to other crops. The expansion of new croplands into areas currently too harsh to grow crops is also likely to have deleterious effects on the wildlife currently using these uncultivated areas. There is gene transfer between unicellular eukaryotes and prokaryotes. There have been no known genetic catastrophes as a result of this.

Economic and Political Effects

Many opponents of current genetic engineering believe the increasing use of GM in major crops has caused a power shift in agriculture towards biotechnology companies gaining far greater control over the production chain of crops and food than any previous industry, and over the farmers that use their products, as well.

Many proponents of current genetic engineering techniques believe it will bring higher yields and profitability to many farmers, especially those in third world countries.

In April 2004 Hugo Chávez announced a total ban on genetically modified seeds in Venezuela.

Genetic Engineering: Thought Flow Exercise

Start with sentence 1 and draw an arrow to connect the other sentences in the correct order. Underline the discourse markers that refer back to previous sentences or ideas. Compare your sequence with the original.

<p>However, some argue that it's not a problem of food production, but of food distribution.</p> <p>However, when those strains cross-pollinated with other varieties of wild and domestic maize, the relevant genes were passed on in unintended ways.</p> <p>And that the population growth is actually a result of the uneven distribution of food (and wealth).</p> <p>Others oppose genetic engineering on the grounds that genetic modifications may have unforeseen consequences, both in the initially modified organisms, and their environments.</p>	<p>For example, certain strains of maize have been developed that are toxic to plant-eating insects.</p> <p>Genetic engineering proponents argue that the technology is not harmful and is necessary for food production to continue to match population growth.</p> <p>This modified the very gene pool from which the maize was derived.</p>
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WHO	to WHOM	WHAT	COMMENT

GM Foods—The Debate

Scan the following abstracts taken from EBSCO, a research database. For each one, determine the main idea about GM foods in the article and how the ideas are developed. Which articles would be useful if you wanted to argue for or against GM foods? Does the WHO and TO WHOM affect the WHAT?

Note: The words **GM** and **foods** are in bold because those were the search terms used.

Note: The *Lancet* is a British medical journal.

Title:	Europe imposes strict GM-food laws.
Subject(s):	<u>GENETICALLY modified foods—Government policy</u> ; <u>LABELS—Law & legislation</u> ; <u>COMMERCIAL policy</u> ; <u>CONSUMER protection—Law & legislation</u> ; <u>PRODUCT safety</u> ; <u>TRADE regulation</u> ; <u>FOOD law & legislation</u> ; <u>EUROPEAN Parliament</u>
Source:	<u>Lancet</u> , 7/12/2003, Vol. 362 Issue 9378, p135, 2/3p, 1c
Author(s):	<u>Bosch, Xavier</u>
Abstract:	Reports that the European Parliament approved two proposals that established a system to trace and label food and feed products made with genetically modified ingredients. Argument of environmental groups that there is no evidence showing genetically modified foods are safe in the long-term; Reaction of the U.S. government; Praise of the Parliament's decision by Greenpeace.

Note: *New Scientist* is a British magazine that reports science developments to the educated public.

Title:	UN is slipping modified food into aid.
Author(s):	<u>Pearce, Fred</u>
Source:	<u>New Scientist</u> ; 9/21/2002, Vol. 175 Issue 2361, p5, 3/4p, 1c
Document Type:	Article
Subject(s):	<u>GENETICALLY modified foods</u> <u>FOOD relief</u> <u>UNITED Nations.—World Food Program</u> <u>DROUGHTS</u>
Abstract:	Focuses on the genetically modified food (GM) serving as emergency aid from the United Nations World Food Program. Countries receiving the aid; Allegations that the U.S. is exploiting the drought in Southern Africa to drum up markets for its unsold GM maize and soya; Rejection of Zambian president Levy Mwanawasa on the GM food aid.

(continued)

GM Foods—The Debate (continued)

Note: The World Health Organization is a United Nations agency.

Title:	<i>UN to help developing countries assess safety of GM crops.</i>
Author(s):	<u>Hagmann, Michael</u>
Source:	<u>Bulletin of the World Health Organization</u> ; 2002, Vol. 80 Issue 4, p336, 3p
Document Type:	Article
Subject(s):	<u>GENETICALLY modified foods</u> <u>HEALTH risk assessment—Developing countries</u> <u>UNITED Nations—Environmental policy</u> <u>AGRICULTURAL biotechnology—Developing countries</u>
Abstract:	Reports on the attempts of the Nairobi, Kenya-based United Nations Environmental Program to <i>help developing countries assess</i> the <i>safety</i> of genetically modified (<i>GM crops</i>). Principles of risk assessment for <i>GM</i> foods; Application of agricultural biotechnology to reduce world poverty; Increase in public investment in poverty-oriented agricultural research.

Note: What does the title of the following publication imply? What do you think the title of the article is trying to say?

Title:	<i>Pharming</i>
Subject(s):	<u>GENETICALLY modified foods</u> ; <u>FOOD—Health aspects</u> ; <u>AGRICULTURAL innovations</u>
Source:	<u>Canada & the World Backgrounder</u> , Mar2002, Vol. 67 Issue 5, p21, 6p, 1bw
Abstract:	Deals with the proliferation of genetically modified (<i>GM</i>) crops or <i>foods</i> around the world. Percentage of store-bought processed-foods with <i>GM</i> components in Canada; Arguments advanced by companies on the negative effect of switching back to conventional seeds; Health problems associated with GM food; Extent of consumer movement against <i>GM foods</i> . INSET: ACCIDENTS DO HAPPEN.

Note: *Hydrocarbon Processing* is a magazine for the petrochemical processing industry. What interest might its members have in this discussion?

Title:	<i>UN to help developing countries assess safety of GM crops.</i>
Author(s):	<u>Whetton, Cris</u>
Source:	<u>Hydrocarbon Processing</u> ; Jun99, Vol. 78 Issue 6, p119, 5p, 1bw
Document Type:	Article
Subject(s):	<u>TRANSGENIC plants</u> <u>FOOD—Health aspects</u> <u>GREAT Britain</u>
Abstract:	Comments on the British public's concerns about genetically modified (<i>GM foods</i>). Role of activist groups, environmentalists and mass media in popularizing adverse information about <i>GM foods</i> ; Lack of proof that the risks of eating <i>GM foods</i> are any greater than the risks of eating unmodified <i>foods</i> such as eggs, pork, rhubarb and potatoes.

(continued)

GM Foods—The Debate (continued)

Note: Who is the intended audience for this article?

Title:	Effect of diets containing genetically modified potatoes expressing Galanthus nivalis lectin on rat small intestine.
Subject(s):	<u>TRANSGENIC plants</u> ; <u>POTATOES—Genetic engineering</u> ; <u>LECTINS—Physiological effect</u> ; <u>GASTROINTESTINAL system</u>
Source:	<u>Lancet</u> , 10/16/99, Vol. 354 Issue 9187, p1353, 2p, 2 charts
Author(s):	<u>Ewen, Stanley W.B.</u> ; <u>Pusztai, Arpad</u>
Abstract:	Diets containing genetically modified (GM) potatoes expressing the lectin Galanthus nivalis agglutinin (GNA) had variable effects on different parts of the rat gastrointestinal tract. Some effects, such as the proliferation of the gastric mucosa, were mainly due to the expression of the GNA transgene. However, other parts of the construct or the genetic transformation (or both) could also have contributed to the overall biological effects of the GNA- GM potatoes, particularly on the small intestine and caecum. [ABSTRACT FROM AUTHOR]

Note: *Consumers' Research Magazine* is a Canadian independent magazine that offers practical advice to the general public.

Title:	Biotech Foods : Right to Know What?
Subject(s):	<u>FOOD—Labeling</u> ; <u>UNITED States.—Food & Drug Administration—Rules & practice</u> ; <u>UNITED States</u>
Source:	<u>Consumers' Research Magazine</u> , Oct99, Vol. 82 Issue 10, p10, 5p
Author(s):	<u>Spencer, Peter</u>
Abstract:	Discusses the labeling of genetically modified (GM) <i>foods</i> in the United States. Definition of extra ingredients in <i>food</i> ; Reason for the clamor on the widespread and growing use of biotech-derived corn and soy ingredients in <i>food</i> products; Key factors behind the labeling mandates of the United States Food and Drug Administration.

Note: *Nation* is a U.S. news magazine, generally on the left politically.

Title:	GM 'Assistance' for Africa.
Subject(s):	<u>GENETICALLY modified foods</u> ; <u>AGRICULTURE & state</u> ; <u>FOOD—Biotechnology</u> ; <u>HUMANITARIAN assistance, American</u> ; <u>FOOD relief</u> ; <u>EXPLOITATION</u>
Source:	<u>Nation</u> , 8/4/2003-8/11/2003, Vol. 277 Issue 4, p7, 2p
Author(s):	<u>Kanoute, Amadou</u>
Abstract:	The author asserts that the administration of United States President George W. Bush is promoting biotechnology in Africa in order to provide so-called development assistance for U.S. farmers and to create new markets and business opportunities for U.S. agricultural businesses, but not, as it stated, to aid Africans. In late June, 2003 Bush spoke of Africa as a famine-stricken continent where the people are unable to grow enough <i>food</i> for themselves. According to the President, African farmers need biotechnology—and therefore should give a warm welcome to GM (genetically modified) seeds and <i>foods</i> supplied by U.S. agribusiness. (These announcements

(continued)

GM Foods—The Debate (continued)

	<p>coincided with the U.S. decision to proceed with a World Trade Organization suit against the European Union on genetically modified <i>foods</i>.) Bush’s assumptions are not accurate. Of course, some Africans are starving and many are chronically, poor, sick and hungry. But most Africans manage well in a difficult situation—growing crops that are adapted to their environment, with limited technology. Africans need many things to improve their lives—but biotechnology agriculture is not one of them. The insistence on using genetically modified (<i>GM</i>) corn as <i>food</i> aid rather than giving untied funds illustrates that “development assistance” is aimed at U.S. farmers rather than African needs. Unable to sell <i>GM</i> crops in the wider market, the United States prefers to subsidize surplus output as “<i>food</i> relief.” <i>GM</i> seed varieties have been of marginal benefit to American farmers, so they are likely to be even less beneficial in Africa, where around 70 percent of farmers are small-scale producers, saving seed from year to year. The challenge for African governments is to regulate and control the introduction of <i>GM food</i> and to adopt high standards of safety for <i>GM</i> products.</p>
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Note: The *Economist* is a general news magazine out of Great Britain.

Title:	Far less scary than it used to be.
Subject(s):	<u>GENETICALLY modified foods; PUBLIC opinion; CROPS—Genetic engineering; PLANT genetic engineering; FOOD—Safety measures</u>
Source:	<u>Economist, 7/26/2003, Vol. 368 Issue 8334, p23, 3p, 2 graphs, 2c</u>
Abstract:	<p>In Rochford, east of London, two dozen people gathered recently to discuss their hopes and fears about genetically modified (<i>GM food</i>). The assembled housewives, pensioners and farmers listened politely to a handful of guest speakers, and then they fired off questions: How can you be sure that <i>GM food</i> is safe to eat? The meeting in Rochford was one of more than 450 public gatherings in a month-long consultation exercise called “<i>GM Nation?</i>”. The exercise, which ended last week, is only one of several studies commissioned by the British government. Earlier this month, the Cabinet Office, a government department, published an assessment of the costs and gains of Britain embracing, or rejecting, <i>GM</i> agriculture. This week, a group led by the government’s chief science adviser published a review of the scientific evidence of the risks and benefits of <i>GM</i> crops. The last time Britain saw such a flurry of interest in <i>GM food</i> was in 1999, when a series of events turned much of the population against “Frankenfoods” and drove the stuff from supermarket shelves. At issue are two broad types of genetic modification, which account for 99% of the almost 59m hectares of <i>GM</i> crops in commercial cultivation. One, called Bt, takes a gene from a bacterium and puts it in plants to give them resistance to certain insects without the use of chemical pesticides. The other uses genes also from bacteria and gives plants resistance to particular herbicides, such as glyphosate.</p>



Topic 5B
**Biotechnology:
Spider Silk**

(1 lesson)

This lesson revisits the idea of learning from nature. Students practise listening for main ideas and details, and synthesizing information to write a summary of a topic.

Outcomes	Instructional and Learning Sequence
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- SLO 4.1** Use language to encourage...
- SLO 6.2.7** Use elaboration...

- SLO 1.1** Engage with increasingly difficult oral and/or visual texts...
- SLO 1.2** Respond to texts with increasing independence...
- SLO 2.1.4** Refine pronunciation to increase intelligibility...
- SLO 6.1.4** Use functional planning...
- SLO 6.1.5** Use selective attention...
- SLO 6.1.6** Use self-monitoring to check...
- SLO 6.2.2** Use repetition to imitate a language model...
- SLO 6.2.4** Use note taking...

Sequence 1

Activation

Review the article from Topic 2: “Peter Parker’s Alter Ego,” and discuss scientists’ efforts to duplicate nature. What other abilities did Spider-man have? (could spin a web) Ask students what they know about spiderwebs.

Listening and reading aloud: **Handout 3-22:** “GM Spider Silk Spun by Canadian Company.” Pre-teach any necessary vocabulary with pronunciation.

- a) Read the article aloud as an item for news broadcast. Read once for main ideas; read a second or third time for students to listen and take notes on Who, What, Where, When, and Significance, and then check with written copy. Underline the important facts in this article with a coloured pen.
- b) Optional speaking: Students practise reading portions of the article aloud, paying particular attention to the stress on content words and to final sounds.

Language Features	Vocabulary
	spin, web, silk, sutures, armour, cultures (growth medium), domestication, mimicking, Holy Grail, aqueous, biodegradable, BioSteel®, protein, fibres, squeeze, udder, exclusive, fund, inserted, issue, journal, licence, medical, military, modified, process
	Pronunciation
	stress on content words, final sounds
	Academic Language Functions
	listening for main ideas

Student Learning Tasks**Teacher Notes and References**

Discuss what you already know about spiderwebs.

- a) Listen and take notes on Who, What, Where, When, and Significance, as the teacher reads **Handout 3-22**: “GM Spider Silk Spun by Canadian Company.”
- b) Underline the important facts in this article with a coloured pen.

Optional Task

Practise reading portions of the article aloud, paying particular attention to the stress on content words.



Handout 3-22: “GM Spider Silk Spun by Canadian Company”

Optional listening: CBC *Quirks and Quarks* radio broadcast “Artificial Spider Silk,” available as MP3 at:
<<http://radio.cbc.ca/programs/quirks/archives/01-02/jan1902.htm>>

Outcomes

SLO 1.2 Respond to texts with increasing independence...

SLO 1.5 Examine and interpret various visual media...

SLO 2.3 Produce a variety of short and extended text forms...

SLO 3.1 Seek, organize, and synthesize information...

SLO 3.3 Quote from or refer to sources...

SLO 6.1.2 Use organizational planning...

SLO 6.2.8 Use imagery in the form of mental or actual pictures...

SLO 6.2.9 Use summarization...

Instructional and Learning Sequence

Reading and Writing Task

Students read “Genetically Altered Goats Produce Spider Silk” (see Teacher Notes and References) and examine **Handout 3-23: “The History of Spider Silk”** (the chart that follows), and then reread the first article, **Handout 3-22: “GM Spider Silk Spun by Canadian Company.”**

Students then write a 250-word summary of the essential information from the two readings and the chart.

Assist students, if necessary, to combine the information from the two readings and the chart. Decide which facts are important and which are just interesting. If desired, use the opportunity to practise in-text documentation of sources according to a recognized style (MLA, APA).

Language Features

Structures

reduction of relative adjective clauses to adjective phrases

Discourse Features

summary

Academic Language Functions

citing sources

synthesizing information from multiple sources

Student Learning Tasks

- a) Read “Altered Goats Produce Spider Silk” and reread the first article (**Handout 3-22**: “GM Spider Silk Spun by Canadian Company”). (I)
- b) Write a 250-word summary of the essential information from the two readings and the chart. (I)

Teacher Notes and References



Handout 3-23: “The History of Spider Silk” (chart)

Internet Resource:

“Genetically Altered Goats Produce Spider Silk” <www.howstuffworks.com/news-item38.html>

Optional Internet Resources: “The Biology of . . . Spider Silk Arachnomania” (the race to synthesize the world’s strongest fibre) at: <www.discover.com/Sept_01/featbiology.htm>

“Biology Fundamentals” (includes a detailed description of the history, characteristics, and potential of bioengineered spider silk) at: <www.nexiabiotech.com/en/03_bio/05.php>

GM Spider Silk Spun by Canadian Company

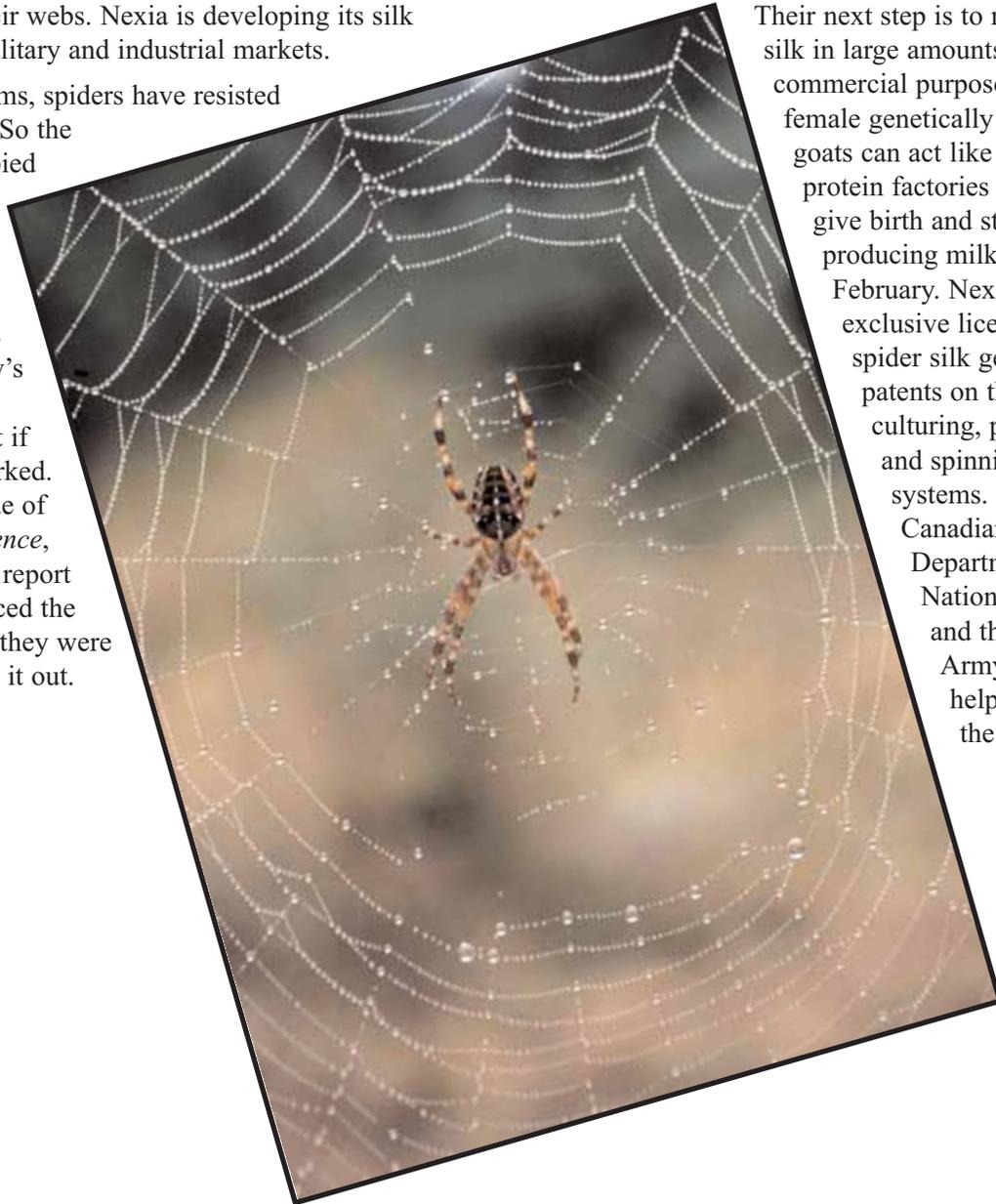
MONTREAL – Genetically modified goats could soon produce milk loaded with spider silk tough enough to be used as body armour yet fine enough for medical sutures. Researchers at Quebec-based Nexia Biotechnologies have produced spider silk in mammalian cell cultures and found a way to spin it.

Spiders produce one of the toughest biological materials in their webs. Nexia is developing its silk for medical, military and industrial markets.

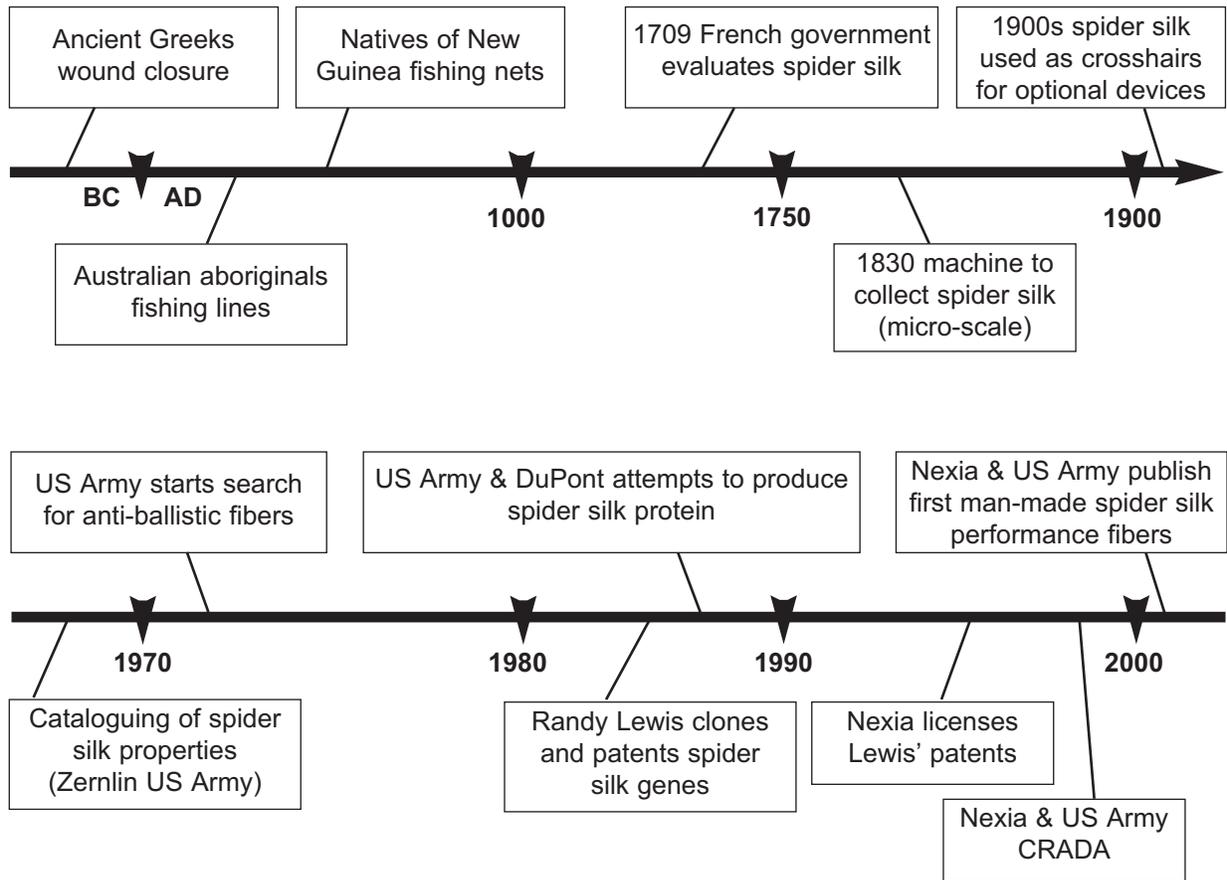
Unlike silkworms, spiders have resisted domestication. So the researchers copied the genes spiders use to make silk and inserted the genes into cells taken from cow's udders and hamsters to test if the process worked. In Friday's issue of the journal *Science*, the researchers report the cells produced the spider silk and they were able to squeeze it out.

Nexia president and chief executive officer Jeffrey Turner calls the product BioSteel®. "Mimicking spider silk properties has been the Holy Grail of material science for a long time and now we've been able to make useful fibres," Turner said in a release. The fine silk proteins were spun from an aqueous solution and are probably biodegradable, Turner said.

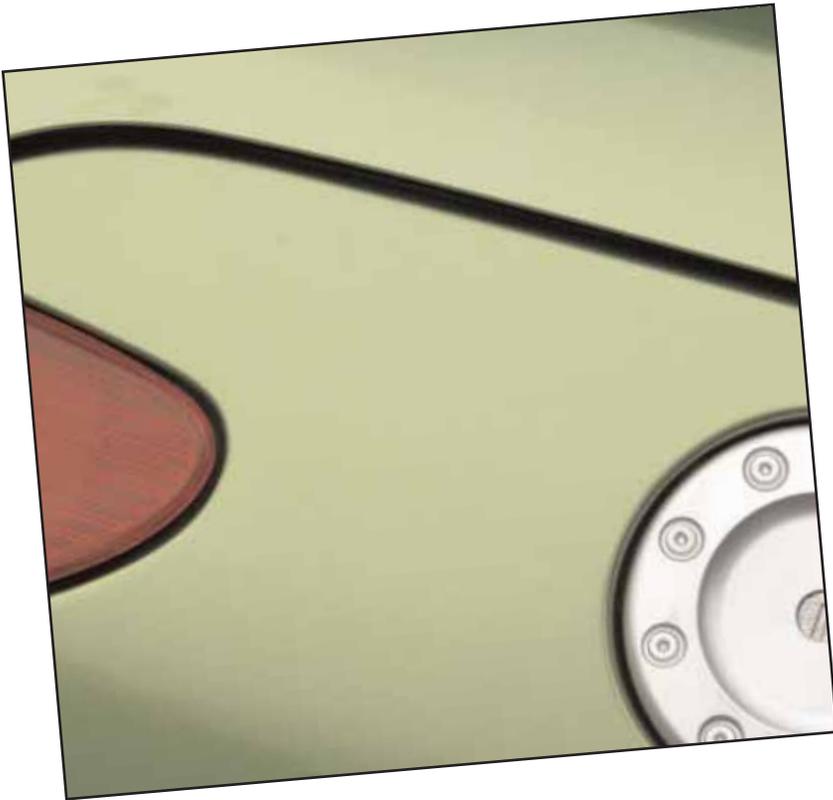
Their next step is to make the silk in large amounts for commercial purposes. The female genetically modified goats can act like silk protein factories when they give birth and start producing milk in February. Nexia has an exclusive licence to the spider silk genes and patents on the culturing, purifying and spinning systems. The Canadian Department of National Defence and the U.S. Army both helped fund the research.



The History of Spider Silk



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Topic 6

Technology and Transportation: To Drive or to Heat, That Is the Question

(1 lesson)

This lesson focuses on technology and transportation in terms of hydrogen-fuel-cell cars. It also connects to the last module by discussing some environmental issues addressed by using the hydrogen cell as an environmentally friendly source of power. Students will read a prediction from the past about electric cars and discuss hydrogen as a possible fuel source. They will listen to an article about cars powered by hydrogen fuel cells as they record point-form notes and questions about the article. Finally, they will create a variety of sentences and

convert them into a short essay with an introduction and conclusion. Some of the other main academic tasks are: listening for key vocabulary; deducing the meanings of unfamiliar words and word groups; selecting relevant information and ignoring irrelevant information; describing similarities and differences; agreeing and disagreeing; making suggestions; using grammatical and lexical cohesive devices in writing, summarizing, planning, and organizing an essay; writing introductions and conclusions; and revising and proofreading.

Outcomes

SLO 1.5 Examine and interpret various visual media...

SLO 2.1.3 Use developing control of grammatical features...

SLO 2.1.4 Refine pronunciation to increase intelligibility...

SLO 4.1 Use language to encourage...

SLO 6.2.5 Use deduction and induction...

SLO 6.2.7 Use elaboration...

SLO 6.2.8 Use imagery in the form of mental or actual pictures...

SLO 6.2.12 Use inferencing to guess the meanings...

SLO 6.3.2 Use co-operation...

Instructional and Learning Sequence

Sequence 1

Activation

This is an active-listening, note-taking, formal writing lesson. The active listening/note-taking portion of the lesson helps students practise skills necessary for taking notes during lectures.

Step 1:

- a) Activate prior knowledge by referring students to the environmental module and the experiment about anthropogenic greenhouse gases emitted by cars. What did they learn about the damage caused to the environment? Introduce the idea of alternate fuel sources, like electricity. Refer to **Handout 3-24**: “Plug in a Car and Give It Some Juice”/Quotation.”
- b) Have one or two students read the article out loud. Point out the fact that, even in the past, people were thinking of ideas that are relevant today.

Step 2:

Ask students if they know of any other alternate fuel sources. (hydrogen) Have one or two students read the quotation by Peter Schwartz and Doug Randall out loud.

- c) Discuss the article. Using the visuals, ask students what they know about hydrogen-cell-fuelled cars. How is hydrogen a friendly alternative to oil and gas? Record all responses and new vocabulary on the board or overhead. In the discussion, try to encourage students to come up with as much of the vocabulary as possible that will help them with the listening activity. Lead them and record vocabulary on the board. Provide necessary vocabulary when you are discussing the visuals. Discuss new key vocabulary. Remember, the new key vocabulary words should be on the board or overhead.

(continued on page 148)

Student Learning Tasks

- a) Discuss the damage to the environment caused by anthropogenic greenhouse gases emitted by cars. (C)

- b) One or two students read **Handout 3-24**: ““Plug In a Car and Give It Some Juice’/Quotation” out loud. (I)

- c) Discuss the article and brainstorm for information about hydrogen-cell-fuelled cars. Note new vocabulary specific to this topic. (C)

Teacher Notes and References



Handout 3-24: ““Plug In a Car and Give It Some Juice’/Quotation”

Appendix 16: How to Write a TQT (Text Questioning Technique) Lesson

Visuals of hydrogen-cell-fuelled cars (teacher-provided). Find different models and at least one that shows the hydrogen fuel cell itself.



This is a Foresee lesson called a TQT, or Text Questioning Technique lesson (see Appendix 16). Students will listen to the teacher read an article, and answer questions in point form as they listen.

Before the class, decide which vocabulary words in the article may give students problems, and devise ways of drawing out as many words as possible through the introductory discussion. Some vocabulary will have to be provided and explained before the reading is done.

Outcomes	Instructional and Learning Sequence
----------	-------------------------------------

SLO 2.1.3 Use developing control of grammatical features...

SLO 4.2 Communicate effectively to work with others...

SLO 6.2.11 Use transfer...

SLO 6.2.12 Use inferencing to guess the meanings...

SLO 6.3.2 Use co-operation...

d) Tell students that they will be listening to an article about hydrogen-cell-fuelled vehicles. They must answer certain questions in point form while doing this. Ask them to tell you the kind of strategies they will use as they listen. They could discuss this in pairs and then as a whole class, or simply as a whole class. They should mention selective attention, directed attention, self-monitoring, self-evaluation, note taking, problem solving, and inferencing. Refer to the complete list of strategies for more ideas.

(continued on page 150)

Language Features	Discourse Features
	expressions to agree, disagree, question, restate, summarize, etc.
	Vocabulary
	<p>Environmental terms and vocabulary introduced in the last module: pollution-free, environmentally friendly, by-products, emissions, hydrogen, oxygen, chemical reaction, environmentalists, emit, element, renewable resource, viable solutions, molecules</p> <p>Connected with hydrogen and hydrogen-cell-fuelled vehicles: cylinder, catalyst, platinum, cold combustion, monopolized, volumes, extricated, synthesized, splitting water molecules, transports, derived, hybrids, primary and secondary fuel source, carbon-fibre-wrapped aluminum tanks, gaseous, battery, ultracapacitor, positive and negative charges, generate, equation, vehicle-to-grid capability, stationary generator, overabundance, hydroelectricity, electrolysis, commercial viability, convergence</p> <p>Idiom: "Give it some juice."</p>
	Pronunciation
	sounds: th, r, l, final s, different pronunciations of ed endings and other problematic sounds for students; linkage; stress (accented syllables); rhythm

Student Learning Tasks

- a) Listen as an article about hydrogen-cell-fuelled vehicles is read. **(I)**
- b) Discuss the strategies used in this listening task. **(G) (C)**

Teacher Notes and References



Appendix 1: Strategies for Second Language Acquisition

Outcomes	Instructional and Learning Sequence
----------	-------------------------------------

SLO 1.1 Engage with increasingly difficult oral and/or visual texts...

SLO 1.2 Respond to texts with increasing independence...

SLO 1.4 Show an awareness of organizational patterns...

SLO 2.1.2 Use standard Canadian spelling...

SLO 6.1.1 Use advanced organization...

SLO 6.1.2 Use organizational planning...

SLO 6.1.5 Use selective attention...

SLO 6.1.7 Use problem identification...

SLO 6.2.11 Use transfer...

SLO 6.3.2 Use co-operation...

e) Give the students **Handout 3-25**: “Questions: To Drive or To Heat, That Is the Question.”

- In pairs, have them read through the questions, looking for problematic words or phrases and trying to guess the meanings.
- Discuss the vocabulary as a class. Have students analyze the questions, predicting what key words they will have to listen for to answer the questions as the passage is read.

Remind students this will be a note-taking activity, so they can get the main points down in any form that works for them; any kind of shorthand will work. If they don’t know a specific word, even writing down the first few letters will help.

Encourage students to use the shorthand symbols learned in the first module and perhaps in the text-messaging lesson in this module. Also, remind them that much of the key vocabulary will be recorded on the board for them to refer to.

- Tell students you will read the article slowly the first time and more quickly the second. If they need a third reading, it will be at normal speed. Remind students that you will not stop to answer questions or repeat while you are reading. They must do their best to record as much as possible as you read straight through.
- Also, tell them that after the readings they will eventually get to check their notes against the written article.

(continued on page 152)

Language Features	Pronunciation
	new vocabulary
	Academic Language Functions
	predicting

Student Learning Tasks

- e) In pairs, read through the questions, look for problematic words or phrases, and try to guess the meanings. (G)
- f) Discuss the vocabulary, analyze the questions, and predict the key words to listen for. (G)

Teacher Notes and References

Handout 3-25: “Questions: To Drive or to Heat, That Is the Question”

Outcomes	Instructional and Learning Sequence
----------	-------------------------------------

SLO 1.1 Engage with increasingly difficult oral and/or visual texts...

SLO 1.4 Show awareness of

SLO 2.1 Show sufficient control over linguistic structures...

SLO 2.3.1 Use the structures and language features...

SLO 6.1.3 Use directed attention...

SLO 6.1.5 Use selective attention...

SLO 6.1.6 Use self-monitoring to check...

SLO 6.1.7 Use problem identification...

SLO 6.1.8 Use self-evaluation to check...

SLO 6.2.4 Use note taking...

f) Read the article **Handout 3-26: “To Drive or to Heat, That Is the Question”** slowly at first, giving a short wait time between sentences so students can process what they are hearing. At the end of the first reading, check with students to find out how they did. Most will need a second and maybe a third reading.

After completing the reading:

- Pair students to compare their answers. Then, give each pair a copy of the article so they may check their answers again. They may change their answers, but they must keep them in point form. Collect the article from students.
- Then, using the words from the questions and using a different-coloured pen for visual clarity, model and discuss with students how to create complete sentences from point-form notes. (See **Handout 3-27: “Creating Sentences from Notes Using Coloured Code”** for an example.)
- Moving one step further, have students work in small groups to look at different ways sentences can be combined so that the answers are not a list of simple sentences. Do several with the class using colour coding to show examples of sentence combining.
- Then lead them to complete their sentences individually.

Language Features	<p>Structures</p> <p>use of coordinate and subordinate conjunctions, types of clauses, reversal of natural order, semicolons, etc. (review)</p>
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Student Learning Tasks

- f) Listen and make notes on the main points as the article is read. **(I)**
- Compare your answers with a partner. **(G)** Check your notes against the written article. **(I)**
 - Go over the point-form answers. **(C)**
 - Discuss how to create complete sentences from your point-form notes. **(C)**
 - Complete your sentences individually. **(I)**

Teacher Notes and References

Handout 3-26: “To Drive or to Heat, That Is the Question”
(teacher resource)

Handout 3-27: “Creating Sentences from Notes Using Coloured Code”

Provide mini-lessons on sentence combining as required.

Outcomes	Instructional and Learning Sequence
<p>SLO 1.4 Show an awareness of organizational patterns...</p> <p>SLO 2.1.2 Use standard Canadian spelling...</p> <p>SLO 2.3.1 Use the structures and language features...</p> <p>SLO 2.3.2 Demonstrate increasing awareness of... rhetorical forms...</p> <p>SLO 2.4 Use the steps of the writing process...</p> <p>SLO 6.2.7 Use elaboration...</p> <p>SLO 6.2.13 Use recombination...</p> <p>SLO 6.3.2 Use co-operation...</p>	<p>Writing</p> <p>Students use their answers to create a short article about hydrogen-cell-fuelled cars. They will add an introduction and conclusion and will use a variety of sentence forms. They should also use at least five new vocabulary words. This article will be handed in for marking after peer editing.</p>
<p>SLO 6.1.2 Use organizational planning...</p> <p>SLO 6.1.5 Use selective attention...</p> <p>SLO 6.2.1 Use resourcing to access...</p> <p>SLO 6.2.5 Use deduction and induction...</p>	<p>Roundup (optional)</p> <p>Students could do research on:</p> <ul style="list-style-type: none"> • solving the hydrogen storage problem • producing hydrogen through renewable, carbon, and nuclear energy sources • costs of making, maintaining, and running hydrogen-cell-fueled vehicles • other future environmentally friendly uses for hydrogen <p>The research could be summarized as a written or oral report, subject to the teacher’s discretion.</p>



Student Learning Tasks**Teacher Notes and References****Assignment**

- a) Write a short article about hydrogen-cell-fuelled cars.
Include an introduction and conclusion. **(I)**

- b) Peer-edit the articles. **(G)**

Research and prepare a written or oral report summarizing information gathered about hydrogen as an energy source.

“Plug in a Car and Give It Some Juice”/Quotation

by Matt Villano

Dan Bocek of Burbank, California, begins his daily morning commute by unplugging his car from an electrical outlet in his garage. Then he drives 30 miles to his office in Alhambra and plugs it in again.

Bocek’s wife drives a gasoline-powered car, and at the end of every month, he says, the two compare expenses. Hers costs them about \$80 a month; his costs only \$4.

If only Thomas Edison could see the Bocek family today. In 1919, while he commercialized an electric battery of his own, Edison predicted widespread popularity for electric cars like Bocek’s. Edison’s battery ran on a direct current, and from his laboratory in West Orange, N. J., he said the invention could be the key to cheaper, more efficient transportation. “In fifteen years, more electricity will be sold for electric vehicles than for light,” he said.

Source: <<http://future.newsday.com/4/fbak0430.htm>>. [28 June, 2003].

Quotation

“The cost of oil dependence has never been so clear... Oil is an indulgence we can no longer afford, not just because it will run out or turn the planet into a sauna, but because it inexorably leads to global conflict... What we need is a massive, Apollo-scale effort to unlock the potential of hydrogen, a virtually unlimited source of power... The technology is at the tipping point.”

—Peter Schwartz and Doug Randall from *Wired*’s cover story in April 2003, “How Hydrogen Power Can Save America”

Source: The Hydrogen Economy.



© Stuart Energy Systems Corporation, 2004. All rights reserved.
http://www.stuartenergy.com/media_center/photo_gallery.html.

Questions: To Drive or to Heat, That Is the Question

1. Name three companies marketing the pollution-free hydrogen fuel cell vehicle.
 - a. _____
 - b. _____
 - c. _____

2. a. What two things do these environmentally friendly cars combine to make electricity?
 - i. _____
 - ii. _____b. What two byproducts are left?
 - i. _____
 - ii. _____

3. When hydrogen gas is combined with oxygen and a catalyst, such as platinum, what is the resulting chemical reaction called?

4. Who is impressed with these vehicles because they omit no pollution?

5. a. How much of the world's oceans is made up of hydrogen?

- b. What remains a problem?

6. Name two ways hydrogen gas can be obtained or produced.
 - a. _____
 - b. _____

(continued)

Questions: To Drive or To Heat, That Is the Question (continued)

7. Hybrid vehicles have a secondary fuel source to help with what two things?

a. _____

b. _____

8. Under how much pressure is the hydrogen used as the primary source of fuel?

9. Name two types of secondary sources.

a. _____

b. _____

10. a. What company is testing a prototype heavy-duty transit bus to be propelled by a hydrogen fuel cell?

b. In what city and province will this occur?

c. What is the significant new function this bus will offer?

d. List one reason Manitoba could be an important player in this process.

e. What is important about electricity that comes from a renewable source?

To Drive or To Heat, That Is the Question (continued)

The vehicle of tomorrow is finally becoming a choice for today. The pollution-free hydrogen-fuel-cell vehicle is being marketed by successful car companies such as Toyota, Ford, and Honda. Daimler Chrysler is creating them in Europe. These environmentally friendly cars, which combine hydrogen from a tank and oxygen from the air to make electricity, leave as their only byproducts air and water. Amazing. But what if there were other uses for these vehicles? Imagine being able to travel pollution-free and use the same vehicle to heat your home!

First, a little background about the hydrogen cell as a fuel source. Essentially, hydrogen gas contained in a cylinder is combined with oxygen and a catalyst, such as platinum. The resulting chemical reaction, referred to as cold combustion, produces electricity to drive an electric motor. Environmentalists are impressed with the technology because hydrogen-powered vehicles emit no pollution at the point of use. In addition, hydrogen is the most abundant element in the universe, making up two-thirds of the oceans of the world; it cannot be monopolized by any country. Unfortunately, producing high volumes of hydrogen cleanly and efficiently for fuel cells remains a problem. The gas can be extricated from oil or natural gas or synthesized by splitting water molecules with electricity. However, such hydrogen merely transports energy derived from another fuel cell. Major automakers world-wide are feverishly researching to find viable solutions to these problems.

Most fuel-cell vehicles today are hybrids; that is, they have a secondary fuel source in addition to their fuel cell to help with acceleration and hill-climbing. The primary source, the hydrogen fuel cell, consists of one or more carbon-fiber-wrapped aluminum tanks filled with gaseous hydrogen at the pressure of 3,600 to 5,000 pounds per square inch. A fuel cell likes to run at a steady load, so when a driver must accelerate, it helps to have a secondary power source to give the necessary boost. Most companies use a battery as the secondary power source; however, Honda uses an ultracapacitor that stores energy in a physical form—on a pair of metal plates that accumulate positive and negative charges—rather

than in a chemical form, as batteries do. Drivers who have test-driven these hybrid vehicles find their performance on the road quite impressive.

So how does this environmentally friendly vehicle become a heat source? In Winnipeg, Manitoba, New Flyer Industries will be testing a prototype heavy-duty transit bus to be propelled by a hydrogen-fuel-cell engine made by Hydrogenics Corporation of Mississauga, Ontario. The bus offers a significant new function: its engine is so efficient that even when the vehicle it powers is at rest, it can still be used to generate energy. This engine is also a hybrid and uses the ultracapacitor as the secondary power source. The Hydrogenics design takes the equation one step further. The engine will have a vehicle-to-grid capability to allow it to act as a stationary generator while at rest. So, while simply sitting in the garage or parking lot, this engine could potentially be running and providing electricity.

Manitoba could become an important player in this whole process. Since hydrogen is not naturally available and must be created, Manitoba's overabundance of hydroelectricity could be crucial. Electricity is one of the best ways to create hydrogen through the process of electrolysis, which separates the hydrogen and oxygen molecules in water. If the electricity comes from a renewable source, such as wind, solar, or hydro generation, then voila! We have an emission-free vehicle running on a fuel that was produced through an emission-free process. Icing on the cake!

The bus that functions as a stationary generator is still five years away from commercial viability (2008). Still, the convergence of water, power, and optimism has Hydrogenics-New Flyer looking toward the future. Who knows? Maybe one day soon, Manitobans will be comfy and cozy in their warm little houses on those long, cold winter nights because of the cars in their garages!

Sources: "Future auto to keep home warm, lit up" Winnipeg Free Press. 7 Dec. 2002. "The Car of Tomorrow." Discover: 18 and 20 (Oct. 2002).

Creating Sentences from Notes Using Coloured Code

When working with students through the answers to a TQT lesson, as you move from point-form notes to simple sentences and, finally, to more complex sentences, use colour-coding for visual clarity. When modelling sample questions on the overhead:

1. Write the questions in one colour.
2. Write the point-form answers contributed by the students in another colour.
3. Have students discuss how to use words and phrases from the questions in combination with their point-form answers to create grammatically correct, complete sentences. Underline the appropriate parts of the questions and draw arrows to show how to combine these words and phrases with the point-form notes. Use a third colour for this step.
4. Students use sentence-combining to combine answers from questions with several parts or answers from related questions. Have students suggest a variety of ways to combine sentences. Record these options in another colour, or choose specific colours to record each different option. Again, it may be necessary to use arrows for visual clarity. Do as many examples as are appropriate for the students. Then, have them complete the assignment themselves.

Students decide how they want to combine their answers to create their final product, which could be a written as paragraph or a series of paragraphs.



Note: With advanced students who already know how to do Step 3, it may only be necessary to focus on the sentence-combining.

Example:

1. Name three companies marketing the pollution-free hydrogen fuel cell vehicle.

a. Toyota

b. Ford and

c. Honda

2. a. What two things do these environmentally friendly cars combine to make electricity?

i. hydrogen and oxygen

ii. air and water

b. What two byproducts are left?

i. air and water

ii. as

Three companies - Toyota, Ford, and Honda - are marketing the pollution-free hydrogen fuel cell vehicle, which combines hydrogen and oxygen to make electricity leaving only air and water as by-products.

Legend:

- point form answers
- complete sentences
- sentence combining

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Note: A full-colour version of this handout is available at the Manitoba Education, Citizenship and Youth website at:

<www.edu.gov.mb.ca/ks4/cur/diversity/eal.>

