

## How can we support students' group-work in science?

### Research taster

Probing questions that ask students for an answer and ask them to explain their reasoning make useful tasks for small group discussion activities in science. Many students seem to get less from group-work than they could because the dialogue is unstructured. So giving them a layered task requiring probing questions and explanations can be very helpful. How good are your students in collaborative group-work in science?

### Your evidence

To explore how well your students collaborate you may wish to reflect on a recent lesson in which students worked in groups. Questions to consider might include:

- How much speaking was there?
- Who is doing the speaking?
- Do the students listen to each other?
- Do the students ask each other for reasons?
- Do they pick up on what others say and build on it?
- Do they try to encourage non-participants to join in?
- Do they try to reach a conclusion together?

You could then give your students a structured group-work task and monitor them while they carry it out. It might help if you ask a colleague to observe your lesson and give you feedback afterwards. You could get small groups to work together on a question, or several questions, and to prepare themselves to explain and defend their answers in a whole class discussion afterwards. It is clearly important that the task requires students to work together rather than in parallel. For example, you could present students with a multiple choice question about simple electrical circuits:

Two cells are connected to a bulb. The bulb is lit. There is a reading on the ammeter in the circuit. One of the cells is removed.

- A) What happens to the reading on the ammeter?
- B) Which of the following is the best explanation of this?
- C) How confident are you that your answers to this question are correct?

(Adapted from Reflective Activity 12-1a)

### Moving forward

Students often get less from group-work than they could because of a lack of appropriate skills. Could you model effective group working in a science context by asking questions that probe students' understanding, such as:

What do you think will happen to the brightness of the bulb? Why do you think that? X, what do you think? If that is what happens to the bulb what will happen to the ammeter? Y, why do you think this will happen? Z, can you add a bit more to what Y has said? So, X, what part do the cells play? Y, can you sum up what we think is going on?

### Find out more

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>

The Research Informed Practice Site digest: Reasoning as a scientist: ways of helping children to use language to learn science

