



Figure 1 Good old-fashioned writing

The benefits of paper!

Rachel Linfield shows how her 'old fashioned' ways can help with enquiry, questions and much more – all nicely wrapped too!

There is rarely a day that goes by without someone telling me that I am 'old fashioned'. They are not talking about the way I look, but simply commenting on my liking for paper. I read books, I write letters, I enjoy wrapping presents, I use paper hankies and, when allowed, I prefer to mark paper-based essays! While realising there is an important need to conserve energy and materials, there are times when I do see the value of paper; for me, a completely

'paperless society' is probably never going to work. Looking back over the past 30 years of my involvement with primary science, there is one material that I have always found useful for encouraging children to investigate – paper!

A key aspect of primary science is asking questions, investigating and finding answers. Regardless of the National Curriculum in use, I always look for opportunities that will enthuse my pupils (and students training to

be early-years and primary teachers) and encourage them to ask those useful 'Why ...?', 'Does ...?', 'Will ...?', 'Can ...?' and 'What if ...?' questions. Despite the prevalence of computers, tablets, kindles, mobile phones and emailed shop receipts, paper is something we see in daily life and use at least once every day – for writing on, wrapping, cleaning, reading, packaging food, as wallpaper, toilet paper, kitchen roll – the list goes on.

Opportunities for asking questions about paper and carrying out investigations are endless. A selection that have been asked by my pupils are listed in Box 1. Perhaps more importantly, all of these have led to research, investigations, answers and further independent investigation and research at school and home.

Recently, when visiting Cambridge, I was greeted by Stan, whom I had

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Box 1 Pupils' questions that led to investigations

- Are paper bags as strong as plastic bags?
- Can paper cups be reused?
- Is card 'paper' and, if it is, which cereal box keeps cereal freshest?
- Which paper makes the best parachute/paper aeroplane/boat?
- Can you paint on all papers?
- How does blotting paper work?
- I don't have filter paper at home – can I use something else for chromatography?
- How long do paper straws last?
- What was paper like in the 'olden days'?
- Will quill pens work on modern paper?
- Is the advert for [well known brand] paper towel true – is it really the most absorbent?
- What is recycled paper?
- Can all papers be recycled?
- How does recycled paper compare with the original, used paper?

taught in 1985 in my very first class; he was then aged 10. This was a challenging class in terms of behaviour and engagement. Nevertheless, the class always responded well to weekly science experimentation. The science lesson was the one time in the week when I could guarantee that all children would concentrate, partly because this was the pre National Curriculum era when, in the school Stan attended, I had total freedom to teach what I liked, when I liked and how. As a result, science tended to arise from topics and pupils' interests and questions, and whenever possible involved practical work.

After Stan introduced me to his own children, he asked me whether I still recycled paper. He recounted

the time in class 5 when we had investigated the recycling of paper and found the perfect, simple recipe to recycle newspaper, which did

Box 2 Class 5's recipe for recycling newspaper

- 1 Rip up two large sheets of newspaper into tiny pieces.
- 2 Mix with a little water and pull it apart until it 'pulps', is fluffy and words cannot be read.
- 3 Lift the pulp (do not squeeze it) letting the water drip between your fingers and place it on a plastic lid.
- 4 Press out the water and leave to dry for a week to make grey, cardboard.



Figure 2 Comparing the results of paper recycling

not require complicated equipment (Box 2). Over 30 years after our original experimenting, Stan could still vividly recount how to recycle newspaper and also remembered going home with very dirty hands stained with the newsprint. We happily reminisced about other weekly science experiments and his children eagerly told me they had also used 'Dad's recipe' to recycle paper (although they had used paper hankies in order to avoid staining their hands!).

The value of investigating things that matter

So, what is the moral of my reminiscing? Is it just a middle-aged excuse to continue using paper? No. It is trying to promote my firm belief that science in primary schools should, wherever possible, allow children to investigate the things that matter to them. Back in 1985, the recycling began on the day the school delivery of sugar paper did not arrive. We had an art lesson and quickly discovered the cupboard's supply of paper tended to be too absorbent for our needs. Thus followed the interest in recycling and the question of whether we could recycle the paper on which we had previously painted (Lucy proved that washing it did not work!). Sadly, we failed to recycle sugar paper in class, although one child did produce some at home using her parents' liquidiser, water and sugar (I never did find out the precise recipe for this paper or whether the parents knew of the liquidiser's use!). Newspaper, however, did prove possible and long after the science lessons on recycling paper had been completed, many children independently continued to carry out investigations in their own time. There are some experiences that just cannot be recreated electronically!

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