

Assessment Task Notification

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| Faculty: Science | Teacher: Howard | Email: nathan.howard11@det.nsw.edu.au |
| Task Number: 3 | Title: Research Assignment | |
| Year: 9 | Due date: Term 3 Week 8 | Weighting: 30% |

| Syllabus Outcome | Description |
|------------------|--|
| SC5-5WS | Produces a plan to investigate identified questions, hypotheses, or problems, individually and collaboratively |
| SC5-9WS | Presents science ideas and evidence for a particular purpose and to a specific audience, using appropriate scientific language, conventions, and representations |
| SC4-1VA, SC5-1VA | Appreciates the importance of science in their lives and the role of scientific inquiry in increasing understanding of the world around them |
| SC5-16CW | Explains how models, theories and laws about matter have been refined as new scientific evidence becomes available |
| SC5-17CW | Discusses the importance of chemical reactions in the production of a range of substances, and the influence of society on the development of new materials |

21st Century and Employment-Related Skills:

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|-------------------------------------|-------------------------|-------------------------------------|--------------------------------|
| <input checked="" type="checkbox"/> | Communication | <input checked="" type="checkbox"/> | Use of technology |
| <input checked="" type="checkbox"/> | Critical Thinking | <input type="checkbox"/> | Self-reflection and refinement |
| <input checked="" type="checkbox"/> | Creativity | <input type="checkbox"/> | Problem Solving |
| <input type="checkbox"/> | Collaboration | <input type="checkbox"/> | Initiative and Enterprise |
| <input checked="" type="checkbox"/> | Planning and Organising | <input type="checkbox"/> | Cross-Cultural Understanding |

Task Description:

The knowledge and understanding strands specify the content for each stage and integrate content related to the understanding about the nature, development, use and influence of science with knowledge of scientific concepts, principles, models, theories and laws. Students develop their scientific understanding about the natural world and the unique nature of Science as a discipline through using and applying the processes of working scientifically. The Chemical World strand is concerned with understanding the composition and behaviour of matter. The key concepts developed in this strand are that the chemical and physical properties of substances are determined by their structure on an atomic scale and that substances change and new substances are produced in chemical reactions by rearranging atoms through atomic interactions and energy transfer.

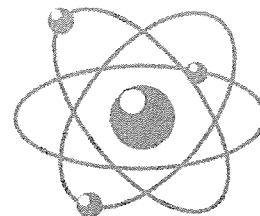
Assessment Criteria:

You will be assessed on your ability to: Think critically, process data and communicate understanding of the chemical world syllabus outcomes.

Method of Task Submission:

Answer the questions in the task and then complete a presentation of work that has been researched

Year 9 Chemistry Research Assessment Task



Outcomes:

SC5-5WS: Produces a plan to investigate identified questions, hypotheses, or problems, individually and collaboratively

SC5-9WS: Presents science ideas and evidence for a particular purpose and to a specific audience, using appropriate scientific language, conventions, and representations

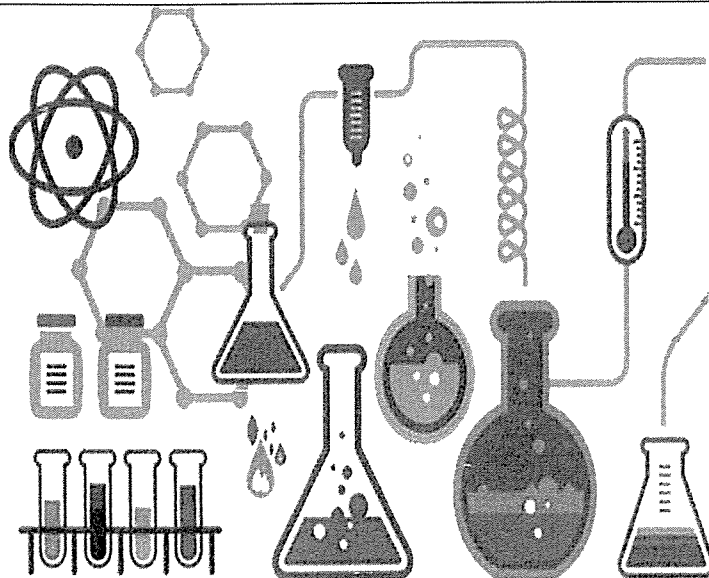
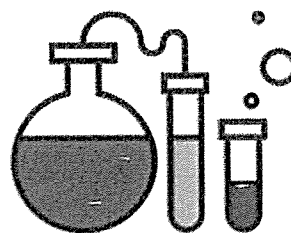
SC5-16CW: Explains how models, theories and laws about matter have been refined as new scientific evidence becomes available

SC5-17CW: Discusses the importance of chemical reactions in the production of a range of substances, and the influence of society on the development of new materials

Description of Activity: Students are to produce an information report on a researched element.

Procedure:

1. Students will choose an element from the periodic table to investigate.
2. Students will then be given two weeks to investigate their element and record all information they find on the 'Part 1' Research Sheet'.
3. The information found in 'Part 1' is then used to fill in the 'Part 2' Element Report. This information sheet will form part of your "Class Element Information Presentation". Note: students must include a bibliography.
4. **Part 3:** Using the information found in Part 1 and Part 2, create a PowerPoint presentation (minimum of 6 slides) OR an A4-sized pamphlet (with information back and front) describing your element. ALL the information found in Parts 1 and 2 **MUST be included** in your presentation/pamphlet.



Remember:

- In **Part 2** you must use sentences to describe the Element you have researched.
- **ALL** the information in **Part 1** must be included in **Part 2**. (There is a model for you to follow attached.)
- You can make your own version of **Part 2 (Element Report)** as long as **ALL** the information shown in the model is included.
- **Your assessment is due:**

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|--|---|
| <ol style="list-style-type: none">1. Element Name2. The symbol for the element is3. What is the atomic number of this element?4. Is the element a metal, non-metal or semi-metal?5. What does the element look like at room temperature (20° C) (e.g. is it a gas, liquid, solid? What is its colour? Any other features?)6. What are the element's; i) Melting Point? ii) Boiling Point?7. How is the element found in nature? (by itself, in an ore, in the sea, etc)8. When was the element discovered? Who discovered it?9. How did the element get this name and symbol?10. Write down two interesting properties of (or facts about) the element. | <ol style="list-style-type: none">11. Is this element found in Australia? If so, where? (Can use a map to show where it is found).12. Where is it found in the world? (Can use a map to show where it is found).13. Can this element be dangerous to life on Earth?14. Draw the configuration of the nucleus and the electron shells of this element.15. Is this element used today in society? For example is it used in industry, communication, medicine etc. Explain how the element is used and its purpose – include its overall impact on society (or has had on society).16. List at LEAST two (2) annotated references used to obtain your information. |
|--|---|

A large rectangular box with a thin black border, intended for a drawing or diagram. In the top right corner of this box, there is a smaller, empty rectangular box. Near the bottom edge of the large box, there is a single horizontal line.

A series of approximately 20 horizontal dashed lines, providing a guide for writing the report's content.

Table description: shaded rows are band descriptors from NESA and non-shaded rows are the task descriptors

| Outcomes and content | Grade A (10 Marks) | Grade B (8 Marks) | Grade C (6 Marks) | Grade D (4 Marks) | Grade E (2-0 Marks) |
|--|---|--|--|---|---|
| Critical Thinking Skills Research Component SC5-16CW Part 3 Power Point Presentation/Pamphlet | Demonstrates extensive knowledge and understanding of content Extensive evaluation of: - Student includes all information from part 1 & 2 (research sheet/element diagram) - Information demonstrates extensive knowledge and understanding of the chosen element - Student demonstrates extensive use of metalanguage and correct scientific concepts. | Demonstrates thorough knowledge and understanding of content Thorough evaluation of: - Student includes most information from part 1 & 2 (research sheet/element diagram) - Information demonstrates thorough knowledge and understanding of the chosen element - Student demonstrates thorough use of metalanguage and correct scientific concepts. | Demonstrates sound knowledge and understanding of content Sound evaluation of: - Student includes some information from part 1 & 2 (research sheet/element diagram) - Information demonstrates sound knowledge and understanding of the chosen element - Student demonstrates sound use of metalanguage and correct scientific concepts. | Demonstrates basic knowledge and understanding of content Limited evaluation of: - Student includes minimal information from part 1 & 2 (research sheet/element diagram) - Information demonstrates basic knowledge and understanding of the chosen element - Student demonstrates basic use of metalanguage and correct scientific concepts. | Demonstrates limited knowledge and understanding of content Basic evaluation of: - Student includes limited information from part 1 & 2 (research sheet/element diagram) - Information demonstrates limited knowledge and understanding of the chosen element - Student demonstrates limited use of metalanguage and correct scientific concepts. |

| Outcomes and content | Grade A (5 Marks) | Grade B (4 Marks) | Grade C (3 Marks) | Grade D (2 Marks) | Grade E (1-0 Marks) |
|---|--|--|---|--|--|
| SC5-16CW Part 2 Element Diagram | Extensive evaluation of: - Student includes all information from part 1 research sheet - Information demonstrates extensive knowledge and understanding of the chosen element - Student demonstrates extensive use of metalanguage and correct scientific concepts. | Thorough evaluation of: - Student includes most information from part 1 research sheet - Information demonstrates thorough knowledge and understanding of the chosen element - Student demonstrates thorough use of metalanguage and correct scientific concepts. | Sound evaluation of: - Student includes some information from part 1 research sheet - Information demonstrates sound knowledge and understanding of the chosen element - Student demonstrates sound use of metalanguage and correct scientific concepts. | Limited evaluation of: - Student includes minimal information from part 1 research sheet - Information demonstrates basic knowledge and understanding of the chosen element - Student demonstrates basic use of metalanguage and correct scientific concepts. | Basic evaluation of: - Student includes limited information from part 1 research sheet - Information demonstrates limited knowledge and understanding of the chosen element - Student demonstrates limited use of metalanguage and correct scientific concepts. |
| SC5-17CW Part 1 Research Sheet | Extensive evaluation of: - Student answers all questions from part 1 research sheet - Information demonstrates extensive knowledge and understanding of the chosen element - Student demonstrates extensive use of metalanguage and correct scientific concepts. | Thorough evaluation of: - Student answers most information from part 1 research sheet - Information demonstrates thorough knowledge and understanding of the chosen element - Student demonstrates thorough use of metalanguage and correct scientific concepts. | Sound evaluation of: - Student answers some information from part 1 research sheet - Information demonstrates sound knowledge and understanding of the chosen element - Student demonstrates sound use of metalanguage and correct scientific concepts. | Limited evaluation of: - Student answers minimal information from part 1 research sheet - Information demonstrates basic knowledge and understanding of the chosen element - Student demonstrates basic use of metalanguage and correct scientific concepts. | Basic evaluation of: - Student answers limited information from part 1 research sheet - Information demonstrates limited knowledge and understanding of the chosen element - Student demonstrates limited use of metalanguage and correct scientific concepts. |

| Processing data Working Scientifically Skills | Effectively gathers, selects, organises and processes first-hand and secondary sourced data and information to evaluate issues and inform creative solutions using appropriate digital technologies Grade A (5 Marks) | Systematically gathers, selects, organises and processes first-hand and secondary sourced data and information to explain issues and inform problem-solving using appropriate digital technologies Grade B (4 Marks) | Gathers and selects first-hand and secondary sourced data and information to identify issues and participating in problem-solving using appropriate digital technologies Grade C (3 Marks) | Uses first-hand and secondary sourced data and information, and appropriate digital technologies, to assist in the problem-solving process Grade D (2 Marks) | Uses information provided and, with assistance, participates in problem-solving activities Grade E (1-0 Marks) |
|---|--|--|--|---|--|
| Outcomes and content SC5-5WS Internet Use/References | Demonstrates an extensive understanding and analysis of: <ul style="list-style-type: none"> - relevant secondary sources (at least 5) from a variety of different sources - presents extensive relevant evidence-based information about the chosen element - includes all relevant references of secondary sources | Demonstrates a thorough understanding and analysis of: <ul style="list-style-type: none"> - relevant secondary sources (at least 4) from a variety of different sources - presents thorough relevant evidence-based information about the chosen element - includes most relevant references of secondary sources | Demonstrates sound understanding and analysis of: <ul style="list-style-type: none"> - relevant secondary sources (at least 3) from a variety of different sources - presents sound relevant evidence-based information about the chosen element - includes some relevant references of secondary sources | Demonstrates a basic understanding and analysis of: <ul style="list-style-type: none"> - relevant secondary sources (at least 2) from a variety of different sources - presents basic relevant evidence-based information about the chosen element - includes basic relevant references of secondary sources | Demonstrates a limited understanding and analysis of: <ul style="list-style-type: none"> - relevant secondary sources (at least 1-0) from a variety of different sources - presents limited relevant evidence-based information about the chosen element - includes all limited references of secondary sources |

| Communication 9WS | Communicates comprehensive understanding of scientific ideas, and related evidence for a particular purpose and audience using scientific units, language conventions and text types | Communicates well-developed understanding of scientific ideas to an audience using scientific units and language conventions | Communicates sound understanding of scientific ideas to an audience | Communicates basic scientific understanding to an audience | With guidance, communicates elementary scientific information to an audience |
|---|---|---|---|--|---|
| <p>SC5-9WS Presentation/Information</p> | <ul style="list-style-type: none"> - presents information with a clear structure and presentation format followed - logical and succinct content, supported by comprehensive and valid evidence and concise content - extensive use of scientific language throughout report | <ul style="list-style-type: none"> - presents information with a thorough structure and presentation format followed - logical and mostly succinct content, supported by well-developed and valid evidence and concise content - thorough use of scientific language throughout report | <ul style="list-style-type: none"> - presents information with a sound structure and presentation format mostly followed - mostly logical and succinct content, supported by sound and mostly valid evidence and relevant content - sound use of scientific language throughout report | <ul style="list-style-type: none"> - presents information with a basic structure and presentation format attempted to be followed - basic and some content included, supported by non-valid evidence and non-concise content - basic use of scientific language throughout report | <ul style="list-style-type: none"> - presents information with a limited structure and presentation format attempted/not followed - limited and or no content included, supported by non-valid evidence and non-concise content - limited use of scientific language throughout report |

| Question | Outcome | Mark |
|---|----------|------------|
| Part 3 PowerPoint Presentation/Pamphlet | SC5-16CW | /10 |
| Part 2 Element Diagram | SC5-16CW | /5 |
| Part 1 Research Sheet | SC5-16CW | /5 |
| Internet/References | SC5-5WS | /5 |
| Presentation/Information | SC5-9WS | /5 |
| Total: | | /30 |

Teacher Comment:

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