

Teaching Science the Horrible Way

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1. *Science and Horrible Science: an overview*

Science is and always will be at the heart of the curriculum and therefore deserves the most effective and imaginative teaching techniques. As the following SWOT analysis makes clear, the subject has a lot going for it ...

<p>STRENGTHS Science is about everyday life and children are always curious about their surroundings. Topics in science such as the body, animals, microbes and space are of great interest to children.</p>	<p>OPPORTUNITIES Practical experiment-based work is often popular with children and of great value to children who find reading and writing difficult. Many children recognise that knowledge of science is helpful for understanding challenges in the future such as global warming or more personal issues such as family illness.</p>
<p>WEAKNESSES Many schools lack expensive science equipment, especially at Primary level. Many primary teachers lack science training. Traditional science books are sometimes lacking in drama or excitement.</p>	<p>THREATS Many scientific words and concepts are unfamiliar to children – in effect we are asking children to learn a new language and a new way of looking at the world at the same time. More advanced science, especially in physics is based on mathematical ideas that may prove daunting for less numerate pupils.</p>



At the heart of *Horrible Science* is the combination of humour and horror to grab a child's imagination.

- ⇒ By "horror" we mean factual material that is grisly but not disturbing or sickening – this material is exciting and even amusing because it is non-threatening.
- ⇒ By "humour" we mean, not only jokes but an off-beat and often anarchic wackiness that reinforces the message that the horrible material is not dangerous.
- ⇒ By presenting science in this way we instantly make it feel exciting and

enjoyable to learn and by presenting the material through a range of constantly varying approaches we ensure that the child's imagination is constantly engaged. This in turn ensures that the factual material is more comprehensible and memorable.

- ⇒ The approaches include cartoon stories, quizzes, fake newspapers and diaries and the carefully controlled use of fictional characters. In addition there are safe, tested experiments that a child can perform at home or school using everyday materials.

Here is how the *Horrible Science* approach impacts on the SWOT analysis above:

<p>STRENGTHS <i>Horrible Science</i> books are based on everyday topics and key areas of the curriculum. There are titles on the most popular science topics the bias towards the body and animals reflects the commercial appeal of these titles.</p>	<p>OPPORTUNITIES All <i>Horrible Science</i> books contain experiments under the heading Dare you discover ... in addition the series features books of experiments and Galt sell a range of experiment kits. Several books deal wit topics that children can perceive as potential threats for example global warning in <i>Wasted World</i> and personal healthcare in <i>The Body Owner's Handbook</i>. Several of the books end with thoughts on how science will shape our future.</p>
<p>WEAKNESSES <i>Horrible Science</i> experiments do not require expensive or elaborate equipment. They are cheap and easy for children to perform. The range of approaches used in <i>Horrible Science</i> books are intended to emphasise the drama and excitement and wonder of science.</p>	<p>THREATS Science words and concepts are introduced gradually often using humour or fact files. Although mathematics are not needed at the level of science covered in the books, some activities require calculators. The reader is clearly and gently guided through this work.</p>

2. How to use *Horrible Science* in your teaching

The first step is to read *Horrible Science* titles that cover the topics you intend to teach. Many teachers find them useful sources of information about a subject and it does help if you at least as much knowledge as the *Horrible Science* fans! As you will see in the next section, the books are full of material that you can use.

- ⇒ Break the topic down into smaller topics and design sessions and suitable learning objectives for each of these.
- ⇒ Design handouts. It's quite OK for these to include materials or cartoons from the books providing that an acknowledgement is given: "*Contains material from Blood, Bones and Body Bits by Nick Arnold and Tony De Saulles*", or whatever the title is.

Generally each session will start with some words of explanation or questions and answers, followed by an activity that will encourage children to think of the topic in terms of their previous experience. This will lead on to practical or small group work supported by handouts. Ideally this work should be as creative as possible and seek to engage the imagination, for example you might ask the children to imagine they were a journalist interviewing a dinosaur - what would they learn about the dinosaurs and how they evolved? Or you could ask the children to imagine they shrank down to the size of an atom – what would they find out? What would happen to them?

The session will end with a class quiz or follow-up work. The follow-up work might include a visit to Nick Arnold's website or one of the other websites listed in the next section. For notes on emailing Nick Arnold please see the download on USING NICK ARNOLD AS A FEATURED AUTHOR available from THE TEACHER ZONE of nickarnold-website.com.



It's a good idea if the topic ends with some kind of set-piece work, for example a class drama or wall display. This is satisfying for the children, and it gives them something to "show" for their hard work. A spectacular way to end a term's work is to organise a *Horrible Science* Fair. This is a Science Fair that uses *Horrible Science* experiments and material for inspiration. Alternatively you might like to book Nick Arnold for a school

talk/lecture or a family show/lecture in the evening or at a weekend.

3. Resources and further reading

The most important resources are the *Horrible Science* books themselves. Each book contains vast amounts of material:

- ⇒ Quizzes ideal for use in handouts or as simple spoken question and answer sessions with the children.
- ⇒ Experiments suitable for the school or home.
- ⇒ Factoids headed *Bet you never knew!* These are ideal for introducing sessions and grabbing a child's attention.
- ⇒ Stories that children can read for themselves or you can read to the class in order to inspire their own written work.

For more detailed guidance on teaching particular topics you may like to get hold of a copy of the relevant *Horrible Science* Teacher's Resources. There are ten titles covering the entire Science curriculum for 7-11 year olds and they have been very highly praised by teachers. More details in THE TEACHER ZONE at **nickarnold-website.com**.

Websites

Nick Arnold's official website at **nickarnold-website.com** has the following resources:

- ⇒ THE TEACHER ZONE with downloads including: Notes on organising a *Horrible Science* Fair and notes on using Nick Arnold as a featured author in school.
- ⇒ Downloadable experiments for use at home or in school in THE HORRIBLE SCIENCE LAB section accessible from THE FUN ZONE.
- ⇒ The HEAR A BOOK section, accessible from THE FUN ZONE has audio files of Nick Arnold reading from his books.
- ⇒ Biographical information about Nick Arnold in the MY HORRIBLE LIFE section.
- ⇒ The CONTACT NICK section where emails can be sent directly to Nick Arnold.
- ⇒ FAQ's for Nick Arnold (go to ALL ABOUT NICK or CONTACT NICK sections and follow the links.)
- ⇒ The Books and Gifts section has a list of all Nick Arnold's books and a link to order them on-line through **Amazon.co.uk**.

In addition, you can find lots of valuable material on the following websites:

- ⇒ **Tonydesaulles.co.uk** is the official website of Tony De Saulles. You can read about his life and find out what events he is doing this year.
- ⇒ For more *Horrible Science* information and downloadable freebies go to the official *Horrible Science* website at **horrible-science.co.uk**.