

BIOLOGICAL ISSUES PRESENTATION

Individually, or in a group of 3 members (maximum), you are to choose a biological issue related to the course and develop a presentation for it. This presentation is expected to be interactive and approximately 20 minutes in length.

NOTE: Your issues presentation should not be in the same unit as your newspaper assignment.

ALL GROUPS:

You must complete a proposal sheet before you begin your project due **Tuesday September 17**

APPROACHING THE ASSIGNMENT

- The due date you select is FINAL. You MUST present the day you have chosen regardless of whether or not all your group members are present on the actual date. If someone is missing, everyone in the group is accountable in having that person's information
- Please submit the rubric with your presentation.
- It is the group's responsibility to discuss the progress of this project. *It is suggested that you meet with the teacher at least a week before the due date.*
- Included within the presentation should be the following:
 - interaction with your audience (skits, games/activities, questions, etc)
 - an experiment that you have designed and conducted yourself, along with the results. It is expected that you include all components of the lab write-up (ie. problem, hypothesis, procedure, materials, results, conclusion) within the Powerpoint. The experiment should be relevant to the issue being presented.

You may wish to select the date of your presentation based on the course content that will be covered during that time. Here is a rough guide:

Sept/Oct:	Diversity of Living Things & Plants: Anatomy, Growth and Function
Oct/Nov:	Genetic Processes
Nov/Dec:	Evolution
Dec:	Animals: Structure and Function

Possible topics for Diversity of Living Things & Plants: Anatomy, Growth and Function

1. You are on a committee for an environmental clean-up group and you are looking into using biotechnology and genetically modified organisms to clean up the environment. Is it worth the investment?
2. Canada has extensive forests; however in recent years, deforestation has become a huge threat to genetic diversity. As an environmental group, you want to assess the effects of deforestation and provide alternatives to the Canadian government.
3. A small town in Ontario called Walkerton faced a crisis. The residents of were falling ill due to *E. coli* infections. Several people died. As an Environment Canada analyst, you have been assigned to design an investigative report detailing the possible causes of the outbreak, the effect of these outbreaks and to outline a solution to the problem.
4. Should we force students to be immunized in schools? You are part of the health and safety committee of the TDSB to determine whether or not this policy should be applied next year.
5. Look at an unused plant species that could become a star crop for feeding hungry nations. Find out how this plant can be used to sustain the human population. Are there any impacts this could have on the world's ecosystem? Weigh out the advantages and disadvantages.

6. The use of biofuels rather than fossil fuels is becoming increasingly popular. Many believe that switching to biofuels will reduce greenhouse gas emissions but may cause food prices to rise. Select two biofuels and assess their total environmental output, including greenhouse gas output that results from its production and use and its effect on land use. Also, consider how growing crops will affect food availability and prices. Discuss other advantages and disadvantages. Should Canada be required to include a substantial percentage of the fuel to be used, be biofuel?
7. The country of Syria is currently under close scrutiny. As the world watches and reacts, there lies the very real and very dangerous threat of bioterrorism. Research the effects of these biochemical weapons while weighing in on a course of action for our government to take.

Possible topics for Genetic Processes

8. You have recently discovered that you and your partner are pregnant. On one of your visits to the doctor, you were asked if you would like to save the umbilical cord of the fetus for possible future use of the stem cells within it. This of course, does not come at a cheap price. Prepare a presentation discussing the issue.
9. The Canadian government is thinking of developing a personal identification record for each citizen in Canada that would include a copy of each individual's DNA. How possible is this task? What are the implications of having this information? You are a member of the committee that will decide if the government should invest in this operation. Prepare the presentation for the meeting.
10. With the advent of biotechnology, there are new biological organisms being produced. As part of a team, you are faced with the decision on whether or not to patent your "invention". Do you think biological organisms can be patented? Do you think that competition is the key driving force of science, followed by collaboration?
11. Is 'brains' all in the family? Some research shows that intelligence is inherited. Knowing this, the school board is thinking of using students' DNA to design learning around the genetic makeup of an individual. You are part of a TDSB committee who was assigned to analyze the research and see if this process should be done.
12. There is a vast quantity of products in the market that claim to counter-act the effects of aging. Research these products for their active ingredients and determine which product is best to invest in.
13. An issue that arises with genetic-testing technology is how to regulate the use of, storage and access to the information obtained from testing. With the rapid development of genetic tools, the ability to test individuals for genetic conditions has improved. Are laws protecting genetic privacy necessary? Should third parties such as employers, insurance companies, health-care providers and governments have access to your genetic information? Research and present the issue.
14. An estimated 30 000 different items on North American grocery store shelves contain products from GMOs. Are current Canadian regulations of genetically modified foods sufficient? In addition to the issue, suggest some reasons for producing GMOs for foods. Do GMO foods taste different from non-GMO foods?

Possible topics for Evolution

15. Bringing back the dead? An extinct woolly mammoth was found and scientists wish to use biotechnology to bring back this extinct species and others back from the dead. How likely can this be achieved? What are the consequences of this? You are part of a government funded research group to analyze this issue and whether or not it should be done.
16. With the advent of modern medicine, the life-span of humans has increased by a number of years. As evolutionists, you wish to examine the impact of medicine on natural selection. Do you think man should not interfere with natural evolution? Should some medical practices be allowed but others be banned?
17. Areas with tropical climates tend to have greater species diversity than areas with cold, harsh climates. Recent DNA evidence indicates that mutation rates are higher in tropical climates than in cold climates. Research the role climate plays in natural selection and investigate the impact global warming may be having on the rate of evolution.
18. Research the techniques, crop varieties and livestock breeds used in industrialized agriculture and compare them to those used in sustainable agriculture. Do the benefits of relying on a few highly productive livestock breeds and crop varieties

outweigh the risks of reducing genetic diversity by allowing less productive breeds to become extinct? Analyze the social, economic and ethical issues to form an opinion on the issue.

Possible topics for Animals: Structure and Function

19. Many “high energy” drinks have recently been declared illegal for sale. As a health advisory board for the government, your role is to prepare a report on these drinks and to decide which ones should not be for sale in Canada.
20. A man, who blamed his heart attack on food, has recently sued McDonalds. McDonalds has responded to this man’s claim and the requests of consumers by introducing a new “Light” menu and new oil for their fried foods. Assess these products for their nutritional value and if there are any side effects. Compare McDonalds with other fast food companies to assess which food chain should be acknowledged for the healthier and appetizing options.
21. Health Canada is looking into the use of radioactive pharmaceuticals. You are the committee assigned to investigate these drugs for their benefits and possible side effects and to determine if they should be approved and how they will be regulated.
22. Males and females perform differently in sports. Investigate at least three sports and outline the differences in male and female physiology and relate it to the sport. Design a product (or a few) to help males and females perform better at these sports.

For additional ideas, please refer to your textbook. The teacher must approve other issues chosen.

NAME: _____

TOTAL VALUE: 100 MARKS

EVALUATION FOR BIOLOGICAL ISSUES PRESENTATION

CRITERIA	1-limited	2-some	3- good	4-excellent
GROUP APPLICATION				
Description of Issue <ul style="list-style-type: none"> shows a thorough understanding of the science in the issue offers scientific background knowledge on the issue (ie. concepts, definitions, diagrams) 	3	6	9	12
Possible Options <ul style="list-style-type: none"> provided a thorough discussion of options 	2	4	6	8
Analysis of STSE issues <ul style="list-style-type: none"> discussed the societal, economic, political, and environmental impact of the issue and the solutions provided 	3	6	9	12
Final Recommendation <ul style="list-style-type: none"> final recommendation was clear reasoning behind the recommendation was given advantages/disadvantages were compared and discussed 	1	2	3	4
LAB DESIGN				
<ul style="list-style-type: none"> discussed why the particular factor(s) were chosen to study/analyze. made the connection of the lab relate to the issue 	0.5	1	0.5	2
Hypothesis <ul style="list-style-type: none"> prediction clearly stated and justified 	0.5	1	0.5	2
Procedure <ul style="list-style-type: none"> steps conducted were outlined thoroughly so that audience could follow along 	1	2	3	4
Results/Analysis <ul style="list-style-type: none"> results presented in graphs, charts and tables thorough analysis of results and implications connections made to possible options/final recommendations 	3	6	9	12
Bibliography <ul style="list-style-type: none"> at least five resources were used APA format was followed Bibliography was on a separate PPT slide and handed in Resources consulted were from official websites At least one scientific journal/book was used 	2	4	6	8
GROUP COMMUNICATION				
Interactive Presentation & Creativity <ul style="list-style-type: none"> Involved audience throughout the presentation with the use of games/cooperative learning activities etc. Presentation contained an activity other than a question and answer period. Presentation stimulated audience questions which were addressed well Topic was original and it was presented in an interesting fashion within the 20min time limit 	2	4	6	8
Visuals <ul style="list-style-type: none"> PPT had appropriate visuals relating to the topic including images, graphs, statistics, appropriate font and amount of written words Multimedia was used effectively eg. Video links, skits, costumes etc 	3	6	9	12

	1-limited	2-some	3-good	4-excellent
INDIVIDUAL MARK				
Communication <ul style="list-style-type: none"> • Did not read your notes during the presentation • Great voice-projection • Ideas were presented clearly 	1	2	3	4
Application <ul style="list-style-type: none"> • A thorough analysis of your section was given 	1	2	3	4
Research Notes <ul style="list-style-type: none"> • All rough notes from your area were submitted. This includes notes from references, concept maps, flow charts, rough drafts, group notes etc. Each individual is expected to submit their own notes. • Rough data from experiments are included • Photo evidence of the experiment or surveys were submitted • Used a variety of resources 	2	4	6	8

PROPOSAL FOR ISSUES PROJECT

Due: Tuesday September 17 (worth 10 marks – 1 proposal per group)

Name(s):

Presentation Date:

1. Brief Description of the Issue: (1)

2. Ideas for experiment (3)

Factor you are going to analyze:

Independent variable:

Dependent variable:

Control variable(s):

Procedure/Idea for investigation:

How are you going to analyze your data? (graphs, charts, tables, diagrams)

How are you going to link your experiment with your project? What connections are you hoping to make? (2)

3. Outline the type of information you need to research: (2)

4. Outline your division of tasks, timelines etc. for your group. (1)

5. Outline some ideas when presenting your issue to the class. (1)

ISSUES PROJECT PROGRESS REPORT

Due: Two weeks before your presentation (10 marks per individual)

Name: _____

You must schedule an interview with your teacher two weeks prior to your presentation. It is up to you to contact the teacher and make the arrangements. During your interview, you must present your rough notes to date, rough data for your experiment and an outline for your presentation.

You must also submit in paragraph format the following information:

- ⇒ Your task in the project
- ⇒ What you have completed
- ⇒ What still needs to be done
- ⇒ Timelines

BIOLOGY ISSUES PROJECT SIGN UP SHEET

Keep in mind **TWO presentations per Friday**. Issues project should be in a different unit than newspaper project

DATE	Group 1 & Topic	Group 2 & Topic
Fri Oct 4 (Unit 1)		
Fri Oct 18 (Unit 1/2)		
Fri Nov 1 (Unit 2)		
Thu Nov 14 (Unit 2/3)		
Fri Nov 29 (Unit 3/4)		
Fri Dec 13 (Unit 4)		