Conservation

Kill, kill, kill, oops they're all dead. Chop, chop, chop, oops they're homeless... and dead.

Conserving endangered species and their habitats

We kill species of plants and animals in two ways:

1) Directly for food, sport, fur coats, pest control, etc.
2) By destroying their habitats.

If done in a controlled way, animal and plant populations will remain at a sustainable level.
If done in an uncontrolled way, species will become endangered and (if nothing is done) extinct.
Learn these two examples of the problem:

Example 1: The barn owl is dying

Barn owls like open areas of rough grassland with hedgerows because this is where mice hang out.
Apart from enjoying the company of mice, barn owls like to rip them to bits and swallow them.
Barn owls live and nest in barns and old hollow trees.

Modern farming is destroying the barn owl habitat in four ways:

1) Replacing areas of rough grassland, hedgerows and trees with crop land.
2) Demolishing old farm buildings, or converting them into houses.
3) Overuse of pesticides which can poison mice.
4) Some of the best remaining hunting ground is the rough grassland beside roads. As a result many barn owls are killed by passing traffic.

To save the barn owl we need to:

1) Replant hedgerows.
2) Allow areas of land to return to an undisturbed habitat to increase mice numbers.
3) Provide nesting boxes in barns and trees.

(These things are slowly being done as part of sustainable farming projects.)

Example 2: Overfishing North Atlantic cod

Everyone knows that pandas are rare, but cod aren't far behind.
Because of frenzied overfishing, this tasty fish could be wiped out from the North Atlantic.

Don't panic yet you crazy cod lovers, there's a four-pronged plan.

1) Fishing quotas to control the numbers of fish killed.
2) Ban on catching juvenile cod to make animal feed.
3) Fishing ban during the three month spawning period.
4) Use of mesh nets that let the juvenile cod escape.

This recovery plan started in June 2001. If it works well, by June 2006
the North Atlantic will produce 10 times more cod than were caught in 2000.

Individual Choices and Societal Actions

Societies must decide on proposals involving the introduction of new technologies, and assess the risks to health and the environment, the costs and the benefits. Governments and regulating authorities usually make these decisions, but individuals also have a responsibility to choose wisely.

Development has to be sustainable

The way we treat the environment now will have an effect on the next generation's quality of life. This means that we need to think carefully about how we can make progress in a responsible way — this is called sustainable development, and you need to learn this definition for the Regents exam:

> Sustainable development meets the needs of today's population without harming the ability of future generations to meet their own needs.

1) Farming and burning fossil fuels are necessary for our standards of living and there's more demand on them as the population gets bigger.

2) There's only so much abuse our little planet can take.
Nowadays, developers can't just build huge power stations or shove stuff in landfills.
They have to take greater care to sustain the delicate balance on Earth — the gases released into the atmosphere and the disposal of waste are just a couple of the things that have to be considered.

3) Sustainable development is environmentally friendly.
Most development today must be able to continue into the future with as little damage as possible to the planet.

4) In the Regents exam, make sure you remember the details about the environmental problems development causes.
If you get an essay-type question, stick them in and show off your "scientific knowledge."

5) You'll have to weigh the pros and cons too. That's all an essay is — write about the pros, then the cons then make a conclusion.

Sustainable development means using the environment responsibly...

You need to understand what sustainable development means — basically that you need to develop, but not ignore, the effects that development will have. For example, very intensive farming which results in the area becoming unfarmable in a few years is not sustainable. Now make sure you learn it...

Exam Question Review

Answers on page 89

1 When fossil fuels burn, they release mainly

1 sulfur dioxide
2 carbon dioxide
3 alkalis
4 nitrogen

2 When oxides of sulfur and nitrogen mix with clouds, they form

1 alkalis
2 acids
3 sulfur dioxide
4 carbon dioxide

Base your answers to questions 3-6 on this extract from an article in an environmental magazine:

The world's rainforests are disappearing at an alarming rate. Unless the current rate of deforestation decreases, there will be no rainforests left by 2025. As the world's population continues to grow, it is likely that deforestation will increase, not decrease. The future of the rainforest looks bleak.

3 Give **two** of the main reasons for deforestation in tropical areas. [2]

4 Deforestation is part of the cause of the "Greenhouse Effect".
Briefly describe what is meant by the "Greenhouse Effect". [2]

5 How is deforestation adding to the problem? [2]

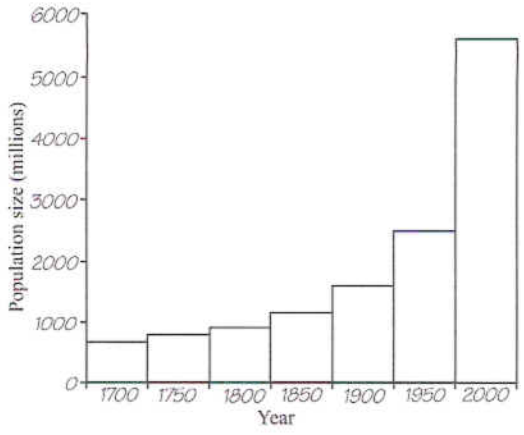
6 Deforestation can cause other problems, apart from adding to the Greenhouse Effect.
Give **two** other ways in which deforestation damages the environment. [2]

7 Explain how global warming could have a serious effect upon the environment. [3]

8 Many farmers use pesticides on their crops. Pesticides can be harmful, and unfortunately they kill lots of harmless insects as well as the intended pests.
Explain, as fully as you can, how the use of pesticides affects the ecosystem of a field. [3]

Exam Question Review

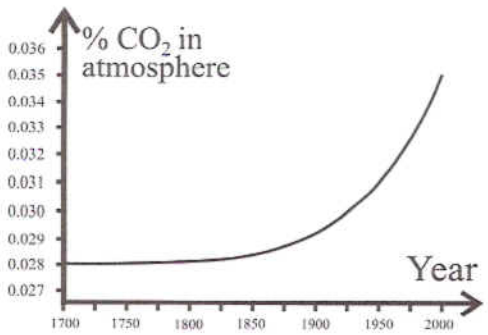
Base your answers to questions 9 and 10 on the bar chart below, showing how the human population has changed over the last 300 years.



9 Give two reasons for this increase in human population over the last 300 years. [2]

10 Explain how the rise in population is affecting our environment. [2]

The level of CO_2 in the atmosphere used to be well balanced.
Use the information in the graph below to answer questions 11-12.



11 During which years did the CO_2 level in the atmosphere remain balanced? [1]

12 During this time, what was the percentage of CO_2 in the atmosphere? [1]

13 Name two processes which release CO_2 into the air. [2]

14 What process removes CO_2 from the environment? [1]

15 Give one other gas that contributes to global warming, and give a source of this gas. [2]