



**Topic 1**

**The Good Ol' Days:  
Back to the Future?**

(1 lesson, plus some out-of-class time)

**T**his lesson focuses on a video interview with a nonagenarian about life in the past. Students will listen to and discuss the interview, and then they will prepare for and conduct an interview of their own. Their final writing activity will be to write a report about their interview. Some of the other main academic tasks are: pronunciation— focusing on voice and spoken language; making

and using notes to speak from; directing a discussion; asking questions, interrupting politely; checking for comprehension; recognizing indicators in discourse; note taking; recognizing the speaker's attitude; understanding intonation; voice emphasis; paraphrasing; quoting directly; referring to sources; academic writing; revising; and proofreading.

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

- SLO 1.3** Develop and express a personal position in a variety of ways...
- SLO 2.1.4** Refine pronunciation to increase intelligibility...
- SLO 4.1** Use language to encourage...
- SLO 6.1.1** Use advanced organization...
- SLO 6.1.3** Use directed attention...
- SLO 6.1.5** Use selective attention...
- SLO 6.2.12** Use inferencing to guess the meanings...
- SLO 6.3.2** Use co-operation...

### Sequence 1

**Activation**

This module will explore some of the technological developments and other changes we commonly experience in today’s fast-paced world. To begin, students will look at the past in order to be more aware of the many differences between past and present.

**Step 1:** Have students reflect on their childhood using the questions provided (see Student Learning Tasks).

**Step 2:** Next, have students think about their parents’ youth using the questions provided (see Student Learning Tasks).

**Step 3:** Ask students if they get the feeling that things are changing rapidly and that the world is getting smaller. How has technology made this possible?

Refer to a question posed by poet Mark Link in his poem “Different,” which is about this world that is changing so quickly: “In moments of reflection we wonder / are we gaining touch with the world at the expense of losing touch with ourselves?” (This question can be applied to a number of the ideas presented in the modules of this course.)

Tell students they will begin thinking about the question posed at the end of the poem by learning about a simpler, more slow-paced time. They will be viewing a video clip about a woman’s experiences as a child and teen living in rural Manitoba in the 1920s and 1930s.

**Step 4:** Students first have a quick round-table discussion, predicting some of the ideas they think will be discussed in the video.

<b>Language Features</b>	<b>Vocabulary</b>
	Idioms: gaining touch, losing touch
	<b>Structures</b>
	past tense adjectives for description appropriate use of articles use of subordinate conjunction “because” in predictions
	<b>Discourse Features</b>
	<b>Expressions for prediction:</b> I think...; perhaps...; maybe...; I predict...; I believe...
	<b>Academic Language Function</b>
	comparing, contrasting and predicting



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

Lead the discussion so that the topics covered in the resource video (see next page) are addressed or mentioned in the discussion.

**Class Discussion**

- Reflect on your childhood.  
Discuss the following questions: What did you do in your free time? What types of technology were available to you? How much time did you spend playing electronic games? Watching television? Playing sports? Doing homework? Talking to friends? How did you get to school?
- Compare and contrast this with your life at this moment. (C)
- Compare and contrast your youth to your parents' and grandparents' youths.

**Discussion Questions:**

- How do you think your parents' growing-up years might compare to yours? Did they get more physical activity? What kind of technology did they have? Did they spend more time with their friends and families? How did they entertain themselves? How about their grandparents? Was life different depending on the country of origin, or whether home was in a rural or urban setting? What the financial status of the family was?
- Things are changing rapidly and the world is getting smaller. How has technology made this possible? (C)
- Predict some of the ideas you think will be discussed in the video. (C)

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 1.5** Examine and interpret various visual media...

**SLO 2.2** Use several visual techniques...

**SLO 6.1.1** Use advanced organization...

**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 6.2.11** Use transfer...

**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 4.2** Communicate effectively to work with others...

**SLO 4.6** Respond to and critique a variety of individual perspectives...

**SLO 6.3.1** Use questioning for clarification...

**SLO 6.3.2** Use co-operation...

**Step 1:** Give each student a copy of **Handout 3-1:** “Graphic Organizer: The Good Ol’ Days with Mrs. MacLeod.” Review active listening skills and note-taking practices. Students view the video, taking notes to fill in the graphic organizer. After viewing, check for comprehension. If necessary, show the video again so that all questions can be answered.

<b>Language Features</b>	<b>Structures</b>
	past tense
	<b>Discourse Features</b>
	<b>Response words to wh questions:</b> Why~because; When~in, on, at; Who~name; What~(various); Where~name of place; How~(various)

**Step 2:** Divide students into small groups. Have them discuss Mrs. MacLeod’s description and view of the past. They should decide if she feels that the technology and lifestyle available today would have made life at that time better, worse, or just different. What of the past does she feel has been lost in today’s world? What does she feel has been gained due to the technology we have today? Students should decide if they agree or disagree, and why.

**Step 3:** Using Appendix 13: “Preparing Interview Questions” as a guide, students review the video and focus on the way the interviewer begins, indicates new questions, probes, adds information, signals that the conclusion is near, signals the conclusion, and thanks the speaker. What techniques and expressions are used? What could the interviewer have done better?

Record this information for use in the final activity.

<b>Language Features</b>	<b>Structures</b>
	who, what, when, where, why, and how questions
	<b>Discourse Features</b>
	<b>Discussion expressions:</b> to agree or disagree, to encourage, to elaborate, to summarize, to clarify, to question  transition markers
	<b>Academic Language Functions</b>
	agreeing, disagreeing, explaining, and summarizing

## Student Learning Tasks

View the video and take notes by filling in **Handout 3-1**: “Graphic Organizer: The Good Ol’ Days with Mrs. MacLeod.” **(I)**

In small groups, discuss Mrs. MacLeod’s description and view of the past based on the teacher’s questions. **(G)**

Review the video to focus on the way the interviewer conducts the interview. Record this information. **(I)**

## Teacher Notes and References



**Handout 3-1:** “Graphic Organizer: The Good Ol’ Days with Mrs. MacLeod”

**Resource Video:** *Mrs. MacLeod: The Good Ol’ Days*



A copy of this video can be obtained on the Manitoba Education, Citizenship and Youth website at

<[www.edu.gov.mb.ca/ks4/cur/diversity/eal/senior4/index.html](http://www.edu.gov.mb.ca/ks4/cur/diversity/eal/senior4/index.html)>.



**Appendix 13:** Preparing Interview Questions: A Student’s Guide

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

- SLO 1.2** Respond to texts with increasing independence...
- SLO 1.4** Show an awareness of organizational patterns...
- SLO 2.1.3** Use developing control of grammatical features...
- SLO 2.1.4** Refine pronunciation to increase intelligibility...
- SLO 2.3.1** Use the structures and language features...
- SLO 2.3.2** Demonstrate increasing awareness of... rhetorical forms...
- SLO 2.4** Use the steps of the writing process...
- SLO 4.3** Use clear and respectful language...
- SLO 4.4** Manage group action...
- SLO 4.7** Use the English language to participate in community...
- SLO 6.1.1** Use advanced organization...
- SLO 6.1.2** Use organizational planning...
- 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 6.2.10** Use translation...
- SLO 6.3.1** Use questioning for clarification...

**Final Step** (listening, speaking, reading writing, translating): Have students find an octogenarian or a nonagenarian to interview, using Mrs. MacLeod’s interview as a model and the questions they prepared in Step 3.

The interview should be done with a person who speaks the student’s first language. It should last about 10 minutes, with the student taking point-form notes during the interview. Encourage students to get permission to audiotape or videotape the interviews. Once the information is gathered, each student will use it to write a short report.

- The report should include three direct quotations from the interviewee.
- Students must use a variety of reporting verbs.
- The reports will be shared with at least one classmate for peer editing and evaluation before they are handed in for assessment.

<b>Language Features</b>	<b>Structures</b>
	Reporting verbs: stated, reported, suggested, mentioned
	<b>Discourse Features</b>
	quotation integration note-taking symbols
	<b>Academic Language Functions</b>
	questioning, clarifying, summarizing, restating, and reporting

**Roundup Suggestions**

1. Have students write a thank-you note (in their first language) to the person they interviewed.
2. Have students research one prediction that was written in the past about the future. These may be predictions that have or have not come true.

<b>Language Features</b>	<b>Discourse Features</b>
	format of a thank-you letter

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

Find an octogenarian or a nonagenarian to interview.

- a) Use the questions developed in Step 3. Take point-form notes.
- b) Write a short report. **(I)**
- c) Share the report with at least one classmate for peer editing. **(P)**

Write a thank-you note to the person you interviewed. **(I)**

Research one prediction written in the past about the future. **(I)**



Decide on the format you want the students to use for their report beforehand.



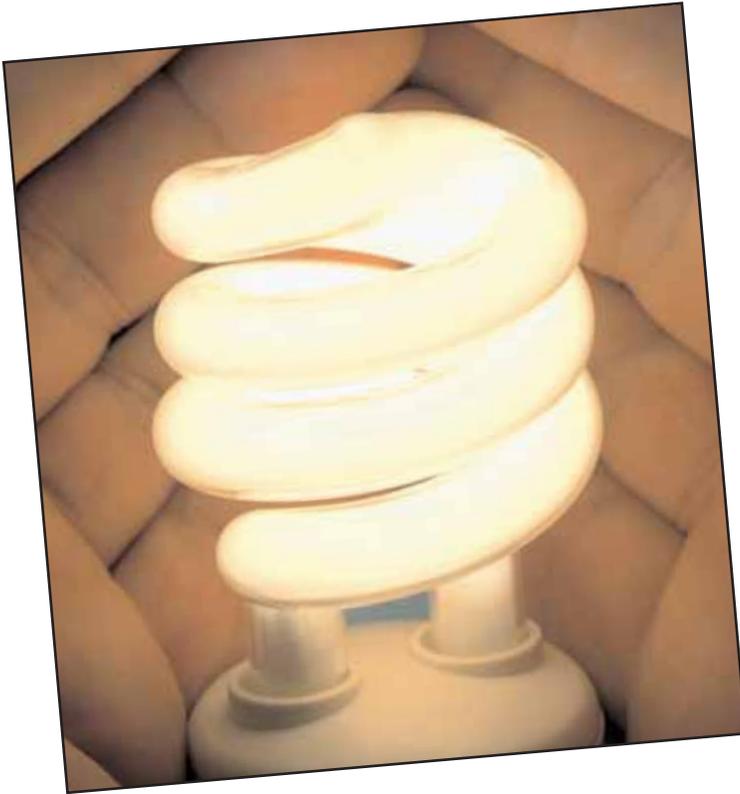
**Graphic Organizer:  
The Good Ol' Days with Mrs. MacLeod**

Take point-form notes as you watch and listen to this video. Decide which important points to record under each heading.

When you are finished, compare your notes with a partner. Come to a consensus on the most important points. Redo your notes to reflect this.

Topic	Response
1. School	
2. Travel	
3. Leisure time activities	
4. Meeting places	
5. Modes of communication	
6. Food and its storage	
7. What we've lost from the past in today's world	
8. Technology and advances that would have been helpful in the past	





**Topic 2  
Inventions**

(1–2 lessons)

**T**his lesson requires students to search for information on the Internet, work in a group to reach consensus, rank items according to importance and justify their decision, examine the structure of an encyclopedia entry, practise note taking and reconstruction of text, practise analogies, read a challenging text for the main ideas, and discuss personal opinions and evaluations.

Optional experiences encourage listening skills and representing information for different audiences.

**Outcomes**

**SLO 1.4** Show an awareness of organizational patterns...

**SLO 2.1.3** Use developing control of grammatical features...

**SLO 4.1** Use language to encourage...

**SLO 4.2** Communicate effectively to work with others...

**SLO 6.2.7** Use elaboration...

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

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

**SLO 1.5** Examine and interpret various visual media...

**SLO 5.1** Identify common themes and symbols...

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

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

**SLO 6.1.5** Use selective attention...

**SLO 6.2.4** Use note taking...

**Instructional and Learning Sequence**

**Sequence 1**

**Activation**

Have students respond to the following questions in their journals: “What does “technology” mean to you? What did it mean to your parents? What did it mean 200 years ago?”

Have students share their responses. How would you like to live with the technology of the past? (Make reference to the video interview with Mrs. MacLeod.) What are the positive and negative features of technology?

**Language Features**

**Vocabulary**

names of technology  
fashion (verb), manipulate

**Academic Language Functions**

expressing opinion, defining, retelling information

**Activity**

Have students search the Internet with a partner to answer a set of questions about great inventions, using **Handout 3-2: “Great Inventions”** or teacher-prepared questions. Include inventions from students’ home cultures, if possible.

**Language Features**

**Vocabulary**

names of inventions

**Structures**

question form (review)

**Academic Language Functions**

framing effective search items

## Student Learning Tasks

Respond to given questions in a journal. (I)

Share responses and discuss. (C)

Discuss what causes technology to change. (C)

Search the Internet with a partner to answer a set of teacher-prepared questions. (P)

## Teacher Notes and References



“Technology may be defined as the process by which human beings fashion tools and machines to change, manipulate, and control their environment.”  
(*Britannica Concise Encyclopaedia*)



Use the Internet (possible search terms: “great inventions” “invention timeline”).

OR

Use reference books or posters of important inventions.

**Handout 3-2:** “Great Inventions” This is a sample that may be used as is, or as a guide for a teacher-created set of questions. Students should be provided with at least 10 questions.

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

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

**SLO 1.7** Evaluate a given text...

**SLO 2.1** Show sufficient control over linguistic structures...

**SLO 6.1.2** Use organizational planning...

**SLO 6.1.3** Use directed attention...

**SLO 6.2.7** Use elaboration...

**SLO 6.2.12** Use inferencing to guess the meanings...

**SLO 6.3.1** Use questioning for clarification...

Have students brainstorm in small groups to identify and rank in importance the 10 most important technological breakthroughs, discoveries, or inventions in the last 100 years.

Groups should come to a consensus as far as possible and justify choices. Share and discuss responses. Record answers on board. Discuss and add to the list any other important inventions. Note any items that are everyday items (like “zipper”) and discuss the contribution of “small inventions.”

<b>Language Features</b>	<b>Discourse Features</b>
	<p><b>Expressions for clarification:</b> “What do you mean...?” “Could you explain?”</p>
	<b>Academic Language Functions</b>
	volunteering an answer, asking for more details, comparing, expressing an opinion



**Student Learning Tasks**

**Teacher Notes and References**

Brainstorm in small groups to identify and rank in importance the 10 most important technological breakthroughs, discoveries, or inventions in the last 100 years. **(G)**

Discuss responses and add to the list of important inventions. **(C)**



Large newsprint sheets and markers (teacher-provided)

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

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

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

**SLO 6.2.5** Use deduction and induction...

**Introduction**

Discuss with the students the format of encyclopedia entries.

a) Have students read the jumbled entry (**Handout 3-3**: “Technology (Student Version)”) and number the sentences in a logical sequence. Check answers together, using **Handout 3-4**: “Technology; Britannica Concise Article (Teacher Version),” and ask students what clues they used. Did knowing the likely organizational structure help? (See Teacher Notes and References column.)

b) Using **Handout 3-4**: “Technology: Britannica Concise Article (Teacher Version),” the reconstructed reading, ask students to answer the following questions:

1. What is the difference between technology and science?
2. How old is technology?
3. What is the difference in the use of the word “accelerated” in sentences c) and d)?
4. Find a word or phrase that means a) the use of one thing instead of another. (the substitution of x for y). What is the verb form of this expression? (to substitute x for y)
5. Find two verb phrases that mean “to be about (something).” (is concerned with, focuses on)
6. Find one word that introduces a contrast. (whereas)
7. Find a phrase that lets you specify exactly what a more general term includes. (in terms of)

<b>Language Features</b>	<b>Vocabulary</b>
	encyclopedia, breakthrough, genome, endeavour, substitution, Industrial Revolution, manipulate, whereas, in terms of names of inventions and technological devices
	<b>Discourse Features</b>
	definition patterns description

## Student Learning Tasks

a) Read the jumbled entry (**Handout 3-3: “Technology (Student Version)”**) and number the sentences in a logical sequence. (I)

b) Answer seven questions using **Handout 3-4: “Technology; Britannica Concise Article (Teacher Version).”** (I)

## Teacher Notes and References



**Handout 3-3:** “Technology (Student Version)”

**Handout 3-4:** “Technology: Britannica Concise Article (Teacher Version)”



A formal definition sentence usually states the term, then the class to which the term belongs, followed by the characteristics that distinguish the term from other members in its class.

For example: “Technology (term) is the application of knowledge (class) to the practical aims of human life... (distinguishing details).”

**Outcomes**

**SLO 1.2** Respond to texts with increasing independence...

**SLO 1.4** Show an awareness of organizational patterns...

**SLO 2.1** Show sufficient control over linguistic structures...

**SLO 6.2.4** Use note taking...

**SLO 6.2.7** Use elaboration...

**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 6.1.5** Use selective attention...

**SLO 6.2.3** Use grouping of items to classify...

**Instructional and Learning Sequence**

**Optional**

Have students write sentences of their own, using one or more of the expressions used in **Handout 3-3**: “Technology: Britannica Concise Article (Teacher Version).”

**Optional: Dictation**

Take back copies of the reading. Write new vocabulary on the board. Read the text once, as a lecture, with students taking notes. Then students each write their own paragraph from their notes, compare their work with a partner, and revise as necessary. Compare with original, paying attention to organization and structure words.

**Language Features**

**Discourse Features**

organizational markers (review)

**Discussion**

Ask students: How does technology make your life easier? What are the disadvantages of technology in your life?

**Journal**

For a 24-hour period, record everything you use, consume, or encounter that has been influenced by science and technology. What would your life be without them?

**Assessment**

Evaluation of reconstructed paragraphs (do they have the main ideas, not necessarily exact words?)

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

Write sentences using one or more of the expressions used in **Handout 3-3: “Technology: Britannica Concise Article (Teacher Version).” (I)**

OR

Write your own paragraph from your notes. Compare your work with a partner and revise. **(I) (P)**

**Assessment**

Evaluation of reconstructed paragraphs (do they have the main ideas, not necessarily the exact words?)

How does technology make your life easier? What are the disadvantages of technology in your life?

For a 24-hour period, record in a journal everything you used, consumed, or encountered that has been influenced by science and technology, and explain what your life would be without them. **(I)**

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

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

**SLO 2.1** Show sufficient control over linguistic structures...

### Sequence 2

Where do scientists get their ideas? Many inventions have come from mimicking nature.

**Activation**

- a) Using visuals of the objects and animal involved, ask students to respond to the following prompts in their journals: How is a plane like a bird? How is an army tank like an armadillo? Flippers like webbed feet? (List several.) Include pearl farm and oysters, suction cups, and gecko feet. Develop vocabulary as necessary.
- b) After a minute or two, share responses.
- c) Then discuss as a class: “Why do you think technology often imitates nature?”

<b>Language Features</b>	<b>Vocabulary</b>
	oyster, pearl, suction cups, gecko, armadillo, flipper, webbed
	<b>Discourse Features</b>
	comparison

**Student Learning Tasks**

**Teacher Notes and References**

**Journal**

a) Respond to the prompts provided by the teacher. (I)

b) Share responses (G)

c) Discuss (C)



Visuals of animals and objects referred to, including oyster, pearl, suction cups, gecko (teacher-provided)

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 1.6** Interpret a range of texts...

**SLO 2.1** Show sufficient control over linguistic structures...

**SLO 2.1.4** Refine pronunciation to increase intelligibility...

**SLO 6.23** Use grouping of items to classify...

**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...

**Pre-reading**

Ask students about the movie/comic book superhero “Spider-man.” Who was Peter Parker? Define “alter ego.” Who was his alter ego? What animal abilities did Peter Parker have?

Read together “Peter Parker’s Alter Ego.” (The first half of the article is enough.)

Answer the following questions:

1. What is “gecko tape”?
2. What could a person do with gecko tape?
3. Why is a gecko able to stick to surfaces?
4. What are “van der Waals” forces?
5. Sort the words into three groups of two words that are close in meaning: pliable, adhesive, negligible, sticky, flexible, slight.
6. How did scientists first try to make gecko tape? How did they change it?
7. Is the tape ready to sell to the public?
8. Where did the researchers describe their work? How did they illustrate it?

**Discussion**

How could gecko tape be used in the real world?

As a class, brainstorm animal adaptations that would be good to have. How could scientists mimic these? Are there any disadvantages to these?

**Language Features**

**Vocabulary**

alter ego, physicist, lizard, gecko, mimic, adhesive, slickest, tape, absorbed molecules, slight, attraction, figure (v), negligible, sole, capillary interaction, sticky, replicate, fabricate, pyramid, micron, attached, flexible, pliable, cycles, published, abalone, nacre, magnificent, composite, matrix, inorganic, calcium carbonate, elastic, rubbery, mortar polymer, deceptively simple, alternately, reservoirs, polymer, layer by layer, armor, “down side”

**Structures**

simple past tense and pronunciation of endings

**Discourse Features**

expressions of possibility

**Academic Language Functions**

hypothesizes

## Student Learning Tasks

Answer questions about Spider-man. (C)

Together, read and answer questions about “Peter Parker’s Alter Ego.” (C)

**Discuss:** How could gecko tape be used in the real world? (C)

Brainstorm for animal adaptations that would be good to have. (C)

## Teacher Notes and References



**Internet Resource:** “Peter Parker’s Alter Ego”—to access, go to

[www.nytimes.com/learning/teachers/lessons/archive.html](http://www.nytimes.com/learning/teachers/lessons/archive.html). Type in the search box “Peter Parker’s Alter Ego.” The lesson “Technology Twins” 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.

This article describes two amazing products that scientists have developed by imitating nature.

**Optional Internet Resources:**

“Tokay Gecko” at:

[www.bbc.co.uk/nature/wildfacts/factfiles/476.shtm](http://www.bbc.co.uk/nature/wildfacts/factfiles/476.shtm)

“Gecko Tape” (article and one-minute video)

at: [www.sciencentral.com/articles/view.php3?article\\_id=218392449](http://www.sciencentral.com/articles/view.php3?article_id=218392449)



A good explanation of “van der Waals” forces is at:

[www.chemguide.co.uk/atoms/bonding/vdw.html](http://www.chemguide.co.uk/atoms/bonding/vdw.html).

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

- SLO 2.1** Show sufficient control over linguistic structures...
- SLO 2.2** Use several visual techniques...
- SLO 2.4** Use the steps of the writing process...
- SLO 3.2** Develop and implement a plan for researching...
- SLO 5.4** Show understanding of the effect of cultural background...
- SLO 5.7** Select and present ideas ...keeping in mind the intended audience.
- SLO 6.1.1** Use advanced organization...
- SLO 6.1.7** Use problem identification...
- SLO 6.2.1** Use resourcing to access...
- SLO 6.2.8** Use imagery in the form of mental or actual pictures...
- SLO 6.2.9** Use summarization...
- SLO 6.2.13** Use recombination...

**Optional**

1. Ask students to research van der Waals forces. Imagine you are a gecko teacher explaining to a class of young geckos how their feet work. Write your explanation, keeping in mind that your audience is young and not technically minded.
2. Imagine you are conducting a marketing campaign for gecko tape. Design the packaging, the brand name, the features you will emphasize, and the demonstrations you will use. Draw a storyboard for a 30-second commercial for the product.
3. Create a “How It Works” poster illustrating another successful technological adaptation of an aspect of nature. Include a labelled diagram and a brief explanation of the adaptation.

<b>Language Features</b>	<p style="margin: 0;"><b>Language Features</b></p> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <p style="margin: 0;">Review various features used earlier in the lesson.</p>
--------------------------	---

**Student Learning Tasks**

1. Research van der Waals forces and write an explanation. (I)
2. Design the packaging, the brand name, the features and demonstrations to be used. Draw a storyboard for a 30-second commercial for the product. (I)
3. Create a “How It Works” poster. (I)

**Teacher Notes and References****Optional Internet Resource:**

The Official Rube Goldberg

Website at:

[<www.rubegoldberg.com/index.html>](http://www.rubegoldberg.com/index.html)



## Great Inventions

1. Who devised the calendar we use today?
2. What is the oldest known use of the wheel?
3. What company invented modern toothpaste?
4. When and where was the first use of swimming pools?
5. Where was paper first invented? When was it used in Europe?
6. When was the first working pair of eyeglasses made?
7. When and where did the oldest known counting board (abacus) come from?
8. When and for whom was the first flush toilet invented?
9. When was the first working bicycle invented?
10. Why was the zipper invented?
11. What was the first plastic called, and what was the problem with it?
12. How were self-stick notes invented?





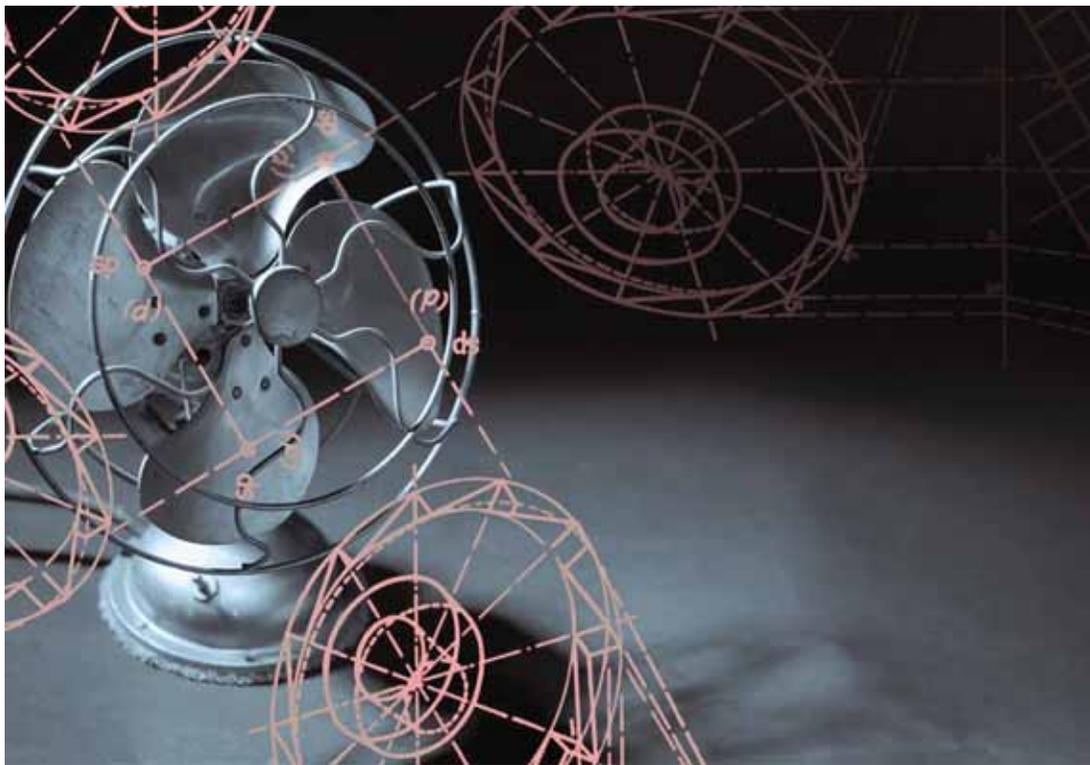
**Technology (Student Version)**

Read this jumbled encyclopedia entry and number the sentences in the correct order.

**Technology**

- a) Whereas science is concerned with how and why things happen, technology focuses on making things happen.
- b) Technology includes the use of materials, tools, techniques, and sources of power to make life easier or more pleasant and work more productive.
- c) It accelerated with the Industrial Revolution and the substitution of machines for animal and human labour.
- d) Accelerated technological development has also had costs, in terms of air and water pollution and other undesirable environmental effects.
- e) Technology began to influence human endeavour as soon as people began using tools.
- f) Application of knowledge to the practical aims of human life or to changing and manipulating the human environment.

*–Britannica Concise Encyclopaedia, 2003.*





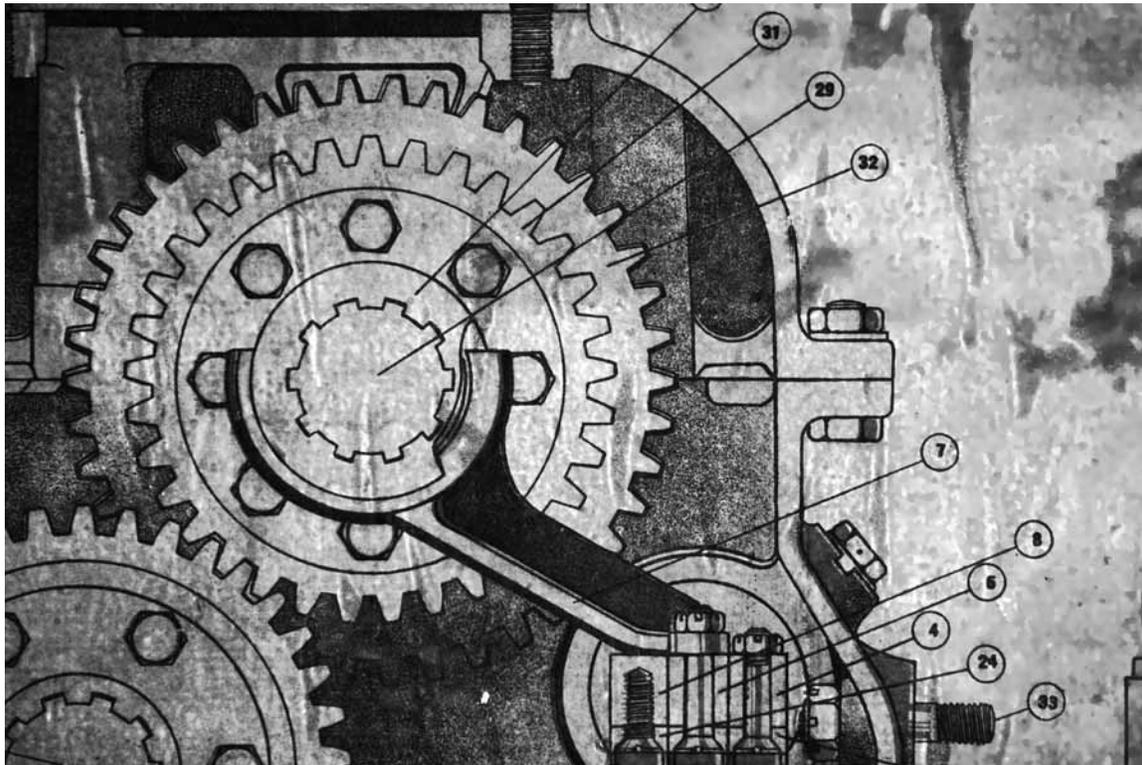
## Technology: Britannica Concise Article (Teacher Version)

### Technology:

Application of knowledge to the practical aims of human life or to changing and manipulating the human environment.

**Technology** includes the use of materials, tools, techniques, and sources of power to make life easier or more pleasant and work more productive. Whereas science is concerned with how and why things happen, technology focuses on making things happen. Technology began to influence human endeavour as soon as people began using tools. It accelerated with the Industrial Revolution and the substitution of machines for animal and human labour. Accelerated technological development has also had costs, in terms of air and water pollution and other undesirable environmental effects.

*—Britannica Concise Encyclopaedia, 2003.*







**Topic 3**

**The Information Age**

(2 lessons)

**T**his lesson introduces students to ethical considerations around technology. They will develop language for discussing the issues, use graphic organizers, analyze a textbook selection, read to determine viewpoints, and write a scenario. Students will engage in discussions of opinions.

**Outcomes**

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

**SLO 2.1** Show sufficient control over linguistic structures...

**SLO 2.2** Use several visual techniques...

**SLO 4.1** Use language to encourage...

**SLO 4.6** Respond to and critique a variety of individual perspectives...

**SLO 6.2.7** Use elaboration...

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

**SLO 6.3.2** Use co-operation...

**Instructional and Learning Sequence**

**Sequence 1**

**Activation**

Ask students to list the technologies that they use that their parents or grandparents (or the woman in the earlier video) didn't have. How have these changed the way people live and think?

OR

Use pictures of the latest personal technologies; let students describe which ones they use and how they use them.

In small groups or pairs have students complete the following:

1. Discuss the following question: If they went to an island for a year, what one technological device would they want to take with them? (Elaborate as desired.)
2. Make a concept map of the positive and negative consequences of the new technologies.
3. Display the maps and discuss how the students decided if a consequence was positive or negative. How are "positive or negative" the same as/different from "good or bad"?

**Language Features**

**Discourse Features**

follow-up questions using the "5 Ws and H"  
 adding details (using two or more sentences, using words like "because" or "so that")

**Student Learning Tasks****Discussion**

List the technologies you use that your parents or grandparents (or the woman in the earlier video) didn't have. **(C)**

OR

Describe the latest personal technologies you use and how you use them. **(C)**

1. Discuss the question posed by the teacher. **(P) (G)**
2. Make a concept map of the positive and negative consequences of the new technologies. **(P) (G)**
3. Display the maps and discuss how you decided if a consequence was positive or negative. **(P) (G)**

**Teacher Notes and References**

**Internet Resource:** "Ethics in Computing," suggested background reading, at:

[http://courses.ncsu.edu:8020/classes-a/computer\\_ethics/](http://courses.ncsu.edu:8020/classes-a/computer_ethics/)

Concept map (See Teaching and Learning EAL in the Senior Years section.)



This lesson encourages students to consider the ethical implications of technology, especially information technology. It is not designed to promote a particular ethic, but to make students aware of the types of ethical questions, and of the specific application to North American concepts of intellectual ownership and academic honesty.

**Outcomes**

**SLO 6.2.12** Use inferencing to guess the meanings...

**SLO 2.2** Use several visual techniques...

**SLO 4.2** Communicate effectively to work with others...

**SLO 6.2.5** Use deduction and induction...

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

**Instructional and Learning Sequence**

**Introduce** the idea of worldview (see Language Features).

List several simply worded statements about the use of information technology for an agree/disagree preview exercise (e.g., “People who copy software and share it with their friends are not doing anything wrong.”)

**Language Features**

**Vocabulary**

worldview—note that “worldview” is a compound noun that may not appear in students’ dictionaries.

**Structures**

modals of obligation (should, must, and ought to)

gerunds and infinitives

Let students predict the meaning of “worldview” by looking at the components, and then give a dictionary definition (“1. The overall perspective from which one sees and interprets the world. 2. A collection of beliefs about life and the universe held by an individual or a group.” –*The American Heritage Dictionary of the English Language*, 2000). Ethics derive from our worldview.

A person’s worldview includes the following components:

- Ethics: the moral principles about right and wrong behaviour that someone believes in; the study of questions about what is morally right and wrong.
- Laws: a system of rules that a society or government develops in order to deal with crime, business agreements, and social relationships.
- Traditions: customs or beliefs that have existed for a long time.
- Morals: principles and beliefs concerning right and wrong behaviour.

Using **Handout 3-5**: “Sample Concept Attainment Chart,” ask students to sort the statements into these categories: worldview, ethics, and laws. Encourage students to provide a rationale for the placement of each statement.

**Student Learning Tasks**

The teacher lists several statements and asks whether you agree or disagree.

Predict the meaning of “worldview” by looking at the components of the word. **(I)**

Discuss and sort the statements into three categories: worldview, ethics, and laws.

**Teacher Notes and References**

**Handout 3-5:** “Sample Concept Attainment Chart”



Students should do this part of the lesson without using their dictionaries unless instructed, in order to encourage them to build the concept behind the words.

You can relate worldview back to Module 2, Topic 1, where the worldviews of Aboriginal and modern industrial cultures were compared.

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

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

**SLO 1.6** Interpret a range of texts...

**SLO 4.1** Use language to encourage...

**SLO 4.2** Communicate effectively to work with others...

**SLO 6.1.1** Use advanced organization...

**SLO 6.1.5** Use selective attention...

**SLO 6.2.7** Use elaboration...

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

**SLO 6.3.2** Use co-operation...

Distribute **Handout 3-6**: “Technology, Information, and Worldview.”

- a) Using preview techniques, students predict the contents of the selection. (This could link to the earlier discussion of positive and negative effects of technology.)
- b) Using guiding questions (see Student Learning Tasks), have students read the first two paragraphs independently or with a partner, and underline the words that introduce the topic.
- c) Students continue reading up to the last two paragraphs, underlining each new technology, placing a plus or minus sign over each positive or negative effect mentioned, and placing a question mark over each idea they are not sure about.  
**Ask:** “What is the main technique used throughout the selection?” (questions) “Why are they not answered in the reading?” (designed to stimulate thought)
- d) As a class, list the new technologies along with their potential benefits and dangers. (evaluation of reading comprehension)

Which problems are “new” problems and which are old ones in a new setting?

Read the last two paragraphs aloud and ask students: “What phrase connects these paragraphs to the previous discussion?” “What words signal the next topic?”

- e) In small groups, students brainstorm a list of other ethical or moral questions that can be raised in one of the following areas (assigned or chosen): commerce, privacy risks, computer abuse, (free) speech issues, social justice issues, intellectual ownership. Lists of questions should be saved for later use.

**Language Features**

**Vocabulary**

airwaves, armchair, blossom, bullies, censor, cradle, criminals, cyber, cyberspace, dignity, dilemmas, disgruntled, disrupt, dissemination, enticed, filter, Greek, hackers, inescapably, innocent, landline, legitimate, lust, misuse, Pandora’s box, pornography, privacy, racist, responsibly, romances, sabotage, spy, stalkers, surveillance, taunted, territory, terrorists, unmarked, usage, victims, viruses, vital, worldview

**From AWL:** access, accuracy, balance, boundaries, briefly, broadcast, enforce, ethical, ethics, exposed, generation, greed, investment, monitor, networks, nevertheless, pose, potential, principles, restriction, revolution, sacred, trace, unsuspecting

**Structures**

question forms, modals of obligation, and hypothetical conditional

**Discourse Features**

rhetorical questions

**Discourse markers:** transitions, e.g., “As you have seen,” “We will now consider,” “We will first look briefly”

## Student Learning Tasks

- a) Use preview techniques to predict the contents of **Handout 3-2**: “Technology, Information, and Worldview.” **(I)**
- b) Read the first two paragraphs and underline the words that introduce the topic.  
Read to find answers to questions posed by the teacher. **(I)** or **(P)**  
Possible questions:
- What is the purpose of the selection? *(to introduce a new topic, the ethical problems of technology)*
  - What techniques are used in the first paragraph? *(examples, questions)*
  - Who is the intended audience? *(this generation)*
  - What is the effect of using the second person pronoun “you” and the first person “we” in the second paragraph? *(gets attention by targeting the audience, and then shows that this is a topic that applies to all)*
- c) Continue to read up to the last two paragraphs and answer questions.
- d) Contribute to a list of new technologies and their potential benefits and dangers. **(C)**
- e) Brainstorm a list of other ethical or moral questions. **(G)**  
Note: Save this list for later use.

## Teacher Notes and References



**Handout 3-6:** “Technology, Information, and Worldview”

**Handout 3-7:** “Zippy Scenarios for Teaching Internet Ethics”



This simulated excerpt from a textbook used in an introductory ethics course comes from a chapter about media and technology. The chapter begins with a discussion of the ways broadcast media influence young people’s values. This reading focuses on vocabulary and background for discussing ethics and technology. The reference to “Pandora’s box” may need explanation.

**Optional:** Teachers who feel comfortable with computers may want to adapt ideas from “Zippy Scenarios for Internet Ethics” for further class discussion, or students can read a model, then write their own to exchange for group discussion.

**Outcomes**

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

**SLO 4.2** Communicate effectively to work with others...

**SLO 6.1.5** Use selective attention...

**SLO 6.2.7** Use elaboration...

**SLO 6.2.9** Use summarization...

**Instructional and Learning Sequence**

**Sequence 3**

**Introduction**

- a) Have students free-write briefly on the topic of “stealing.” What is it? Why do people steal? Have several students read their definitions.
- b) Discuss whether the computer and Internet have changed the nature of theft.
- c) Read **Handout 3-8: “Ethical Issues of Information Production”** and identify three different traditions about the ownership of information. Use phrases for attributing viewpoints.
- d) Discussion: Reread the last sentence of the first paragraph. How could a person who has grown up in one culture/tradition have trouble when working in another?

<b>Language Features</b>	<b>Vocabulary</b>
	concerning, with regard to, be related to x, integrity, (author)-ship, copyright, original, emulation, aspects “According to...” “The paragraph states that...”
	<b>Structures</b>
	use of parentheses his/her
	<b>Discourse Features</b>
	attributing expressions, e.g., “according to”; “the paragraph states”
	<b>Academic Language Functions</b>
	defining and citing

**Assessment**

Create a comprehension check. (See Teacher Notes and References.)

**Student Learning Tasks**

- a) Free-write briefly on the topic of “stealing.” What is it? Why do people steal? **(I)**
- b) Discuss whether the computer and Internet have changed the nature of theft. **(C)**
- c) Listen as **Handout 3-8**: “Ethical Issues of Information Production” is read and identify three different traditions about the ownership of information. **(I)**
- d) Discussion **(C)**

**Teacher Notes and References****Comprehension Check:**

Teacher presents several true/false statements based on the passage. (teacher-created)

**Handout 3-8**: “Ethical Issues of Information Production”

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 1.3** 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 2.1** Show sufficient control over linguistic structures...

**SLO 4.2** Communicate effectively to work with others...

**SLO 6.1.6** Use self-monitoring to check...

**SLO 6.2.7** Use elaboration...

**SLO 6.3.1** Use questioning for clarification...

**SLO 6.3.2** Use co-operation...

**SLO 5.1** Identify common themes and symbols...

**SLO 6.2.1** Use resourcing to access...

**Optional**

Distribute **Handout 3-9**: “The Ten Commandments of Computer Ethics.” Introduce by explaining that the Ten Commandments are a set of principles that have origins in Jewish religious laws about behaviour, and that are also respected by several other religions. They are easy to remember because they are written in the same short, simple pattern. Many other guidelines follow this pattern. However, the brevity of the code means that not every situation may be covered, and some items may be more important than others.

- a) Students may share and compare lists of principles for right living from their cultural backgrounds.

This set of commandments for computer ethics is modelled on the Ten Commandments. Analyze the list for audience, purpose, and context.

- b) Assign each student one commandment on the list. Have students give an example of the commandment and state whether they agree or disagree. Are their decisions based on ethics or laws?
- c) In small groups, have students rank the commandments from most important to least important. Justify the ranking. Compare results with another group.

<b>Language Features</b>	<b>Vocabulary</b>
	commandment, “Thou shalt not” snoop, “bear false witness” (lie about someone), interfere, proprietary software, authorization, compensation, appropriate (verb) intellectual output, social consequences, consideration
	<b>Academic Language Functions</b>
	expression and soliciting opinions

**Optional**

- a) Refer students to the website of the University of Manitoba’s Student Resource Centre to read the brochure on what is considered academic honesty in the North American context, or to take the “Test Your Integrity I.Q.” quiz.
- b) Discuss any differences in approach from students’ own cultures.

<b>Language Features</b>	<b>Vocabulary</b>
	plagiarism, documentation

## Student Learning Tasks

## Teacher Notes and References

**Optional Task:**

- Share and compare lists of principles for right living from your cultural backgrounds. **(I)**
- Given one commandment, give an example of the commandment and state whether you agree or disagree. **(I)**
- In small groups, rank the commandments. from most important to least important. Justify the ranking. Compare results with another group. **(G)**

- Read the brochure or take the quiz. **(I)**
- Discuss differences in the approach to plagiarism. **(C)**

**Resources**

**Handout 3-9:** “The Ten Commandments of Computer Ethics”



**Internet Resource:** “Test Your Integrity I.Q.” quiz at:  
[http://umanitoba.ca/student/resource/student\\_advocacy/academic\\_honesty\\_quiz.shtml](http://umanitoba.ca/student/resource/student_advocacy/academic_honesty_quiz.shtml)



This is a good opportunity to prepare students for North American university expectations. This may warrant further discussion, especially regarding documentation and “helping a friend.”

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

- 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 2.4** Use the steps of the writing process...
- SLO 5.1** Identify common themes and symbols...
- SLO 6.1.1** Use advanced organization...
- SLO 6.1.2** Use organizational planning...
- SLO 6.1.4** Use functional planning...
- SLO 6.1.8** Use self-evaluation to check...
- SLO 6.2.11** Use transfer...

**Writing**

Have students choose one of the questions from the previously brainstormed lists of possible issues in computer ethics.

a) Write a short scenario. The first paragraph describes the situation and the people affected by it. The second and third explain the ethical dilemma from the perspective of each person affected, and predicts what each would do. The final paragraph should describe the student’s own thinking on this issue, and explain what influences his or her decision.

b) Have students share their scenarios and discuss other possible responses.

<b>Language Features</b>	<b>Discourse Features</b>
	connectors between paragraphs
	<b>Academic Language Functions</b>
	expressing point of view
	analyzing







## Sample Concept Attainment Chart

These are possible statements to separate the concepts. Note that the teacher is not agreeing or disagreeing with any statement, merely giving an example of what some people may think.

<i>Worldview</i>	<i>Ethics</i>	<i>Laws</i>
<p>The greatest value in life is friendship.</p> <p>Most human beings are good and trustworthy.</p> <p>It is important to respect authority.</p> <p>This life is all there is.</p> <p>Truth changes with the times.</p> <p>Humans are just one type of intelligent animal.</p> <p>There is a personal God.</p> <p>People can't change their fate.</p> <p>It is important to be honest.</p>	<p>You should always help your friend.</p> <p>It is wrong to steal.</p> <p>It's okay to copy software and share it with a friend.</p> <p>I should be able to say what I want on the Internet.</p> <p>It's okay for the government to listen to suspected criminals' phone conversations.</p> <p>It's okay to sell information about my customers to another company.</p> <p>I won't buy products made by companies who treat their workers badly.</p>	<p>Taking something from a store without paying for it is against the law and will be punished.</p> <p>You must stand when the teacher enters the room.</p> <p>You must stop for a red light.</p> <p>Writing a newspaper article that encourages people to hate another race is against the law and will be punished.</p> <p>Entering someone's office without permission will be punished.</p> <p>You cannot use animals for experiments that will cause pain.</p>





## Technology, Information, and Worldview

**W**hy would computer science majors in some Canadian universities be required to take an ethics course?

© This page contains items that cannot be posted online due to copyright. Please see the print version of this course.



## Zippy Scenarios for Teaching Internet Ethics

**D**escribe the underlying Netiquette/ethics issue(s) in each scenario. What is your opinion of the behaviours involved? What equitable solutions can you suggest? Describe a parallel situation in which computers are NOT involved.

1. Jules has walked away from a lab computer without logging off. Trish sits down and, still logged in as Jules, sends inflammatory email messages out to a number of students and posts similar messages on the class newsgroup.
2. Lester sends email to the entire student body inviting them to a BYOB party at his house while his parents are out of town. Lester receives a message from a system administrator calling him in for a meeting with school officials. He objects because he feels that his email is his own private business.
3. Every time Abner posts a comment to a newsgroup, his posts are flamed by a group of “enemies.” Abner has responded to each flame in turn, and a full-scale war is now in progress.
4. It seems like every time Melanie logs on to her account, Stanley knows about it and sends messages that cover her screen with text. At first she thinks it is funny, but now its really starting to bother her. The messages reformat the text on her screen and, besides, its kind of creepy the way he always knows she’s logged on.
5. Sharon and Timothy are students at Big Suburban High School. They have designed a web page devoted to their favourite rock band, using their personal disk space on the schools web server. They have posted song clips, lyrics, photographs of each band member, and articles they have found in various web news sources. However, school authorities have asked them to shut down their site because of the obscene content of many of the lyrics. Sharon and Timothy object, noting that their First Amendment (free speech) rights are being violated.

### Intellectual Property Issues

1. Tracy had a report to write on acid rain. She used several sources—books, magazines, newspaper articles, and a CD-ROM encyclopedia. She listed all these sources in her bibliography at the end of the report. She found the encyclopedia to be the most convenient source because she could highlight portions of the text and paste them into her word processing document.
2. Jason R. designed and posted a Star Wars website. Once the site started receiving 40,000 hits a day, he received a phone call from Lucasfilm asking him to shut it down. Jason posted excerpts of the phone conversation on his website. Lucasfilm was then flooded with angry email messages from fans who felt the company was exerting totalitarian control over products to which they felt a deep personal connection.
3. Ms. Harris received email from someone who liked the gargoyle image on the Uni High Library’s web page and wanted to know if he could use it on his school library’s web page. The art teacher, who created the image for the school, wrote back to him, explaining that the image belonged to the university and that, furthermore, it had special significance as the image that identifies Uni High. She thanked him for his interest, but told him that she could not grant permission for him to use it.
4. Richard asked Vicky if he could look at the essay she wrote for their history class. She told him “sure” and thought no more about it. Several days after the essays were turned in, the teacher asked her to stay after class. She showed Vicky that her essay and Richards were almost identical. She asked Vicky for an explanation.
5. Malcolm has a web page on the topic of sailboats. He has collected a truly astonishing amount of information and receives many complimentary email messages from sailing enthusiasts. He has downloaded numerous pictures and articles he finds on other websites, and is always careful to give credit by citing the original sources.

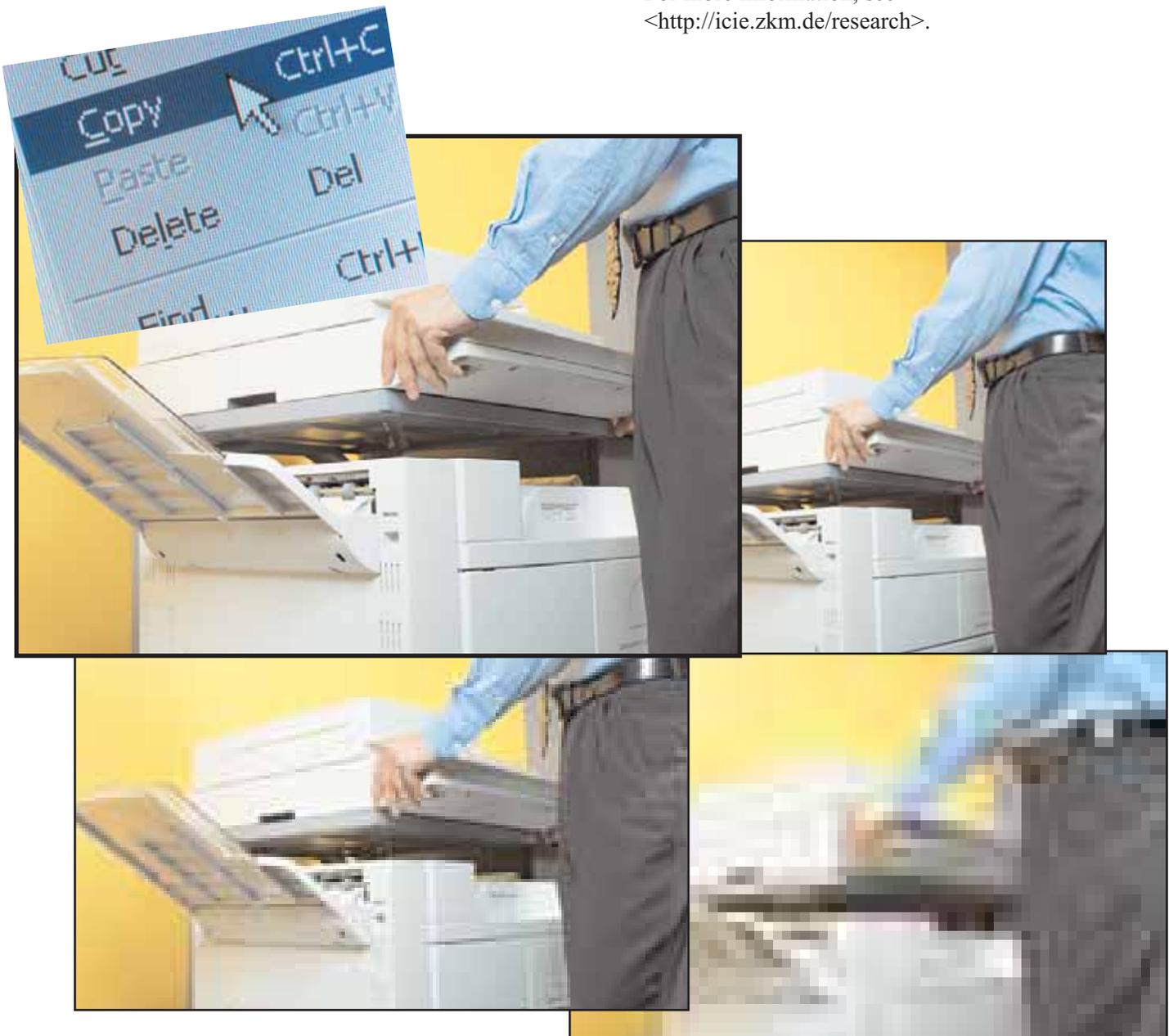


## Ethical Issues of Information Production

The question concerning the protection of the intellectual property is one of the most important and difficult ethical, moral, and legal ones in the field of information production. Different traditions with regard to technologies and products have led to different protection laws in different regions of the world:

- The European tradition emphasizes the moral rights of the authors (*droit d'auteur*). These are related to the person of the author and concern the integrity and authorship of her or his work as well as her or his reputation.
- The Anglo-American tradition emphasizes the property or economic rights (copyright). These rights can be transferred. According to this tradition “original works of authorship in any tangible means of expression” (17 U.S.C. sect. 102[a]) should be protected.
- The Asian tradition(s) consider copying as a matter of emulation of the master. Conflicts arise when national and international laws and moral traditions protect different aspects of various media.

For more information, see  
<<http://icie.zkm.de/research>>.





## The Ten Commandments of Computer Ethics

by the **Computer Ethics Institute**

1. Thou shalt not use a computer to harm other people.
2. Thou shalt not interfere with other people's computer work.
3. Thou shalt not snoop around in other people's computer files.
4. Thou shalt not use a computer to steal.
5. Thou shalt not use a computer to bear false witness.
6. Thou shalt not copy or use proprietary software for which you have not paid.
7. Thou shalt not use other people's computer resources without authorization or proper compensation.
8. Thou shalt not appropriate other people's intellectual output.
9. Thou shalt think about the social consequences of the program you are writing or the system you are designing.
10. Thou shalt always use a computer in ways that insure consideration and respect for your fellow humans.



Copyright Computer Ethics Institute.

[www.ccsr.cse.dmu.ac.uk/resources/professionalism/codes/cei\\_command.html](http://www.ccsr.cse.dmu.ac.uk/resources/professionalism/codes/cei_command.html).

