Topic: Physics Revision and Exam Technique

Prepared by**: Paul Yapp**

Issues tackled:

1. **Handling formulae.**
2. **Extracting information from examination questions.**
3. **Use of mind maps/concept maps in revision.**
4. **Using different learning styles for revision.**

Issue 1: Handling formulae

Prior knowledge and experience:

Possible tasks:

Preparation for tutorial:
1. Prepare a formula sheet including the relevant units for the appropriate syllabus.
2. Develop a set of revision questions that involve rearrangement of formulae.

Possible activities during tutorial:
1. Look at basic types of equations involved and the possible methods for rearranging them i.e. using triangles, prior to substitution or after substitution.
2. Suggest a variety of ways of structuring the part of the lesson where the examples will be used.

AST Input:

Demonstrate that all rearranging methods give the same result.
Demonstrate dimensional analysis i.e. determining units from other units.

Reading:

Subject knowledge and understanding

The appropriate syllabus/scheme of work.

Subject pedagogy

Useful websites and applications

GCSE Bitesize.

Resources:

Task 1
Calculators.

Task 2
Syllabus, past exam papers, mark schemes.

Issue 2: Extracting information from examination questions

Prior knowledge and experience:

Possible tasks:

Preparation for tutorial:
1. Find ten examples of numerical exam questions.
2. Collect four examples of numerical questions with mark schemes.

Possible activities during tutorial:
1. Practice extracting the relevant information from exam questions.
2. Compare examiners' marks schemes to papers to look at how marks are awarded for numerical questions and the importance of showing working to allow errors to be carried forward.

AST Input:

- Demonstrate how to reduce a question down to the bare facts from the past paper questions prepared by the trainees.
- Show how to use the simplified information to select the relevant formula from the formula sheet prepared in issue one (see above).

Reading:

Subject knowledge and understanding

Breithaupt, J. (1997) **Teach Yourself Revision: Revise GCSE Physics**, Hodder & Stoughton, London.

Subject pedagogy

Useful websites and applications

http://dbweb.liv.ac.uk/ltsnpsc/AB/AB-html/node12.html

Resources:

Tasks 1 and **2**.
Past exam papers, examiners' reports.

Issue 3: Use of mind maps/concept maps in revision

Prior knowledge and experience:

Possible tasks:

Preparation for tutorial:
1. Produce a mind map for a physics topic from the syllabus.
2. Find out about brain trees and concept maps and how, if at all, they differ from a mind map.

Possible activities during tutorial:
1. Look critically at the mind map to ensure it has covered the entire topic.
2. Discuss the strengths and weaknesses of using mind maps as a revision tool.

AST Input:
- Construct a mind map during the tutorial

Reading:

Subject knowledge and understanding

Briethaupt, J. (1997) **Teach Yourself Revision: Revise GCSE Physics**, Hodder & Stoughton, London. Pages 4-11.

Subject pedagogy

There are a range of books that look at mind mapping in particular those by Tony Buzan are helpful.

Useful websites and applications

www.change.freeuk.com/learning/advskills/mindmap.html

Resources:

Issue 4: Using different learning styles for revision

Prior knowledge and experience:

Possible tasks:

Preparation for tutorial:
1. Find out the possible learning styles that could be suitable for pupils.
2. Prepare a revision lesson on one topic that would appeal to different styles of learners.

Possible activities during tutorial:
1. Discuss the learning styles from the preparation.
2. Complete the learning style audit (see the web site below).

AST Input:
- Give alternative suggestions for the revision lesson based on the learning styles audit.

Reading:

Subject knowledge and understanding

Subject pedagogy

Teachers Toolkit http://www.standards.dfes.gov.uk/thinkingskills/resources/565144?view=get

Useful websites and applications

www.edgehill.ac.uk/tld/audit/lstyles/audit.htm

Resources:

Task 2

See Useful websites and applications.