

Science and Literacy

“The important thing in science is not so much to obtain new facts as to discover new ways of thinking about them”

William Lawrence Bragg

Physicist

Although learning to complete an accurate, detailed scientific report is an essential skill, it is not where the link between literacy and science ends. The skills, observations and language which emanate in science lessons can be developed across the curriculum to ensure your children are becoming independent learners that are able to question, think and transfer their knowledge.

Many pupils (and teachers!) don't see many connections between science and writing. But scientists are inveterate writers. They write down hunches and sketch possible arrangements of whatever they are studying. They observe carefully and write down their observations. They conduct experiments and write down what they think will happen as well as what they actually observe. Writing and sketching are important tools real scientists use to help themselves think.

Similarly, children often associate science with hard-to-read textbooks and big unpronounceable words to memorize. If they see themselves as inadequate and uninterested learners in science, their attitudes will affect their motivation, learning, and thinking.

We have included some ideas that you may be able to use or adapt to meet the needs of your children. This is by no means a prescriptive list, but could be used as a starting point for ideas which may fit in with topics you are teaching in school.



Suggested Opportunities for Writing

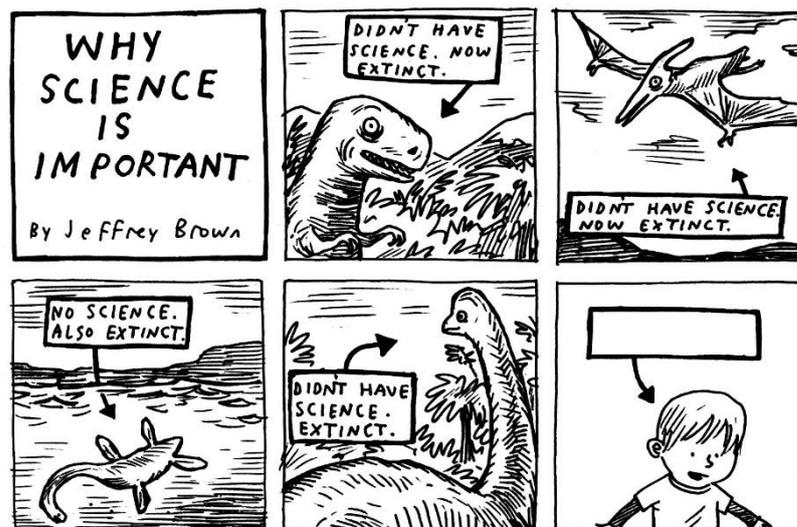
Journals

Journals call for more extended entries than quick writes and are most successful if used on a daily basis. Both high-structure and low-structure journals can be used in a science class. Here are some examples of high-structure journal prompts science teachers use:

- ✓ Draw and label the parts of the digestive system.
- ✓ Arrange the following words into a web that shows their relationships.
- ✓ Analyse how you did with today's experiment. Were you able to follow the directions? Did the experiment turn out as you had predicted?
- ✓ Explain to a younger person (brother, sister, cousin) why it is important for everyone to understand about toxins in our environment.

You could also prompt them to write about their image/idea/feelings about science.

- Of all the school subjects you study, is science one of your best or one of your worst? Rank it on a 1 (worst) to 10 (best) scale and explain why you chose the number you did.
- How do you feel about science experiments? Can you usually do them? Do you like to do them? Do they help you learn?
- Do you do anything out of school that is science related? Do you like sci-fi TV shows, movies, books? Do you like any science/nature shows on TV? Have you ever belonged to the scouts, or another group through which you had any nature/discovery/science experiences? Do you have a microscope, telescope, or other science equipment?



Diaries

Writing a diary account can be a fun way to learn more about a particular person or topic, which can be easily differentiated to all abilities and ages.

1. Diary extract of a famous scientist the day before, of after, he or she made a discovery that they believed would change attitudes.
e.g. Did Newton celebrate his discoveries with his friends?(probably not as he was a very unpopular chap). Or did he celebrate by leaving science for the day and going to watch a good hanging of the latest counterfeiter caught?
2. Children could write a creative piece as “A day in the life of...”
 - Mannie the Micro-organism, as he grows and spreads around the classroom passed from hand to pencil to chair etc.
 - The day the sun came out and the seed felt its heat for the first time.
 - A first-person diary describing a day in the life of your favourite animal—with information about habitat, predator-prey interactions, and survival strategies.
 - A first-person account of a major volcanic eruption, such as Mount St. Helens, including all relevant scientific details, the type of volcano, the nature of the eruption, the damage done, and so on.
 - A story describing the journey of a bite of food from the mouth on downward, with details showing all the steps along the way (this makes a great comic strip or first-person account).
 - With due credit to H.G. Wells, a story about a trip back in time to the Jurassic or any other era, describing the plants, animals, and topography of the time.
 - And with a nod to Jules Verne, a scientifically accurate journey to the centre of the earth, describing the characteristics of each layer one would encounter.

Newspaper Reports

These can be used in several ways.

- ✓ Children can use newspaper template to write their own news report. This could also be presented as a radio news item or a TV report. There could be links with history too, reporting on a new discovery, e.g. 1924 – Edwin Hubble: the discovery that the Milky Way is just one of many galaxies. Children could take on different roles, interviewer, eye witness etc. It is well reported that Darwin was mocked for his ideas, children could report on his “ludicrous new theories”.

