



Scenario 2

Synopsis

The assessment task comes from the module, the World Communicates (8.2). It is the first assessment task in Term 1 and assesses the learning outcomes for current technologies associated with information transfer. Students are required to identify data sources, gather, process and present information from secondary sources for one selected application of wave physics. A short oral presentation, the research notes and bibliography were used to assess student achievement of the identified outcomes.

Class group: Year 11 – Preliminary course

Subject: Physics

Topic: The World Communicates

Context: A comprehensive high school in a non-metropolitan area

Class group: Year 11 – Preliminary course

Task outline: The task assesses student achievement of outcomes in relation to the Module, the World Communicates. Students deliver a 5 minute talk on an application of wave and/or communication physics.

- Outcomes:**
- P.7 describes the effects of energy transfers and transformations
 - P.8 explains wave motions in terms of energy sources and the oscillations produced
 - P.12 discusses the validity and reliability of data gathered from first-hand and secondary sources
 - P.13 identifies appropriate terminology and reporting styles to communicate information and understanding in physics
 - P.14 draws valid conclusions from gathered data and information.



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Physics – Preliminary assessment task

Wave applications research and oral presentation

Outcomes to be assessed:

A student:

- P.7 describes the effects of energy transfers and transformations
- P.8 explains wave motions in terms of energy sources and the oscillations produced.
- P.12 discusses the validity and reliability of data gathered from first-hand and secondary sources
- P.13 identifies appropriate terminology and reporting styles to communicate information and understanding in physics
- P.14 draws valid conclusions from gathered data and information

Task:	1
Weighting:	10%
Marks:	15
Time:	4 weeks

Task

The task will comprise four main parts:

1. Selection of application

Choose one of the following applications of wave and/or communication physics:

1. Global Positioning System (GPS)
2. Petrological microscope
3. CD technology, including difference between CD and DVD
4. The Internet (emphasising the digital process)
5. GSM mobile phones
6. CDMA mobile phones
7. Iridium satellite phone system
8. VLF submarine communication
9. Satellite TV delivery
10. Any other appropriate and relevant application (but you must clear it with me first)

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2. Research

- You must research the application, why it is useful and how it works; stressing the underlying physical principles involved, particularly those related to wave physics.
- Two periods have been allocated for you to spend in the Library Resource centre; period 2 Friday 25th February and period 5, Wednesday, March 1st. During this time you are to identify data sources, gather and process information on your chosen wave application.
- As many of the wave applications are recent innovations and you are required to locate information about the state of current research for your chosen application, you should access information from at least **THREE** different sources such as popular scientific journals, CD ROMs, science text books and the Internet. At least one source of information must come from the mass media, such as a newspaper article.
- You are to develop research notes and a bibliography.

In addition to your talk you must submit your bibliography and research notes for assessment.

3. Preparation of Presentation

- The main part of your presentation will be a five minute illustrated talk to the class about your selected application. You must discuss the validity and reliability of the information you accessed, identify any conflicting or anomalous information and discuss any limitations. Conclusions should be drawn from the gathered information. Your talk should be supported by use of relevant diagrams or illustrations. These can be on overheads transparencies, slides, charts, drawings on the board or a Power point presentation.
- Basic resources for illustrations will be provided but you will have to plan ahead and use the two allocated periods wisely. If you require any special equipment or needs, notify me early on so plans can be made.

4. Delivery of Presentation

- Talks will commence in class on Monday, 13th March. Students will be randomly selected to give their talks. At the end of the talk, you must hand in your research notes and bibliography. If we are efficient, the talks should take no more than two and a half lessons so please be prompt and prepared.



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Marking guidelines

Criteria	Mark
<ul style="list-style-type: none"> • Accesses information from a comprehensive range of different types of information sources, including mass media • Provides complete information of all references accessed, using an appropriate bibliographic format • Presents a range of text and visual information in a multimedia presentation to communicate effectively • Explains wave motions involved in their chosen application, in terms of the energy sources and the oscillations produced, using appropriate terminology in their oral presentation • Discusses energy transfers and transformations of their chosen application, refers to the underlying physics principles, how the technology works its usefulness application in their oral presentation • Uses the information/data accessed as the basis for their explanations and discussions, identifies any conflicting/anomalous data or information and discusses the limitations of the information accessed in their oral presentation 	13-15
<ul style="list-style-type: none"> • Accesses information from a range of different types of information sources, including mass media • Provides some information about references accessed, in a bibliographic format • Presents some text and visual information in a multimedia presentation to communicate effectively • Discusses wave motions involved in their chosen application, in terms of the energy sources, using appropriate terminology • Discusses energy transfers and transformations of their chosen application, how the technology works and its usefulness • Uses the information accessed as the basis for their discussions and identifies conflicting/anomalous data or information 	10-12
<ul style="list-style-type: none"> • Accesses information from several different types of information sources • Provides incomplete information about references accessed, in a bibliographic format • Presents texts or visual information in a multimedia presentation to communicate effectively • Identifies the wave motions involved in their chosen application and the energy sources of that wave motion, using appropriate terminology • Discusses energy transfers and transformations of their chosen application and its usefulness • Uses the information accessed as a basis for their discussions 	7-9
<ul style="list-style-type: none"> • Accesses information from several references of the same type • Lists the resources accessed • Presents text or visual information in an oral presentation • Identifies the energy transfers and transformations of their chosen application • Statements made in their oral presentation are consistent with the information accesses 	4-6
<ul style="list-style-type: none"> • Accesses information from a single reference source • Provides an oral presentation without visual aides • States some energy transfers and transformations for their chosen application 	1-3

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