## Ouestion Data source Data source Data source Data source **RO1:** What attitudes do Attitude Semi-structured interviews students have about science? questionnaire (Kind (individual and/or group) et al., 2007) with pupils Sub-question 1: Can writing Analysis of written Attitude Semi-structured interviews comments in student to an authentic audience other questionnaire, before (individual and/or group) than the teacher improve and after (Kind et al.. with pupils learning journals student attitude to science? 2007)

## What are students' attitudes to writing in science lessons?

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Question	Data source	Data source	Data source	Data source
<b>RQ2:</b> What would help them to be better writers?	Analysis of students' written work	Semi-structured interviews (individual and⁄or group) with pupils	Analysis of written comments in student learning journals	
<b>RQ3:</b> Can writing to an authentic audience other than the teacher improve students' <i>learning</i> of scientific concepts?	Concept map before and at the end for each topic	Semi-structured interviews (individual and/or group) with pupils	Analysis of student written work and comments in student learning journals	Summative assessment results

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three questions and chose a range of data collection methods that she believed would help her answer these questions. Her overall research design is shown in Table 11.1.

Nicky carried out a survey of her class first and then selected a sub-sample for follow-up interview using the survey data. This method of merging data is sequential. Nicky also concurrently collected three other sources of qualitative data: the students' written work, concept maps and learning journals. Her final data source was summative assessment of students' work (Figure 11.2).

The grids in Figure 11.3 will help you to structure your research design and plan the project timescales.



Figure 11.2 Meeting multiple methods

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