Unit 14 Global communication: negotiating and transferring data

About the unit

In this unit pupils work with a 'remote partner' in another school to collect common, agreed data for a specific topic. Once the data has been collected, it is transferred electronically and merged to form a complete data set. Pupils then produce a report on their joint findings.

A great deal of preparation is needed for this unit. Teachers will need to identify a suitable school (either locally, in another part of the UK or overseas). Teachers from both schools will need to:

- agree on a broad project focus, *eg geographical information, the local area, cultural themes, hobbies, interests*, but not the specifics of what data will be exchanged – this must be left for the class to negotiate
- identify the parameters for the project, *eg type of software used, the timing*
- agree expected outcomes, *eg what does each school expect to get out of the project*
- identify periods of peak activity and how these are to be resolved, *eg when pupils will correspond by e-mail*
- agree protocol, *eg replies to e-mail should be made within two days*

The whole class should work together to gather data, maybe in three or four groups to allow for differentiation. Pupils could work individually but this would limit the amount of data that could be collected.

This unit is expected to take approximately 10 hours.

Where the unit fits in

This unit builds on work undertaken in unit 5 'Data: designing structure, capturing and presenting data', unit 8 'Public information systems' and unit 10 'Information: reliability, validity and bias'.

Expectations

At the end of this unit

most pupils will: identify an area of interest, design the data collection, enter data into a database; formulate questions, interrogate the database using appropriate queries and analyse the data; make an informed choice of which software to use to prepare and present their findings; refine work using information from a range of sources, testing their hypotheses; identify any limitations in the software tools which have constrained the success of the project

some pupils will not have made so much progress and will: need to work on their own system to design a database for use only by themselves; prepare a presentation of results to their peers in the remote site

some pupils will have progressed further and will: design appropriate methods for capturing and ensuring the integrity of their data, *eg use of OMR or verification techniques*; design a database for use by others identifying advantages and disadvantages of different applications (within the school or the remote site); ensure that particular attention is paid to ease of use and appropriateness of their database implementation; consider the benefits and limitations of ICT tools and information sources and use results to inform future judgements

Language for learning

Through the activities in this unit pupils will be able to understand, use and spell correctly vocabulary relating to:

- data collection, *eg verification, validation*

Reading – through the activities pupils could:

- identify what information is needed, and draw together information from different sources
- pick out useful information and critically evaluate how the whole piece is presented

Writing – through the activities pupils could:

- organise content into a whole piece with the relationship between points/paragraphs clearly signalled
- structure paragraphs to develop points, by using evidence, additional facts

Resources

Resources include sufficient e-mail facilities for the whole class to participate within short periods.

Learning objectives Pupils should learn:	Possible teaching activities	Learning outcomes Pupils:	Points to note
Activity 1			
• how to establish initial links	• Ask pupils to e-mail their remote partners to establish links and build cooperative relationships. • Ask pupils to identify their specific remote partner(s) and start to share information about themselves and their context.	• establish effective links with remote partners	• Investment of time at this stage will enable pupils to develop an effective relationship with their remote partner. While it is possible to run straight into the project without this phase, it will inevitably slow down the negotiation phase.
Activity 2			
• to plan the project outline • to prepare electronic communication	• Discuss pupils' interests, what they would like to investigate and would be willing to share with their remote partners. • Ask the class to formulate questions and decide on the contextual information to share in initial e-mail with remote partners. Ask pupils to prepare their communication and send their e-mails. • Demonstrate how to identify what information is needed. • Access to video conferencing could enable effective face-to-face negotiation at this stage.	• analyse and plan a project • prepare and communicate information	• To make best use of e-mail it is important to try and negotiate aspects that would appeal to both partners. • Preparation of a video conference needs forward planning and negotiation between teachers.
Activity 3			
• to negotiate details of the project • to identify project success criteria	• Ask pupils to consider areas of mutual interest with their remote partners. Ask them to develop and negotiate questions and hypotheses. • Prepare a questionnaire. Ask pupils to determine the next step and agree a 'contract', *eg completion dates, sample size, format of data to be exchanged*. • Identify and agree potential success criteria with pupils.	• understand that successful negotiations depend on good preparation • recognise that projects are improved by the sharing and refining of ideas • identify success criteria for project(s)	• This activity takes place during peak online periods. • Try to set up regular (daily/weekly) communication at this point in the project that will enable a cycle of negotiation and refinement rather than just a single request.
Activity 4			
• to design an electronic database and prepare data • to assess the clarity of information for specific purposes	• This activity involves the collection of 'our data' to be shared with a remote partner. • Revise with pupils how to design an electronic database structure, spreadsheet or CSV (comma separated variable) – the main points are the agreed 'fields' and type of data. • Ask pupils to prepare sample data and test the database with this data. Ask them to refine the system in readiness for real data. • Review the principles of verification and validation. • Ask pupils to go through the data collection process, prepare for sharing the data with their remote partner and send the data.	• design and test a data capture system • prepare a data capture system that can be used by others • assess the adequacy and clarity of information for specific purposes	• There are two aspects of preparation in this phase: – collection of data for the remote partner which **must** be met to keep the remote partner's deadline – preparation of a system locally for receiving the data sent by the remote partner

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Activity 5			
• the importance of verifying and validating data	• Ask pupils to enter data into the database, the structure of which has already been agreed, with due regard to its verification and validity.	• understand validation and verification techniques	• Due care must be taken to ensure that the data collected is accurate. Watch out for varying interpretations of the questions within the questionnaire, missing fields and incomplete sets of data.
Activity 6			
• to prepare reports, refining ideas and language after negotiation and drawing conclusions	• Ask pupils to complete initial queries of data and share their findings with the class. • Ask them to prepare a report to share the initial findings with their remote partners and communicate these to the partner. • Pupils need to react and negotiate as a result of mutually shared information and preliminary findings/analysis. • To assist in the preparation of reports, show pupils how to organise content into a whole piece of writing with the relationship between points clearly signalled and with paragraphs structured to develop points by using evidence. • Explain the effect of different aspects of formality in language.	• analyse large quantities of data and draw conclusions • prepare project outcomes in a suitable format that can be used by others • write coherent texts for different purposes including analysis and review • use more formal writing to suggest objectivity and impartiality	• The quality of the hypothesis at this stage will need to be researched and checked to ensure that issues raised are accurate and consistent with the data. It will go through the cycle of tentative hypothesis, further research, analysis and discussion to identify significant findings to share with partners.
Activity 7			
• to evaluate the use of ICT and the tools used	• Ask pupils to complete their data analysis. Ask pupils to evaluate the software tools they have used to build the database and consider its limitations and constraints. • Ask pupils to prepare the final project report and present their findings to the whole class, then share them with their remote partners.	• identify limitations and constraints on project outcomes imposed by software tools • apply criteria to evaluate the outcomes of a project • produce a final project report	• Project reports could be published on the school intranet or the internet.