

RUNNING A SCIENCE READING CHALLENGE: A GUIDE FOR TEACHERS

PROMOTING SCIENCE READING FOR
INTEREST AND ENJOYMENT

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Introduction

While we may not always agree with current educational priorities and policies, few of us would disagree with the idea that children and young people should develop the habit of reading widely and often, both for pleasure and for information. Indeed, professionally, we put a great deal of time, effort, and often ingenuity, into planning learning experiences to achieve these two goals. However, when planning these learning experiences, we tend to equate 'reading for pleasure' with fiction and 'reading for information' with non-fiction.

For this reason, perhaps, it is relatively rare to find reference to 'reading science for pleasure' in school science policies, action plans or schemes of work. Yet there is a wealth of wonderful science books published for children, many of which have the potential not only to extend our pupils' knowledge and understanding, but also to excite their interest and imagination.

It could of course be claimed that those children who are keen on science will read science books anyway, whether at home or in school during free-choice reading opportunities. However, at Queen's University, Belfast, we have carried out two small-scale studies, one with the support of the Royal Society and one funded by the Primary Science Teaching Trust (PSTT), which suggest that this may not always be so.

In the PSTT-funded study, just over 300 children, aged between 8 and 14, completed a questionnaire exploring their reading habits, preferences and opinions, generally and in relation to science. Our findings showed that only about 16% regularly read science books on a free-choice basis. This raises the important question 'Why so few?' An obvious response might be that many children do not have access to science books at home and hence they are unlikely to read them outside of school. However, we also asked about the pupils' reading habits in school and only about 22% claimed to read science books there.

Similarly, it could be argued that perhaps children simply don't like science and so don't read science books. Our survey showed, though, that science was a popular subject in our participating schools. As one child responded:

'I like science but I wouldn't be tempted to read a book about it.'

Why then do children choose not to read science books? There were two 'open-ended' questions in our survey which may offer some pointers to why this is so. Firstly, we asked pupils 'What jumps into your mind when you think of science books?' While some provided answers which were encouraging, a disappointing number of children responded that science books are 'boring' or 'difficult.'

Secondly, we asked, 'What type of person reads science books?' Understandably, almost half of our sample answered 'Scientists.' This is problematic, if children consider that only 'specialists' read such books. Furthermore, a worrying number replied, 'only smart people' or 'clever people.' As one child wrote:

'Science books are only for people who get top marks in everything.'

There seems to be a vicious circle here. Typically, children do not read science books and so they form misconceptions about them (e.g. boring, difficult, or only for smart people) and so they do not read them and the cycle is perpetuated.

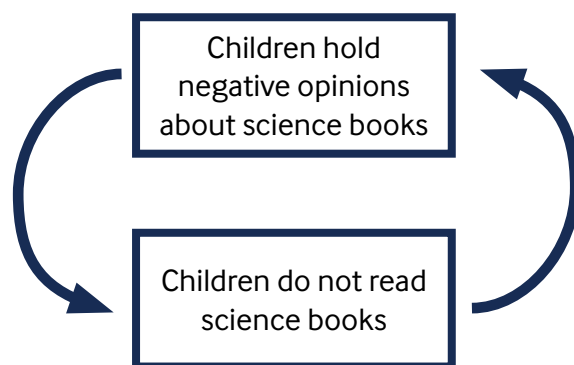


Figure 1. A vicious circle

Unless we can break the cycle shown in Figure 1, many of our pupils will miss out on books which could really catch their interest and imagination. But how best can we do this? Although there is an abundance of information available on how to encourage children to **'read for pleasure'** and initiatives to support the process, there is currently almost no guidance or support available to teachers who wish to encourage children and young people to **'read SCIENCE for pleasure'**.

During the past three years, with funding from PSTT, we have had the privilege of working with teachers to explore ways in which we might motivate pupils to engage with science books for interest and enjoyment. Our approach has involved taking the traditional idea of a **'Reading Challenge'**, where children are expected to read a set number of books, and developing it in a way that puts **SCIENCE** centre stage and that fosters creative interaction with the texts and, typically, collaboration among the young readers.

As project directors, this has proved to be a really exciting experience for us - indeed, one of the most rewarding in our professional lives. Often, we were dazzled by the ideas that our project teachers devised for promoting science reading for pleasure and delighted with the children's responses. Overall, there has been clear evidence that many participating in the reading challenge no longer regard science books as boring, difficult and only for smart people.

'I thought science books were a bit boring at the start, but once I got reading them they were amazing.'

The purpose of this guide, and the associated newsletters, is to share more widely our ideas for and experiences of running a **'Science Reading Challenge'**. We hope that they will inspire you to introduce or continue promoting science reading for pleasure among your pupils and that the material will provide useful support as you do so. This is just a beginning, however. We anticipate that you will want to build on these ideas, adapting and developing them to meet the needs and interests of your children and embedding your approaches firmly in your school schemes and programmes.

Happy reading science for pleasure,

Ruth Jarman and Joy Alexander

Queen's University, Belfast
September 2017

Reading Science Books: The Benefits for Children

Many benefits for children can flow from reading science. These can be summarised as follows. Good quality science information books and science-rich story books have the potential to:

- promote the learning of science information and ideas
- promote the learning of science skills and of what it means to 'work scientifically'
- promote the learning of skills through science, particularly those related to literacy
- promote interest in science
- perhaps, stimulate a lifelong science reading habit, whether or not the pupils eventually pursue science beyond school

Each of these points will be considered briefly in turn.

Firstly, reading science books can extend and/or consolidate children's science knowledge and understanding. Some texts will deal with topics that have been or will be covered in the school's science programme. Many will cover these themes more broadly, providing lots of illustrations, everyday life examples, background stories etc. which can delight young readers. Other books will cover topics that are beyond the school curriculum. Reading these texts has the advantage that it raises pupils' awareness of the wider reach of science. We have found children are often fascinated to learn about food science and forensic science, about psychology and palaeontology.

Reading science books can also promote the learning of science skills. This is an important point. We are certainly NOT suggesting that promoting science reading for pleasure should diminish the amount of time devoted to first-hand practical experience. Far from it. Many children's science books comprise or contain examples of practical activities and suggestions for investigations. Many can raise questions in children's minds which are amenable to scientific enquiry in the classroom. Furthermore, in undertaking these enquiries, pupils can develop, as required by the National Curriculum, their skills of research using secondary sources. In an additional and rather special way, children can learn what it means to 'work scientifically' by reading biographies of scientists or books about individuals following scientific careers.

Reading science books can also promote the learning of skills through science, particularly those related to general literacy. When teachers engage their pupils in stimulating, book-related activities, children can develop, not only reading skills, but also their ability to convey ideas and opinions through the spoken and written word. Moreover, some of the tasks undertaken by the children during the project described in this guide have involved other curricular areas such as ICT, drama, music, art and craftwork, design and technology. Significantly, many developed the key '4Cs', the so-called 21st century skills of communication, collaboration, critical thinking and creativity.

Reading children's science books can promote interest. Unlike textbooks, they are written very specifically with this in mind. This is important, given that principally the books are offering a free-choice, leisure-time experience. In that context, if a child is not captivated by a book, she or he will simply put it down and do something else instead! Hence, typically, these publications aim to engage readers at an emotional level as well as an intellectual level. Such science books, therefore, represent a resource which, potentially, can both inform and inspire young readers, fostering positive attitudes to science and fuelling their curiosity and sense of wonder. No surprise then, that many scientists attribute their interest in science at least in part to science books they read for pleasure as a child.

Finally, by encouraging children in school to read science books for interest and enjoyment as well as simply for information, we increase the possibility that they will continue to engage with science beyond school, whether or not they pursue science courses, jobs or careers. This would be a significant outcome. The aptitude to access sources of science information is the foundation on which scientific literacy - lifelong, life-wide, life-deep - is built.

Science information books

A crucial factor in the success of a science reading challenge is that contemporary science information books for young people are wonderfully attractive, high quality productions with an undoubted wow! factor. As one participant in a challenge said of a science book he had enjoyed: *'It wants you to read it.'* They are written to appeal to young readers, sometimes casting them in the role of a detective or discoverer or even proposing, as the clever title of a book from the Science Museum has it, *This Book Thinks you're a Scientist*.

Typically the best of modern science books for children are large size and highly colourful, with illustrative material of all kinds – photos, drawings, cartoons, diagrams, etc. They may have innovative design features, such as pop-ups or interactive elements (lift-the-flap, pull or push, turn), with page lay-out heavily influenced by web-page design. The similarity of the lay-out of many modern information books to web pages has educational value as a helpful introduction to researching on the internet. Browsing along the shelves of science books for young people in a library or a bookshop quickly dispels notions that science books are boring. There can be genuine pleasure in handling the book itself, drawing the reader in before he or she even begins to read.

Children's science books are often of a size that facilitates a couple of children reading together, so that they can discuss what they are looking at and learning about. They often do not need to be read in a linear fashion; readers can browse until they come upon a page that interests them and then gradually get drawn in to read more. These books are inviting for readers with a range of reading abilities, as a double-page spread often contains chunks of text with diagrams and pictures through which children can find their own path to make meaning at a basic or more sophisticated level.

There is a wide range of types of science book to cater for all interests and tastes, so it is good to introduce children and their parents to the breadth of what is available:

Information books (narrative / exposition)	How-to books
Biography and autobiography	Field guides
Reference books	Quiz and puzzle books
Fact books	Science-related poetry
Experiment books	Science-rich fiction

To see wonderful examples of the best of contemporary children's science books, have a look at the recent winners (chosen by young people) and the shortlists (chosen by a panel of scientists) of the annual Royal Society Young People's Book Prize. The shortlist is selected from titles submitted by publishers and so they represent the best of science publishing for children in any year: <https://royalsociety.org/grants-schemes-awards/book-prizes/young-peoples-book-prize/past-winners/>

What takes place in a Science Reading Challenge?

OVERVIEW

The purpose of the Reading Challenge is to grow young science readers by challenging children to read a specified number of science information books within a set period of time. This process is associated with participation in one or more activities designed to foster further engagement with the books. The Challenge capitalises on the class or school library as a resource for science learning. However, although learning will be a very likely result of the Challenge, the focus is on reading for pleasure. This means that, as far as possible, children choose the books they want to read and are free to read them in the way that they want. Although teachers will encourage and advise, the reading should not be too teacher-directed. The aim is to develop in children's minds an association between science books and enjoyment and to show them that science reading can be interesting and even fun!

The Challenge consists of three stages, **each of which is described more fully later on:**

- A **Launch Event** designed to catch the children's interest, with the focus on science. The Reading Challenge is issued and explained, the children are given their reading passports, and by the time the launch event ends, they should be eager to start on their science reading!
- A **Reading Challenge**, which is the core of the programme, in which the children read a number of science books and take part in activities planned to promote creative interaction with the books they are reading. As a sign of their participation each child has a reading passport, in which stickers are gradually inserted which record the progress of the reading.
- It's good to have some kind of **Final Event** or special assembly with a celebratory flavour to mark the end of the Challenge, when those who have completed their passports are presented with a Certificate in recognition of their achievement.

These three features – Launch Event, the Reading Challenge itself and a Final Event – form the recommended substance of the scheme. However there is considerable scope to tailor the programme to fit the context of an individual school and the needs and interests of the pupils who will be participating. Teachers are welcome to adapt and refine their implementation of the Challenge according to their circumstances and judgement.

PLANNING THE PROGRAMME

The effort put into pre-planning will yield results in a smoothly running Reading Challenge. The key elements that need to be decided in advance are:

WHO WILL TAKE PART?

The Challenge can be used with a whole year group, with one or more classes or with groups within a class, or with science clubs or library / book clubs. It can also be used as an inter-school project. Class teachers are likely to take the lead or teachers with a responsibility for science, but the literacy coordinator or, if relevant, teacher with responsibility for the library could also have a part to play in it.

WHAT IS THE BOOK SOURCE FOR THE CHALLENGE?

The most convenient source of STEM-related books will probably be a class library and/or the school library. Children may also want to use some of their own books or borrow from the local library. We called our reading challenge 'Project 500' to reinforce in young people's minds and memories that 500 is the Dewey Decimal library classification number for science books. The '500' shelves contain books on maths, astronomy, physics, chemistry, earth sciences, life sciences, botany and zoology, which should offer plenty of choice! It may be necessary to make decisions about who the Reading Challenge is offered to according to the size of the book-stock available. Ideally there needs to be several times as many books as there are participating children, so that, when they all borrow a book to read, the stock is not so depleted that there is little left to choose from. The Schools Library Service is an excellent source of help and advice.

WHAT MATERIALS WILL BE NEEDED?

Reading passports, the stickers to go in them, and certificates will need to be designed and produced. It is best if you can produce customised materials, specific to your school and appropriate for your aims in undertaking the Reading Challenge. In the Appendix to this Teachers' Guide there are templates of the materials that we used and also ones created by a school in our project, which can be copied or used as models for creating a more personalised design. Templates can also be found online for customising and printing passports and certificates as well as options for obtaining self-branded stickers.

The *theme* we chose for our reading challenge was astronomy. We used this theme in the artwork for the passports, and the eight planets conveniently determined the number and supplied the content of the eight stickers that could be acquired in the course of our challenge. Accordingly, someone who was awarded a certificate had 'read their way through the solar system'!

There are very many STEM-related themes which could be chosen for the Reading Challenge and then carried through the materials, the launch event and other aspects of the programme. The theme may relate to the curriculum or to local circumstances or it may simply present science generally in an eye-catching manner. It is worth doing your best to produce attractive materials. Teachers who have run reading challenges found that the children enjoyed and were excited by the passports and stickers more than had been anticipated.

The Launch Event

The Launch Event is designed to catch the interest of the pupils. This definite starting point is important to the success of the programme. We have found that, typically, it serves to fire the children's enthusiasm, motivating them for what is to follow. Without it, children can be left rather unclear about the distinctiveness of their reading.

The focus of the launch is on science and on generating excitement about all things scientific. A link is made to reading about science and then the Reading Challenge is presented and explained. The children are given their reading passports and by the end of the launch event, they should be eagerly anticipating getting started on their science reading!

A list of possible launch events is shown below. Some of these are ambitious; others less so, though they still can be very successful in sparking interest. The key feature is the connection made to science reading and science books. Thus, if the launch comprises a Science Show, ask the science communicator to make references to science books in her or his presentation. If the plan is that children make and decorate balloon jets, show them that the idea and instructions have been sourced from a science book.

- Wacky Science Day. Children visit different classrooms to take part in a range of activities –
- e.g. story-time in the school library, science experiments in classrooms, 'rocket launch' outside, science-related ICT tasks, science-related films, science-themed snacks, etc
- Science Show with presentations by visiting science communicators, science centre personnel, environmental groups, etc
- Scientist Visit (including possibly a former pupil who is a scientist or has a science-related job)
- Science 'Readathon'
- Science-related story-telling day
- Science-themed activity day (e.g. a CSI day)
- Science-themed 'film day' related to science books in the school book-stock
- Science-themed dress-up day (in our project schools, this was linked to World Book Day)
- Science book-based treasure hunts or scavenger hunts
- Author Visit (note - this can be VERY expensive)
- Teachers or visiting speakers discuss (or read aloud from) their favourite science book
- School assembly themed around science books, with presentations, science-related music, science demonstrations, science drama, etc.
- Educational visits to informal science education sites (e.g. science centres, museums, a planetarium, a zoo, etc)
- Educational visits to science-related sites
- Visit to local public library and participating in science-related activities in the library

Remember, some of the activities you may plan will require risk assessments to be undertaken in advance. School policy and practice will apply to ICT-related activities including video production.

The 'Launch Event' can be tied in with, for example, World Book Day or National Science and Engineering Week, or with, for example, St Valentine's Day (with an emphasis on the human heart), science-related phenomenon or event (e.g. an upcoming eclipse) or a famous scientist's birthday.

In our project schools, teachers devised and implemented some very striking – and memorable – launch

events, many of which are described in the Project 500 Newsletters, which can be accessed via the PSTT website [here](#).

Links to Project 500 Newsletter articles (click to access):

Spring 2015	Brownlee Primary School Bloomfield Collegiate
Spring 2016	St Joseph's Primary School Andrews Memorial Primary School St Patrick's College, Bearnageeha
Summer 2016	Northbury Primary School Sullivan Upper School Preparatory Department Oakham School
Autumn 2016	Mill Strand Integrated Primary School
Spring 2017	St Patrick's College, Maghera and Maghera Primary School
Summer 2017	Exeter Junior School

Important points to note. Many of our schools invited the local press to their launches (and/or to their final events) and the associated publicity further enthused the children. Where teachers booked a science show, because of the expense involved, these were often presented to the whole school community even though only one or two classes were nominated to participate in the Reading Challenge itself.

The Reading Challenge

The essence of the Reading Challenge is two-fold: reading science information books and finding out about science. It follows that what is most important for the duration of the Challenge is to highlight and maintain interest in these two elements in every way possible – informal talk, individual and group discussion, supporting activities. To this end, our experience has shown that the Challenge is most successful when the children not only read their books but participate in one or more activities designed to increase engagement with those books. Furthermore, teachers have an important role in supporting (though not directing!) pupils as they carry out their activities.

There are two practical arrangements which need to be decided upon and then have to be communicated clearly to all participants. These are matters for you to decide for your school, based on your circumstances, goals and preferences and on the needs of your children.

- How long will the Reading Challenge last? It's good to have a definite time-limit rather than allow the Challenge to run on too long.
- What will stickers be awarded for? The simplest situation is: read a book, get a sticker. However you may well want to offer other alternatives, such as awarding stickers for specified activities according to the demands of the task (see Table 1). It's a good idea to display prominently how stickers can be earned. Children generally enjoy obtaining stickers so they should serve as incentives throughout the Challenge. Essentially the passport is a motivational tool.

Decide on administrative arrangements – giving out stickers, etc - that will work most easily for you and be minimally interruptive of class time.

The passport validates what an individual has done, but why not chart the science reading progress of a class by using large displays with a science theme, for example, the number of leaves on a reading tree, the number of stars in a night sky, the 'temperature' on a thermometer or other scale, the height that a rocket

has travelled toward the moon, etc. In one school in our project, a rocket (1.5m high!) was made from card and stuck on the classroom wall. Small, cut-out astronauts were then used to chart the reading progress of the class.

As already indicated, we found that children respond most favourably when, alongside their reading of science books, they are involved in one or more activities designed to enhance their engagement and interaction with the texts, for which stickers may be awarded. These activities should as far as possible be freely chosen and should not seem like tasks or exercises; the reading is not for the purpose of the activity but the activity aims to perpetuate the enjoyment of reading and finding out. It's also a good idea to offer options so that the activities can be selected by the children to suit their aptitudes or the book they have read. For example, while some children will enthuse about dramatic activity, others will prefer to carry out an experiment or make a poster. Children have told us of their enjoyment of these ancillary activities, which are closely associated with the actual reading experience of a book. In fact, there's not much point doing them if there isn't enjoyment and satisfaction in the doing of them! They provide a way to internalise new science learning and to share it more widely with others.

Suggestions for such activities have been grouped together under the following ten headings, though inevitably there is some overlap between the groupings. Each is discussed in more detail on following pages:

- Fascinating fact-finders and interesting idea investigators
- Science Quizzes and Games
- Science practical activities, experiments and investigations
- Communicating the science learned to others
- Beyond the traditional book review
- Book talk and pupil book presentations
- Drama and role play
- Art and craftwork, including paper engineering
- Reading buddies and mentors
- Library Links

Say you have decided to award 8 stickers...

<p>Example A</p> <p>Children are encouraged to read 4 science books</p> <p>Children select their favourite book. Working with classmates who also enjoyed that book, they produce a video to 'advertise' that book to other classes</p>	<p>1 sticker each</p> <p>4 stickers</p>
<p>Example B</p> <p>Children are encouraged to read 2 science books</p> <p><i>Children choose from among the following activities:</i></p>	<p>2 stickers each</p>
<p>Find Five Fascinating Facts!</p>	<p>1 sticker</p>
<p>The Best Bits! Children identify the most interesting WIPP – new science Word, Information, Picture and Page and share these with a friend</p>	<p>1 sticker</p>
<p>Make a quiz to use with one of the books</p>	<p>1 sticker</p>
<p>Make a 'word search' to use with one of the books</p>	<p>1 sticker</p>
<p>Make a bookmark to go with one of the books</p>	<p>1 sticker</p>
<p>Write a book review for Amazon – star rating and comment</p>	<p>2 stickers</p>
<p>Write a 'Better Blurb' for the cover to encourage other children to read the science book</p>	<p>2 stickers</p>
<p>Carry out a science activity recommended in the book and report on what happened</p>	<p>2 stickers</p>

Table 1. Examples of sticker award schemes

Remember, some of the activities you may plan will require risk assessments to be undertaken in advance. School policy and practice will apply to ICT-related activities including video production.

The Final Event

You will have your own ideas for what would be a fitting way to mark the end of the Reading Challenge. It's good to have a definite event to round everything off and give closure.

The key part of the final event is the presentation of certificates. One teacher told us that what they appreciated when they participated in our project was the 'celebratory element' and 'joyousness' that characterised the closing awards ceremony.

How will you mark the closing event as special? Who will present the certificates? Are there special guests who could/should be invited? What activities could be included in the programme?

In our project, one school for their final event visited a partner school for a day and presented what they had learned about science in a variety of imaginative ways.

Look back, but also look forward! Children who read science books and engage in related activities which lead them to think 'I'm enjoying this', 'This challenge is fun', 'This is interesting', 'I didn't know that fact and I must find out more', are gently acquiring motivational drivers that may in the longer run build a growth mindset. Give praise for the achievement of receiving a certificate and encourage those who have done so to continue to learn about science through the curriculum and through books.

Hopefully the final event won't mean the end of reading science information books but will prove to be 'the end of the beginning,' with regard to both children's leisure reading of science books and to curricular use of science information books as resources for science learning!

Remember, some of the activities you may plan will require risk assessments to be undertaken in advance. School policy and practice will apply to ICT-related activities including video production.

Links to Project 500 Newsletter articles:

[Autumn 2015](#)

[Spring 2017](#)

St Pius X College

Mill Strand Integrated Primary School, Portrush

Suggestions for possible Reading Challenge activities

FASCINATING FACT FINDERS AND INTERESTING IDEA INVESTIGATORS

Any science information book will contain many fascinating facts, interesting ideas and new knowledge which can act as hooks to draw readers toward an interest in science. Often children's books present 'did you know' features or lists of 'factoids', typically sentence-long quirky or useful details specifically selected to intrigue, surprise or amuse.

This characteristic can be exploited in one of the simplest activities a teacher can use to enhance engagement with science books; pupils are challenged to identify and share the 'fascinating facts' and/or 'interesting ideas' that most caught their attention during their reading. Simple this approach may be, but it can be very successful. Children and, we noticed, boys especially, enjoy finding and sharing their 'gems' with their classmates. They often do so unprompted, and very enthusiastically, without any teacher intervention. Moreover, this activity has considerable potential to develop curiosity.

In our project, one school had pupils design a large poster entitled 'St Patrick's PS impresses Einstein' on which children stuck their fascinating facts, another collected information in a 'Fact File' which then formed the basis of a Teacher vs Pupil science quiz. In a third school, children received 'Ask me a fact about ...' stickers relating to a topic in whatever book they had been reading. So, a child who had read a book about the environment would wear a sticker saying 'Ask me a fact about Recycling.' This turned the reading challenge into a further challenge to demonstrate what had been learned from reading.

Important points to note. Children should be given the opportunity to talk about their 'fascinating facts' by asking them questions such as 'Why did you choose that fact?'; 'Does it remind you of anything else you have learned about in science?'; 'What did you feel when you learned that fact?' etc. Secondly, we want to avoid giving children the impression that science is simply a collection of facts, interesting as they may be. We need to stress that scientists aim to EXPLAIN these facts. Finally, in an extension of this approach, there is great value in asking children to list the questions that jumped into their mind when reading the book but that their books did not answer. These can be further researched or even, if possible, referred to a scientist or to the author through, if she or he has one, the author's website.

Links to Project 500 Newsletter articles:

Autumn 2015	St Patrick's Primary School, Ballygalget Crafty Science Communication
Spring 2016	St Patrick's College, Bearnageeha
Summer 2016	Sullivan Upper School Preparatory Department
Summer 2017	St Patrick's Primary School, Mullanaska

Suggestions for Fascinating Fact Finders and Interesting Idea Investigators

Children identify the most interesting fact(s) and idea(s) that they have found in their chosen science book and share them, for example ...

- in paired, small group or whole class discussion
- by writing them on to, e.g. speech bubbles and sticking them on pre-prepared posters which can be displayed in the classroom or around the school
- by writing them on to card and sticking them onto large, pre-prepared words such as 'SCIENCE' or 'BOOK INTO SCIENCE' etc
- by designing 'Fascinating Fact' bookmarks or writing the information on colourful luggage labels and displaying them on a poster
- by designing a 'lift the flap' poster or booklet, where the fact is posed as a question and the answer can be found by lifting the flap
- by recording them in a 'Fascinating Fact' file or folder
- by collecting them and using them as the basis of, e.g. a Teacher vs Pupil quiz
- by giving the children 'Ask me a fact about ...' stickers to wear which relate to the topics in the books they have read

SCIENCE QUIZZES AND GAMES

Science books can form the basis of a wide variety of quizzes and games. Essentially, there are two approaches that can be adopted. Either the quizzes or games can be devised by the teacher or they can be devised by the children.

In the first instance, a teacher designs a quiz, information treasure hunt or game based on one or more books that the children have read. The intention is to make these instructive, but also as unlike a traditional test as possible. One teacher in our project, for example, prepared a quiz to accompany science books in the class library. The quiz questions were answered using a STILE[®] Tray, a resource which can be found in a number of primary schools (see the article 'Do science with STILE' in the [Summer 2016 Project 500 Newsletter](#)). Similarly, in a transition-project, pupils in a school partnership cluster all read the same science books which were then used by teachers to draw up an 'inter-school quiz' conducted as one of many events when the primary schools visited their partner secondary school.

In the second approach, the children themselves are challenged to make up a quiz or game to accompany a specific science book. In our project this was the more commonly adopted of the two methods. Thus, pupils designed quizzes or word searches based on a book they had read. These could then be attempted by other readers of the same text. In another example, a number of teachers invited their pupils (working either individually or in small groups) to select a book and design a board game to accompany it. The results were some very colourful and imaginative creations providing plenty of evidence of children's science learning through the process.

Important point to note. Children are very competitive and in many quizzes there are 'winners' and 'losers.'

We must remember, however, that our aim is to motivate ALL children to read science books and so we must ensure that the learning of ALL participants is valued and celebrated so that ALL are encouraged to continue to choose to read science.

Links to Project 500 Newsletter articles:

[Autumn 2015](#)

St Pius X College

[Spring 2015](#)

St Joseph's Primary School, Tyrella

Andrews Memorial Primary School

Do science with STILE

Suggestions for Science Quizzes and Games

Children ...

- participate in, or themselves design, science book-related quizzes
- complete or design a question sheet for a STILE tray based on a science book from the class (or school) library
- participate in or design a board game relating to a science book in the class (or school) library
- participate in, or design themselves, an 'information treasure hunt' based on a number of science books in the class (or school) library
- participate in, or design themselves, a 'Can you find?' competition. Parts of images from a number of science books are displayed around the school. Children are challenged to identify the books
- in a school partnership cluster, all read the same science books which are then used as the basis for an 'inter-school quiz'

SCIENCE PRACTICAL ACTIVITIES, EXPERIMENTS AND INVESTIGATIONS

As already stressed, promoting science reading for interest and enjoyment should not reduce the time devoted to first-hand practical experience. Many children's science books comprise or contain science practical activities, experiments and/or investigations. Their young readers can be given the opportunity to try out some of these for themselves or, if this is not appropriate, they can act as assistants in a teacher demonstration. In one of our project schools it was suggested that videos be taken of the children carrying out the activities so that their experiences can be shared by other readers of that book. In another school, older children selected 'experiments' which they practised and demonstrated to younger children in other classes. In a third school, parents were given a list of simple science 'experiments' (sourced from science books in the class library) that could be conducted at home with household products. Under the mentorship of their daughter or son, parents carried out one of these activities and thereby earned some project stickers for their child's passport.

Books can also be used as secondary sources to support children as they plan science investigations. Thus, in a transition programme which included Project 500, primary and secondary pupils worked together to

plan, carry out and report the results of a series of investigations relating to the design and building of pyramids. Like real scientists, their research began in the library – albeit in their local library bus!

As a teacher reads a science book with pupils, it should be routine practice to ask if there are any questions that jump into the children’s minds. Though most will not, a few of these questions may be amenable to practical scientific investigation in the classroom.

Some science books are biographies or are about individuals following science jobs or careers. Through reading these, children can learn more about what it means to ‘work scientifically.’ In one of our project schools, children chose a scientist about whom they would like to find out more. As they researched, they were encouraged to answer questions such as ‘Where was I born?’, ‘Where did / do I live’, ‘My area of science was / is ...’ ‘Where did / do I work ...’ ‘This is something I discovered / invented ...’. Importantly, the children were also asked to describe the most interesting thing that they found out during their research. All this information was presented on attractive, teacher- designed A4 worksheets which were subsequently displayed alongside the pupils’ completed passports.

Important point to note: Again, we stress that science practical work will require risk assessments to be undertaken in advance. School policy and practice will apply to ICT-related activities including video production.

Links to Project 500 Newsletter articles:

Summer 2015	Assumption Grammar School
Autumn 2016	Mill Strand Integrated Primary School St Patrick’s College Maghera and Maghera Primary School
Summer 2017	Exeter Junior School

Suggestions for Science Practical Activities, Experiments and Investigations

Children ...

- carry out practical activities, experiments and/or investigations taken from and linked clearly to science books
- are videoed carrying out practical activities, experiments and/or investigations taken from and linked clearly to science books. These are then uploaded to an appropriate platform so they can be viewed by classmates reading the book or by children in other classes
- practise carrying out ‘experiments’ from science books which they then demonstrate and explain to children in other classes
- use science books as secondary sources to help them plan their own investigations
- propose questions, relating to a science book they have read (or have heard their teacher read). They then identify the questions which they themselves could investigate practically and plan and carry out an experiment to do so
- choose a scientist and read her or his biography – presenting a BRIEF report which answers questions such as ‘Where was I born?’, ‘Where did / do I live’, ‘My area of science was / is ...’, ‘Where did / do I work ...’, ‘This is something I discovered / invented ...’, ‘Why (child’s name) thinks this scientist is important ...’ etc.
- choose a scientist and read his or her biography. They then prepare to role-play that scientist describing his or her work. This presentation can be made to classmates or to those in other classes (or other schools)

COMMUNICATING THE SCIENCE LEARNED TO OTHERS

Science is communicated in a great many ways and this variety can be exploited as we encourage children to share with others the most interesting and important science information and ideas they have learned through reading their science books. Indeed, it is difficult to think of a communication medium that we have not encountered during our experience running this reading challenge!

Children presented their new science knowledge orally. Most simply, some discussed the information (including their opinions about and responses to this information) in pairs, small groups and class. More ambitiously, they presented the science through podcasts and videos (often shown on the display screens in areas around the school) or through drama and role-play (see separate section).

Children presented their new science knowledge in writing – though seldom merely as written reports. They prepared posters and PowerPoint presentations, both with a strong visual element, which were then often displayed around the school. They wrote poems and scripts for plays and role-plays which were performed for other children in their school, and on occasion, from other schools.

Children presented their new science knowledge through artwork, designing delightful book marks and book covers, story boards and comic strips. They also presented their science knowledge through craftwork, designing board games, models and dioramas. In a very interesting example of this, some pupils communicated what they had learned through paper engineering, designing lift- the-flaps, pull-outs and spinners.

In setting up these Reading Challenge-related experiences, teachers adopted one of two possible approaches; either the teacher chose the means of communication OR the children themselves chose how they would communicate the science. In an example of the former, pupils were told they would be awarded a certain number of stickers for designing a board game to accompany a science book they had read. In an example of the latter, pupils were given the considerable challenge of communicating the science they had learned, by whatever means they wished, to children in another school.

Important points to note. Some craftwork will require risk assessments to be undertaken in advance. School policy and practice will apply to ICT-related activities including video production. It may be appropriate to remind children that science communication is seldom simply a 'copy out' or 'cut and paste' exercise. Moreover, they need to pay as much attention to the science information they are presenting as to the method used (PPT, artwork, etc). The medium should not overwhelm the message!

Links to Project 500 Newsletter articles:

[Spring 2015](#)

Bloomfield Collegiate
Paper Engineering and
Learning Science

[Spring 2016](#)

Andrews Memorial
Primary School

[Summer 2015](#)

Assumption Grammar School
Macosquin Primary School
Out of this World

[Summer 2016](#)

Oakham School

[Autumn 2016](#)

St John's Primary School,
Carnlough

[Autumn 2015](#)

St Pius X College
Crafty Science Communication

[Summer 2017](#)

Exeter Junior School

Suggestions for Communicating the Science Learned to Others

Children communicate the science they have learned ...

- orally through discussion in pairs, small groups or the whole class
- orally through podcasts and videos
- orally through drama and role-plays
- in writing through posters and PowerPoints
- in writing through composing poems or preparing scripts for plays or role- plays
- through artwork such as book marks and book covers (remember to include blurbs!)
- through artwork such as story boards, cartoons and comic strips
- through craftwork such as board games, models and dioramas (see later section on art and craftwork)
- through paper engineering - designing lift-the-flaps, pull-outs and spinners (see later section on art and craftwork)

BEYOND THE TRADITIONAL BOOK REVIEW

Book reviews constitute the standard book-related activity. Their value is that they provide evidence that a pupil has engaged with a book. Their disadvantage is that they can seem like a mundane exercise. It is not very motivating to have to write about a book for no particular audience just to demonstrate that you know what the book is about.

However there are ways in which writing book reviews can be made more meaningful and enjoyable. The usual content is a survey of what the book covers, with some examples or detail, and an evaluative opinion of how good the book is. This content does not have to be in paragraphs of prose. It could be presented in a more interesting form, such as a poster, or a blurb for the back cover of a new edition. The evaluative opinion could be in the form of a star rating, from 1-star to 5- star, together with a reason for the choice.

The Royal Society Young People's Book Prize recommends the following questions as especially appropriate for science information books: Was the layout helpful – making the information clear / easy to use and understand? How well does the book help you understand the topic? Was it interesting – telling you new information? Was it appealing – making you want to find out more about the subject?

Writing has more of a purpose if it is for an identifiable audience, so reviews could be written for a library noticeboard or for the school web-site or for a booklet on the '500' books in the school library.

It is probably good practice not to require a book review to be produced on every book read in the Reading Challenge. This could turn a worthwhile activity into a chore! Better to write one or two good reviews than half a dozen dull and dutiful ones.

Links to Project 500 Newsletter articles:

[Spring 2015](#)

[Summer 2016](#)

Bloomfield Collegiate

Northbury Primary School

Suggestions for book reviews

Children ...

- prepare book reviews
 - in the form of Tweets, PowerPoint presentations or podcasts
 - as videos for display on screens in, for example, the school library or school entrance halls
 - for the school website, school newsletter or school magazine - for publication in a local / community newspaper
- design an 'advertisement' for a favourite science book
- write a 'better blurb' for a science book cover
- offer a star rating and comment for the book, as in an 'Amazon' review
- design a poster to promote a favourite science book. These can be displayed in the classroom, corridors, entrance hall, school library or local public library

BOOK TALK AND PUPIL BOOK PRESENTATIONS

By their very nature, science information books readily lend themselves to discussion and expression of opinion. Teachers know that you find out how much you actually do know when you have to talk about it! Thus book talk can be a covert method of reinforcing science learning.

Whereas a book presentation is often formal, book talk is usually more informal and wide-ranging. A book presentation is a variant form of book review, but where the latter may be written, the former is frequently oral.

Key questions for discussion include:

What new things did you learn about science and/or about scientists from the book? Did anything in the book remind you of something you have learned about in science or have experienced in everyday life? Did anything in the book surprise you or make you go 'Wow'? Did anything in the book make you want to find out more about a science topic? What could you / did you do to explore this topic further? What parts of the book did you find most interesting? Do you think the book is well written? Did it make the topic interesting and help you understand it? Does the book look attractive? Would it attract children of your age to read it? Why? Overall, did you enjoy the book? Can you explain why?

While book presentations are accessible for all levels of ability, they may be particularly suitable for young people for whom a written task could be counter-productive to the enjoyment they had derived from reading the book. The presentation format offers several potential methods of support to weaker readers:

- an interesting passage from a book could be presented simply by being read out to others and this could, if necessary, be done by the teacher.
- several PowerPoint slides could be prepared to present a book, with pages pictured and main contents listed. In this case, the book itself is used in such a way that it supports the presenter.
- presentations can be effectively done by groups, so that individual children can play their part yet have the benefit of group support.

In one of the schools in our project, excited groups responded enthusiastically to a 'Dragons' Den'- inspired invitation to 'Big up your book!' There was a competitive edge to the presentations as the groups vied to pitch their book to the audience. As exemplified below, there are various ways in which a situation can be set up which allows discussion of the books that are being read in the Reading Challenge.

Links to Project 500 Newsletter articles:

Autumn 2015	St Patrick's Primary School, Ballygalget
	St Pius X College
Summer 2017	Exeter Junior School

Suggestions for book talk and pupil book presentations

Children ...

- select their favourite passage from a science book they enjoyed and either they or the teacher reads it to the class
- prepare a 'pitch' for a favourite science book - this could involve making a 'book trailer' video - **'Big up your Book.'** They have 500 seconds to prepare a 'pitch' for their favourite science book and 50 seconds to make their presentation
- become a 'Book Ambassador'
- prepare a 'news' item on video (television) or audio (radio) relating to a science book
- prepare a school or class assembly or a presentation for a specific group themed around science books, with, for example, PowerPoint presentations, science-related music, science demonstrations, etc.
- set up a school 'science book jury' or 'science book judging panel' to choose your science book of the year, or participate in the Royal Society Young People's Book Prize (<https://royalsociety.org/grants-schemes-awards/book-prizes/young-peoples-book-prize/>)
- hold a 'Desert Island Science Books' session where each participant nominates a set number of science books to keep with them
- generate questions relating to the preparation or content of a science book to ask its author (if she or he has a website), a scientist, science teacher, etc.
- participate in a Book Club type session with all those who have read the same book

DRAMA AND ROLE PLAY

Many children in Key Stages 2 and 3 enjoy taking on roles and participating in drama. By this means, readers can internalise and then pass on to others information about, reflections on, feelings about, or attitudes towards science.

Teachers in our project were pleased by the outcomes when they gave pupils the option of researching the lives of scientists in the school library. They then portrayed the character of their chosen scientist dramatically, in the form of a monologue telling of the scientist's life and achievements ('I am Sir Isaac Newton....').

Interviewing is a popular form of role play and is versatile in the uses to which it can be put in the classroom. Some science books are presented in the style of a detective story or investigative journalism and these are roles that could be adopted to 'find out about' science.

Drama or role plays written and performed by pupils can be presented to an audience, for example to another group in school or at a parents' evening. One school in our project presented their play at the school's Prize Day.

Links to Project 500 Newsletter articles:

[Summer 2015](#)

Assumption Grammar School
Macosquin Primary School

Suggestions for Drama and role play

Children ...

- write and act a drama or role play for a school or class assembly based on science ideas from a science book or the life and work of a scientist described in a science book
- write and act a drama for a school or class assembly to promote the reading of science books

READING BUDDIES AND MENTORS

Some teachers in our project set up the Reading Challenge so that older pupils acted as 'book buddies' or reading mentors for younger children. There is of course a learning intention here, in that younger readers receive individual support from a buddy who will usually perform well to the level of responsibility with which they perceive themselves to have been entrusted. However there is often genuine reading pleasure for both participants in this social reading with its opportunity to read, talk about and enjoy new scientific information.

Contemporary children's science books generally lend themselves to two young people looking at a double-page spread together. Usually these books are not rigidly linear, so that children can find their own way in by browsing for a page that attracts their attention and studying it. Illustrations and diagrams are normally characterised by high quality and clarity and can often be 'read' as stand-alone information or else they will be well integrated with the text. All of these features help to make the scientific content accessible to readers.

Links to Project 500 Newsletter articles:

[Autumn 2015](#)

St Patrick's Primary School, Ballygalget
Macosquin Primary School

Suggestions for Reading Buddies and Mentors

Children ...

- in pairs read science books together as buddies
- read science books together, with an older child acting as a mentor to a younger child

ART AND CRAFTWORK, INCLUDING PAPER ENGINEERING

Important among the many ways in which science can be communicated is its presentation through art and craftwork. Many of the teachers in our project encouraged their pupils to share with others the science they learned from their reading through this medium. Needless to say, the children relished the opportunity, often exhibiting considerable imagination and ingenuity in so doing. Teachers valued the extended cross-curricular nature of the project.

In terms of artwork, the young readers designed and made bookmarks and book covers relevant to the science books they had read. In the case of the latter, the science message can be boosted through the writing of the blurbs which feature on the covers. A few of the older pupils drew storyboards and comic strips about scientists' lives and space exploration. The design of board games provided a great way to communicate science information and to engage others in science learning. Some wonderfully creative examples were produced by those participating in the project. One school even ran an 'Art and Science' competition!

In terms of craftwork, the young readers prepared dioramas and models. The former is a scene, in 3D, where figures or objects are placed in a naturalistic setting in front of a painted background. Using old boxes and other material, some pupils represented the science ideas or processes they had been reading about in this form, for example, one child prepared a diorama 'I'm a celebrity, get me out of here' on the theme of record-breaking animals. Many more children prepared models to communicate the science they had learned. Among these the most novel was a child who crafted a shark with a scuba-diver in its mouth. When the hapless scuba-diver was pulled out of the shark's mouth, he was followed by a paper tape on which was written fascinating facts about the fish! Paper engineering (lift-the-flaps, pull-outs and spinners) is a great way of communicating science and many children in our project used this to present the most interesting

ideas and important information they had learned through their reading. In an amazing example of this approach, one child designed and produced a whole book about astronomy, the science being put across very impressively through paper engineering.

Important points to note. Some craftwork will require risk assessments to be undertaken in advance. CAUTION: though there are plenty of online sites and books giving instructions on paper- engineering, many of their ideas (particularly the making of pop-ups) require the use of very sharp cutting tools which would be inappropriate for children to use. Again, it may be necessary to remind children that they need to pay as much attention to the science information they are presenting as to the method used. As stressed before, the medium should not overwhelm the message!

Links to Project 500 Newsletter articles:

Spring 2015	Bloomfield Collegiate Paper Engineering and Learning Science
Summer 2015	Out of this World
Autumn 2015	St Pius X College Crafty Science Communication
Spring 2016	Andrews Memorial Primary School
Autumn 2016	St John's Primary School, Carnlough
Summer 2017	Exeter Junior School

Suggestions for Art and Craftwork, including Paper Engineering

Children communicate the science they have learned through art and craftwork ...

- through the design and making of book marks and book covers (remember to include blurbs!)
- through the design and drawing of story boards, cartoons and comic strips
- through the design and making of board games to accompany particular science books
- through the design and making of models and dioramas
- through paper engineering - designing and making lift-the-flaps, pull-outs and spinners

LIBRARY LINKS

A class focus on 'Reading Science for Interest and Enjoyment' offers a very valuable opportunity to create important links with the concept of 'library', whether class library, school library or public library. After all, as Einstein is alleged to have said, *'The only thing that you absolutely have to know, is the location of the library.'*

We found in Project 500 that some children were unsure of what 'Science' includes and so were unsure what are science books and what are not. Early in their challenge, they could role-play being 'Science Seekers' or 'Library Leaders': each group could be given a pile of books and be asked to decide which among them should be shelved under 'Science' (In our project we linked this with their Dewey Decimal Classification, '500'). In follow-up discussion, they could defend their classification (and perhaps be awarded 2 stickers). In an extension of this, children can have a say in which science books they read by being involved with their teachers in the school's science book-stock selection.

A number of our project schools provided pupils with the opportunity to act as 'librarians' – whether of the book corner or class library or, in those that had one, in the school library. These children assisted with tracking the science books and, sometimes, giving out the award stickers. In some cases they were responsible for designing attractive science book displays in their classroom, in school circulation areas or, as relevant, in the school library. For guidance see our [Summer 2015 Project 500 Newsletter](#) article *'Discovering Great Books.'* Though written for teachers, this guidance is useful for pupil librarians as well.

Children can also be offered the opportunity to encourage others to read science books by, for example, designing and distributing 'Read Science' bookmarks and designing and displaying posters, PowerPoints, school screen savers, videos, etc around the school and by doing presentations as part of school Science Assemblies. Indeed, a whole class can plan a 'campaign' to encourage other children to read science for pleasure.

If possible, there is great value in promoting links with the local public library. Not only does this increase access to children's science books but reinforces in their mind this important community resource. In our project, a number of schools visited their public library. In addition, pupils can be encouraged to prepare material (posters or PowerPoints, for example) for display in their local public library, thereby providing a different - and authentic - audience for their work.

Important Point to Note. School policy and practice will apply to ICT-related activities including video production.

Links to Project 500 Newsletter articles:

Summer 2015	Macosquin Primary School Discovering Great Books
Autumn 2016	St John's Primary School, Carnlough Belfast Hospital School
Spring 2017	St Patrick's College and Maghera Primary School Derby High School
Summer 2017	St Patrick's Primary School, Mullanaska Exeter Junior School St Joseph's School, Cornwall

Suggestions for Library Links

Children ...

- role-play 'librarians', grouping books as 'Science books' and 'Not Science Books'
- act as 'pupil librarians' assisting in the management of the book corner, class library or, if relevant, the school library
- help prepare attractive science book displays for the book corner, class library, the school library (if relevant) or school circulation areas (if appropriate)
- encourage others to 'Read Science' through making and distributing book marks, designing and displaying posters, PowerPoints, school screen savers, videos, etc. around the school and by doing presentations as part of school Science Assemblies
- plan a school-wide plan 'campaign' to encourage other children to read science for pleasure
- participate in a class visit to the local public library and engage in science reading and science activities there
- design and make posters and PowerPoints for display in the local public library

FAQs

HOW MUCH WILL IT COST?

You can 'cut your coat according to your cloth.' There are some unavoidable costs in producing the passports, stickers and certificates, though you can cut costs by producing your own. However it's probably true that the better the quality, the better the product, so it could be a false economy to do this on the cheap. There may be costs associated with the launch event, especially if you opt to buy in something like a science show presentation. If there is money that can be invested in the purchase of some up-to-date children's science books, the benefits will outlast the reading challenge. A financial contribution could be sought from the PTA or from local sponsorship or from organisations or companies which are favourable to supporting science-related enrichment programmes.

HOW CAN WE INCREASE OUR STOCK OF SCIENCE BOOKS?

Teachers have told us that book-stock was an issue that they needed to consider. We do advise that you don't try to do the Reading Challenge with more children than is wise in the light of the supply of books available to choose from. The Reading Challenge provides a good opportunity to take a very rough inventory of the science information books in the school, whether in class libraries or in the school library. It takes time to build up book-stock so this is something to keep under review. In our experience, the Schools Library Service is very helpful and knowledgeable and should certainly be consulted for advice and to ascertain if they can assist with increasing the book-stock. We are often asked by teachers where they can find out about children's science books and the best place we know is the list of the winners and shortlists of the Royal Society's Young People's Book Prize, which has already been referred to:

<https://royalsociety.org/grants-schemes-awards/book-prizes/young-peoples-book-prize/past-winners/>

HOW WILL BOYS REACT TO A READING CHALLENGE?

Teachers have told us that the Reading Challenge works well for boys: 'It was pleasing to see some of the boys extremely interested,' and the librarian in one school noted the boys' enthusiasm compared with the customary male attitude. Another teacher and science coordinator felt the Challenge worked for both boys and girls: 'It has really inspired our girls – who sadly often don't see themselves as scientists, and our less able readers, particularly our boys who have produced some of the finest pieces of associated written work.' Boys find they get enjoyment and learning from books, possibly related to the fact that they do not have to read a book from cover to cover and that assessment is not part of the Challenge. Boys seem especially to like to pick up interesting snippets about science that they can pass on to their friends. Making a link from science information books to practical science has also been shown to appeal to boys.

WILL THE COMPETITIVE ELEMENT IN COLLECTING STICKERS FOR THE PASSPORT NOT UPSTAGE THE SCIENCE AND LEARNING ASPECTS OF THE CHALLENGE?

It could indeed be objected that children may engage with the Challenge, not because they want to find out about science, but because they have a competitive spirit, or from a sense of obligation to the teacher, or because they like collecting stickers and getting a certificate. It's true that teachers found that their children's enthusiasm for these motivational elements was greater than expected but of course it's also the case that these aspects of the Challenge will only be effective if they exert a strong appeal which becomes a positive impetus to increased reading. We are strongly of the opinion that using the Reading Challenge to promote science non-fiction to young people is a necessary strategy if their beliefs that these books are boring, difficult or not for them are to be overturned. It is a means to an end, namely, that many of the children will discover intrinsic value in reading science information books - and fortunately we gathered quite a lot of evidence that this was so! We would want to stress the importance of the activities during the Challenge and of teachers proactively boosting enthusiasm and interest. The launch / passports / stickers are hooks to lure the children to science books in the first place, but the goal of the Challenge is for engagement to pass to the books themselves and their content, so that children form an approving image of themselves as science readers.

CAN PARENTS GET INVOLVED?

It's great to find ways for parents to share in the excitement about science! One school in our project allowed parents to help their child to earn stickers in two ways. Either they could carry out an experiment at home from a list of simple experiments using household products, or they could read a science book that had been chosen for them by their child. Another possibility would be to invite a parent to class or to an assembly to talk about science and about a science book that they had read.

See Project 500 Newsletter article: [Autumn 2016](#), Mill Strand Integrated Primary School, Portrush.

I'M CONCERNED THAT OUR WEAKER READERS WILL STRUGGLE WITH A READING CHALLENGE AND THAT BOYS MAY BE RELUCTANT TO GET INVOLVED WITH READING.

Keep in mind that the overall aim is for a child to find out something about science from a book and for it not to be 'unpleasant' to do so. The whole book does not have to be read. Although it's important to respect the child's right to freely choose a book and to choose what he or she would like to read in it, some guidance and encouragement may help with this. Any accompanying activities that they do should make them feel: I can do this and I want to do this. You may want to modify the challenge or how stickers are earned as appropriate for individual pupils. Have another look at the section on reading buddies and reading mentors as this is relevant to your question. Also look at the earlier section on 'pupil book presentations' as it explains how this may be an appropriate strategy for weaker readers.

Quotes

WHAT TEACHERS SAY ...

'Project 500 was the gift that kept on giving.'

'The children have continued to access the science books on display daily.'

'I don't think a lot of the boys would have been open to reading science books for pleasure but now I would say from what we've heard they've now realized that science can be read for pleasure and enjoyment. We heard one of the boys saying that he was telling his mum these facts and that she was very keen to have a look at that kind of thing.'

'It was wonderful to see the genuine buzz amongst the students about books which they would probably, generally, overlook.'

WHAT CHILDREN SAY ...

'Project 500 has definitely encouraged me to read more science books because I really enjoy them now. It wasn't my type of book just to pick up and read but now I think they are.'

'I thought science books were a bit boring at the start, but once I got reading them they were amazing.'

'The animal books especially made me want to find out more. I actually went to the (public) library the week after Project 500 and got loads of animal books out.'

'I got to learn new things and it challenged me to find out more about science.'

'Now I love science and I just want to read more about it. I was just like, Oh I have to read more of these. When you lift up a science book it tells you loads of new facts that you've never known before and you're just like, whoa! I didn't know that.'

'I think the physics books and the chemistry books were very 'wow' but then with the biology books you were just, well how does the body do this? How is all this there? You'd be amazed.'

'I like science books because they're facts and I enjoy reading facts because then I know about them so I can tell people and then they find it interesting.'

'Even my dad loved reading the books I borrowed and we had fun doing experiments together.'

A School Librarian's View

In conclusion, we would like to share a librarian's view of their Science Reading Challenge. To celebrate pupils' involvement, **Kathryn Warren (Librarian, St. Joseph's School, Cornwall)** wrote a poem referring to all the topics the children had read and written about during the project!

*Now then children, what we need,
Is lots of story books for you to read.
'No, no,' the children chorused, all with one voice,
'Give us Science books and we will rejoice.
Science 500 is what we need,
And then we will show you how we can read.
Reading about science, with no regret,
You may even learn a new alphabet.'*

*I learnt about:
Aphids & Asteroids, Bacteria & Biodiversity,
Carbon & Craters, Dinosaurs & Diamonds,
Earthquakes & Exoskeletons*

*Fascinating facts about:
Fusion & Fluorine, Gravity & Gases,
Hurricanes & Hydrogen, Insects & Ice &
Jupiter*

*I read about:
Koala bears & Ladybirds & Light,
Magnets & Mercury, Neptune & NASA,
Orangutans & Oxygen, Pond-skaters,
Planetoids & Poo*

*There were pictures and drawings of:
Roots & Reptiles, Sweat Glands & Stars,
Turbines & Titan, & Uranus.
Volcanoes & Vipers, Weather & Water,
Xylum & Yttrium & Zebras*

*'Alas, no Q!' I said with a groan,
And so I resolved to add one of my own.
Opening a book with the greatest of glee,
I snuggled down on the settee
And dipped my biscuit in a cup of tea,
And read all about the Quantum Theory.*

Appendices

The following pages show:

- Stickers used in our Reading Challenge
- Example of school - designed resources
- Passport used in our Reading Challenge (A5 format, pages 1 & 4)
- Passport used in our Reading Challenge (A5 format, pages 2 & 3)
- Certificate used in our Reading Challenge



Stickers were obtained from:
 Superstickers
 PO Box 55
 4 Balloo Avenue
 Bangor
 BT19 7PJ
 Telephone: 0800 318 192
 Email: www.superstickers.com



These are examples of Reading Challenge resources designed and produced by Sullivan Upper School Preparatory Department

