ENVIRONMENT

UNIT OVERVIEW

This exciting look at the environment is sure to captivate students. The three-part format builds a base of information, cements it in, and culminates it with exciting, hands-on projects ... sure to draw the best out of students.

PART I - ENVIRONMENT: A NEED TO KNOW (25%)

- This informational section relies on interesting demonstrations, simple assignments and overhead notes to build a base of knowledge.

PART II - TEST CONSTRUCTION (25%)

- Teachers take a break while students, in pairs, make up their own exams. Information in the notes is reviewed and retained as students work through the test making process.

PART III - ENVIRONMENT DAY (50%)

- students choose from a host of exciting hands-on environmental projects and present them to the class on a day designated as **Environment Day**. A great way to tie the unit together.

Possible Projects Include:

1. Making Paper
2. Environmental Storybook
3. Environment A B C's
4. Environment Boardgame
5. Energy House
6. Hydroelectric Dam
7. Windmill
8. Music Messages
9. Water Purification
10. Friends of the Planet

PART I - ENVIRONMENT: A NEED TO KNOW (25%)

This part of the unit is a teacher-directed section using overhead notes to build an information base for students. Simple demonstrations and activities accompany the notes which concentrate on the following major topics:

1) Acid Rain
2) Greenhouse Effect (Global Warming)
3) Ozone Layer Destruction
4) Too Much Garbage

The notes have been purposely designed with blanks in them to keep the students thinking as they copy down the overhead notes into their science notebooks. A complete set of notes with these words highlighted in italics is provided for the teacher.

After the students learn about each of the four major topics, this section ends with students trying to develop **solutions** to each of the problems.

PART I - LESSON 5 - Too Much Garbage

Student Objectives and Activities

Students should learn to view the planet as "Spaceship Earth". Students will also comprehend the concepts of the THREE R's - 1) recycling (and composting) 2) reducing and 3) reusing.

Student Activities include 1) notes 2) an analysis of kitchen garbage and 3) construction of a poster.

Suggested Teaching Strategies

- Begin the lesson in dramatic fashion by placing a bag of garbage on a table or desk at the front of the class. You may wish to bring your own kitchen garbage bag from home for this activity. (Cleverly stocked with a few recyclable cans and bottles for added effect.)

- After announcing that "Today, the topic is garbage" use the notes on the overhead notes to impress upon the students just how much garbage North Americans produce.

- Once students are familiar with the ideas in the notes, unceremoniously dump the contents of the bag onto a table or desk at the front of the class.

- Go through the contents of the bag one by one (use rubber gloves if necessary) asking the class to decide if each item could be recycled, composted, or reused. (Don't forget the bag itself.)

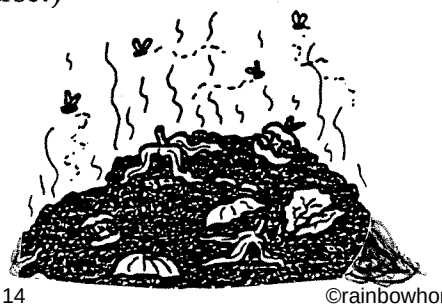
- Place all of the materials that could be recycled, reused or composted back in the bag.

- This will leave a small fraction of "real garbage" behind and demonstrates how much is truly wasted.

- The assignment of the day is to construct a poster (hopefully about the environment) The only rule is that **no "new" material may be used** in the making of this poster.

- Students must use pencil shavings, old scraps of cloth, used tin cans etc. to do this assignment. Even new paper to make the posters on is not permitted. (Suggest recycling cardboard boxes.)

- The more creative, the better. (One wise guy student even formed letters with dead flies - he got a perfect mark of course!)



ENVIRONMENT EXAM

Name: _____

1. Fill in the blanks:

a) A gas found in refrigerators _____

b) A big polluter found in Sudbury, Canada _____

c) A scale used to tell if a substance is an acid or base _____

d) Too much stomach acid will cause this _____

e) Coal, oil and natural gas are all examples _____

f) Short form for Chloral-Floral-Carbon _____

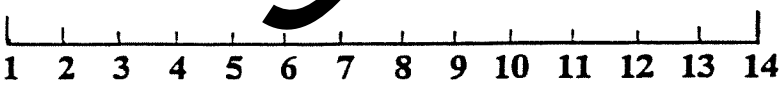
g) Global warming effect _____

h) A substance that turns litmus paper re_____

i) What is the pH of water? _____

j) What could rotting leaves and chee_____? _____

2. On the following pH s_____le, show where these substances would go:
   a) water
   b) strong acid
   c) strong b_____
   d) sulph_____ric acid
   e) orang_____ juice



Strong Acid Neutral Strong Base

3. Draw three pictures that show how acid rain forms. Label your diagram.

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