

**ASSIGNMENT COVER SHEET: SECONDARY PGCE**

**Name: Group:**

**Module Number: SIT 4011**

**Assignment Title: Planning for Effective Teaching and Learning in Computer Science**

**Date submitted:** **Personal Tutor:**

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| **Learning Outcomes: On completion of this module, you will be able to -**   1. Demonstrate depth and systematic understanding of planning and assessment practice in Computer Science, both in your specialist and non-specialist areas 2. Critically analyse the needs of learners, planning and differentiating accordingly, to ensure progression for all 3. Demonstrate deep and systematic understanding in order to evaluate teaching approaches and their effect on learning 4. Reflect critically on your own practice in planning and assessment strategies used in your own practice in order to improve future practice   Comments related to Learning Outcomes  Additional comments following moderation:  Trainee Targets |

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| **Trainee/ student to complete** (your work cannot be accepted for marking unless the***declaration is signed*):** | **Tutors to complete** |
| Word Count: \_\_\_\_\_\_\_\_\_\_\_\_\_\_  Appendices: Yes/No  **Declaration:**  **I confirm that I have read Edge Hill University’s policy on plagiarism and collusion, as contained in the Regulations (please see your Student Handbook), and that the work submitted here is my own.**  Signature: ……………………………………….  Date: …………………. | Mark awarded after internal moderation ­­­­­­  (subject to University and External Assessment )  First Marker signature:…………………………………..  Date: ………………..  Second Marker signature: ……………………………  Date: ……………….. |

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|  | ***Level 7*** | |  | ***Areas for Development & Reassessment*** | ***Areas for Development & Reassessment*** |
| ***Distinction*** | ***Merit*** | ***Pass*** | ***Some revision needed*** | ***Significant revision needed*** |
| **Knowledge and Understanding**  **L7 weighted criteria** | Your work demonstrates a deep knowledge and understanding of the topic under discussion. You have identified the key points and make very effective reference to the wider field in support of your discussion. You have demonstrated a very clear awareness of current research in the field. Where appropriate, you have explored different perspectives very effectively and make full reference to those which inform your discussion. Your own research is very effectively underpinned by current theory and practice. | Your work demonstrates a sound knowledge and understanding of the topic under discussion. You have identified the key points and make good reference to the wider field in support of your discussion. You have demonstrated a clear awareness of current research in the field. Where appropriate, you have explored different perspectives effectively and make full reference to those which inform your discussion. Your own research is effectively underpinned by current theory and practice. | **Your work demonstrates knowledge and understanding of the topic under discussion. You have identified the key points and make reference to the wider field in support of your discussion. You have demonstrated awareness of current research in the field. Where appropriate, you have explored different perspectives and make reference to those which inform your discussion. Your own research is underpinned by current theory and practice.** | Your work demonstrates some knowledge and understanding of the topic under discussion. You have identified some key points and make some reference to the wider field in support of your discussion. You have demonstrated some awareness of current research in the field. Where appropriate, you have mentioned different perspectives and make reference to those which inform your discussion. Your own research makes some reference to current theory and practice. | Your work demonstrates limited knowledge and understanding of the topic under discussion. You need to identify key points or make reference to the wider field in support of your discussion. You need to demonstrate an awareness of current research in the field. You need to mention different perspectives or make reference to those which inform your discussion. Your own research needs to make reference to current theory and practice. |
| **Analysis and Reflection**  **L7 weighted criteria** | You have very effectively demonstrated the ability to critically evaluate arguments, concepts and data in your work. You have combined theory, practice and reflection very effectively. You have demonstrated a very clear ability to reflect on your own and others’ professional practice and/or learning for the purpose of improvement. | You have effectively demonstrated the ability to critically evaluate arguments, concepts and data in your work. You have combined theory, practice and reflection effectively. You have demonstrated a clear ability to reflect on your own and others’ professional practice and/or learning for the purpose of improvement. | You have demonstrated the ability to critically evaluate arguments, concepts and data in your work. You have combined theory, practice and reflection. You have demonstrated an ability to reflect on your own and others’ professional practice and/or learning for the purpose of improvement. | You have demonstrated some ability to critically evaluate arguments, concepts and data in your work. You have combined elements of theory, practice and reflection. You have demonstrated some ability to reflect on your own and others’ professional practice and/or learning for the purpose of improvement. | You need to critically evaluate arguments, concepts and data in your work. You need to combine elements of theory, practice and reflection. You have not demonstrated an ability to reflect on your own and others’ professional practice and/or learning for the purpose of improvement. |
| **Relevance to the Set Task** | Your discussion is wholly relevant to the assessment title and the module learning outcomes. Your work includes some original insights and is thought-provoking. | Your discussion is wholly relevant to the assessment title and the module learning outcomes. Your work includes some original insights and is thought-provoking. | Your discussion is relevant to the assessment title and the module learning outcomes. | Your discussion is relevant to the assessment title and the module learning outcomes. | Your discussion is not sufficiently relevant to the assessment title and the module learning outcomes. |
| **Structure** | Your assignment is very clearly structured and has enabled you to give a full and effective response to the assignment title and the module learning outcomes. Where you have included appendices they are appropriate and clearly referred to in the text of the assignment. | Your assignment is clearly structured and has enabled you to give a full response to the assignment title and the module learning outcomes. Where you have included appendices they are appropriate and clearly referred to in the text of the assignment. | Your assignment structure has enabled you to give a reasonable response to the assignment title and the module learning outcomes. Where you have included appendices they are appropriate and referred to in the text of the assignment. | Your assignment structure has enabled you to give a reasonable response to the assignment title and the module learning outcomes. Where you have included appendices they are appropriate and referred to in the text of the assignment. | Your assignment lacks structure resulting in a failure to produce a reasonable response to the assignment title and the module learning outcomes. You have not included necessary appendices or have not referred to them in the text of the assignment. |
| **Use of language** | Your assignment is very well written and follows a logical sequence which is very apparent to the reader. Your extensive referencing follows the required academic conventions enabling the reader to easily identify supporting evidence. | Your assignment is well written and follows a logical sequence which is very apparent to the reader. Your extensive referencing follows the required academic conventions enabling the reader to easily identify supporting evidence. | Your assignment is well written and follows a logical sequence which is apparent to the reader. Your referencing follows the required academic conventions enabling the reader to identify supporting evidence. | Your assignment is reasonably well written and follows a logical sequence. Your referencing follows the required academic conventions enabling the reader to identify supporting evidence. | Your assignment is not written to an acceptable standard and lacks a logical sequence. Your referencing style also does not follow the required academic conventions making it difficult for the reader to identify supporting evidence. |

**PGCE Secondary Science Assessment Criteria (Level 7). SIT4011 Planning for Effective Teaching and Learning in Computer Science**

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|  | SIT 4011 PLANNING for effective teaching and learning in Computer Science |
|  |  |
| [Pick the date] | Scheme of Work and Assessment Portfolio |
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SIT4011 Planning for Effective Teaching and Learning in Computer Science

Scheme of Work and assessment portfolio

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# introduction to the Assignment

For this assignment you are required to develop a whole scheme of work, lesson plans, lesson evaluations and resources for a series of lessons, which have been created to residing on a web based platform such as school virtual learning environment.

For the purpose of the assignment this material should be hosted on a website and also presented on a CD/DVD. Trainees have in the past used Wix.com to effectively evidence this website

The assignment has two areas of focus for the resources.

1. Teacher Resources: These include lesson plans, scheme of work and any other ancillary instructions the teacher may require to conduct the lesson. This materials include:-

* All Lesson Plans
* Schemes of Work including a Rationale and classroom seating plan
* Teaching Assistant/Support Assistant materials
* Literacy support materials including wall displays and vocabulary.
* Feedback sheets for the class teacher
* Scaffold materials such as mouse mats
* Resources (Differentiated)

All of the above must be produced in a teacher friendly format, with all resources appropriately named and referred to in lesson plans and schemes of work.

1. Pupil Resources: These include all the lesson tasks and materials needed to help the pupils complete all the lessons for the scheme of work and the required materials to complete both formative and summative assessment processes. These may include

* Worksheets
* Web links to blogs or sites with supportive materials, or even ideally, ones you have created.
* Exercises (paper based and electronic.
* Templates
* Key Vocabulary
* Multi Media Presentations
* Assessment materials (Both Formative and Summative)
* Modelled examples of completed work for each lesson
* Feedback sheets from the pupils

You must try as many assessment strategies as the time allocated will allow. Usually around 3-5 hours.

All of the above for point 2 must be included in a pupil friendly format, using appropriate fonts, images and colours to engage the pupils.

All this work must be available electronically.

**NB**

**This work should be delivered in a live classroom setting and you must obtain feedback.**

**All resources created for this task must be your own work and not adapted from other materials.**

# Introduction (

This section of 1000 words (approx) is potentially one of the trickiest sections of the assignment to complete. It should consist of TWO sub-headed parts:

* Contextual Information
* Assessment Theory

## Contextual Information

In this section you should BRIEFLY indicate who the scheme of work is designed for (maximum 200 words). Thus you should include:

* The secondary year group
* The enhanced seating plan containing the required ability range; performance levels; FSM; LAC and any special needs pupils (SEN or G&T) etc.
* Also include a reference to where the scheme fits into the Computer Science National Curriculum
* Any behaviour management issues for the class

PGCE Secondary Computer Science: Seating Plan

**Form……………………………………. Number of pupils……………………………**

Draw the seating arrangement of the room in this space.

For EVERY pupil include the following (where appropriate):

Name

NC target level; current level

Gifted and Talented (G&T)

SEN statement (type/stage)

Free School Meals (FSM)

English as an additional language (EAL)

Looked after children (LAC)

(You may decide to colour code these aspects for ease of reference)

**KEEPTHIS SEATING PLAN FOR HANDY REFERENCE EVERY TIME YOU TEACH THE CLASS, BUT REMEMBER THAT IT CONTAINS CONFIDENTIAL INFORMATION AND PUPILS SHOULD NOT BE ABLE TO SEE IT!**

## Assessment Theory

In order to complete this section effectively you will need to outline your assessment strategy for the scheme of work – WITH REFERENCE TO APPROPRIATE LITERATURE (about 10-12 good references are adequate here). Some good sources are Capel, Leask and Turner (2005); Wellington and Ireson (2008), Hollins (ed) (2011) *Teaching ICT Simmons and Hawkins* (2009). This latter source is a riveting read and is available from all good book shops…

You may choose to refer to aspects such as the following:

* The purposes of assessment
* Formative, summative, diagnostic and evaluative assessment strategies
* Tests, exams and revision (strategies)
* Assessment for learning (AfL)
* Statutory National Curriculum assessment and levels including leveled assessments
* Assessment of Pupil Performance in Computer Science (APP)
* Marking, feedback and target setting

# scheme of work

You are required to use the SOW template table on the next page as a planning guideline and then transfer the scheme of work to the same format as the Raspberry Pi Scheme of Work on Blackboard. The scheme/part scheme should include a minimum of EIGHT and a maximum of TEN lessons. This section has a word equivalence of 1000 words.

The following hints might be useful in helping you to complete the table:

* Try and phrase your lesson title as a question or as something ‘catchy’ or ‘unusual’. This helps to set the context of the lesson as being about finding an answer to the question or disclosing what the catchy title refers to!
* You need to formulate ONE learning objective and THREE learning outcomes per lesson. It is a good idea to number the learning outcomes.
* Remember objectives are related to what the lesson is about e.g.
* ‘Pupils will learn about networks and operating systems’ or ‘Pupils will discuss the pros and cons of Online Shopping’ etc.
* Remember outcomes are what the pupils will have done/will be able to do and e.g.
* ‘Pupils will have produced a table of advantages and disadvantages of online shopping habits’ or ‘Pupils will be able to recite a mnemonic for remembering the order of the memory hierarchy (size) in a computerized system’.
* It is a good idea to categorize your lesson activities using S (starter), M1, M2, M3 etc. (main activities 1, 2, 3 etc.) and P (plenary).
* Make as full a list of VARIED resources as you can. This always helps with planning individual lessons from the SOW.
* Be as specific as you can about the assessment items and the APP focus and level that you enter into the last column of the plan. Link these to the particular numbered learning outcome they are assessing e.g.
* ‘Who wants to be a millionaire’ plenary on threats to computer systems

**Secondary Computer Science Scheme of Work Planning Tool:**

Module title / topic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Duration of scheme \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Year Group \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Set (if applicable) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Title** | **Learning Objectives** | **Learning Outcomes** | **Suggested Activities** | **Resources** | **Assessment** |
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# samples of marked work

You are required to include samples of marked work that has been done by the pupils during the teaching of the scheme included in the previous section.

The following hints might be useful in helping you to compile this:

* You don’t have to include original work. A pdf or clear photographic file of the work is acceptable
* Include a sample of different types of assessment tasks – a different one for each of the lessons in the scheme, done by different pupils
* Ensure that your marking includes elements of ‘praise’ e.g. ‘what went well’ (WWW) and how the pupil can improve (target-setting) e.g. ‘even better if’ (EBI)
* Make sure that some of this marked work is leveled using CAS levels, as well as the school’s own marking/grading system

# summative assessment and mark scheme

This section of the assignment will consist of TWO main elements.

First, you are required to produce what is commonly known as the ‘end of unit test’ (or its more creative equivalent – maybe a practical assessment!) for the scheme of work that you included earlier. This ‘test’ should allow you to assign a NC level to the pupil based on their performance. Remember that it is ‘cheating’ to simply use the one that the school might already be using and we would like you to enhance/tweak it (in consultation with appropriate school colleagues).

Second, you need to produce the ‘mark scheme’ that goes with the ‘test’. This mark scheme should clearly describe and show the question/task levels and leveling procedure that is being used.

Remember to try and cater for all the ability levels in the class and offer the opportunity for pupils to achieve above their current/target level.

# marked summative assessments

In order to complete this section effectively, you will need to include THREE marked summative assessment tasks. Include pupils achieving at different levels and don’t forget to include the WWW/EBI type of feedback described earlier.

Again, you don’t have to include original work. A pdf or clear photographic file of the work is acceptable.

# class mark profile

In this section you need to include a copy of your mark book/electronic assessment record for the class related to the scheme of work taught for the assignment.

Remember to include a comprehensive compilation of aspects such as prior attainment (CAT and SAT scores, current and target levels), attendance, classwork marks/levels, homework mark/levels, ‘test’ marks/levels etc.

Also remember to REMOVE THE PUPILS’ NAMES. Instead you can call them all by pseudonyms (this can be time-consuming, but fun!) or just number/letter them Pupil 1 or Pupil A etc.

# critical reflection on assessment data

In order to complete this section effectively, you will need to critically reflect on how effective your assessment strategy was in helping your pupils to progress (1000 words approx.).

The following hints might be useful in helping you to complete this extended piece of writing:

* Write about whether you feel ‘pupils’ achieved the learning outcomes that you set in the lessons and what assessment evidence you have for this.
* Look back at the Introduction section of this assignment and critically reflect on the assessment goals for the scheme, the class and individuals in the class. Remember to write about aspects such as those indicated in the template notes, such as the purposes of assessment, formative, summative, diagnostic and evaluative assessment strategies, tests, exams and revision (strategies), assessment for learning (AfL), statutory National Curriculum assessment and levels including leveled assessments, assessment of pupil performance in science (APP), marking, feedback and target setting.
* Link these reflections to relevant literature (about 10-12 good references are adequate here) that you might have quoted in the Introduction section, or any new sources that you might want to use.
* Make some suggestions about how you will improve the assessment elements of the SOW/lessons the next time that you teach it/them.

# bibliography

This section will include an alphabetical list (in author’s surname order) of all the references you have included in the body of the assignment.

You will need to include two sets of sources in this ONE list:

1. Those that you have referred to in your Introduction and Critical Reflection sections (these are more likely to be ‘theory’ type references e.g. journal articles and book chapters)
2. Those that you have used to compile your SOW (these are more likely to be science text books, teacher’s guides, published science resources etc)

An example of how to set this out is as follows. Note all the conventions, including which text to italicize:

ARGYRIS, C. and SCHÖN, D.A., 1992. *Theory in practice: Increasing professional effectiveness*. San Francisco: Jossey-Bass Inc.,U.S.

Bergin, S. Reilly, R. 2005. *Programming: Factors that Influence Success*. ACM SIGCSE Bulletin (Vol. 37, No. 1, pp. 411-415). ACM.

Brown, N., Sentance, S., Crick, T., and Humphreys, S., 2013, *Restart: The Resurgence of Computer Science in UK Schools.* ACM Trans. Comput. Educ. 1, 1, Article 1 (January 2013)

Brown, R.V., and P. Paschoud. 2005*. Rational choice and judgment: Decision analysis for the decider*. Hoboken, NJ: Wiley-Interscience

Cowan, J. 2010, *Developing the ability for making evaluative judgements, Teaching in Higher Education*, 15:3, 323-334

Dowie, J., and A. Elstein. 1988. *Professional judgment.* Cambridge: Cambridge University Press.

DEPARTMENT FOR EDUCATION, 2010. *The importance of teaching* [online]. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/175429/CM-7980.pdf [Accessed 15 December 2015].

Department for Education, 2013. *Teaching Standards.* Available from <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/301107/Teachers__Standards.pdf> [Accessed 26 February 2015]

Department for Education, 2013. Computing programmes of study: key stages 3 and 4 National curriculum in England. Available from: <http://www.computingatschool.org.uk/data/uploads/secondary_national_curriculum_-_computing.pdf> [Accessed 28 February 2015]

FORDE, C., MCMAHON, M. and MCPHEE, A.D., 2006. *Professional development, reflection and Enquiry*. United States: SAGE Publications.

Gardner, J. 2013. *Assessment And Learning.* 1st ed. London: SAGE Publications Ltd, Print.

Ginnis, P. 2005, *The Teacher's Toolkit*. 1st ed. Norwalk, CT: Crown House Pub. Co.

Gipps, C. 1994. *Beyond Testing: Towards a theory of Educational Assessment,* London: Falmer Press

Haynes, A. 2010. *The Complete Guide To Lesson Planning And Preparation*. 1st ed. London [etc.]: Continuum, Print.

INDEPENDENT SCHOOLS INSPECTORATE (ISI), 2016. XXXXXXXXX *School Regulatory Compliance Inspection*. Available from: http://www.XXXXXXXXXXXXX.com/media/126505/Kingsmead%20Inspection%20Report%2022-23%20March%202016.pdf [Accessed 11 December 2016].

JOHNSON, D., BOYLE, M. and GILLIES, R., 2013. *Cooperative learning: A smart Pedagogy for successful learning* [online]. Available from: https://sydney.edu.au/education\_social\_work/professional\_learning/resources/papers/slc-2013/cooperative-learning.pdf [Accessed 19 December 2016].

Jones, C. 2005. Assessment for Learning. London: Learning Skills and Development Agency Ltd.

Kallia, M. 2017 *Assessment in Computer Science Courses a Literature Review.* Royal Society (online) Available from https://royalsociety.org/~/media/policy/projects/computing-education/assessment-literature-review.pdf

KOUNIN, J., 1970, *Discipline And Group Management In Classrooms*. 1st ed. New York: Holt, Rinehart and Winstone.

Mansell, W., M. James, and The Assessment Reform Group. 2009. *Assessment in schools: Fit for purpose? A commentary on the Teaching and Learning Research Programme.* London: Economic and Social Research Council.

McIntosh. 2015 *Final Report on the Commission on Assessment without Levels.* Depertment for Education. (online) Available from https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/483058/Commission\_on\_Assessment\_Without\_Levels\_-\_report.pdf

Muijs, D. and Reynolds, D. 2011. *Effective teaching*. 1st ed. London: Sage.

Murphy, R and Torrance, H 1988. The changing face of educational Assessment. Milton Keynes: Open University Press.

PETTY, G., 2009. *Teaching today: A practical guide*. 4th ed. Cheltenham: Thornes, Nelson.

Rohrer, D., and H. Pashler. 2010. “Recent Research on Human Learning Challenges Conventional Instructional Strategies.” Educational Researcher 39 (5): 406–412.

Royal Society, 2012, Shut down or restart? The way forward for computing in UK schools [online] London: The Royal Society, p.4 available from

https://royalsociety.org/~/media/education/computing-in-schools/2012-01-12-

computing-in-schools.pdf [Accessed 14. September 2016]

Royal Society, 2016, Google, Microsoft and the Royal Society Partner to Strengthen Computer Science Teaching in Schools, [online] available from <https://royalsociety.org/news/2016/05/computing-education-project/> [Accessed 14 September 16]

Royal Society, 2017 *After the Reboot: Computer Science in Schools.* Royal Society Creative Commons (online) Available from https://royalsociety.org/~/media/policy/projects/computing-education/computing-education-report.pdf

Schmidt, E., 2011 *Mactaggart Lecture* [online] Available from

http://www.theguardian.com/media/interactive/2011/aug/26/eric-schmidt-mactaggart-

lecture-full-text [Accessed on 14 September 2015]

Shepard, L. A. 2006. “Classroom Assessment” In Educational Measurement, edited by R. L. Brennan, 623–646. Westport, CT: American Council on Education/ Praeger

Wallace, S. 2015. Dictionary of Education. Oxford: Oxford University Press Print

Wiliam, D. 200g *Assessment for Learning: Why, what and haw?* Cambridge Assessment (online) Available from

http://www.assessnet.org.uk/e-learning/file.php/1/Resources/Excellence\_in\_Assessment/Excellence\_in\_Assessment\_-\_Issue\_1.pdf

Vygotskiĭ, L. S et al. *Mind In Society*. 1st ed. Cambridge, Mass.: Harvard University Press, 1978. Print.