

How can we help students understand how we get knowledge from science processes?

Research taster

Pupils often find the nature and processes of science difficult to relate to the science investigations they do in class. It seems to help pupils when teachers explore their understanding of the key stages of science investigations and help to set them in context.

Your evidence

You may like to consider how far you explore your pupils' understanding of what they have to do in an investigation. Recording the lesson using sound or video might help you to focus on the key points. How useful have you and your pupils found questions like:

- What are you trying to find out?
- What do you have to do to test your idea?
- What do you think might happen?
- How could you find out?
- What could you measure and how many measurements will you need to make?
- How will you record your results?
- What's the best way of displaying your results?
- What do your results tell you?

When you reflect on the experience did you feel your pupils had a clear idea of the key stages of science investigations?

(Adapted from Reflective Activity 8-3a)

Moving forward

Would it be helpful to break down the skills pupils need to use and to give them small-scale experiments in groups with which to test out the key ideas? Would it give students greater access to each other's ideas if groups paired up to share their answers before reporting to the whole class?

Find out more

To find out more about the teaching and learning of the processes of science you may find the following useful:

Osborne, J., Ratcliffe, M., Bartholemew, H. (2003) Teaching pupils ideas about science: case studies from the classroom. Paper Presented at the Seventh International History, Philosophy & Science Teaching Conference, July 30-Aug 3, 2003

Reports of the Towards Evidence-Based Practice in Science Education (2000-2003) project. They are accessible at: <http://www.tlrp.org/proj/phase1/phase1bsept.html>