

Example 2 **Something to chew on**

Articles reporting science-based news appear regularly in the press. Research presented at the annual Psychological Society conference made the news in several daily papers.

The activities based on this sequence of articles require pupils to use their developing knowledge of 'science enquiry' (Sc1 National Curriculum, AT1 Northern Ireland Curriculum) to help them approach the newspaper articles with a questioning mind i.e. 'to read critically'.

The lesson addresses three related themes, collecting information, scrutinising that information and shaping actions. The newspaper reports provide information about an investigation into the relationship between chewing gum and memory. There is the chance to explore how the information in the reports might or might not be used to influence lifestyle decisions and actions.

Anticipated learning gains

Having completed the activity pupils should be able to recognise that there may be limited information in a newspaper report and so resist the temptation to form firm opinions on the basis of headlines or of a single report. They should know the potential value of more than one source of information and consider how further information could be gathered. The pupils' knowledge of Sc 1 / AT 1 should be used to make a list of important information that they would expect to find in a newspaper report of a science investigation. Furthermore pupils should be able to identify the strengths and limitations of the science investigation as it has been reported.

Introduction

Key questions - used to set the scene and engage pupils with the topic

Can you think of any famous people who chew gum?

A class survey.

Do you chew gum - almost every day?
 - at least once a week?
 - once a month?
 - rarely / never?

Why do you think people chew gum?

(anticipated answers)
- helps you concentrate
- keeps you calm
- looks cool

Development

Activity 1 **Headline News**

Here are some of the headlines and opening statements from recent newspaper reports. (Activity 1. Headline news resource sheet). Read each in turn and then discuss the questions below.

The headlines report a science investigation into chewing gum.

1. What question or questions do you think the scientists were trying to answer?
2. What sort of experiment do you think the scientists might have carried out?
3. Make a list of important information that the journalist should include in the newspaper article which reports on the scientists work.

This is an activity for small groups (or a whole class) brainstorming their ideas. The focus is on encouraging pupils to use their knowledge of 'scientific enquiry' to anticipate how the scientists would ask a question, make a fair test, and report the important features of the investigation and their findings, so that other scientists could evaluate the findings.

Activity 2 **Reading the news** Daily Mail March 14 2002

Now read the newspaper article **'I've got an improved memory, by gum'**

It is an account of the work of the scientists investigating the effects of chewing gum.

From the newspaper story try to answer the following questions. Remember the report may not have the answers to all your questions!

1. Who did the investigation?
2. Who paid for the investigation?
3. Where was the investigation carried out?
4. Where did the scientists report the results of their research?
5. From the information you are given in the news story could you write a detailed step by step plan for the investigation?
6. What did the scientists find out from the investigation?
7. What do other scientists say about the research?

Review

Working with a partner, compare your answers.

How many of the questions were you able to answer?

Did you agree with your partner?

Compare your answers with another group.

Section 4

Look at the questions which you have not been able to answer. Make a list of any further information which you need.

Sometimes the newspaper does not provide all the information you need. If you wanted to know more - can you suggest ways to find out more about this science investigation?

Depending of the age, ability and previous learning experiences of the pupils this activity may also lead to an opportunity to explore the differences between observations or findings, conclusions, predictions and opinions.

Activity 3 Reading the news The Independent March 14 2002

Read the newspaper report '**Chewing can boost brainpower**'. It is a second account of the work of the scientists investigating the effects of chewing gum.

In the newspaper story try to find and underline the answers the following questions. Remember the report may not have all of the answers to all your questions!

1. Who did the investigation?
2. Who paid for the investigation?
3. Where was the investigation carried out?
4. Where did the scientists report the results of their research?
5. From the information you are given in the news story could you write a detailed step by step plan for the investigation?
6. What did the scientists find out from the investigation?
7. What do other scientists say about the research?

Review

Make a list of the additional information which you found in the second article.

How many of the questions were you able to answer from the second report?

Do the two articles agree on the details of the investigation and the findings?

Do you now have all the information you were looking for?

Make a list of any important information which you still do not know.

You were able to compare two newspaper reports of the same scientific experiment involving chewing gum. Both of the reports contain information written by journalists who reported the scientists work. Now that you have read two reports you can see that some reports contain more information than others. However newspaper reports often leave some questions unanswered. Remember, too, that they are **a secondary source of science information** written by journalists and not the scientists themselves.

These activities could be used to begin the process of encouraging the young people to think critically about the information they read, and to begin to build a framework from which they can develop their abilities to interrogate media texts.

Extension

Activity 4 Investigation design and observations

In the report ‘chewing gum can boost your brainpower’ find and underline the following phrases, which describe the design of the investigation.

Three groups of 25 people took part in the experiment

They then completed computerised tests

During tests to recall 15 words, the gum-chewers remembered two to three more than the non-chewers.

"We found a very clear pattern of improved memory when gum was chewed.

Try to list some strengths and some limitations of the investigation as reported in this newspaper article?

Strengths	Limitations

Activity 5 Make sense of the news: have your own say!

Jo said “Teachers should allow chewing in class because scientists say chewing gum helps your school work.”

Based on the evidence in this article would you try to persuade your teachers to make chewing gum freely available in school and to allow chewing in class?

If you have answered ‘yes’, what would you say to support your suggestion?

If you have answered ‘no’, what are your reasons?

What other factors do you think might influence your teacher’s decision about whether or not to allow chewing gum in class? Make a list.

Review

Sometimes people make important decisions based on the information they read in the newspapers. It is important to assess the evidence.

What is your assessment of the evidence which is presented in these newspaper reports? Write a short summary or join in a class discussion to give your opinion. Remember it is important to be able to support your views.

Chewing gum can boost brainpower

CHEWING GUM can greatly improve the performance of the brain, research issued yesterday suggests.

By gum, here's something for the memory to start chewing on

It is a habit usually linked with young people, pop stars and football managers such as Sir Alex Ferguson. But researchers said yesterday that chewing gum can improve your memory.

I've got an improved memory, by gum

Chewing gum can improve your memory, scientists have found.

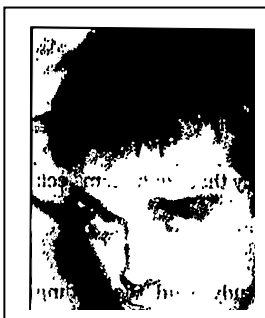
Chewing it over is the key to exam success

Generations of school teachers have tried to ban it, but chewing gum could help children to achieve better exam results, researchers have shown

Chewing gum can boost brainpower

By LORNA DUCKWORTH
Social Affairs Correspondent

CHEWING GUM can greatly improve the performance of the brain, research issued yesterday suggests. People who chewed gum scored 40 per cent more in memory tests than those who didn't in a study presented to the British Psychological Society's annual conference in Blackpool.



Robbie Williams: A noted celebrity gum-chewer

Dr Andrew Scholey, of the human cognitive neuroscience unit at the University of Northumbria, described the improvement in memory as "quite dramatic".

Although chewing gum was first marketed in America more than 150 years ago, Dr Scholey's work is the first to look at its impact on mental performance. Three groups of 25 people took part in the experiment. The first chewed gum throughout, the second had nothing and the third went through the chewing motion with nothing in their mouth. They then completed computerised tests to measure attention span, response times and long and short-term memory.

During tests to recall 15 words, the gum-chewers remembered two to three more than the non-chewers. There was no effect on concentration but the heartbeat of the gum-chewers increased by an average of three to four beats a minute compared with only a very slight increase among the fake chewers.

Dr Scholey said chewing gum might improve memory because the heartbeat increased and delivered more oxygen and glucose to the brain. Alternatively, chewing could stimulate insulin production, which affected the part of the brain involved in memory.

Dr Scholey said: "We found a very clear pattern of improved memory when gum was chewed. We think it is the effect of chewing that causes this rather than anything in the gum itself. There are lots of ways to improve mental function. This may be one of a series of interventions that people may want to try."

Well known gum-chewers include Sir Alex Ferguson, Robbie Williams and Martine McCutcheon.

Previous work by Dr Scholey has shown that ginseng can enhance the memory and ginkgo can improve memory and concentration.

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The Daily Mail March 14 2002

I've got an improved memory, by gum

CHEWING gum can improve your memory, scientists have found.

The discovery will come as bad news for pavement- cleaners as well as parents, who are irritated by the perpetual motion of their children's jaws.

But taking a packet of gum into exams might actually boost a student's performance.

Neuroscientists at the University of Northumbria assessed the effects on memory of various substances - including rosemary, ginseng and aromatherapy oils.

They found that volunteers' ability to remember lists of words improved by more than a third if they were given a stick of gum.

Dr Andrew Scholey told the-British Psychological Society's annual conference in Blackpool: 'It was really quite a dramatic effect. It held up over and over again, so we are confident it is really helping.'

He is not certain why chewing gum quickens the mind, but said it may raise the heart rate, pumping more blood to the brain. The team also found that the smell

of rosemary jogs the memory. It can help people recall faces and events from years earlier.

The scientists hope to use the information to produce drugs to combat dementia or Alzheimer's.