Contents: Opinion survey concerning the feasibility and desirability of a number of suggested scientific and technological developments.

Time: 1 period (more if follow-up work is undertaken).

Intended use: Could be used in conjunction with a range of scientific and general courses. May be particularly appropriate for use at the end of a course of study which has included a number of SATIS units.

Aims:

- To help students assess their own awareness and knowledge of developments in science and technology
- To increase awareness of the power and limitations of science and technology for solving problems
- To develop awareness that scientific and technological innovations can have both beneficial and detrimental results for society
- To encourage students to express their opinions, and listen to the opinions of others.

Requirements Students' worksheets No.1010

Author: Jim Teasdale

Suggested use

There are several ways to use the unit. One possibility might be:

1 Introduce the unit and explain the activity
2 Give each student the list of suggestions and an answer grid
3 Get them to complete the answer grid, working individually
4 After completion, ask them to compare their answers with other students, working in small groups and discussing any differences.
5 Finally, have a plenary discussion involving the whole class and focusing on any especially controversial points.

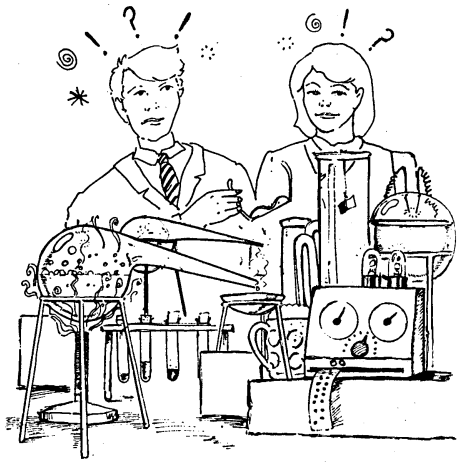
Students need not work through **all** the suggestions. The teacher could choose a selection for them to do. It may help to take the suggestions in batches, working on a small number at a time.

Further activities

1 The list of suggestions can be extended (or completely replaced) by the teacher's own suggestions, or those of students.

2 The responses could be analysed by groups, to examine whether they vary significantly, for example:
   (a) betweeen boys and girls
   (b) between age groups
   (c) between teachers and students
   (d) according to subject options (for example, whether students have opted to study science subjects)

CAN IT BE DONE? SHOULD IT BE DONE?



Science and technology can solve many of our problems, but not all of them. Sometimes we make a scientific or technological discovery, then decide we would have been better off without it.

In this unit you will look at a number of suggested scientific or technological developments. For each one, give your opinion on each of the following:

A Is it possible?

Is the suggestion:
1 possible in everyday life
2 possible in the laboratory
3 possible in theory
4 impossible

B How sure are you of your answer to A?

Are you:
1 certain
2 fairly sure
3 unsure
4 blind guess

C Is it desirable?

Do you believe:
1 this suggestion should be put into practice
2 it depends on the balance of advantages and disadvantages
3 this suggestion should not be put into practice

(If you have decided the suggestion is impossible, leave **C** unanswered.)

Put your responses to the suggestions on the answer grid provided.

When you have finished, compare your responses with those of other students. Discuss any differences.

Here is the list of suggestions. Can these things be done? Should they be done?

1 Making food from waste plastic
2 Making electricity directly from sunlight
3 Using non-pedigree cows to produce pedigree calves
4 Powering a car by sunlight
5 Producing a chemical which allows you to drink as much as you like without getting a hangover

6 Producing a chemical which stops the police detecting alcohol on your breath
7 Using radiation to sterilize food to stop it going off
8 Freezing a person's body so they can be kept alive in cold storage
9 Making an artifical heart
10 Making a medicine that will cure all forms of cancer

11 Making a car engine that will use water as a fuel
12 Heating homes using waste heat from power stations
13 Replacing all Britain's nuclear power stations by tidal power stations
14 Putting a chemical into the drinking water that will stop people wanting to smoke cigarettes
15 Recycling 80 per cent of all glass containers

16 Recycling 90 per cent of all the aluminium we use
17 Producing a completely safe insecticide
18 Making a synthetic fibre that has exactly the same properties as wool
19 Making artificial eyes for blind people
20 Building a bridge between Britain and America

21 Building a car in which you could survive a head-on collision at 100 mph
22 Replacing doctors with computers
23 Extracting minerals without causing damage to the environment
24 Producing a chemical which could be added to sweets so they do not cause tooth decay
25 Building a defensive system which would destroy all incoming nuclear weapons before they could hit Britain

26 Running a car factory with no humans at all, just robots
27 Feeding the world's population on plant products alone, using no food produced by animals
28 Making a refrigerator that will work where there is no electricity
29 Using bacteria to get metals from ores
30 Growing bananas on a large scale in Britain

31 Making a medicine that stops people feeling depressed, without any side-effects
32 Predicting when a volcano will erupt
33 Cutting down people's average dose of low-level radiation by half
34 Providing mains household electricity without any danger of electrocution
35 Finding a cure for AIDS

36 Preventing acid rain
37 Disposing of nuclear waste in space
38 Choosing the sex of a baby
39 Performing a brain transplant operation
40 Treating the waste from chemical factories to remove all poisonous chemicals
41 Making computers which are more intelligent than humans
42 Using nuclear fusion to produce practically unlimited energy supplies

Can it be done? Should it be done?

Put a tick in the appropriate column

Suggestion	A Is it possible?				B How sure are you of A?				C Is it desirable?		
	1	2	3	4	1	2	3	4	Yes	Depends	No
1											
2											
3											
4											
5											
6											
7											
8											
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Index

This index includes, in a single list, references to science syllabus topics (eg acceleration, acids), to social and technological topics (eg advertising, agriculture) and to types of activity (eg data analysis, discussion).

Entries give unit and page numbers (eg 801/1). A list of unit titles can be found at the front of this book.

Where the reference is to the whole unit, the number is given in italics (eg *901*).

References to the Teachers' Notes are in small roman numerals as in the units (eg 809/ii). In a few units the Teachers' Notes only cover one unnumbered page. These pages are indexed as 't' (eg 1010/t).

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SATIS 10 and Index

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