

CHEMISTRY IN OUR LIVES

PART 1 PEOPLE AND CHEMISTRY

You are going to contact students in other parts of the world about how chemistry and chemical products affect our lives.

In Parts 2 and 3 you will find activities which will help you to gather the information you need to fill in the Exchange Form. The numbering of the activities matches the numbering on the Exchange Form.

The drawings on this page illustrate some of the many uses of chemical products we find in our homes. Some of the products come from natural sources, others are manufactured.



PART 2 CHEMISTRY IN OUR HOMES

Medicines in the home

1. Start this investigation by discovering examples of products which people use for:

- cooking or preserving food,
- cleaning,
- decoration,
- keeping healthy or treating disease,
- fuel,
- growing plants and protecting them from pests.



Do one or both of these activities:

- Keep a diary for a day noting, for each part of the day, the chemical products you use.
- Make a survey of the chemical products in your home. Check with the adults in your home that it is all right for you to do the survey before you start.

Record your findings in a table like this. Your teacher may provide a copy of the table on the Exchange Form to help you.

Purpose	Common example of a product in our homes	Source: natural or manufactured, and country of origin	Ingredients listed on the label

Labelling chemical substances and products

There is an international set of symbols used to label chemical substances as shown on this page. In some countries these symbols are not only used in laboratories and in industry, they are also used to label chemicals which people buy to take home.



2. Look at some containers of everyday chemical products that can be hazardous if they are not used properly. Examples are bleach, paraffin and medicines. Do the labels on the containers give safety information? Do the labels include standard hazard signs?

Design a new label for one of the products. You might design a label which would be easily understood by a very young child or by a person with poor eyesight.

SAFETY NOTE

Do not touch, taste or smell the contents of any of the containers.



Making a chemical product

3. You are going to make and test a chemical product. Your teacher will give you instructions on how to do this.

PART 3 LIVING WITH CHEMISTRY

A story about chemistry

4. In this part of the topic you are going to find a story about chemistry which comes from where you live and which you think will interest people in other parts of the world. There are three suggestions here, but you may prefer an idea of your own which illustrates how chemistry affects people in your region.

SUGGESTION A – CHEMISTRY THEN AND NOW

Interview an older person about a change they have seen in their lives because of developments in chemistry. Choose a topic such as materials used to make a household article (a container for example), methods of washing and keeping clean, medicines, growing food, fuels or any other example of a product of chemistry.



Here is a set of headings you could use on the exchange form.

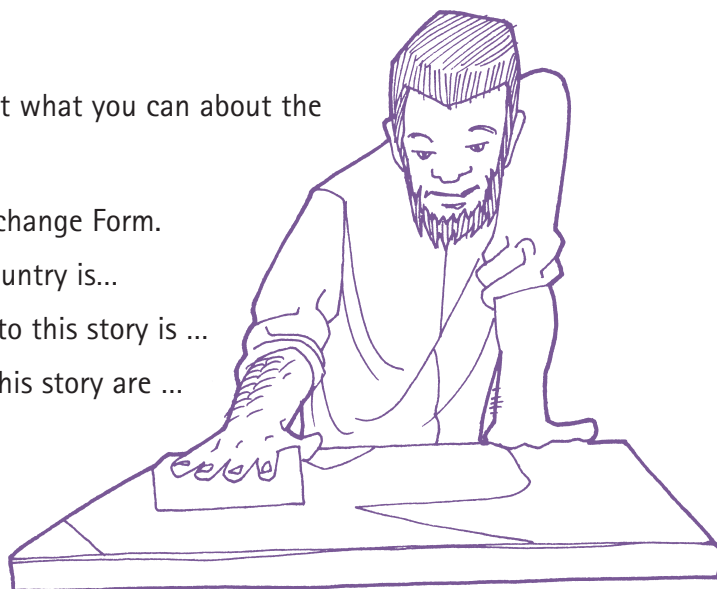
- This is the person we interviewed ...
- This the topic for the interview...
- This is the situation when the person was young ...
- These are some of the changes we were told about ...
- This is what the situation is like now...

SUGGESTION B – A TOPICAL ISSUE

Pick a topical issue to do with chemistry. Find out what you can about the issue from the news and other sources.

Here is a set of heading you could use on the Exchange Form.

- A topical story about chemicals in our country is...
- Reports suggest that the public attitude to this story is ...
- The benefits of chemicals mentioned in this story are ...
- The chemical hazards and risks are ...
- Our attitudes are ...



SUGGESTION C – A PERSON INVOLVED IN CHEMISTRY

This could be the work of a person working in chemistry now or a person who made an important contribution to chemistry in the past. You might interview a person who uses chemistry at work. Alternatively choose to find out about someone who has made a contribution to chemistry in your region recently or in the past.

Here is a set of heading you could use on the Exchange Form:

- This is the person we are writing about ...
- This is why we chose to find out about this person ...
- This is the connection the person has with chemistry ...
- This is how the work of the person has affected people where we live ...
- This is the most interesting thing we have learnt about this person ...



Chemistry and the economy

5. In all countries, chemistry has played a part in developing the economy. You are going to find an example of a contribution made by chemistry to your local, regional or national economy. Find an example as near to your school as possible. The example might be a large-scale industrial process or it might be a small scale process such as home brewing or colouring textiles with dyes from plants or even baking bread.

Here are some possible topics.

- A raw material which is mined, quarried or extracted – for example, salt from the sea or brine, crude oil from oil wells, a mineral from rocks, gases from the air, or products such as starch, sugars, oils or dyes from plants.
- A process for separating or refining raw materials – for example, oil refining or metal extraction.
- A process for converting raw materials into pure chemical substances – for example, the production of chlorine, alkalis, acids, metals, alcohol or sugar.
- A process for combining chemical substances to make useful products – for example, making soaps, plastics, glass, bleaches, perfumes or medicines.
- A process for producing food or drink.

PART 4 EXCHANGING INFORMATION

In this part of the topic you will exchange information with students in different countries. Your teacher has an Exchange Form which contains questions similar to those you answered in Parts 2 and 3. As a class decide what information to write on it.

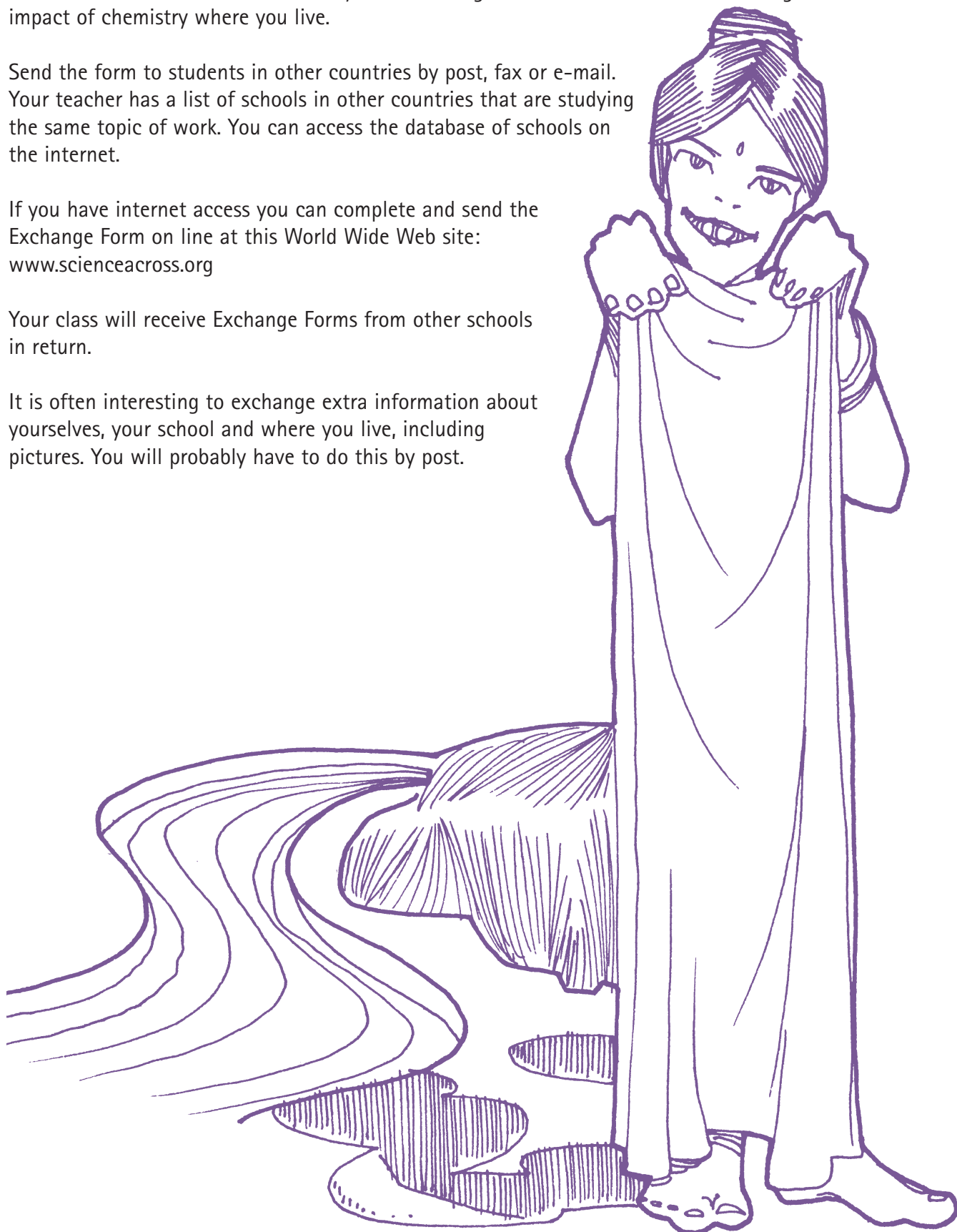
Compare your findings with those of other students. Agree on what to write on the Exchange Form. Choose information and ideas which you think will give students in other countries a good idea of the impact of chemistry where you live.

Send the form to students in other countries by post, fax or e-mail. Your teacher has a list of schools in other countries that are studying the same topic of work. You can access the database of schools on the internet.

If you have internet access you can complete and send the Exchange Form on line at this World Wide Web site:
www.scienceacross.org

Your class will receive Exchange Forms from other schools in return.

It is often interesting to exchange extra information about yourselves, your school and where you live, including pictures. You will probably have to do this by post.



PART 5 COMPARING INFORMATION FROM OTHER COUNTRIES

When you have received the Exchange Forms you can discuss the following ideas.

Chemical products in our homes

- What have you found out about the similarities and differences between the chemicals people use in their homes in different countries?
- What explanations can you suggest for the similarities and differences you have noticed?
- How do the standards of labelling vary from country to country?
- Are there differences across the world in the meaning of the term chemical or chemical substance?
- What strikes you about the chemical products made at other schools? How similar or different are the methods and apparatus used in other schools to the methods you have used?



Living with chemistry

- What do you notice about the similarities and differences between the chemicals stories that other students have written on their Exchange Forms? What do the stories tell you about the attitudes of students to chemistry and chemical products?
- How important does the chemical industry appear to be in the countries from which you have received Exchange Forms?
- What is the most unexpected or interesting piece of information you have found in the Exchange Forms?
- How has your work on this topic changed your knowledge, understanding and appreciation of chemistry?

