Secondary
National Strategy
for school improvement

ICT subject leader development materials

Autumn 2006

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creating opportunity, releasing potential, achieving excellence

Guidance

Curriculum and Standards

ICT subject leaders

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Contents

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Examiners' commentary, 2004

The standard of performance from the candidates in the written paper continues to improve. However, in this specification, there are elements of the theory that are difficult to teach through the practical coursework and these may need to be taught in separate theory lessons.

The most common mistake made by candidates was to give a storage device as an input device.

Candidates who did not score well on this question usually did one or more of the following:

- they gave too few boxes, despite the question including a clear example (they may have planned to code the data but they gave no indication of this)
- they did not give enough fields to score well on this question (most of a page was left for the answer and the question was out of eight marks)
- they gave some fields that were wrong/irrelevant, e.g. National Insurance number. Whilst this did not directly lose marks it did not gain marks.

The application given in this question is a graphic design company that produced detailed designs for a wide range of products. As candidates' answers needed to relate to this, possible acceptable answers would include:

- graphics software often uses/needs lots of memory
- imported images may be large so lots of memory needed
- editing images may need lots of memory
- may be handling lots of / several images at one time.

The assignment is designed to lead candidates into analysis and design work. Since these processes may be relatively new to many candidates, the set assignment contains much of the analysis and many of the design ideas. The assignment is deliberately task-oriented with the aim of ensuring that candidates are tested over a range of skills and given the opportunity to show how well they can do over a range of tasks. Whilst the project is looking at a holistic system approach, it may well be that candidates of a certain ability may be better guided into a limited-mark task-driven approach; evidence in the work presented suggests that whatever method is used, candidates of all abilities tend to produce a better-quality project when they have a genuine interest in the topic to be undertaken, and where genuine research can be carried out.

A feature of some projects, which were subsequently moderated downwards, was that of simplistic (though often well-executed) problems and solutions that lacked breadth and/or depth. Lots of tasks at a middle level do not equate to one holistic problem at a higher grade.

Similarly, very little evidence has been provided of true systems that are centred round a web-based theme; those candidates who produce a set of pages and link them cannot achieve high marks, and additionally those including web pages as part of the solution to a broader theme should consider the actual worth of that component. Is it part of the system or just an 'add on' to try to show more breadth?

Better work shows that the candidate has an appreciation of the audience and the uses of the solution they are developing and these candidates do explore the problem and only eventually come to a conclusion as to the precise nature of the issues involved. Less good work reaches conclusions about the problems much sooner. It was not uncommon to find the whole analysis taking no more than a couple of sides of A4 paper. This volume of work is not sufficient for a full analysis and consequently would not be highly marked. It would be very valuable for the centre to state this in their own annotation of the candidates' work.

Candidates need to keep in mind their analysis and constantly refer to the problem being solved. If they have identified effective performance criteria they are more likely to produce evidence that can be seen as a good solution to the problem.

Implementation continues to be reasonably well done by many centres, although there were many instances of high marks being awarded where candidates had produced solutions to what were simple tasks.

There are some issues affecting candidates who do not annotate and explain their work well. These candidates risk having their mark adjusted because there is not enough evidence for the award of the skill level. It must be noted that moderators may not be familiar with the particular software being used, so they need the candidate to annotate the work in order to be able to make a judgement. Production of evidence is not just printouts of the answer, nor is it just lots of screenshots. It is a mixture of the two.

For many candidates testing seems to be no more than a statement such as 'I tried it and it worked'. It is very important that candidates understand validation of data on entry, for successful treatment of erroneous data. If the software being used does not allow validation rules, then the candidate can simply explain how they would incorporate validation and what would happen to data entered. The process should be more than just a check of the generic software validation routines; the testing should be specific relating to the problem being undertaken.

There is a need for centres to:

- internally standardise. If this is not done then candidates risk having downward adjustments applied because of the inaccurate marking of one teacher on one set of students' work
- ensure that, as a different moderator is allocated to the assignment component, full paperwork for the required component is forwarded to each moderator
- ensure that paperwork has been completed as per the specification, as delays are inevitable if the correct documentation is not provided
- remove work from bulky folders before posting to the moderator
- ensure that, if plastic wallets are used, all the work is visible without the moderator having to remove it from the wallets
- ensure the correct marking criteria are used
- annotate the work as required by the specification.

Teachers must show why they have awarded the marks. They potentially disadvantage their candidates by not doing this.

00000-2006

Key Stage 4	Lesson	
Learning objectives	In this lesson we are learning to: – use our questionnaire and analysis of our questionnaire to develop clear evaluations, in order to improve our work; – use connectives to link sentences.	
Learning outcomes	At the end of this lesson pupils will have: – developed a clear evaluation of their newsletters, and how to improve them; – improved the language used in evaluating work.	
Teacher note **Resources** TutorResource2 criteria and evidence.pub Handout3Connectives.doc TutorResource3criteria and evidence2.pub	In using this resource and supporting pupils developing their evaluations, it is important to let pupils choose and not to lead them in the evidence chosen. In teaching this lesson it was found that pupils frequently chose different aspects to those expected by the teacher, but that they were still valid and still helped them to develop evaluations which would improve their newsletters.	
	Share objectives	**5 min**
Key vocabulary criteria evidence connectives evaluation review	**Starter** Introduce by reminding pupils that they had already concluded, by looking at their questionnaires and analysis of questionnaires, that their evaluations were not that precise. Refer to completed newsletters. Show **TutorResource2 criteria and evidence.pub** on the whiteboard and point to the connectives. Say that these will be part of helping to produce good concluding sentences and stronger evaluations. Point to the criteria directly from the DiDA website and the statistical information from the analysis. Pick two items of evidence, for example '73% of girls looked at every page' and '49% of boys looked at every page'. Point out the importance of linking the criteria and the evidence in developing the argument to show why a newsletter is good or why it might need improving. Model by choosing one criterion and linking evidence using drag and drop. Ask pupils to pick criteria and explain why.	**5 min**

	Model Introduce the use of connectives to link the ideas together, referring to their different attributes, for example adding information, comparing information. Provide worksheet **Handout3Connectives.doc** to aid reading of words on the whiteboard resource. Set pupils the challenge of coming up with the word(s) to link the two chosen statistics. Pupils work in pairs to a tight timescale (1 min). Which words will they choose and why? Circulate to ensure that pupils are confident to share their answers, thus drawing in the reluctant pupils. **Differentiation:** Tailor the connectives handout to focus on a small number of connectives which will best suit the evaluation. Work with the literacy coordinator. Bring attention back to the board and ask pupils to share their ideas. Model on the board, dragging and dropping suggestions	**10 min**
	Try and apply Introduce the development of an evaluative statement. Ask pupils to work in pairs on mini-whiteboards to write an evaluation of the criteria on the board (5 mins). Circulate to guide discussion and steer conversation onto why solutions are good, but also what to do to improve. One group brings up the whiteboard to share the evaluation.	**5 min**
Resources	**Try and apply** Pupils work on computers using their own evidence, drag and drop criteria and analysis, then produce an evaluative statement. One group could use the teacher's machine connected to the whiteboard, to be used to model later to class. **Differentiation:** Work with chosen group establishing their evidence. Link to assessment to establish the appropriate level of support. **Model** Use a final model to ensure that pupils begin to make conclusions about how to adapt the newsletter (TutorResource3criteria and evidence2.pub)	**10 min**
	Secure Assessment: pupils go to the completed newsletter and make any amendments, using pupil review to assess completed changes against marking criteria.	**20 min**
	Plenary One group share how they have made changes and invite further comment from peers.	**5 min**
	Homework Use the review process and developing evaluations to look at another completed product and establish areas for improvement in future lessons.	

Adding also as well as moreover and too	**Cause and effect** therefore consequently because so however thus
Sequencing after finally next then first/second/third	**Qualifying** however unless except if as long as
Emphasising significantly in particular above all especially indeed	**Illustrating** for instance for example such as as revealed by in the case of
Contrasting alternatively on the other hand whereas instead of unlike	**Comparing** similarly in the same way equally likewise as with

Key Stage 4	Lesson	
Learning objectives	In this lesson we are learning to: • create an effective test plan; • use adults/pupils to review; • document, test and review procedures.	
Learning outcomes	At the end of this lesson pupils will have: • created a checklist to assess the quality of an e-portfolio; • tested the checklist against their own and others portfolio.	
Teacher note Resources	**Resources** Sample portfolio, for example: www.didaonline.co.uk/GtSR4DiDAUnit1L1/Exemplar%20work/Omar	
Key vocabulary	**Starter** Show a sample e-portfolio on a big screen and ask pupils to consider their views of it. Show a few pages and ask pupils to give it a mark out of 10. Pair pupils and ask them to discuss their mark and the reasons for the award. Allow pupils a few minutes to discuss before using a show of hands to capture the spread of marks. Record these on the whiteboard/flipchart and then select pupils to give the reasons for their response. Rapidly gather a number of responses before asking pupils to consider why they have such different views.	**10 min**
	Share objectives Share objectives with pupils. Tell them that there are certain criteria for judging e-portfolios. Remind them that they will have done this sort of activity before in previous lessons. Explore the objectives with pupils by asking them to identify what they think are the key areas for success. (This may vary from one type of portfolio to another but may include, for example, the content, presentation of material and the navigation or index.)	**10 min**
	Model Select one aspect of an e-portfolio to investigate as a group. This will model the process for pupils. For example, say that the content is always important and that the examination board will expect certain items to be there. Ask pupils to work in pairs to create a list of the contents for their portfolio without referring to any documents previously provided. Allow a few minutes for discussion before allowing pupils to refer to checklists, etc. Ask pupils to create a definitive list of content. Pose the question: How do they know this sample portfolio contains everything it should? Tell pupils to call up the sample portfolio and test it against their criteria. Summarise this episode by reflecting on the consequences of not fulfilling all the criteria of the content checklist.	**10 min**

	Try and apply Divide the class into two groups and allocate the two further themes, for example navigation and presentation. Ask the groups to work in pairs and to repeat the process to generate a checklist, firstly by using their own understanding, and secondly by reference to materials previously presented to them. As pupils are working, circulate to stimulate discussion and provide additional support where required. Allow time for discussion before drawing pupils together. Swap pupils to work with a different partner to compare checklists.	**15 min**
	Secure Allow discussion time before swapping pupils again, this time between the two groups. Pupils should now be working in pairs with one pupil from each group with their own checklist. Ask pupils to use checklists to assess the sample portfolio, amending their checklists as necessary.	**10 min**
	Plenary Ask pupils to give the e-portfolio a mark out of ten and compare with responses from the starter activity. Ask pupils to explain their marks.	**5 min**
	Homework Pupils should use the checklists developed during the lesson to assess their own portfolio.	

Subject leader self-evaluation

Quality of provision

Middle leader's role	Current practice (R/A/G)	How do you know? (Evidence)	Action points
Do pupils acquire new knowledge, skills and understanding?			
Are pupils able to discuss and develop their ideas?			
Are lesson plans adapted to take account of assessment information?			

Do lessons have clear learning objectives and use a wide range of teaching strategies to address the needs of learners? Is a variety of teaching methods used? Are lessons appropriately differentiated to address the full ability range in your subject area?			

Subject leader self-evaluation

Quality of provision

Middle leader's role	Current practice (R/A/G)	How do you know? (Evidence)	Action points
Do pupils acquire new knowledge, skills and understanding?	A	Review of medium-term planning, linked to a work scrutiny.	Work with the SLT to develop opportunities for feedback from pupils. Link this to specific areas of the medium-term plan through a cycle of departmental self-evaluation. Work with the ICT LM to ensure that the approach is consistent with whole-school work in LiL and AfL. Adapt lesson observation forms to develop this as a key focus area for this year. Develop a coaching model with particular focus on progression across the key stage boundaries, drawing on good practice. Ensure that the outcomes of the coaching model are part of team meetings.
Are pupils able to discuss and develop their ideas?	A	Following work on peer review, lesson observation is carried out by the SL and the ICT LM (SLT) to evaluate differences between groups of pupils and between Key Stage 3 and Key Stage 4. This area is variable between classes and year groups. It is stronger in Key Stage 3 than in Key Stage 4.	
Are lesson plans adapted to take account of assessment information?	R	Medium-term plans are reviewed occasionally but there is infrequent review of lesson plans. Assessment points and differentiation are not part of the lesson plan grid.	As part of work on planning, review sample lesson plans against the medium-term plan. Develop a new form to ensure that assessment opportunities are included and link to work on peer assessment and curricular targets.

Do lessons have clear learning objectives and use a wide range of teaching strategies to address the needs of learners?	A	Observation of lessons uses the teachers to ascertain objectives. Observation shows these are always used. Teaching strategies are developing but limited in range. Key Stage 4 course work lessons often lack structure and clear learning objectives	Find out about models used throughout the school. Establish improved teaching as a high priority in the 2006–07 development plan. Investigate the options for support and CPD to develop teachers' knowledge and understanding of a range of teaching strategies. Use lesson observation, coaching and CPD to develop a wider range of pedagogy in the department, particularly guided group work, questioning, explaining and modelling. Use the TLSS pack. Identify how other departments have used strategies to develop their curriculum and extend pedagogy. Arrange for discussions, observation and networking opportunities.
Is a variety of teaching methods used?	A	There is a discernible difference in methods between Key Stage 3 and Key Stage 4, with more directed teaching in Key Stage 4. There is some development of inductive starters at Key Stage 3.	Use pedagogical models from *Using whiteboard technology in ICT* to develop more creative use of whiteboards. Review resources and teaching strategies for starters. Aim to develop new metacognitive starters for DiDA, using the Strategy medium-term plan and LiL pack as reference.
Are lessons appropriately differentiated to address the full ability range in your subject area?	R	A standard lesson plan is used by teachers across the department and this is not adapted to meet the needs of individuals and groups of learners. There is little review of lesson plans as the STUs and GCSE courses have not been reviewed.	Work with the ICT LM and consultant to review a sample of lessons. Carry out thorough scrutiny of pupils' work, drawing on data and comparison to expectations and progress in core subjects. Track different pupil samples against lesson plans and resources. Check the team meeting agenda to ensure that outcomes are incorporated in subsequent planning.

Making tracking manageable

When subject departments are developing or refining their approaches to tracking pupils' progress, some useful guiding principles can be applied.

- The subject leader has a key strategic role in establishing a manageable yet robust approach to teacher assessment.
- The tracking process needs to be closely integrated with everyday teaching and learning.
- It is not possible to assess every objective that is taught – instead it is necessary to identify the ones that are key indicators of pupils' progress.
- The key indicators can be related to crucial level borderlines, for example between levels 3 and 4.
- Ongoing assessment should be the basis of tracking, with use made of specific activities or probing questions to refine judgements.
- Where appropriate, the focus can be on the pupils whose attainment is difficult to determine with confidence.
- Recording systems can be very simple, keeping note of only the information that is necessary.
- It is vital that the information is used formatively and that any necessary modifications are made to the teaching programme.
- It is important to involve pupils in the process – this helps secure the learning and enables pupils to see for themselves that they are making progress.

A science department uses the five key scientific ideas and scientific enquiry as a framework for organising the Key Stage 3 programme of study.

- Cells
- Interdependence
- Particles
- Forces
- Energy
- Scientific enquiry

Expectations of pupils' attainment in each of the key ideas and scientific enquiry during the three years of the key stage were mapped out using the yearly teaching objectives from the *Framework for teaching science: Years 7, 8 and 9* (DfES 0136/2002). Assessment opportunities were then identified, together with specific activities or questions. Wherever possible the assessment of scientific enquiry was linked with assessment of the five key scientific ideas.

Having done this, the department decided to replace some of its end-of-unit tests with tasks that required an extended response from the pupils, sometimes in written form but also involving the production of a poster, diagram or cartoon strip, or a drama activity. For each of these unit tasks the department now produces a 'levelness' guide, to which they must match pupil responses. The department does not see the levelness guide as a checklist to be slavishly followed. Indeed, teachers are encouraged to take into account what they already know about each pupil from their everyday teaching when making their overall judgements on pupil attainment in the unit.

As well as providing an effective and efficient way of tracking pupils' progress, the approach provides a rich source of evidence of an individual's understanding and misconceptions, and informs the way subsequent teaching needs to be shaped.

Task prompt

Task 1 – Advert and report. You should spend about 15 minutes to complete this task. You have received an email from Esther Quinn, the theme park manager. Open it to find out what you have to do.

Email

Hi

At this time of year we put a black-and-white advert in the local paper. We use the advert to try and attract new customers to come to the theme park for the first time.

1. I want you to complete the advert that is attached. Please do the following.
   a. Add a suitable map in the empty space on the right of 'Where to find us'. Choose the map from the Waltywood Publicity Folder.
   b. Look at the 'Advert Slogans' file in the Waltywood Publicity Folder. Choose a slogan that fits in with the rest of the advert. Insert that slogan in the space at the top of the advert.
   c. Alter the format of the text to suit this kind of advert.
   d. Attach your finished advert to an email and send it to me. Put 'Advert' in the subject line. Make sure you cc it to Chandra Bhat (cbhat@waltywood.co.uk).
2. Bywell Park is making a claim on their website (www.bywellpark.co.uk) about the speed of their ride 'Dynamix'. Use the following websites to check if their claim is true or untrue:

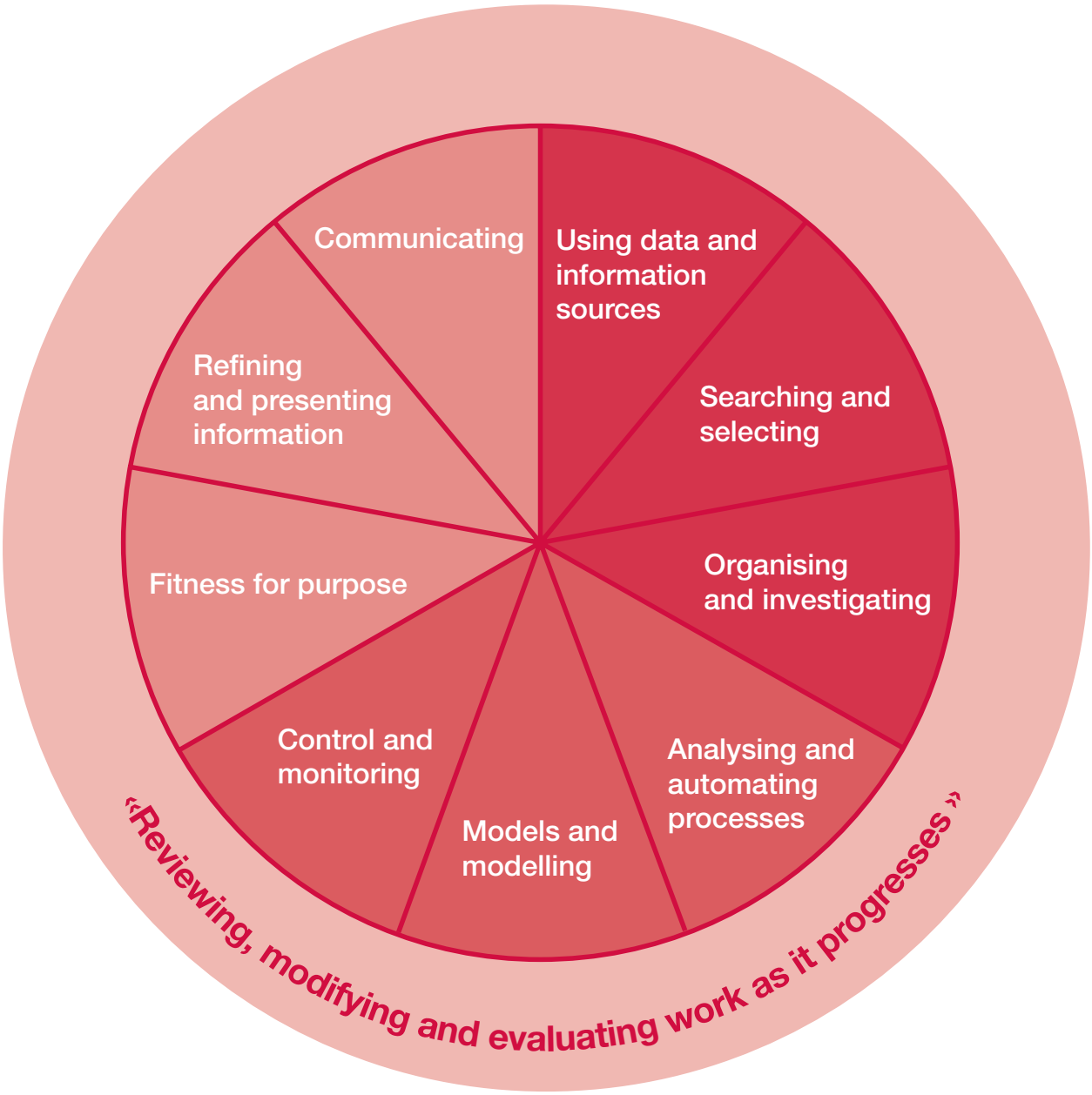
   www.ridesfan.co.uk
   www.bigride.co.uk

   Record your findings by completing the document called 'Bywell Report' in the Waltywood Publicity Folder. Save the completed report in the Waltywood Publicity Folder.

Thanks

Esther Quinn
General Manager
Waltywood Theme Park
equinn@waltywood.co.uk

Task prompt



Key to National Curriculum themes:

- **Finding things out**
- **Developing ideas and making things happen**
- **Exchanging and sharing information**
- **Reviewing, modifying and evaluating work as it progresses**

Fitness for purpose Refining and presenting	**Unit 7.1: Using ICT** In this unit pupils will plan and create presentations about themselves. It is intended that each presentation will be projected on screen and accompanied by a spoken commentary. The audience will be the rest of the class. Pupils will explore the concept of 'fitness for purpose' when using images, text, colour and sound to enhance their presentation. They will consider how to match and adapt their presentation to a given audience and purpose. Finally, they will evaluate the suitability of their work for different audiences and purposes. **The problem:** Email to all pupils in Year 7 from the Student Council. We've been asked to get a presentation ready about the school for all the pupils in Year 6 who might want to come here, and we need you to help us decide the most helpful presentation we could send them. We have come up with some questions to help you and hope that you can solve this problem for us. • Do we already have any information to help us? • What sort of things should we include in a presentation like this? • How do we make sure that Year 6 pupils know which secondary school the presentation is from? • What programs can we use to prepare a presentation? • Where would we get the pictures from? • Since the presentation is for Year 6 pupils, what do we need to think about when we use words and pictures? • How could we change our presentation so that it provides information for parents and carers? • Can we split this work up into sections? • How can we test out the presentations to know that they are interesting and helpful? You may have more questions, Year 7, but I am sure you can help us with this.

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INVESTOR IN PEOPLE

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