



The Learning Institute

Supporting primary science

Part 1: The curriculum and the value of talk in science

Overview

Science, together with English and mathematics, is a core subject within the national curriculum therefore science should have a prominent place within the timetable. This CPD task seeks to support practitioners by helping them to understand the structure of primary science curriculum and learn ways to support pupils in practical science activities. There are three separate stand-alone parts to this CPD.

The first part helps to give you an understanding of how the science curriculum is structured and effective ways in which you can support pupils in their learning.

Target audience

Teaching assistants, and others who work in primary science

Duration

Approximately 1 hour

The Learning Institute provides opportunities for individuals and communities through high quality education, training and research programmes that challenge personal barriers and promote social inclusion. To find out more, please get in touch.

Introduction

Do the children that you work with enjoy science? What is it about the subject that they particularly enjoy? Is there perhaps something that they do not engage with so well? Is science taught as a discrete subject or does it form part of a cross-curricular approach?

There are many ways that science is taught at primary level. This CPD is designed to develop your understanding of how to support your pupils no matter which way the subject is approached in your setting.

This first session introduces you to the structure of the science curriculum and then helps you to broaden your understanding of how to effectively support the pupils that you work with particularly when undertaking practical activities.

Objectives

- To understand how the science curriculum is made up of two distinct strands and know how they support each other
- To understand the importance of talk in practical science
- To consider how children can be encouraged and supported in their learning

Resources

Pen and paper for note taking

Internet access to following:

- Science programmes of study: key stages 1 and 2 [document], available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/425618/PRIMARY_national_curriculum_-_Science.pdf
- Talk for primary science [webpage, including videos], available at <https://edu.rsc.org/resources/talk-for-primary-science/2104.article>

Task 1: The structure of the science curriculum

This task is to help you to understand how the science curriculum is structured. This is an important factor that will help you to support children's learning effectively.

Read pages 3 and 4 of *Science programmes of study: key stages 1 and 2*, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/425618/PRIMARY_national_curriculum_-_Science.pdf

Make notes on the following:

- The difference between *scientific knowledge and conceptual understanding* **and** *the nature, processes and methods of science*.
- Why do you think the term *working scientifically* is used? How should this strand be taught?

You have just read how important spoken language is within all areas of the curriculum. In science it is especially important in the following ways:

Cognitively: verbalising concepts and ideas can help understand and clarify them. It also gives *you* an opportunity to identify any emerging misconceptions.

Socially: working with others helps develop the generic skills of listening, turn taking and respect. In science at any level, it is important to share ideas so others can build on them. Listening to other's ideas can also demonstrate alternative approaches

Linguistically: there are precise scientific terms that children need to learn and use appropriately. This vocabulary is introduced at an early age and developed and built upon throughout the key stages.

Task 2: The importance of talk

Scientific enquiry refers to practical tasks that children undertake to find the answer to a question or to solve a problem. This task focuses on why talk is so important when children are carrying out such tasks.

Read the introduction and watch the first video, available at <https://edu.rsc.org/resources/talk-for-primary-science/2104.article>, where practitioners discuss strategies that they employ to encourage discussion and meaningful talk.

As you watch, make a bullet pointed list of the strategies that are used by the different practitioners.

Look through your list and highlight the ones that you feel are most important to support learning in science. If you could only choose one, which would you employ in order to develop your own practice?

You may wish to watch the remaining videos to learn more about the use sensory stimulus, stories, puppets and concept cartoons within primary science.

Task 3: Reflection on learning

Note down your responses to the following questions:

- What knowledge did I already have that has been refreshed by this CPD?
- How has this CPD developed my knowledge and understanding?
- How can I apply what I now know to my practice

Sources

Department for Education (2013) *Science programmes of study: key stages 1 and 2*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/425618/PRIMARY_national_curriculum_-_Science.pdf (Accessed: 16 June 2020)

Royal Society of Chemistry (2015) *Talk for primary science*. Available at: <https://edu.rsc.org/resources/talk-for-primary-science/2104.article> (Accessed: 16 June 2020)

Further reading

The Exploratorium (2015) *Science talk: a tool for learning science and developing language*. Available at: <https://www.exploratorium.edu/education/ifi/inquiry-and-eld/educators-guide/science-talk> (Accessed: 16 June 2020)

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