

Urban Assembly School for Law and Justice
Biochemistry
Ms. Rathmann-Noonan & Ms. Jacobson

SimEcosystem

Over the next 3 weeks, you will be creating your own ecosystem based on your knowledge of ecology and your imagination. You will then introduce a human impact into your ecosystem and describe how the ecosystem responds in an “Environmental Impact Statement.” You will present this using Powerpoint to the class during the week of January 16th.

How to Simulate an Ecosystem:

Step 1: Determine your abiotic factors. Use textbook chapters 21-23, and use the Internet to learn about the abiotic factors in certain ecosystems around the world.

- A: Location
- B: Climate (temperature, seasons, humidity, and precipitation)
- C: Surface conditions: soil minerals, soil texture, water, etc.

Make a neat and complete list of these abiotic factors to turn in.

Step 2: Create life

Part A: Create a Biological Community

Create a community of organisms **that would inhabit the ecosystem with the abiotic factors described above**. Imaginary creatures are acceptable and encouraged!! Use chapter 21-23 and the Internet to make sure that the organisms that you describe would actually survive in your ecosystem!

Include at least one species of each of these:

- i. producers
- ii. herbivores
- iii. carnivores/omnivores
- iv. decomposers

Part B: Fill in the Details

For each species be sure to include:

- i. habitat
- ii. population size
- iii. nutritional requirements or type of soil/amt of water
- iv. sensitivity to the environment

Part C: Make Connections

- i. Make a food web and an energy pyramid for your community
- ii. Describe relationships between the organisms. You must have an example of each of the 3 types of relationships below.
 - a. Predator-Prey
 - b. Symbiosis (mutualism, commensalism, or parasitism)
 - c. Competition

Parts A & B should be written as a list of organisms with a paragraph describing each of them and how it fits in the ecosystem and any relationships it has. Part C should be a drawing of the energy pyramid and food web. The information about relationships should be put into the 1st section.

Step 3: Add a human disturbance

Make sure that your impact is relevant to the ecosystem you have created. Start by describing what the impact is/what causes it. Then describe how it impacts your specific ecosystem.

Some great examples are:

- a. Climate change (global warming)
- b. Habitat Loss (deforestation)
- c. Ozone Hole (increased UV light exposure)
- d. Desertification
- e. Invasive Species
- f. Pollution
- g. Acid Rain
- h. Overfishing / Direct Harvesting of producers and/or consumers

Step 4: Write an “Environmental Impact Statement”

An Environmental Impact Statement is a document that builders and government officials write to describe how a proposed project will affect the ecosystem around it. You will write an environmental impact statement for the impact you have chosen. You may want to check out some real Environmental Impact Statements on the Internet.

Your Environmental Impact Statement should be formatted as follows:

Introduction

Description of Ecosystem

Description of Human Impact

How the Ecosystem will be affected and How it will respond.

Conclusion

Appendix: Food Web, Energy Pyramid, any other visual aids.

It must be typed.

Step 5: Prepare a Powerpoint Presentation

You will be presenting your Environmental Impact Statements to a panel of other scientists. This speech must be accompanied by a Powerpoint presentation. The presentation should include all of the major findings in your EIS. The presentation should be 5 minutes long. You should probably estimate about 2 slides per minute. Images are encouraged, and you can search for great images on Google Image. (We will do an image search tutorial in class.) Fancy transitions and sound effects are not. Every word you say should not be written on a slide. The Powerpoint should compliment your speech – it should not **be** your speech.

Step 6: Write test questions

Write 2 test questions about your presentation to go on the unit test. These should be questions that the audience could answer by taking notes on your presentation and studying their notes. One questions should be multiple choice and the other should be short answer. Try to make your short answer question a “higher order” question—why, how, etc.

Step 7: Give your presentation to the peer review panel

5 minutes long

You can use notes if you want, but shouldn't be reading directly from them. In a word...

PRACTICE!

Due Date and Scoring Guide
SimEcosystem Project
150 points total

<u>Assignment</u>	<u>Point Value</u>	<u>Due Date</u>
Steps 1 & 2: <i>(Paragraphs, Description of Ecosystem, Food Web, and Energy Pyramid)</i>	30 points	Friday, January 6
Step 3 & 4: <i>(Environmental Impact Statement)</i>	65 points	Wednesday, January 11
Step 5: <i>(Powerpoint Presentation)</i>	30 points	Emailed to mjacobson@sljhs.org OR ajrn@sljhs.org by MIDNIGHT Friday, January 13
Step 6: <i>(Test Questions)</i>	10 points	Monday, January 16
Step 7: <i>(Presentation)</i>	15 points	Monday-Wednesday January 16-18
EXAM	75 points	Thursday, January 19

NAME OF COURSE
Biochemistry
UNIT NAME Ecology

NAME OF INSTRUCTOR(S)
Rathmann-Noonan & Jacobson

UNIT/ESSENTIAL QUESTION:
How do ecosystems maintain equilibrium?

FOCUS QUESTION/OBJECTIVE:
How can we show the amount of energy that is lost in a food chain?

<p>At the end of this lesson, students will KNOW: The definitions and differences between herbivores, carnivores, and omnivores. Where to put certain organisms on an energy pyramid. Why there is less usable energy as you go up a food chain.</p>	<p>At the end of this lesson, students will BE ABLE TO: Represent energy flow in a community with a food web and label the producers, consumers and decomposers. Represent energy flow in a community with an energy pyramid. Place herbivores, carnivores, and omnivores in appropriate places in a food web and energy pyramid.</p>	<p>At the end of this lesson, students will THINK ABOUT: Do certain types of diets more efficiently use the sun's energy?</p>
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PROCEDURE:

<p>DO NOW</p>	<p>Draw a food web of the community made of the following organisms (autotrophs are labeled with a * and heterotrophs are labeled with a #). Take into account whether a consumer eats only plants, plants AND animals, or only animals.</p> <p>Grass Vegetables Trees Mice Rabbits Deer Owls Snakes Mountain lions Decomposers</p> <p>What would happen to the organisms in this community if ALL the grass were killed by a chemical spill? What would happen to the organisms in this community if ALL the rabbits were hunted and killed?</p> <p>Have a student put their food web on the easel and have students share answers.</p>
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	<p>Emphasize that the more connections that you have in a food chain, the more able it is to adapt if one organism disappears from the community.</p>
MINI-LESSON	<p>Using the food web that the student created, introduce the words herbivore, carnivore, omnivore. Have students point out herbivores, carnivores, and omnivores.</p> <p>Project definitions on the smartboard: Herbivore: a consumer that eats ONLY plants. Carnivore: a consumer that eats animals. Omnivore: a consumer that eats both plants and animals.</p> <p>Have students label each organism on your food chain one of the 3 things—pair share</p> <p>Yesterday, you did food chains, today we are going to represent the energy flow in an ecosystem in a different way.</p> <p>Put a box at the bottom of the screen. Say that this box represents the energy that the producers have obtained from the sun. Write “producers” in that box and list the names of the producers from the food web on the easel</p> <p>Tell students that the next box represents the amount of energy that the consumers that eat the plants got from the producers. Ask them if they think the box will be smaller or larger and why. Tell students that only 10% of the energy from one level in the food chain goes to the next level.</p> <p>Draw the next box, write “consumers (herbivores)” in the box and write the names of all the herbivores in the box.</p> <p>Ask how big the next box should be and why. Draw the box, ask what type of organisms should be put in the box. Write consumers (carnivores) in the box.</p> <p>Ask: Where should omnivores be on this chart? Draw the name of the omnivores in both higher boxes. Ask: What if an organism eats mountain lions? Where would we put them? Ask: What is missing from this chart? (decomposers) Say that we don’t put them in because they can get their energy from any of the levels on the chart.</p> <p>Write “Energy Pyramid” on the top of the chart.</p>
ACTIVITY	<p>Make an energy pyramid for the ecosystem you are working on. Make it the correct number of levels for the organisms that you have. Put each organisms in the right box (except what?)</p>
SUMMARY	<p>Students share out their food webs and energy pyramids. Summary Question: If Ms. Rathmann-Noonan is a vegetarian and Ms. Jacobson eats meat,</p>

	where do they each belong on the energy pyramid? Which diet requires MORE energy from the sun to sustain and why?
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HOMEWORK: Ms. R-N: Finish “You and the Web of Life” activity. Ms. Jacobson: page 19. Applications questions 1,2 and 3.

MATERIALS: Chart Paper and Markers. Extra copies of the ecosystem handouts. Previously done food webs on chart paper.
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REGENTS CONNECTIONS:	SAT CONNECTIONS:
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CORNELL NOTES:

UNIT ESSENTIAL QUESTION: How do ecosystems maintain equilibrium?

FOCUS QUESTION/OBJECTIVE:
What ways do different organisms in a community interact with each other?

<p>At the end of this lesson, students will KNOW: The different relationships that occur between organisms in a community (predator-prey, competition, symbiosis (mutualism, commensalisms, parasitism))</p>	<p>At the end of this lesson, students will BE ABLE TO: Create a skit that demonstrates a particular relationship between organisms. Give an example of pairs or groups of organisms that have different relationships. Describe the difference between different relations.</p>	<p>At the end of this lesson, students will THINK ABOUT: How are the roles of different organisms in a community different from each other?</p>
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PROCEDURE:

<p>Do Now</p>	<p>Imagine your advisory group is a community of organisms. Describe the roles of a few different people in your advisory community. Describe the types of relationships between those people.</p>
<p>MINI-LESSON</p>	<p>Have students share their responses, as long as they are respectful to the members of their advisory group. Describe the assignment—have students read through the worksheet Assign Group Roles: Recorder (writes down the script, definitions, etc.) 2 Actors (helps write and perform the script) Reporter (explains the relationship to the class after the speech) Extra Person: Facilitator (make sure that everyone is doing your work)</p>
<p>ACTIVITY</p>	<p>Each student group will be assigned one of the following relationships: Competition for food Competition for light Predator-prey Symbiosis- Parasitism Symbiosis- Mutualism Symbiosis- Commensalism They will read a case study of two organisms that interact with their relationship They will create a definition for that relationship Then, they will create a skit demonstrating that relationship as if it were between two people. On day 2, students will present their skits and definitions to the class. Students in the class will have a sheet where they will summarize the skit, the case study, and the definition based on the skits</p>
<p>SUMMARY</p>	<p>Assessment questions</p>

HOMEWORK: Night 1: practice the skit!

Night 2: Read section 3.4 page 64-66. Answer questions 4 and 5 on page 66 in complete sentences.

MATERIALS: handouts.

REGENTS CONNECTIONS: regents material

SAT CONNECTIONS:

CORNELL NOTES:

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NAME OF COURSE Biochemistry

NAME OF INSTRUCTOR(S)

Jacobson/ Rathmann-Noonan

**UNIT NAME: Ecology/Human
Impact**

DATE 12-13-05

How does an ecosystem maintain balance?

FOCUS QUESTION/OBJECTIVE:

How do humans impact the flow of matter in an ecosystem?

<p>At the end of this lesson, students will KNOW: How oxygen, nitrogen, carbon, and hydrogen are cycled through an ecosystem.</p>	<p>At the end of this lesson, students will BE ABLE TO: Describe how nitrogen-based fertilizers relate to the nitrogen cycle. Describe how plants and animals are involved in the cycle of oxygen and carbon.</p>	<p>At the end of this lesson, students will THINK ABOUT: Would the world be able to support as many people as it does if we didn't have fertilizers?</p>
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PROCEDURE:

<p>DO NOW</p>	<p>Our bodies are made mostly of atoms of carbon, nitrogen, oxygen, and hydrogen. Where do we get these atoms from? What happens to them when we die?</p>
<p>MINI-LESSON</p>	<p>We have already learned that matter (atoms) in a food web are cycled between living and nonliving things over and over and over again. These atoms are combined together from nonliving things by plants. Then they are passed from one organisms to another and are recombined over and over and over again. Eventually, these organisms die and are broken down into simpler nonliving things by decomposers. Any type of matter will end up being cycled in this way.</p> <p>For example, the water cycle is a way that water cycles through the ecosystem. But there are other ways.</p> <p>As you are saying the description below, draw a diagram on the smartboard: For example, we have all heard that plants "make" the oxygen that we breathe in and that they "use" the carbon dioxide that we breathe out. In fact, plants use carbon dioxide gas from the air as part of the reaction they do to store the sun's energy (photosynthesis) and build their bodies. O₂ is a waste product of this reaction. What do you think happens to the Carbon Atoms? (it help build up the cells). We then use O₂ in a reaction that allows us to get energy out of our food (respiration). CO₂ is a waste product of this reaction. So there is a cycle.</p> <p>Another cycle that occurs is with nitrogen. Nitrogen atoms are important parts of the protein in the bodies of plants and animals. N₂ gas is the most common substance in our air. Certain types of bacteria take nonliving nitrogen compounds (like N₂ gas, ammonia, etc) and make them usable by plants. The plants combine these Nitrogen atoms into their proteins. Then animals eat the plants and combine those nitrogen atoms into their proteins. When these things die, the bacteria decays them into ammonia and the cycle starts again.</p>

	Today you will be reading about 2 different ways that humans have interfered with these cycles. You will answer the questions and share your answers with the class.
ACTIVITY	Students read 2 readings—one about the effect of cutting down trees on the cycling of oxygen/carbon dioxide and one about why we have to use nitrogen-based fertilizers.
SUMMARY	Would the world be able to support as many people as it does if we didn't have fertilizers?

HOMEWORK:

Imagine that you are 1 atom of oxygen, nitrogen, or carbon. Write a paragraph describing one journey that you make between living and nonliving things.

MATERIALS:

REGENTS CONNECTIONS:

SAT CONNECTIONS:

CORNELL NOTES:

Questions here

General notes about the subject here.

NAME OF COURSE

Biochemistry

UNIT NAME Ecology

NAME OF INSTRUCTOR(S) Rathmann-

Noonan & Jacobson

DATE December 15, 2005

UNIT/ESSENTIAL QUESTION:

How do ecosystems maintain equilibrium?

FOCUS QUESTION/OBJECTIVE:

Focus: How do we measure how strong an acid we have?

At the end of this lesson, students will KNOW:	At the end of this lesson, students will BE ABLE TO: Identify, based on pH, whether a substance is acidic, basic, or neutral. Describe the differences in Hydrogen ion concentration of substances with different pHs.	At the end of this lesson, students will THINK ABOUT:
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PROCEDURE:

DO NOW

Which acid do you think is more dangerous to the environment: concentrated sulfuric acid spilled into a river or lemon juice that you

	poured down the sink? Explain the reasons for your answer
MINI-LESSON	<p>There are different strengths of acids and bases. We measure this strength using something called the pH scale. The scale goes from 0 → 14. 7 is called “neutral” and water has a pH of seven. Acids are on the 1 side and bases on the 14 side. What is the difference between an acid and a base? (H⁺ and OH⁻ ions). As you go down in numbers you get MORE H⁺. As you go up in numbers you get MORE OH⁻. (Draw all this stuff on the pH scale in the textbook). Indicators and pH paper give you a good idea about the pH of a substance.</p> <p>Let’s look at the pHs of some substances and you can tell me if it’s a strong acid, weak acid, neutral, strong base, or weak base.</p> <p>Show pictures of substances and their pHs. Have students volunteer the answers.</p> <p>Normal Rain = 5.6, it’s an acid, what is a possible pH for acid rain? Tell students acid rain can have a pH anywhere from 5.5 to as low as 2.4</p>
ACTIVITY	Work on project
SUMMARY	

HOMEWORK: Project

MATERIALS: Smartboard. Easel. Digital projector.

REGENTS CONNECTIONS:

SAT CONNECTIONS:

Deforestation/ Desertification
NAME OF COURSE Biochemistry

NAME OF INSTRUCTOR(S)
Jacobson/ Rathmann-Noonan
DATE 1/9/06

UNIT NAME Ecology

UNIT/ESSENTIAL QUESTION:

How do ecosystems achieve and maintain equilibrium (homeostasis)?

FOCUS QUESTION/OBJECTIVE:

What are some ways that humans change the land for their use?

At the end of this lesson, students will KNOW: About two different human impacts on land, desertification and deforestation and their impact.	At the end of this lesson, students will BE ABLE TO: Understand the reasons that these human impacts occur and answer regents questions about these human impacts.	At the end of this lesson, students will THINK ABOUT: The necessity of land for human purposes that cause deforestation and desertification.
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PROCEDURE:

DO NOW	Years ago the state of Ohio was covered in forests. How has that changed today and why?
MINI-LESSON	<p>Answer to the do now: Trees were cut down to make room for cities (housing and business) and agriculture (for grazing and planting).</p> <p>Deforestation - cutting down trees How might this be a detrimental thing? <i>Removes the tree roots that hold the soil in place and help retain water, soil erosion, increased water runoff and flooding (no groundwater).</i> Where do you think this problem is worst? <i>Tropical Rainforest where 50% of earth's species live.</i> <i>Destroys habitat, food supply, soil, climate (transpiration)</i> Other long term problems: Rise in CO₂ from burning & decaying, effect global climate, food production, and sea levels.</p> <p>Desertification- conversion of rangeland, cropland, grassland in to desert like land. Natural desertification happens at the edge of current deserts and is caused by dehydration of topsoil during drought or evaporation. This is accelerated by overgrazing (too many live stocks. Poor soil and water management, and deforestation.</p>
ACTIVITY	Work on Project
SUMMARY	What factors human and natural increase the size of deserts? How could deforestation of tropical forests affect climate?

HOMEWORK:

Reading and regents question.

MATERIALS:

Smartboard

Invasive Species

NAME OF COURSE Biochemistry

NAME OF INSTRUCTOR(S) Jacobson/
Rathmann-Noonan

UNIT NAME Ecology/ Human Impact

DATE 1/10/06

UNIT/ESSENTIAL QUESTION:

How do ecosystems achieve and maintain equilibrium?

FOCUS QUESTION/OBJECTIVE:

How do invasive species negatively impact an ecosystem?

At the end of this lesson, students will KNOW:

Specific examples of how invasive species affect an ecosystem.

At the end of this lesson, students will BE ABLE TO:

Give examples of how an invasive species affect an environment.

At the end of this lesson, students will THINK ABOUT:

The involvement of humans in invasive species.

PROCEDURE:

DO NOW

In many of the areas of Brooklyn there is a large change happening as more Caucasian people move into areas that had previously been majority black. With a change in the population also comes renovation of living and a change in retail options. What happens to the original population of families and people who lived in these areas? How are they affected by the change?

MINI-LESSON

Answer to the do now: The native population is negatively affected as new people and retail move in the prices raise and they are no longer able to live there.

This happens in nature - Imagine a population of oak trees....and then one day this little moth arrives. In a short amount of time the forests of trees are sick and dying.

When a species of animals comes into a new area where they have unlimited resources and no natural predator they are invasive species.

They take the resources of the native species such as food and habitat and can have a great effect on food webs. How might they have an effect on a food web?

Many times they are introduced into the new area through human interaction.

Some examples: rabbits in Australia
Zebra Mussels in the Great Lakes

ACTIVITY

Work on Project

SUMMARY

How can invasive species have a negative effect on an ecosystem? What effect do they have on biodiversity?
Are humans an invasive species?

HOMEWORK:

Reading and regents questions

MATERIALS:

Smartboard, handouts

Global Warming

NAME OF COURSE Biochemistry

NAME OF INSTRUCTOR(S) Jacobson/
Rathmann-Noonan

UNIT NAME Ecology/ Human Impact

DATE 1/12/06

UNIT/ESSENTIAL QUESTION:

How do ecosystems achieve and maintain equilibrium?

FOCUS QUESTION/OBJECTIVE:

How does global warming affect the earth?

At the end of this lesson, students will KNOW: What global warming is, what causes it and how it affects the earth and humans.	At the end of this lesson, students will BE ABLE TO: Give examples of how humans contributed to global warming.	At the end of this lesson, students will THINK ABOUT: The long term affect of global warming on the earth and what can be done to help remedy the problem.
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PROCEDURE:

DO NOW	Imagine its 15 years from now and the earth has changed quite a bit, one of the most obvious changes is that now the overall temperature is 10 degrees hotter. How might that effect the earth? How might that affect your everyday life?
MINI-LESSON	<p>Answer: Ice caps will melt, ocean levels will raise. Cities will be covered in water, animals and humans will be lost. Habitat loss, more money for air conditioning.</p> <p>Over the past 100 years the surface of the earth has warmed by about .5 degrees. This is known as global warming. Human technology is blamed for adding to gases in the atmosphere.</p> <p>Example is carbon dioxide that is released by burning fossil fuels (driving cars/ factories, etc). While carbon dioxide is emitted by plants larger amounts are released by humans.</p> <p>This raises the temperature of the earth by the greenhouse effect. Think about sitting in a closed car on a hot day...the sun light comes into the windows and warms the car but the heat does not escape. This is similar to the gases in the atmosphere (carbon dioxide, ozone, methane) - without these gases the earth would be cold and no life could live here. However too much gas and the temperature raises.</p> <p>Global warming affects the carbon cycle. Burning fossil fuels adds carbon dioxide, and cutting down rainforest leaves fewer plants to absorb the carbon dioxide.</p> <p>Long term effects: Melting of the ice caps, desertification, famine (food can no long grow), flooding.</p>
ACTIVITY	Work on Project
SUMMARY	What effect does global warming have on the earth? What effect

	does global warming have on the carbon cycle?
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HOMEWORK:

Reading and regents questions

MATERIALS:

Smartboard, handouts

Ozone Layer/ Hole

NAME OF COURSE Biochemistry

NAME OF INSTRUCTOR(S) Jacobson/
Rathmann-Noonan

UNIT NAME Ecology/ Human Impact

DATE 1/10/06

UNIT/ESSENTIAL QUESTION:

How do ecosystems achieve and maintain equilibrium?

FOCUS QUESTION/OBJECTIVE:

What is the ozone layer and what is the effect of a hole in it?

At the end of this lesson, students will KNOW: The purpose of the ozone layer and how humans have impacted it.	At the end of this lesson, students will BE ABLE TO: Explain where the ozone layer holes are and how this problem will affect humans.	At the end of this lesson, students will THINK ABOUT: The long term effects of a hole in the ozone layer.
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PROCEDURE:

DO NOW	Quick write.... What do you know about the ozone layer?
MINI-LESSON	Go over the do now reviewing student answers. The ozone layer is a layer of gas molecules known as ozone - which are three oxygen atoms bonded together. The purpose is filter UV radiation from the sun- keeping the harmful rays from reaching us. Over the last 100 years two holes in the ozone layer have been created - one over the Artic and one over Anarctica. The holes were caused by gases and chemicals emitted by humans (such as CFCs from air conditioners and fridges, and aerosol sprays). These "holes" are not actually holes but very thin areas that are not able to filter the UV radiation. It is possible for the ozone layer to be repaired but it will need 50-100 years and global cooperation.
ACTIVITY	Work on Project
SUMMARY	How does the hole in the ozone layer affect animals besides humans? Will the ozone layer be able to be repaired?

HOMEWORK:

Reading and regents questions

MATERIALS:

Smartboard, handouts

NAME OF COURSE Biochemistry

NAME OF INSTRUCTOR(S)

Jacobson/ Rathmann-Noonan

**UNIT NAME: Ecology/Human
Impact**

DATE 12-13-05

How does an ecosystem maintain balance?

FOCUS QUESTION/OBJECTIVE:

How do you create a Power Point presentation?

<p>At the end of this lesson, students will KNOW: How to use Power Point to create a presentation based on a piece of writing.</p> <p>How to attach a document to an email.</p>	<p>At the end of this lesson, students will BE ABLE TO: Make a presentation using powerpoint</p> <p>Attach a practice presentation and email it to the instructor.</p>	<p>At the end of this lesson, students will THINK ABOUT: How can words and pictures on my powerpoint complement my work?</p>
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PROCEDURE:

DO NOW	Sit at a computer in a pair. Type Powerpoint presentation as the title of your presentation and your names in the second box.
MINI-LESSON	<p>Have students share their do nows. The list of things should look something like: Few words Pictures Doesn't distract, but helps you understand People don't read off the slides directly. Etc.</p> <p>Put students in groups of 2 at a computer. Distribute the sample environmental impact statement to the class. Have students in pairs underline the 3-4 important topics covered in the paragraph. Have students share the important points in the paragraph. As a class, but them in 3 or 4 groups that you will use for different slides. Tell students that this is how they should break down a paragraph into slides. Show them how to create 3 slides and type the title onto the top of one slide.</p> <p>Then have students write 3-4 phrases or bullet points for each slide and type them into the slides.</p> <p>Show students how to use clip art to add a picture to a slide. Give pairs time to add clip art to one of their slides.</p> <p>Show students how to search using google image search and cut and paste a picture from the internet. Give pairs time to add an internet image to the paper.</p>
ACTIVITY	Students will work to create a set of slides for a second body paragraph in the essay.
SUMMARY	Students will stop approximately 15 minutes before the end of class. Demonstrate (using yahoo or hotmail or aol) how to attach and send a document. If necessary, show them in multiple platforms. Have students email their sample powerpoints to you and grade them as evaluation for the lesson.

HOMEWORK:

Imagine that you are 1 atom of oxygen, nitrogen, or carbon. Write a paragraph

describing one journey that you make between living and nonliving things.

MATERIALS: computer room, sample essay

REGENTS CONNECTIONS:	SAT CONNECTIONS:
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Ocean Ecosystem

By: Khrystyne Hernandez

Main Points of this Topic

- Short introduction
- Description of the Ocean ecosystem
- Human Impact
- The Effects of the impact on the ocean ecosystem
- Final Words and Comments

Introduction

- An ecosystem keeps a balance
- The balance is between people, animals, and plants
- Ecosystems can also be consider a cycle.

Description of the Ocean Ecosystem

- Location: Atlantic ocean
- Temperatures between 45-65 degrees
- Season: Spring
- Predators: Shark and Stingray
- Prey: Tuna, Black-nosed dace, flounder, and flying fish



Human Impact

- Many different types of Human impacts
- Water Pollution is one major impact
- The impact is called Organic Substance
- Organic Substance- when large amounts of manure or sewage enters the water

Sewage: Human Impact
Bad! →



The Effect of the Impact on the Ocean Ecosystem

- After a month a decrease of stingray and flounders and an increase of shrimps
- After 6 months a decrease shark population and black-nosed dace all began to die
- Plants grew 2x faster then normally
- After 2 years, plants and the shrimp only remained



Death

Final Word and Comments

- Overall my ocean ecosystem was balanced to begin with
- A Human impact caused a disruption
- Water Pollution killed and damage the ocean
- We all have to keep Balance in the all ecosystems in order to live healthy lives for all humans, animals, and the plants.

Thank You



Ozone Holes Impact on the Taiga

Stacey-Ann Chambers

Introduction to the taiga

- Taiga is a forest with lots of cone-bearing trees.
- There are lots of evergreen trees.
- Moose is one of the organisms living in the taiga



Introduction to the Ozone Holes

- An ozone hole is an area with thinner ozone.
- Which is an increase in UV (ultraviolet) light exposure.
- The Ozone Hole is found in Antarctica.



Introduction to Impact of Ozone Holes on the Taiga

- Organism in taiga can't adapt fast to the climate change.
- The ecosystem is harm from the ozone hole.

Taiiga

The Taiga and it's location

- Swampy coniferous (cone bearing trees) sybaritic forest.
- Extending south from the Tundra.

Seasons

- Winter days in taiga aren't as long as in Arctic tundra.
- More snow falls in the taiga, winter, than Arctic tundra.
- Summer days are shorter, but warmer and the ground thaws completely.



Soil and Organism

- Soil in the taiga tends to be acidic under the coniferous trees.
- Soil supports few species of decomposers.
- Organisms: grass (producers), Snow Shoe rabbit, moose, deer (herbivores), grizzly bear, wolves (carnivores /omnivores) and tiny arthropods (decomposers)



Ozone Hole

Ozone Holes

- Ozone is the gaseous form of oxygen, contains three atoms instead of the two.
- An ozone hole is an area of the upper atmosphere where the area have thinner ozone.
- Ozone holes forms because of the weather in the ozone layer.

How Ozone Hole Forms

- These clouds are PSCs, Stratospheric clouds Mother of Pearl or Nacreous Clouds.
- In these clouds surface chemistry takes place.
- It converts chlorine or bromine into active forms, so that's there is sunlight.





What cause ozone holes and how it we can be renewed?

- No clouds in the ozone layer, little or no ozone problems.
- Ozone is caused by ozone depleting chemicals in the atmosphere.
- Over years if we stop depleting chemicals the ozone hole can go back to normal.

The Impact of Ozone Holes on the Taiga

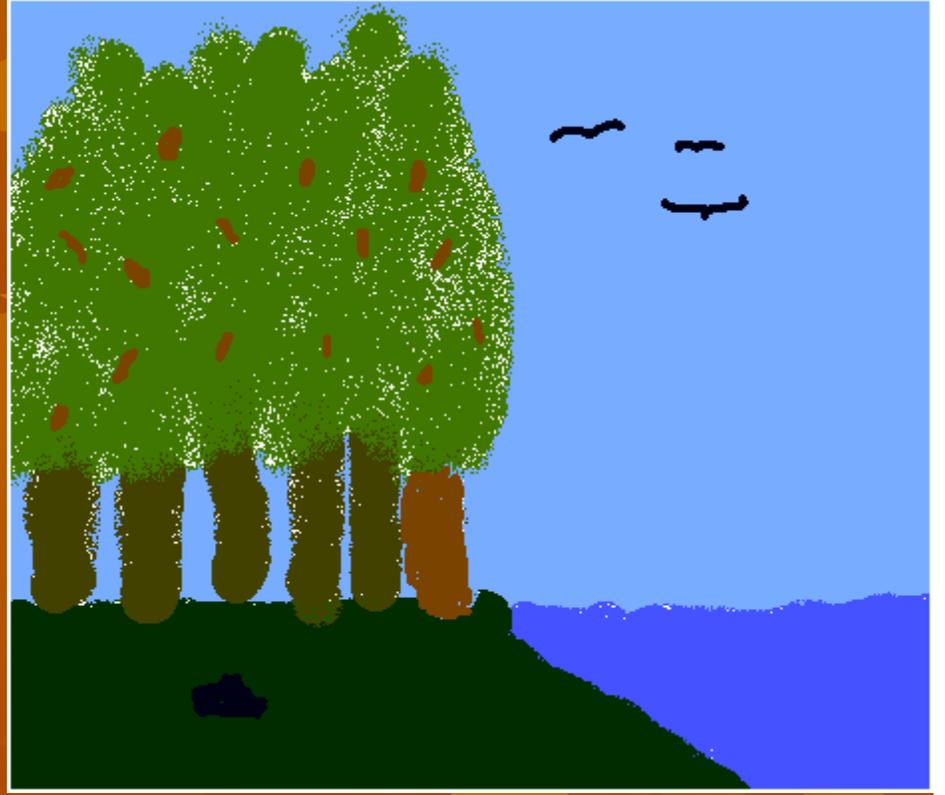
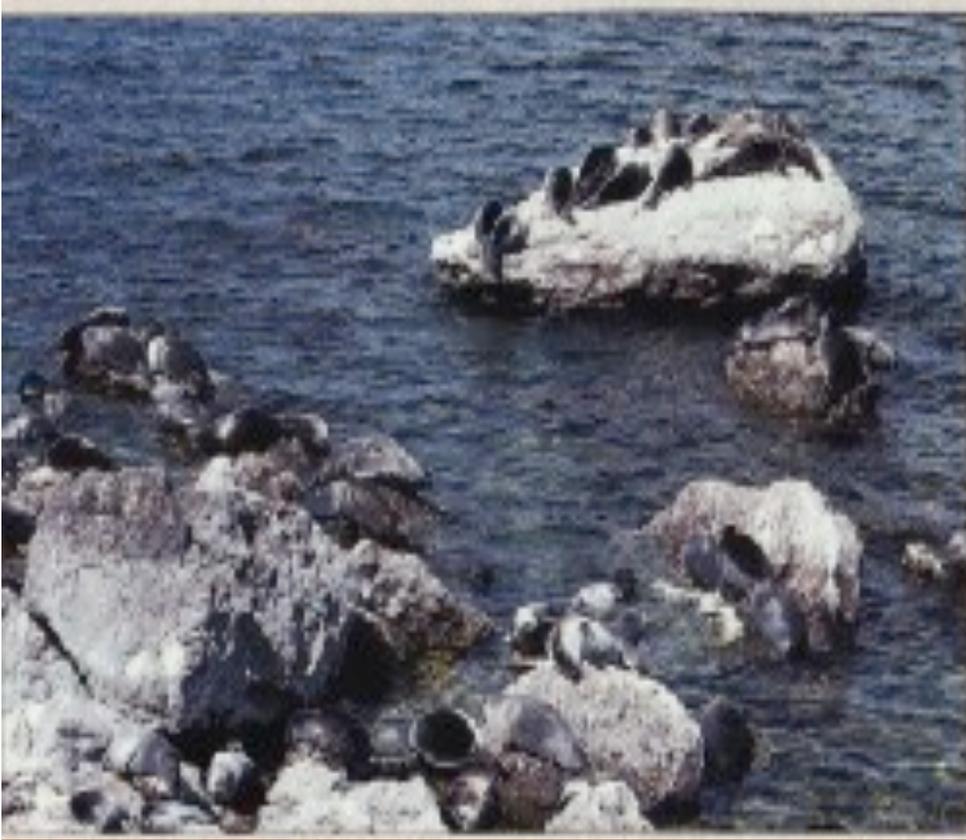
What is the Impact

The organisms in taiga are used to a type of temperature.

- An ozone hole, is an increase in the UV light exposure, leaving the organisms to suffer.

Why will the organism get harm?

- With increase in UV light exposure, organisms have to adapt to temperature in taiga.
- Animal aren't able to adapt to this kind of change fast.
- It takes years and years for them to be able to live in these kind of conditions.



What will happen to the organism?

- Grass, Snow Shoe rabbit, moose, deer , grizzly bear, wolves and tiny arthropods, have to emigrate to an other place.
- They will die out, if they continue to live in the taiga.



Conclusion

What will Ozone Hole do to ecosystem ?

- The ozone hole will have an impact on the organisms in taiga.
- Increase of UV light exposure will cause organisms in taiga to move away or die out.
- Organism are not used to all temperature, they have to adapt to the change.



Review of the animal effect

- Ozone hole will cause harms to the organisms rather than benefits.
- Organisms like grass, Snow Shoe rabbit, moose, deer, grizzly bear, wolves and tiny arthropods will be affected to continue living in the taiga.



Global Warming and Our Ecosystem.

Yuanne Keana Stowe

Climate

- Cool climate.
- Not too much precipitate.
- One season all year round.



Location

- In Antarctica.
- In the middle of the continent.
- In a man made rainforest.



Abiotic factors

- Fertile soil.
- Springs.
- Rivers.
- Rocky mountains.



Biotic factors



- Producers: Evergreen, Citren, Grass, Lagae.
- Consumers: herbivores: Bibrat, Appe, Flatfish, Sclanta.
- Carnivores/omnivores: Quetzal, Orgra, Noli, Phalete , Red bird, Tar, Dichro.
- Decomposers: Lichea, Ale ,Linka.

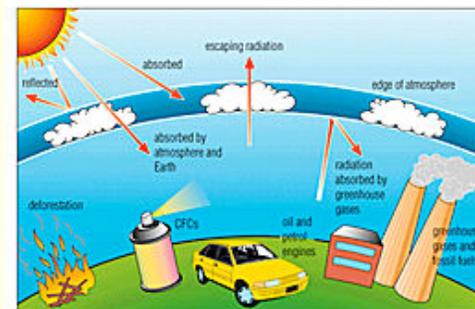
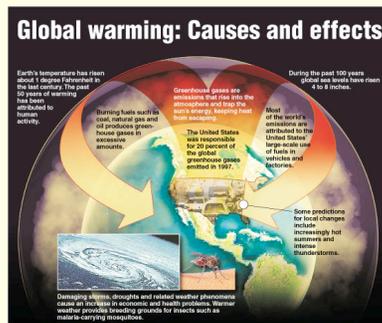
Global warming

- The rapid heating of the earth over time.



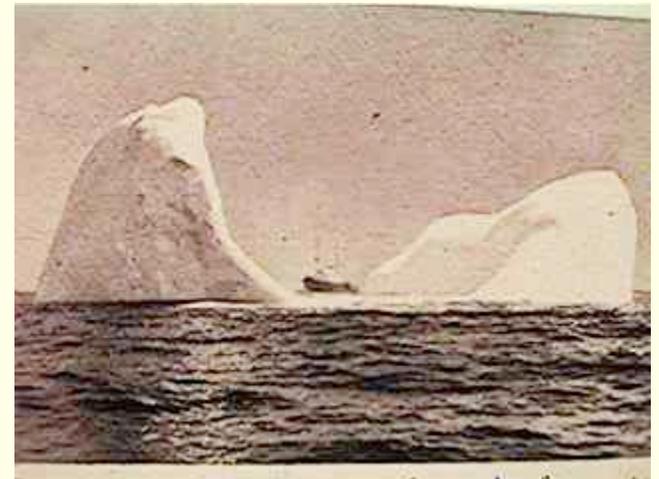
What causes global warming

- Cause by different gases:
Carbon, water vapor ,methane.
- Its due to human activities.
- Burning of fossil fuels.
- Work like a green house does.
- Light enter on earth turn to heat by gases.
- Heat can't escape therefore earth warms up.



Impacts on ecosystem

- Melting of ice.
- Lost of life.
- Destruction of ecosystem.



Reaction of ecosystem

- Animals will migrate.
- Ecosystem become unstable
- Animals become extinct.
- Competition increases.
- Less biodiversity.



Conclusion

- Global warming cause lost of ecosystems.
- It is harmful to animals and mankind a like.
- Our ecosystem needs to be preserved and protected.

