

# Why? **The rationale and aims behind teaching science...**

Science education seems to contribute to the development of the child as a **whole person** and is extremely **relevant** to their growing understanding of the world that surrounds them. Education Scotland's science principles and practice points out that science learning facilitates the development of children's engagement with the **'big ideas'** and concepts of the world, and further, an understanding of their role in it, including the influence they possess over its wellbeing. The CfE Sciences for all briefing agrees with this, adding that scientific learning enhances children's **understanding and appreciation of the world** and facilitates their exploration of the scientific explanations given to many of their 'countless questions' regarding life and the world we live in; and further, promoting this **curiosity** and **enquiry** as to help children benefit from lifelong learning opportunities. It does so through its ability to allow learners to develop the "desire to explore further and apply their learning in different ways." Learning throughout one's life can also be promoted in the sciences through its ability to 'nurture' an **open - minded** nature in its participants. The skills developed in learning through the sciences, outlined by Education Scotland's Principles and Practice as **Scientific analytical thinking skills and inquiry and investigative skills** support them in becoming not just **scientifically literate** citizens, but successful in **learning, life and work.**

# An enhanced society.

Both documents outline the importance of Science, both globally and in Scottish society, pointing out that scientific learning contributes positively to **'mental, social, emotional and physical wellbeing' as well as being "central to our economic future"**. This emphasises how vital it is that learners develop an appreciation and understanding of the sciences, as through this desire to engage in scientific learning throughout their lives, our society can continue to benefit from the contributions such progress offers all of us.

Teaching the sciences is further outlined to create **"scientifically literate citizens"** who are developed in skills that will not only enhance their contributions to careers in the science sectors, but too in other fields; therefore equipping learners to "succeed in our increasingly globalised society"

## Common skills drawn on...

**Create**                      **Enquire**  
**Investigate**  
**Explore**                      **Predict**  
**Identify**  
**Observe**                      **Conclude**

### CfE's 5 organisers for Science:

- Planet earth
- Forces electricity and waves,
- Materials
- Biological systems
- Topical science

# How is effective scientific learning achieved?

CfE briefing states: "**Outdoor learning** is also emerging as a strong approach to learning in the sciences". The science principles and practice add to this, promoting the use of the **active learning** opportunities science offers and further encouraging practitioners to take advantage of it's links with various relevant contexts and resources such as **technology, living things and real materials.**

However, the CfE briefing does outline that despite the plentiful beneficial **interdisciplinary** opportunities that learning through science offers, practitioners must ensure that their planning is making room for the development of scientific skills.

Another point in which the document raised as important for professional consideration was **teacher competence** - it made clear that staff should seek professional development opportunities that enhance their practice in teaching science. Further, **partnership working** with other organisations where appropriate should be used to enhance learning opportunities.