

**HUMAN ENVIRONMENTAL IMPACT UNIT SKETCH**

**Key IDEA # 7**

Essential Question: What have humans done to change the earth?

| <b>LESSONS</b>                  | <b>DAY 1</b>   | <b>DAY 2</b>                           | <b>DAY 3</b>   | <b>DAY 4</b>   | <b>DAY 5</b>  |
|---------------------------------|--|--|--|--|---|
| Essential and Guiding Questions | What have humans done to change the earth?                                       | Why do humans change the earth?        | Can nature affect humans?                                    | Why are there so many of us?                               | Is man threatening global stability?                                  |
| Learning Opportunities          | Answer essential question of unit.<br>Prior knowledge activity<br>Video/pictures | Group work<br>Picture reading          | View natural disaster pictures and/or films<br>Reading aloud | Prior knowledge activity<br><br>Cooperative group research | Mapping activity<br>Predicting<br><br>...continues on following day.. |
| Assessments and Reflection      | Pre-test of essential question.<br>(Essay)                                       | Group sharing<br>Writing<br>Assessment | Writing  | Design posters,<br>Graphics<br>Oral<br>Presentation        | Informal writing assessment   |
| MST Standard 4                  | 7.1a-c<br>7.2a-c   | 7.1a-c<br>7.2a-c                       | 7.1b   | 7.1a, c  | 7.2a  |

## HUMAN ENVIRONMENTAL IMPACT UNIT SKETCH

**Essential Question: What have humans done to change the Earth?**

| <b>LESSONS</b>                  | <b>DAY 6</b>  | <b>DAY 7</b>                                  | <b>DAY 8</b>   | <b>DAY 9</b>   | <b>DAY 10</b>   |
|---------------------------------|---|---|--|--|---|
| Essential and Guiding Questions | Is man threatening global stability?  | Where does a new _____ come from?             | What happens to the water you drink?                             | Where does your garbage go?  | Is change in the environment inevitable?  |
| Learning Opportunities          | Cooperative group work – research, design graphic organizers for team presentations | Read the story of plastics.<br><br>Group work | Read the “Toilet-to-tap” story<br><br>Questioning and group work | Prior knowledge activity<br><br>Read aloud story of landfills<br><br>Visual/graphic organizers | Free-writing<br><br>Read aloud<br><br>Whole class discussion<br><br>Group work, Planning, organizing, investigating |
| Assessments and Reflection      | Oral presentations<br><br>Writing Assessments                                       | Team/class display                            | Review<br>Writing reflection                                     | Critical thinking assessment   | Writing assessment  |
| Standards                       | 7.2a  | 7.1a  | 7.1a, 7.1b, 7.1c   | 7.1c, 7.2a   | 7.1b-c, 7.2a, c   |

## HUMAN ENVIRONMENTAL IMPACT UNIT SKETCH

**Essential Question: What have humans done to change the Earth?**

| <b>LESSONS</b>                  | <b>DAY 11</b>                             | <b>DAY 12</b>                |  |  |  |
|---------------------------------|---|------------------------------|--|--|--|
| Essential and Guiding Questions | Is change inevitable for the environment? | Is it good to change things? | Will there be a tomorrow?                                    |  |  |
| Learning Opportunities          | Group work continues...                   | Reading<br>Making a T chart  | Group work accessing prior knowledge<br><br>Think-pair-share |  |  |
| Assessments and Reflection      | Oral Presentations                        | Writing assessment           | Formal writing assessment                                    |  |  |
| Standards                       | 7.1b-c, 7.2a-c                            | 7.1c                         | 7.1a-c, 7.2a-c, 7.3a,b                                       |  |  |

**Unit Topic/Essential Question: What have humans done to change the earth?**

**Aim/Guiding Question:** Students are introduced to the essential question:  
**What have humans done to change the earth?**

**Objectives**

*Students will be able to:*

- Define where they live on the earth.
- Describe some of the resources that they use that come from the earth.
- Describe some of the changes that humans have caused to the earth.

**New Terms:**

Resources  
 Change

**Materials/Preparations:**

Video "Miracle Planet" or similar film showing Earth before and after the advent of man,  
 Or pictures of pristine and polluted scenes of Earth  
 Blank (copy) paper      Loose-leaf paper      TV and VCR (depending on video)

| <b>Time (min)</b> | <b>Development</b>  | <b>Instructional Strategies</b>                          |
|-------------------|---|--|
| 3                 | Make a list of ways that humans have changed the earth. (Do Now)  | Motivation   |
| 7                 | <p><i>Ask these questions and write them on the board.</i></p> <p>Have the students write their answers to these questions.</p> <p>"Is the earth the same as it was 5,000 years ago?"</p> <p>"Is the earth the same as is was 2,000 years ago?"</p> <p>"How about 100 years ago?"</p> <p>"Is it the same as 10 years ago?"</p> <p>"Have humans changed the earth?"</p>  | <p>Questioning</p> <p>Assessing prior knowledge</p>      |
| 10                | <p><i>Give each student a piece of loose-leaf paper and ask them to write a description entitled:</i></p> <p>"What have humans done to change the earth?"</p> <ul style="list-style-type: none"> <li>• <i>Walk around the room and help the students keep on task.</i></li> <li>• <i>If necessary ask the students some of the original questions to help them focus on the topic.</i></li> <li>• <i>If students finish early give them a piece of blank paper and have them draw a picture of the topic.</i></li> </ul> <p><i>Give the students a 5-minute warning to allow them to complete their essays.</i></p> | <p>Independent Work</p> <p>Assessing prior knowledge</p> |
| 10                | Show a part of the video "Miracle Planet" that show some before and after effects of human actions on the earth. (Or, in the absence of a video, have pictures depicting Earth in a pristine state and Earth polluted from human actions.)  | Visual presentation                                      |

|    |   |                 |
|----|---|-----------------|
| 10 | <p><i>Ask the class the original question again.</i></p> <p><b>"What have humans done to change the earth?"</b></p> <p><i>Encourage students to share ideas from their essays or drawings and not to read the entire essay.</i></p>                                 | Reflection      |
| 5  | <p><i>Collect all of the paragraphs and drawings from the students.</i></p> <p><i>Ask the students to look at their original list and determine if the list is complete.</i></p> <p><i>Tell the students to add new ideas if needed to their original list.</i></p> | Self-evaluation |

**Suggested Homework:**

Look for some proof in a Newspaper article, book or other source that shows how humans have changed the earth. Encourage your students to bring in pictures of how humans influenced change on Earth.

**Resources Used:**

**Standards Addressed:**

7.1a, 7.1b, 7.1c, 7.2a, 7.2b, 7.2c

**Unit Topic/Essential Question: What have humans done to change the earth?**

**Aim/Guiding Question: Why do humans change the earth?**

**Objectives**

*Students will be able to:*

- Describe some of the reasons why humans change the earth.
- List some of the effects of these changes on the human population.

**New Terms:**

|         |             |
|---------|-------------|
| renew   | detrimental |
| deplete | consumption |
| finite  |             |

**Materials/Preparations:**

Bring photos to class that show some of the reasons that humans have changed the earth. Find examples of homes that were built on land that used to be forested or wetlands, Land that was changed for recreation, and/or land that was changed to build a power plant.

| <b>Time (min)</b> | <b>Development</b>   | <b>Instructional Strategies</b> |
|-------------------|--|---------------------------------|
| 3                 | <i>Form groups:</i> The students will look at the pictures and discuss why the change has occurred. Give each group a different picture set. (Do Now)  | Motivation                      |
| 10                | Ask the groups to come up with a list of 10 reasons why humans change the earth.   | Group work                      |
| 7                 | <i>Write the chart on the board:</i><br>How did it change?/Why did it change?/Advantage?/Disadvantage?<br>The groups will answer these questions using their picture.  | Picture reading                 |
| 15                | <i>Write in the board</i> a list of the reasons that people change the earth. Your list might include the following with a brief discussion of each: <ul style="list-style-type: none"> <li>• Space for the overgrowing population (Homes, Recreation)</li> <li>• Need for Energy</li> <li>• Ex. Fuel: Direct by cutting down trees to burn, or indirect by clearing space or damming a river for a power plant</li> <li>• Technology</li> <li>• Food</li> <li>• Money/Greed</li> <li>• Ignorance</li> </ul> |                                 |
| 5                 | Ask the student to write about what impressed them most from today's lesson. Ask for a minimum of three different ideas.   | Writing assessment              |
| 5                 | Ask a few students to share their ideas.   | Group Sharing                   |

|  |  |        |
|--|--|--------|
|  | <i>Review the topic:</i> Humans change the Earth for many reasons. Some changes are good for the Earth, some changes do not affect the Earth and some changes are detrimental. | Review |
|--|--|--------|

**Suggested Homework:**

Answer one of the questions: "What has Mother Nature ever done to me? or What has Mother Nature ever done for me? Write at least one paragraph and bring in a picture to show your example if possible.

**Reference:**

**Standards Addressed:**

7.1a-c, 7.2a-c

**Unit Topic/Essential Question: What have humans done to change the earth?**

**Aim/Guiding Question: Can nature affect humans?**

**Objectives**

*Students will be able to:*

- Explain how natural processes can effect humans

**New Terms:**

evaporation                      precipitation  
 water cycle                      condensation

**Materials/Preparations:**

Pictures of storms / pictures of the dust bowl /or pictures of other natural disasters.  
 An article about a natural disaster and an article about a natural cycle.  
 Teacher should be familiar with the water cycle.

| <b>Time (min)</b> | <b>Development</b>  | <b>Instructional Strategies</b> |
|-------------------|---|---------------------------------|
| 3                 | Show students a natural disaster picture and ask;<br>“Is this a natural process?” (Do now)<br>“Do all natural processes benefit humans?”  | Motivation                      |
| 7                 | Tell students that half will be reading about a beneficial natural cycle and half will be reading about a detrimental natural process. <i>Ask students</i> to read the story/article and to write down one idea that can help to answer the aim. <i>Give</i> half of the student the natural disaster article and half of the students the natural cycle article. | Reading<br>Writing              |
| 13                | <i>Go around</i> the room and ask each student to share their idea and ask the class to add to their original idea based on what the other students are saying.   | Sharing                         |
| 7                 | <i>Ask</i> the class to write one paragraph that answers the question:<br>“Can nature affect humans?”   | Writing                         |
| 7                 | <i>Ask</i> for a student to volunteer to read their essay, and if time permits have another student read their essay also.  | Read aloud                      |
| 5                 | Ask the students to help you complete the "Water Cycle" on the board. Give them hints if needed. Include: Evaporation, Condensation, and Precipitation  | Direct instruction              |
| 3                 | Go over the original question.  | Review                          |

**Suggested Homework:**

Would your life be changed if there were no plastic? Make a list of things that you like that would not have if plastic did not exist.

**Standards Addressed:**

7.1b



**Unit Topic/Essential Question:** What have humans done to change the earth?

**Aim/Guiding Question:** Why are there so many of us?

**Objectives**

**Students will be able to:**

- Explain why human population growth is rapidly increasing

**New Terms:**

population density    exponential growth    limiting factors  
 carrying capacity                      finite resources                      consumption

**Materials/Preparations:**

Reading selections on the impact of human overpopulation. At least 4 –5 different reading. Enough copies for each group of 4-5 students. Topics could be: food shortages, energy shortages, destruction of plant and animal habitats, species extinction, pollution, overcrowding, and so on.

| Time (min) | Development  | Instructional Strategies                            |
|------------|--|---|
| 5          | Do-Now: If the number of students in your school doubled, what effect would it have on the resources in your school? Explain...give some details.<br>Short sharing and discussion.   | Motivation  |
| 10         | Ask: How many people are there on Earth today? Ans. Approx. 6.2 billion<br>How many were there in 1985?                      Ans. 5.0 billion<br>How many were there in 1970?                      Ans. 4.0 billion<br>How many were there in 1930?                      Ans. 2.0 billion<br>List guesses on the board. Explain that the time needed for doubling the population keeps getting shorter and shorter. If the doubling rate of approx. 35 years continues, by 2010 there will be about 10 billion people on Earth.<br>Ask: What happens to a population becomes so dense that resources and space can no longer support it? Illicit responses....discuss limiting factors (food, pollution, competition, water, space, disease, etc.) | Assessing prior knowledge<br><br>Direct Instruction |
| 15         | By emphasizing that human overpopulation is a major cause of some of the world's most serious problems. It leads to food shortages, energy shortages, destruction of plant and animal habitats, species extinction, pollution, overcrowding, etc.<br>Divide class into teams of four and ask each team to discuss how  | Cooperative Group work<br><br>Reading, research     |

|    |  |                                  |
|----|--|----------------------------------|
|    | <p>overpopulation is affecting the environment and quality of life for humans and impacting on other living organisms.</p> <p>You can supply a reading piece for each group to analyze (check the Internet for current material or magazine articles on any of the topics listed above.)</p> <p>OR</p> <p>Each group could choose one problem associated with overpopulation and find out more about it.</p> |                                  |
| 15 | Groups make an outline of findings on poster paper and present information to the class  | Oral Presentation/<br>Assessment |

**Suggested Homework:**

Write an essay. Topic: Should the world's population be limited? Why? Why not?

Questions to think about when answering: How will the Earth be affected if the population continues to double at this rate? Can it be controlled? Should governments impose restrictions on family size?

**Standards Addressed:**

7.1a, c

**Lesson #: 5-6**

**Unit Topic/Essential Question: What have humans done to change the earth?**

**Aim/Guiding Question: Is man threatening global stability?**

**Objectives**

***Students will be able to:***

- Explain the effects of exploiting plants and animals
- Understand the harmful effects of alien organisms into ecosystems
- Discuss extinction and how it occurs
- Explain the causes of deforestation and its impact on biodiversity

**New Terms:**

biodiversity extinction habitat destruction alien species deforestation

**Materials/Preparations:**

Poster paper

Map of the world showing rainforest areas

Overhead transparency for world's rainforests

Cutouts the size and shape of Oregon – enough to cover all of the rainforest areas

Reading on reintroduction of native species (comebacks)

| <b>Time (min)</b> | <b>Development</b>  | <b>Instructional Strategies</b>                     |
|-------------------|---|---|
| 5                 | Do-Now: Ask each student to write down the names of five organisms. Either plant, animal, fungi, and so on.   | Do-Now  |
| 10                | Depending on class size, you could generate a list of at least 100 different species. Have one student volunteer to write the names on the board or chart paper. When the list is complete explain that this many organisms become extinct each day. Keep on the board for tomorrow's activity (or transfer to chart paper) | Motivation  |
| 15                | Discuss biodiversity, natural resources, habitat destruction, deforestation, extinction. Illicit ways in which biodiversity benefits humans. Mention the social and economic factors behind habitat destruction. Discuss the harmful effects alien species can have on an ecosystem. Students answer questions, take notes. | Direct Instruction<br><br>Notetaking<br>Questioning |
| 10                | Using the world map, have students locate Brazil, Indonesia, and Columbia. Tell students that these are major areas where deforestation is occurring. Mention that half of the world's tropical rain forest have been cleared to create farmland, grazing land, timber, and wood for fuel.                                  | Mapping   |

|    |  |   |
|----|--|---|
|    | Using your overhead transparency, outline the rainforests on Earth. Remind students that these are the areas of greatest biodiversity on Earth. Using a cutout of the outline of the state of Oregon, explain that this much land represents the amount of forest being destroyed each year. Ask students to estimate how long it will take for all of the rain forest to disappear. Continue covering up the rainforest land. (It is estimated that at this pace by 2035 there will be no remaining rainforests.)                                       | Predicting  |
| 5  | <i>Students write a brief summary relating biodiversity to habitat destruction.</i>  | Informal writing assessment                             |
|    | <b>DAY 2</b>   |   |
| 5  | Do-Now: Working with a partner, have students share homework findings and come up with a list of four to five provisions of the Endangered Species Act.<br>Illicit responses until all of the provisions are listed on board.  | Do-Now<br>Homework review                               |
| 20 | Using cooperative grouping the students should use the list of organisms that was just generated yesterday for this activity. Ask students, in their groups, to connect as many of the plants, animals, fungi on the list to each other (as part of food webs and food chains), or ways that they are important to people for food, clothing, shelter, medicine.<br>Students should be familiar with graphic organizers (concept maps) and should make as many as they can.<br>This works well when texts and other resources are available to students. | Cooperative group work<br>Prior knowledge<br>Organizing |
| 15 | Groups present their graphic organizers, answer questions, defend choices.   | Oral presentation                                       |
| 10 | Read a true ‘comeback” story to class. (an article on reintroducing a native species)<br>Depending on the article, they should be able to explain in writing why it is important to save threatened species and how man can benefit from reintroducing plants, etc. to a troubled area.  | Listening for information<br>Writing assessment         |

**Suggested Homework:**

Day 1: Research the Endangered Species Act. What does it provide for?  
Explain why it is important to protect endangered species.

Day 2: Research the Gaia Hypothesis. Do you agree with the hypothesis?  
Explain how Earth is like a living organism.

**Standards Addressed:**

7.2a

**Unit Topic/Essential Question: What have humans done to change the earth?**

**Aim/Guiding Question:** Where does a new \_\_\_(you name it)\_ come from?

**Objectives**

*Students will be able to:*

- Understand that the earth has finite resources

**New Terms:**

resources      cycles  
renewable      non-renewable

**Materials/Preparations:**

a story of plastic – when it was introduced, how it’s made, and so on. (class-set)

| <b>Time (min)</b> | <b>Development</b>   | <b>Instructional Strategies</b>                 |
|-------------------|--|---|
| 5                 | Do-Now: “What wouldn’t I have if plastic did not exist?”   | Motivation                                      |
| 7                 | Ask students to read the story of plastic  | Reading   |
| 5                 | Ask students to answer the following questions and write the questions and the answers in their notes;<br>Depending on the reading you have, questions should cover the How, Where, Why, When, of plastic.   | Recall  |
| 3                 | Ask, “What does the story about plastics have to do with a new _____?”<br>If no one answers ask, “Could a new _____ be built without plastic?”   | Infer<br>Critical thinking                      |
| 7                 | With a partner, and based on what they read about plastics, ask students to answer the question,<br>What wouldn’t I have if aluminum did not exist?<br>What wouldn’t I have if steel did not exist?  | Group work,<br>Assessing prior knowledge        |
| 3                 | Have them share what they decided with the class.  | Sharing   |
| 10                | Discuss finite resources. Trace the origins of plastic, aluminum, steel.<br>Ask students to work with a partner and make a list of products made with renewable resources and another made from non-renewable resources.<br>Share lists. Make a class display. | Direct instruction,<br>Group work<br>Assessment |

**Suggested Homework:**

Write a persuasive essay defending this position:  
Resources are limited and are not all meant for human consumption.

**Standards Addressed**

7.1a

**Unit Topic/Essential Question: What have humans done to change the earth?**

**Aim/Guiding Question: What happens to water when you drink it?**

**Objectives**

*Students will be able to:*

- Recognize a cycle
- Describe a cycle
- Explain why cycles exist

**New Terms:**

Limited                                  unlimited  
Sewer

**Materials/Preparations:**

“Toilet-to-Tap in Los Angeles” class set

| <b>Time (min)</b> | <b>Development</b>  | <b>Instructional Strategies</b>       |
|-------------------|---|---------------------------------------|
| 1                 | <i>Write on the board:</i><br>Would you drink used water from your toilet?  | Motivation                            |
| 3                 | What would have to be done to toilet water/sewer water for you to drink it?   | Questioning                           |
| 10                | <i>Ask the students to read:</i><br>"Toilet-to-Tap in Los Angeles"<br><i>Ask them to underline the sentences that they feel are the most important.</i><br><i>Encourage them to find a minimum of 4 and a maximum of 8 sentences.</i>   | Reading                               |
| 7                 | Have the students pair up and share their sentences<br>Have each pair of students pick 2 sentences that they want to share with the entire class.   | Group Work<br>Share                   |
| 8                 | Groups read sentences to the entire class. After the questions have been read ask them if they could find a central theme.<br><i>Write the theme on the board</i>   | Reading                               |
| 10                | <i>Ask the question:</i><br>“Is Water a limited or unlimited resource?”<br>If you hear the response “Unlimited”<br><i>Ask:</i><br>“If it is unlimited, where does it come from?”<br>Remind the class of the water cycle.<br><i>Ask:</i><br>“If Aliens were to come to the earth today and ask us for water to take back to their planet could we give it to them? If we gave them water would the earth make more to replace the water that we had given them?” | Question-ing<br><br>Guiding Questions |
| 5                 | Review the Topic.<br>Have the students write in their journals:   | Review<br>Writing                     |

|  |  |                          |
|--|--|--------------------------|
|  | "My opinion changed today because ....." | reflection<br>Assessment |
|--|--|--------------------------|

**Suggested Homework:**

Ask your students to make a list of everything that they throw away until the next class.

**Standards Addressed:**

7.1a, 7.1b, 7.1c

**Unit Topic/Essential Question: What have humans done to change the earth?**

**Aim/Guiding Question: Where does your garbage go?**

**Objectives**

*Students will be able to:*

- Understand that nothing can be thrown away
- Explain one way that humans can adversely affect an ecosystem Reuse

**New Terms:**

Decompose

**Materials/Preparations:**

Previous night's homework lists

Picture

Typing paper

Reading (can get off Internet) on Fresh Kills Landfill

| <b>Time (min)</b> | <b>Development</b>   | <b>Instructional Strategies</b>                            |
|-------------------|--|--|
| 5                 | Ask student to form groups and take out their lists. (Do Now) Ask them if they can put the garbage into groups that have similar characteristics.  | Group work<br>Homework review                              |
| 5                 | Show the class a picture of a garbage dump and ask:<br>"What is this?" "Why do we have these?"<br>Ask:<br>"Do we need a garbage dump in NYC?"<br>Ask:<br>"Does anyone know where it is?"   | Motivation<br><br>Questioning<br>Assessing prior knowledge |
| 5                 | <i>Ask:</i><br>"How many of you threw something in the trash in the past 24 hours?"<br><b>"Where did it go?" Illicit all responses. Write on board. Accept all answers.</b>  | Whole class questioning                                    |
| 5                 | Read article aloud to students or describe a landfill.   | Read aloud<br>Listening skills                             |
| 15                | Ask the class to draw the description (with labels) of where one piece of paper would go if it were thrown away in the class trash can today. (Trace the journey of a piece of paper using some form of graphic organizer)<br>If they are having trouble lead them by asking:<br>"Who picks it up first?" Custodian/Janitor<br>"Who puts it outside?"<br>"Who picks it up from outside?"<br>"How does it get to the dump?"<br>Ask: | Questioning  |



|   |  |                                     |
|---|--|-------------------------------------|
|   | <p>“Can you really ever throw anything away?”</p> <p>Explain that you can move the location of something but it never leaves the Earth.</p> <p>Students present drawings, flowcharts, etc.</p> | Visual assessment-graphic organizer |
| 2 | <p>Ask:</p> <p>“What would happen to our trash if there wasn’t a dump?”</p>  | Infer                               |
| 3 | <p>What are the alternatives of throwing our trash in a landfill/Garbage Dump?</p>   | Critical thinking, assessment       |

**Suggested Homework:**

What should be recycled? Make a list.

**Standards Addressed:**

7.1c, 7.2a

**Unit Topic/Essential Question: What have humans done to change the earth?**

**Aim/Guiding Question: Is change in the environment inevitable?**

**Objectives:**

*Students will be able to:*

- Explain the historical background of air pollution
- Examine the sources and affects of inorganic and organic toxic chemicals
- Explain the problems of radioactive and thermal water pollution

**New Terms:**

sewage treatment plants                      toxic chemicals                      heavy metals  
 oxides                      chlorofluorocarbons (CFC's)                      acid rain                      global warming  
 ozone

**Materials/Preparations:**

“*Silent Spring*” by Rachel Carson – selected readings  
 newspaper articles about outbreaks of water-borne disease, case studies of toxic leaks, solid waste disposal, sewerage, hazardous waste disposal...ex: Love Canal, DDT, New York’s Long Island Sound, New York’s Adirondack Mountains, East Liverpool, Ohio’s incinerator, the Ozone Crisis

| Time (min) | Development   | Instructional Strategies                                 |
|------------|---|--|
|            | DAY 1   |  |
| 5          | Ask students to consider this term, “silent spring” and freewrite for 3 minutes. A free-writing exercise is writing off the top of ones head. No right or wrong, simply impressions, associations, etc. Teacher should model this beforehand. Teacher should also engage in the free-writing exercise. Ask for volunteers to share remarks. Write key words, phrases on board.                    | Motivation<br>Free-writing<br>Assessing prior knowledge  |
| 15         | Read aloud to class – Chapter one “A Fable for Tomorrow” or chapter two “The Obligation to Endure” of Rachel Carson’s <i>Silent Spring</i> . Illicit responses. Could lead to a rich class discussion of man’s negative impact on the environment. (Depending on your school resources/program, this book or parts of it could be assigned reading as well.)                                      | Read aloud<br><br>Whole class discussion                 |
| 15         | Groups students in fours and assign a pollution topic from the above list to each group. Starting in class today, teams should read the article/case study together and plan on researching to acquire additional information needed to analyze each situation. Questions for all groups to answer should be:<br>What is the problem?<br>What are the causes?<br>What are the possible solutions? | Group work:<br>Organization<br>Planning<br>Investigation |

|    |   |   |
|----|---|---|
|    | <p>Are there different sides?<br/>         What companies, groups, or individuals are on what side and why?<br/>         What scientific data has been used to justify position(s)? Does the data seem valid?<br/>         Is the evidence contradictory?<br/>         Is it possible to eliminate this problem? How?<br/>         You or the students can add additional questions.</p>  |   |
| 5  | Teams write an outline of their plan – who is doing what research for example – and how they will present findings to class.  | Writing assessment  |
|    | DAY 2   |   |
| 10 | <b>Teams gather, share information, and plan their presentations.</b>   | Group work  |
| 25 | <p><b>Class presentations.</b><br/>         Depending on the classes experiences, teams present their “case” studies to the class using visual supports such as posters, graphic organizers, pictures, Hyperstudio, or Powerpoint.<br/>         The audience should take notes and evaluate presentations on clarity, understanding of science content, and presentation form.<br/>         You and your class could develop a criteria check-off list (or rubric) for presentations of this type.<br/>         There should be Question and Answer period following each presentation.<br/>         (Depending on side of class and length of presentations, this could cover one additional day.)</p> | <p>Oral presentations-<br/>assessment</p> <p>Analysis</p> <p>Feedback</p> |

**Suggested Homework:**

Day 1: Each team member will research their part of the investigation and answer assigned questions.

Day 2: Research ways that energy and resources can be controlled. Write a one page report.

**Standards Addressed:**

7.1b-c, 7.2a, c

**Unit Topic/Essential Question: What have humans done to change the earth?**

**Aim/Guiding Question: Is it good to change things?**

**Objectives**

*Students will be able to:*

- Explain how human activities can alter an ecosystem
- Describe one way that humans have modified their surroundings

**New Terms:**

Ecosystems

**Materials/Preparations:**

An article about change – positive and negative effects of humans on the environment

| <b>Time (min)</b> | <b>Development</b>  | <b>Instructional Strategies</b>  |
|-------------------|---|----------------------------------|
| 3                 | Ask students to write down one change that humans have made that has been good and one change that humans have made that have been bad (Do Now)   | Writing                          |
| 3                 | Ask the class to share a good thing and then a bad thing and ask the question: "Who decides if it was good or bad?"   | Motivation                       |
| 10                | Have the students read the article and make a T chart; Good or Pro vs Bad or Con<br>Instruct the students to write words or ideas from the articles under the appropriate heading.                          | Reading<br>T- Chart<br>Comparing |
| 1                 | Ask the students to form a Pro or a Con view point and get ready to defend/debate it  |                                  |
| 10                | Have a class debate:<br>"Was this a good change?"<br><i>If necessary during the debate ask leading questions such as:</i><br>"Who was benefited by the change?"<br>"Who was/what was harmed by the change?" |                                  |
| 8                 | Ask the student to write a persuasive paragraph that is designed to convince the reader that their viewpoint is correct.  | Writing<br>Assessment            |
| 10                | Ask one pro student and one con student to read their paragraphs.<br>Have a class discussion on the topic.  | Reading                          |

**Suggested Homework:**

Write a minimum of one paragraph entitled:

Would you die if 18 people lived with you in your home?

Your paragraph must include the following:

What would change for you?

What would you not have anymore or what would be more valuable?

What would happen when one of the people got sick?

**Standards Addressed:**

7.1c