

Topic 1

**Staying Fit:
It's Not about Age;
It's about Attitude**

(1–1.5 lessons)

In this introductory lesson, students will watch and take notes on a CBC video clip about baby boomers, and a videotape about senior citizens. These two videos compare the attitudes and behaviour of people of different age groups concerning health. The main academic tasks are: giving information in detail, describing similarities and differences, using visual aids and graphic

organizers, summarizing, recognizing important points, taking notes, understanding intonation and voice emphasis, recognizing the speaker's attitude, listening critically, recognizing implications, selecting relevant points, stating opinion, evaluating, classifying, supporting an argument, revising, and proofreading.

Outcomes

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

SLO 4.1 Use language to encourage...

SLO 4.2 Communicate effectively to work with others...

SLO 4.3 Use clear and respectful language...

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

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

SLO 6.2.7 Use elaboration...

Instructional and Learning Sequence

Sequence 1

Activation

Introduce the topic of this module: health and health care. Ask the students to form groups of four and discuss the following statements:

1. What do you think the state of health is in Canada and your country of origin?
2. Do you think young people are generally more fit and healthier than older people?
3. Are older or younger people more willing to make lifestyle changes to become healthier?
4. What are some of the factors that affect this decision?
5. What can people do to make a positive change?
6. How do people react to, and prepare for, health problems?
7. Is it better to have prescriptive or preventative reactions to health care?
8. Is a combination of the two of these solutions the best answer?
9. How do you think these attitudes compare/contrast with those of Canadians?

As a class, share and record these ideas.

Language Features

Structures

Comparative and superlative forms: more willing, healthier, better, worse

Phrasal verbs: react to, prepare for

Conditional expressions: if a person is ill, then...

Discourse Features

Expressions for discussion: to agree, disagree, explain, describe, compare, contrast, emphasize, etc.

Pronunciation

students should be monitoring their own pronunciation in terms of sounds, stress, linkage, and reduction

Academic Language Functions

summarizing, explaining, describing, comparing, contrasting

Student Learning Tasks

Teacher Notes and References

In groups of four, discuss the questions provided by your teacher. (G)

As a class, share and record your ideas. (G)

Outcomes	Instructional and Learning Sequence
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- SLO 1.2** Respond to texts with increasing independence...
- SLO 1.3** Develop and express a personal position in a variety of ways...
- SLO 1.5** Examine and interpret various visual media...
- SLO 2.1.4** Refine pronunciation to increase intelligibility...
- SLO 6.1.1** Use advanced organization...
- SLO 6.1.2** Use organizational planning...
- SLO 6.1.5** Use selective attention...
- SLO 6.2.4** Use note taking...
- SLO 6.2.8** Use imagery in the form of mental or actual pictures...

Tell students they will watch a video clip from the CBC archives called “Baby Boomers’ Bad Habits.” Give each student a copy of **Handout 4-1**: “Point-form Notes Organizer: Baby Boomers’ Babies Have Bad Habits.”

Students go over the “Intro” section individually.

Go over the “Through” section to make sure all vocabulary is understood.

Have students predict what might go in the blanks.

Have students go to <http://archives.cbc.ca/>. Look for “Search the Archives” on the sidebar. Type in “Baby boomers’ bad habits.” Students watch the clip and fill in the blanks on their organizers. They can view the clip a second time if necessary.

Students check the answers to the questions together. Have each of the students respond verbally to the video’s information in one or two sentences. (There is another optional activity at the end of the fill-in-the-blanks exercise under the heading “Beyond.”)

In the “Intro,” or preparation section of the activity, make sure to explain the idioms mentioned if students cannot figure them out.

Language Features	Vocabulary
	Idioms: put up a stink, red flag, baby boomers
	Pronunciation
	You may want to discuss reduction and linkage used by the speakers in the videos. If this listening activity creates a significant problem for your students, it would be a good idea to create another type of cloze in which the focus is on linkage and reduction instead of on content.
	Academic Language Functions
	Predicting

- SLO 2.2** Use several visual techniques...
- SLO 4.2** Communicate effectively to work with others...
- SLO 6.1.3** Use directed attention...
- SLO 6.1.6** Use self-monitoring to check...
- SLO 6.1.8** Use self-evaluation to check...

Prepare the students for the second video, *Seniors Are Cool!*

Ask them to use the title of the video to predict what they will see and hear. Give them a copy of **Handout 4-2**: “Graphic Organizer for Listening: *Seniors Are Cool!*,” which contains a list of the names of the seniors presented in the video and the questions asked by the interviewer. Students will fill in information about each senior’s goals, attributes, et cetera. as they view the video.

After viewing the video, the class should compare answers in groups of four and then as a class. What ideas and values does this video present? Again, have each student respond in one or two sentences. Finally, have students compare/contrast the two videos, first in small groups and then as a class. Record ideas.

Language Features	Vocabulary
	Idiom: cool
	Discourse Features
	discourse markers of comparison and contrast (review)

Student Learning Tasks

Go over the “Intro” section in **Handout 4-1**: “Point-form Notes Organizer: Baby Boomers’ Babies Have Bad Habits” “Point-form Notes Organizer: Baby Boomers’ Babies Have Bad Habits.” (I)

Predict what might go in the blanks in the “Through” section of **Handout 4-1**: “Point-form Notes Organizer: Baby Boomers’ Babies Have Bad Habits.” (I)

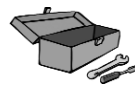
Go to the Internet resource, watch the video, and complete **Handout 4-1**: “Point-form Notes Organizer: Baby Boomers’ Babies Have Bad Habits.” (I) Check answers together. (G) Respond verbally to the video’s information in one or two sentences. (I)

Predict what you will see and hear in the second video. (I)

Given **Handout 4-2**: “Graphic Organizer for Listening: *Seniors Are Cool!*”, fill in information about each senior’s goals, attributes, et cetera as you view the video. (I)

Compare answers in groups of four and then as a class. (G) (C) Respond in one or two sentences to the ideas and values in the video. (I)

Teacher Notes and References



Internet Resource: Video clip from CBC Archives: “Baby Boomers’ Bad Habits”

available through the CBC archives <<http://archives.cbc.ca>>. Search for “Baby boomers’ bad habits,” Broadcast Feb 3, 1998. It is one of a series of clips and activities in the series *Getting Physical: Canada’s Fitness Movement*. If the video is not accessible, search for a short article about Generation X and health. You may also want to look at the *Healthy Kids, Healthy Futures Task Force Report, 2005*, available at <www.gov.mb.ca/healthykids/>.

Handout 4-1: “Point-form Notes Organizer: Baby Boomers’ Babies Have Bad Habits”



Video: *Seniors Are Cool!*

Handout 4-2: “Graphic Organizer for Listening: *Seniors Are Cool!*”

OR

Use the list of questions provided with the video.

Venn diagram (See Teaching and Learning EAL in the Senior Years section.)



A copy of the resource video can be obtained from the Manitoba Education, Citizenship and Youth library at <www.edu.gov.mb.ca/ks4/iru> (Call Number 8452), or through the Manitoba Seniors and Healthy Aging Secretariat at <www.gov.mb.ca/shas>.

Outcomes	Instructional and Learning Sequence
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- 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 2.4** Use the steps of the writing process...
- SLO 3.1** Seek, organize, and synthesize information...
- SLO 6.1.2** Use organizational planning...
- SLO 6.1.6** Use self-monitoring to check...
- SLO 6.2.7** Use elaboration...
- SLO 6.2.9** Use summarization
- SLO 6.2.13** Use recombination

Writing Assignment

Have students write a short essay, contrasting the attitudes presented by the people in each video. In their written piece, they must make a value judgement about whether a preventative or prescriptive attitude is better concerning one’s health today and in the future. They must also come to a conclusion about why baby boomers and seniors have the attitudes they do.

- a) Students first create a point-form outline. They should begin with an introductory paragraph with a good hook and thesis statement.
- b) Then, they decide on an appropriate organizational pattern for their essay. For example, they may choose to describe the baby boomers in one paragraph, contrast the seniors in a second, and determine the reasons for the differences in attitude and behaviour in the third.
- c) In the conclusion, they may decide to evaluate prescriptive and preventative health approaches, coming to a conclusion about the value of each.
- d) From this outline, students write their essay, using a variety of combining forms and sentence types. They should self-edit this first draft and create a final draft to be handed in for marking.

Language Features	Vocabulary
	preventative, prescriptive
	Discourse Features
	discourse markers to show contrast point-form outline format essay format for contrast
	Structures
	Structures for sentence combining: semicolons; subordinate/coordinate conjunctions; noun, adjective, and adverbial clauses, etc.
	Academic Language Functions
	contrasting, evaluating

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

Write a short essay, contrasting the attitudes presented by the people in each video.

- a) Create a point-form outline. Begin with an introductory paragraph containing a hook and a thesis statement.
- b) Decide on an appropriate organizational pattern.

- c) Evaluate prescriptive and preventative health approaches, coming to a conclusion about the value of each.
- d) Use a variety of combining forms and sentence types, self-edit the first draft, and create a final draft to be handed in for marking.

Outcomes

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

SLO 1.5 Examine and interpret various visual media...

SLO 2.1 Show sufficient control over linguistic structures...

SLO 6.2.5 Use deduction and induction...

SLO 6.2.7 Use elaboration...

Instructional and Learning Sequence

Roundup

Students write a personal response to the *Seniors Are Cool!* video. How does the information given in this video compare to attitudes in their countries of origin? Are the attitudes of seniors similar or different?

Language Features

Structures

use of simple present tense (review)

Discourse Features

compare/contrast markers

Academic Language Functions

comparing, contrasting

Student Learning Tasks

Teacher Notes and References

Write a personal response to the *Seniors Are Cool!* video. **(1)**

Point-form Notes Organizer: Baby Boomers' Babies Have Bad Habits

Intro:

What does the title of the video clip suggest to you? _____

What do you think the following expressions and idioms mean?

baby boomers: _____

put up a stink: _____

red flag: _____

Can you think of any bad habits that may be discussed in this clip? _____

Through:

Carefully read over all the questions below before you watch the clip. Try to figure out what might go in the blanks. As you watch the clip, record information to fill in the blanks and answer the questions.

1. Kids put up a stink. Why? _____

2. Kids in the mall:
Play _____
Don't _____ except in _____

3. Kids with parents who smoke _____

4. This adds up to failing on _____

5. Statistics showed the following about baby boomers' children:

a) Nutrition:

_____ do not get enough fruit and _____.

_____ do not get enough _____ and cereals.

b) Physical activity:

_____ do not get enough.

c) Second-hand smoke:

_____ are exposed.

(continued)

**Graphic Organizer for Listening:
Seniors Are Cool!**

I. Mrs. Seal	Intro:
	Why did you choose Tae Kwon Do?
	Do you enjoy teaching?
	What do you say to people who think seniors are slow and helpless?
	So, will you tell us your age?
	Do you feel more secure?
	Conclusion:

(continued)

**Graphic Organizer for Listening:
Seniors Are Cool! (continued)**

II. School Volunteers	Intro:
	So, how does your problem work?
	First speaker:
	So what are you guys doing here today?
	So, will you tell us your age?
	What's your favourite part of this?
	Conclusion:

(continued)

**Graphic Organizer for Listening:
Seniors Are Cool! (continued)**

III. Mr. Robertson	Intro:
	Mr. Robertson speaks:
	How long is your average snowshoe trip?
	What ages of people come on these hikes?
	Mr. Robertson, why do you snowshoe?
	Mr. Robertson, how do you stay in shape?
	Conclusion:

(continued)

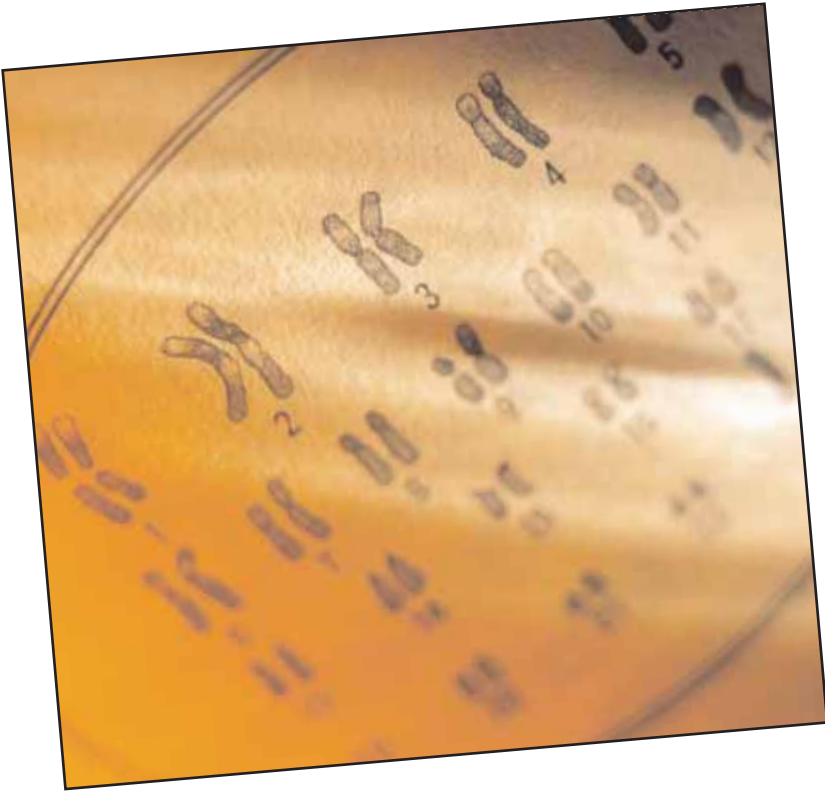
**Graphic Organizer for Listening:
Seniors Are Cool! (continued)**

IV. i. Mr. Strutwa: Restoring cars	Intro:
	Why did you decide to restore old cars after you retired?
	What's your favourite type of car to work on?
	What kind of car is this one here?
	Is that a real Ferrari?
	How long have you been restoring cars?

(continued)

**Graphic Organizer for Listening:
Seniors Are Cool! (continued)**

IV. ii: Mr. Strutwa: Keeping fit	Intro:
	Mr. Strutwa, how long have you been working out?
	What does your average day look like?
	What would you say to younger people wanting to start an exercise program?
	What's the secret of your success?



Topic 2
New, Improved?
Human Genetic
Issues

(2–4 lessons)

Students engage with a variety of texts on a controversial current topic. They analyze texts for viewpoint and implications. They research a short topic, prepare an outline, and explain their findings in an oral presentation. Students write a summary from notes, critique a movie, and discuss the benefits and dangers of genetic manipulation.

Outcomes

SLO 1.2 Respond to texts with increasing independence...

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

SLO 1.7 Evaluate a given text...

SLO 6.2.1 Use resourcing to access...

SLO 6.2.7 Use elaboration...

SLO 6.3.2 Use co-operation...

Instructional and Learning Sequence

Sequence 1

Activation

Journal Entry

- a) If you could choose three physical characteristics for your future child, what would they be and why? Have students write for 10 or 15 minutes, and then ask for volunteers to share their choices.
- b) Brainstorm with the students a list of characteristics that are genetically determined.
- c) Discuss what other factors influence a child’s development. Is personality inherited? (heredity vs. environment; nature vs. nurture)
- d) Give students a chart of 8 to 10 human characteristics such as obesity, blue eyes, heart disease, alcoholism, shyness. Have them mark each trait as “nature” or “nurture.”
- e) Read the listed articles to find how heredity or environment may influence various traits.
- f) Discuss the previous list of characteristics in light of the readings.
- g) Journal entry: If you could prevent your child from inheriting something you do not like about yourself, would you?

Language Features

Vocabulary

heredity, nature vs. nurture, human characteristics (e.g., obesity, shyness)

Expressions from “The Big Question”: a case in point, heck, average Joe, a gaggle, great strides

Discourse Features

rhetorical questions

expressions of contrast (e.g., on the other hand)

Academic Language Functions

discussing

predicting

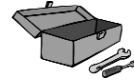
classifying

justifying

Student Learning Tasks

- a) In your journal, respond to which three physical characteristics you would choose for your future child. What would they be and why? **(I)**
- b) Brainstorm a list of characteristics that are genetically determined. **(C)**
- c) Discuss other factors that influence a child's development. **(C)**
- d) Given a chart of 8 to 10 human characteristics, mark each trait as "nature" or "nurture." **(I)**
- e) Read the listed articles to find how heredity or environment may influence various traits. **(I)**
- f) Discuss the previous list of characteristics in light of the readings.
- g) Journal entry: Respond to this hypothetical statement: If you could prevent your child from inheriting something you do not like about yourself, would you?

Teacher Notes and References



Handout 4-3: "NewsHour Extra for Students: The Big Question"

Internet Resources: "Human

Genome: Nature vs. Nurture: How Much of a Person's Fate is Written in the Genes?" at: www.news.bbc.co.uk/1/hi/in_depth/sci_tech/2000/human_genome/760724.stm. This article suggests that sequencing the human genome will make the role of environment in determining our health more, rather than less, clear.

"Nature vs. Nurture Revisited" at: www.pbs.org/wgbh/nova/genome/debate.htm. This article emphasizes the "seesaw struggle" between our genes and environment, concluding that our increased ability to manipulate genetic wiring may boost the influence of nature.

"Is Society Responsible for Mental Illness?" at: www.news.bbc.co.uk/1/hi/health/1079481.stm. This article reports on the role of genetics and environment on mental illness. It cautions that too much emphasis may be put on a medical model of wellness.

Caution: This lesson is not designed as a science lesson, but as an opportunity to discuss a current issue with many practical and ethical implications. Some things to keep in mind:

- approach all issues with sensitivity
- establish parameters for discussions
- ensure that the issues do not become personalized or directed at individual students
- protect the interests of individual students by finding out in advance whether any student would be personally affected by the discussion
- accept that there may not be a single "right answer" to a question or issue
- respect everyone's right to voice opinions or perspectives
- help students clarify the distinction between informed opinion and bias

Outcomes

SLO 1.5 Examine and interpret various visual media...

SLO 6.2.3 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...

Instructional and Learning Sequence

- a) Brainstorm different media depictions of humans who have been genetically altered. Encourage students to contribute examples from their own popular culture (e.g., anime). What views of genetic engineering does each reflect?
- b) Using a Venn diagram or other graphic organizer, group them into positive and negative depictions. Is there any overlap?
- c) Review literary sources or scenes from movies that deal with human engineering. *Gattaca* deals most directly with a future world filled with genetically based discrimination. Give enough context to understand the scene.

Discussion questions (depending on the scene):

1. What are the genetic alterations depicted?
2. What is their purpose?
3. What are the consequences (intended and unintended for the characters? Society?)

Language Features

Vocabulary

alter, depict, creature, discrimination, consequences (intended/unintended); other vocabulary necessary to understand the movie scenes

names of popular "modified" characters (e.g., Spider-Man)

Academic Language Functions

classifying

analyzing and interpreting

describing

Student Learning Tasks

- a) Brainstorm different media depictions of humans who have been genetically altered. (C)
- b) Using a Venn diagram or other graphic organizer, group the depictions into positive and negative categories. (C)
- c) Discuss questions related to scenes from the movies. (C)

Teacher Notes and References

Venn diagram (see Teaching and Learning EAL in the Senior Years section)

Literary options: *Frankenstein*, *Brave New World*, *Dr. Jekyll and Mr. Hyde*

Movie viewing options: *Gattaca*, *Frankenstein*, *Blade Runner II*, *Brave New World*, *Species*, *X-Men*, *Terminator 2*, *Star Wars Episode II: Attack of the Clones*, *The 6th Day*, *Spider-Man* (accidental modification)

Scientists, philosophers, artists, and ordinary people have long been fascinated with the prospect of altering the human body to correct “flaws” or to enhance its abilities. What was a fantasy in the past is near reality today.



These movies contain some strong scenes. It is not necessary to view the whole movie, but enough scenes

should be viewed to allow students to answer the discussion questions. Make sure public performance rights for educational use of the video are obtained before showing it to the class.

Suggestion: Use closed captioning, and view clips at least twice.

Outcomes

SLO 1.2 Respond to texts with increasing independence...

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

SLO 1.5 Examine and interpret various visual media...

SLO 1.7 Evaluate a given text...

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

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

SLO 6.1.1 Use advanced organization...

SLO 6.2.1 Use resourcing to access...

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

Option 1

View a number of scenes or the entirety of one of these movies (Gattaca recommended). Provide a plot synopsis and pre-teach essential vocabulary, particularly terms related to the scientific process and important colloquialisms.

Journal Entry: Immediately after viewing each scene, or at the end of the film, have students describe in their journals the strongest visual or sound image that they remember, as well as their immediate reaction to the film (e.g., sad, surprised, frightened, pleased).

After viewing, ask questions about the theme of the film. What is the filmmaker’s opinion about the potential of genetic engineering? Do students agree with this view? Which scientific and societal aspects of this film seem to be possible in the future, and which seem improbable?

Writing Task

Students write a critique of the science of the film, based on current research (must cite sources). This will necessitate researching the topic of genetic manipulation. Students use peer editing to focus on the six elements.

Language Features

Vocabulary

as required by the movie
 theme, improbable, realistic, aspects

Discourse Features

format of critical review—introduction, thesis, summary, critique, conclusion and present verb tense
 format of citations

Academic Language Functions

describing
 discussing
 evaluating
 inferring
 predicting
 summarizing
 analyzing and interpreting

Student Learning Tasks

View a number of scenes or the entirety of one of these movies (Gattaca recommended). (C)

Journal Entry: Describe in your journal the strongest visual or sound image that you remember, as well as your immediate reaction to the film. (I)

Write a critique of the science of the film, based on current research (must cite sources). (I)

Peer-edit to focus on the six elements. (P)

Teacher Notes and References

See page 29 for a list of potential movies.

For the Writing Task: Internet access or recent print resources



Give class time to research. If possible, prepare a web page with links to recommended resources. Emphasize that this is not a standard “movie review,” but should examine the science involved.

Outcomes

- SLO 2.1.3** Use developing control of grammatical features...
- SLO 2.2** Use several visual techniques...
- SLO 2.3** Produce a variety of short and extended text forms...
- SLO 2.3.3** Produce effective oral presentations.
- SLO 3.1** Seek, organize, and synthesize information...
- SLO 3.2** Develop and implement a plan for researching...
- SLO 3.3** Quote from or refer to sources...
- SLO 4.1** Use language to encourage...
- SLO 5.7** Select and present ideas...keeping in mind the intended audience.
- SLO 6.1.1** Use advanced organization...
- SLO 6.2.1** Use resourcing to access...
- SLO 6.2.4** Use note taking...
- SLO 6.2.9** Use summarization...
- SLO 6.2.11** Use transfer...
- SLO 6.3.1** Use questioning for clarification...

Instructional and Learning Sequence

Option 2

Divide the students into three groups. Assign each group a different aspect of the Human Genome Project to research.

Scientific Findings: What is the science behind the project? What have we learned? What are the important scientific terms and discoveries?

Applications: How can the knowledge coming from this project possibly be applied to human health? (Include a case study.)

Ethical Implications: What are the main ethical issues we face with mapping the human gene (e.g., treatment of disease, stem cell research, genetic screening and modification)?

1) Presentation:

- a) Each group should prepare one or two posters or a computer presentation with the highlights of their topic. Use illustrations wherever they will help.
- b) Display the projects and have each group explain their findings.
- c) Each group should also prepare a one-page outline of their presentation to aid note taking. Allow time after each presentation for clarification and further questioning, and for students to view the posters. Students must complete their notes to use in the writing task.

2) Writing Task: Using only the notes from the presentations, students write a one-page report on the importance of the Human Genome Project.

Remind students to use separate paragraphs for each topic.

Language Features

Vocabulary

Vocabulary review from Module 3, Topic 5A:
Biotechnology: GM Foods lesson

Discourse Features

Expressions for clarification: What did you say was the ...? What was the first point in #3? How do you spell ...? (These are simple questions, but listen for fossilized errors in question order.)
summary/paraphrase

Academic Language Functions

- reconstructing point-form notes into sentences
- explaining
- summarizing
- expressing opinion

Student Learning Tasks

In three groups, research a different aspect of the Human Genome Project. Focus on:

- Scientific findings
- Applications
- Ethical implications **(G)**

1) Presentation

- a) Prepare one or two posters or a computer presentation with the highlights of your topic. **(G)**
- b) Display your project and explain the findings. **(G)**
- c) Prepare a one-page outline of your presentation to aid note taking. **(G)**

2) Individual Writing Task

Using only the notes from the presentations, write a one-page report on the importance of the Human Genome Project. **(I)**

Teacher Notes and References

Internet access or recent print resources



This could be set up as a debate.

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 4.3 Use clear and respectful language...

SLO 5.3 Analyze ways in which ...contemporary culture

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

SLO 6.2.11 Use transfer...

SLO 6.2.13 Use recombination...

SLO 1.2 Respond to texts with increasing independence...

SLO 1.5 Examine and interpret various visual media...

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

SLO 6.1.5 Use selective attention...

SLO 6.2.1 Use resourcing to access...

SLO 6.2.11 Use transfer...

SLO 6.2.12 Use inferencing to guess the meanings...

Instructional and Learning Sequence

Discussion

Scientists were able to clone a sheep (Dolly) in 1997. What do students know about Dolly and subsequent attempts to clone animals? What is the potential of cloning for animals? Humans? What are the possible advantages and dangers of cloning extinct animals (think *Jurassic Park*)? Humans?

Language Features	Discourse Features
	expressions of opinion agreement/disagreement
	Academic Language Functions
	agreeing/disagreeing clarification asking for details restating

View

Using teacher-developed preview questions, students view one or both of the suggested video clips to look at possible benefits and dangers of cloning. Students exchange their personal reactions to the videos.

Language Features	Vocabulary
	pre-teach any necessary vocabulary
	Academic Language Functions
	listening for main ideas comparison evaluation

Student Learning Tasks

Discuss: What is the potential of cloning for animals? Humans? (C)

View one or both video clips to look at possible benefits and dangers of cloning using preview questions. (C)

Share the reactions or comments about the issues or concerns raised in the videos.

Teacher Notes and References

Visuals: Dolly, the cloned sheep, or other cloned animals (teacher-provided)



Video Clip: “Dolly’s Death Raises Big Questions” (time: 2:22) at:

<<http://archives.cbc.ca/400d.asp?id=1-75-738-4484>>

“Man with CF sees cloning as ‘second chance at life’” (time: 8:53) at:

<<http://archives.cbc.ca/500f.asp?id=1-75-738-4506>>

Teacher-developed preview guidelines

Outcomes	Instructional and Learning Sequence
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SLO 1.5 Examine and interpret various visual media...

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

SLO 6.2.7 Use elaboration...

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

SLO 6.1.8 Use self-evaluation to check...

SLO 6.3.3 Use positive self-talk to reduce anxiety

View the biotechnology cartoons on **Handouts 4-4 and 4-5**. What ideas about the Human Genome Project and genetic engineering do the cartoons express? What views of modern society do they express?

Language Features	Vocabulary
	copyright, commerce
	Discourse Features
	format and purpose of political cartoon
	Academic Language Functions
	hypothesizing
	inferring
	evaluating

Journal Entry

After studying and discussing the topic of genetic engineering, students state whether their views about it have changed.

Learning Log

Students write three positive comments about their work on this lesson (e.g., It was hard for me to explain my part of the poster, but I tried. I'm able to find the main points in most of the articles, even though I don't understand everything. I asked for clarification when I didn't get all the notes).

Student Learning Tasks

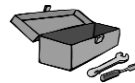
View the biotechnology cartoons on **Handouts 4-4 and 4-5**. What ideas about the Human Genome Project and genetic engineering do the cartoons express? **(1)**

Write a journal entry discussing your changing view on genetic engineering.

Write three positive comments about your work on this lesson. **(1)**

Teacher Notes and References**Handouts 4-4 and 4-5:**

Biotechnology cartoons. There is also a cartoon on the “true meaning of the human genetic code” at <http://cagle.state.msn.com/news/gene/gene9.asp>.



“The Science Behind the Human Genome Project” at:

www.ornl.gov/sci/techresources/Human_Genome/project/info.shtml

“Our Genes, Our Choices” at:

www.pbs.org/fredfriendly/ourgenesold/index.html

“Canada Enters the Clone Age” at:

<http://archives.cbc.ca/300c.asp?id=1-75-738>

NewsHour Extra for Students: The Big Question

By Heather Jones, 17, Texas

The Human Genome Project has opened up new opportunities for mankind. What will the future hold?

Perhaps someday people will never need glasses because genes from eagles' eyes have been combined with their parents' DNA.

Wings! We could all have wings! Beautiful feathered wings that would be utterly useless because of our body weights, but still, it'd be awesome!

There could be immunity to disease or viruses, such as anthrax, AIDS, or influenza. But at the same time, there is the possibility for abuse. As in any realm of science, progress brings not only the ability to do good, but also the ability to do ill.

A Better Human?

With the information scientists are gathering from their mapping of the genome, we can make the same substances our bodies make. A case in point is insulin, which is grown by combining the piece of genome which codes for human insulin with a chunk of bacteria. The bacteria doesn't recognize that anything has changed, it merely starts pumping out insulin, which scientists can then use to save the lives of millions who suffer from diabetes.

Clearly, there are many benefits to be derived from such technology, from medicines to the enhancement of our natural abilities.

But what happens when obsessive parents try to genetically engineer their kid to be the ultimate basketball player?

Is this fair to the child? What if the child doesn't want to be eight feet tall? What if the child's true calling in life is to be a jockey, only they can't, because their parents messed with their genes?

And how would this overly tall child be accepted among his peers? As anyone who's ever been made fun of well knows, being different from the other students means your school life is straight from heck.

Before we can answer these questions, we must ask ourselves who would actually use this technology? Certainly it's not going to be the average Joe and Josephine who'll be able to afford something as expensive as a designer baby. It will probably be the rich, the powerful, the well connected, and a gaggle of scientists.

But more than that, mapping the genome could place stress on not only the social structure but the foundations of democracy itself. Our country was founded on a premise that "all men are created equal." But what happens when all men are not created equal? Specifically, when the rich and powerful are created superior to the average and the poor?



(continued)

NewsHour Extra for Students: The Big Question (continued)

The Genes Made Me Do It

Another question has to do with the use of genetic information. Let's say that someone has a gene that makes them susceptible to cancer if they're exposed to chlorine. Can their insurance company refuse to cover them if they go swimming? Can their company, since they are providing them insurance, decree that they may not go swimming?

If a student is found to have a violence gene, can the schools refuse to enroll them even if the student has never acted out? Could someone be denied a job because they're considered a genetic "threat"? Could a determination that someone has the gene for "violent" (or even "generous") be accepted as character evidence in a court of law?

Will a person who's been told all their life they have "bad" genes, which make you selfish and violent, eventually become selfish and violent?

We're still unclear about how much of our personalities are determined by genes, and how much by environment. Aside from the whole nature vs. nurture debate, there is also the question of free will vs. determinism, a philosophical concept much like fate and destiny.

People who believe their actions are dictated entirely by their genes might take even less responsibility for their actions. A man or woman who becomes angry while in heavy traffic and ends up shooting a rubber-necker for driving too slowly may argue it isn't their fault because they have genes that make them snap very easily, and they can't be held responsible for their actions.

Genetic screening can, of course, be useful. Parents who carry recessive genes for deadly biological diseases such as sickle-cell anemia or Tay-Sach disease can find out their children will be affected. With some sort of gene replacement therapy, the defective genes that would normally cause the child to die early could be replaced with normal, healthy ones so that the parents could have a healthy child.

The government and military could also use the new information for either good or bad. They could develop new and better ways to resist biological warfare attacks. On the other hand, however, they could develop new and "better" biological weapons, specially tailored to attack certain parts of the human system. Perhaps they could develop a weapon that would render enemy soldiers blind and deaf. Will the good here outweigh the bad?

The Map of Uncertainty

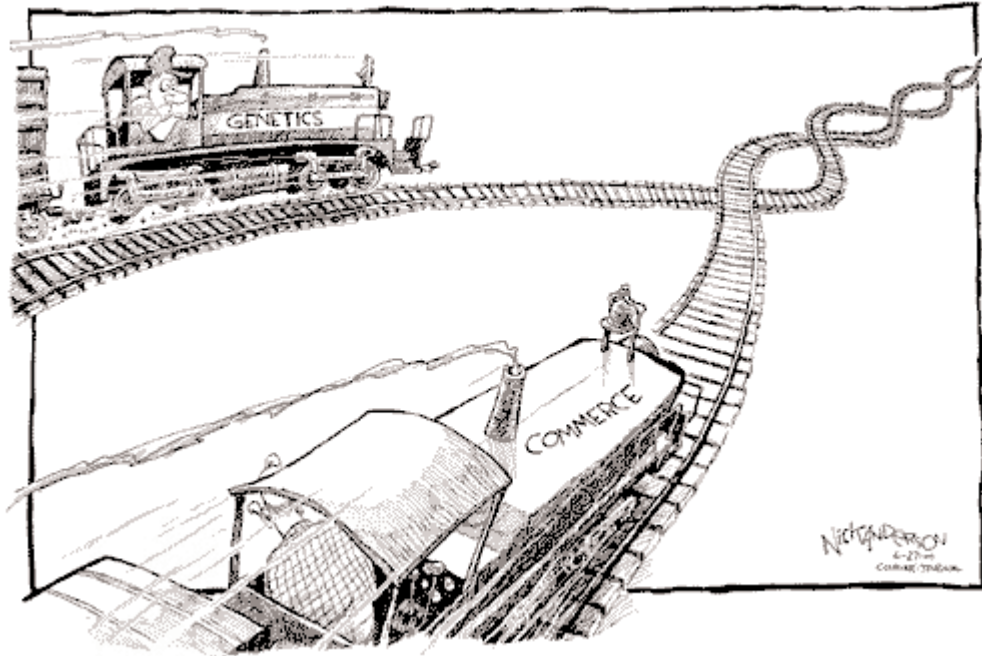
The study of genetics, much like other scientific endeavours, has both good points and bad. On one hand, great strides are being made in understanding how the human body functions. We could find out where we came from and the migration patterns of ancient man.

Children that otherwise might have been born with rare and deadly diseases may be born healthy and happy.

But at the same time, ethical and philosophical questions must and will be addressed. A psychologically dangerous attempt at "normalization" could result as people begin to view their differences as unwanted diseases or defects that must be removed from the genetic structure of their children.

In the end, we can only look to the future with wide eyes, hopefully ready to accept the good and to fight against the evil.

Genetics and Commerce



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