



# JOHN EDMONDSON HIGH SCHOOL

## Assessment Notification

Faculty: Science Course: Investigating Science Year: HSC12

Assessment Task: Depth Study- Secondary Source Investigation Task

Assessment Weighting: 30% Due: Term 2 Week 7 Date: 6/6/2023

Task Type: Hand in Task  In Class Task  Practical Task

### Outcomes assessed (NESA)

- > Analyses and evaluates primary and secondary data and information. (INS 11/12-5)
- > Solves scientific problems using primary and secondary data, critical thinking skills, and scientific processes. (INS 11/12-6)
- > Communicates scientific understanding using suitable language and terminology for a specific audience or purpose. (INS 11/12-7)
- > Use evidence-based analysis in a scientific investigation to support or refute a hypothesis (INS12-14)
  
- > Evaluate the implications of ethical, social, economic, and political influences on Science. (INS 12-15)

### Syllabus covered: Module 7: Fact or Fallacy?

The scientific process is the most powerful tool available for generating knowledge about the world. It uses evidence and measurement to find truth and highlight misinterpretations and misrepresentations. Science as a human endeavour is subject to human failings, which can contribute to fallacies, misinterpretations and, on occasion, fraud. For this reason, scientific processes attempt to compensate for human failings by questioning evidence, re-testing ideas, replicating results and engaging with peer review in order to evaluate research.

Students investigate claims through conducting practical and secondary-sourced investigations and evaluate these based on scientific evidence. They explore examples of scientific claims made in the media and investigate the benefits of peer review.

### Reading Between the Lines

**Inquiry question:** How does the reporting of science influence the general public's understanding of the subject?

Students:

- examine a contemporary scientific debate and how it is portrayed in the mainstream media, including but not limited to:
  - accuracy of information
  - validity of data

– reliability of information sources

- evaluate the use and interpretation of the terms ‘theory’, ‘hypothesis’, ‘belief’ and ‘law’ in relation to media reporting of scientific developments
- compare the difference in reporting between a peer-reviewed journal article and a scientific article published in popular media

### **Task Description/Overview**

This assessment task will require you to complete a Depth Study Secondary Source Investigation, create an informative poster and **submit your report through CANVAS or to D03 by 8:20 am**

You will complete a Depth Study Secondary Source Investigation to evaluate the scientific credibility of a movie by creating a poster that analyses the accuracy of the movie and the reliability of the movie as a scientific text.

#### The Depth Study

- Watch the film at home (2-3 hours)
- Pre-understanding of the science addressed in this film. This would include research and a rationale of what scientific concept the real science relates to. (5 periods)
- Analysing the film by creating a digital poster. (5 periods)

**The poster is not to exceed A1 in size.**

### **Detailed Assessment Task Description**

You will complete a Depth Study Secondary Source Investigation to evaluate the scientific credibility of a movie by creating a poster that analyses the accuracy of the movie and the reliability of the movie as a scientific text.

1. Choose a movie that portrays scientific concepts or events from the list provided. Each student needs to choose a different movie. Watch the movie at home.
2. Create a poster that evaluates the scientific accuracy and reliability of the movie. The poster should include the following sections:
  - a. Title: A creative title that reflects the movie and the focus of your poster (2 marks).
  - b. Introduction: A clear and thorough movie outline (3 marks).
  - c. Description: A detailed description of THREE scenes in the movie that portray a scientific event, idea, or concept. You should use a visual in your answer (5 marks).
  - d. Accuracy Analysis: A detailed **evaluation** of the accuracy of THREE scientific concepts or events portrayed in the movie. You must include specific examples of where the science was accurate or inaccurate and **explain** why they are accurate or inaccurate. Your response must refer to scientific theories, laws, or current research to support your evaluation. You should use graphs, diagrams, or illustrations to support your evaluation (15 marks).

- e. Discuss (Identify ethical issues and provide points for and/or against ) the implications of the movie's influence on science. Is it ethical that a movie knowingly portrays science incorrectly? (5 marks)
3. The poster should be visually appealing and easy to read. You can use images, graphics, and colors to enhance your poster (5 marks).
  4. The poster should communicate scientific understanding using suitable language and terminology for a specific audience or purpose using correct grammar, punctuation, and spelling.
  5. Bibliography: Include references to any sources of scientific evidence and facts used in your poster, using the APA 7<sup>th</sup> edition referencing system outlined on the school website. This should be on the back of the poster (5 marks).

**The poster is not to exceed A1 in size.**

## Marking Criteria

	5	4	3	2	1
Title				An insightful and creative title	A relevant title
Introduction			A clear and thorough introduction to the movie	A clear introduction	A basic introduction.
Description	A detailed and thorough description of THREE scenes in the movie that portray a scientific event, idea, or concept. Uses a visual in the answer.	A description of THREE scenes in the movie that portray a scientific event, idea, or concept.	A detailed and thorough description of TWO scenes in the movie that portray a scientific event, idea, or concept.	A description of TWO scenes in the movie that portray a scientific event, idea, or concept.	A description of ONE scene in the movie that portrays a scientific event, idea, or concept.
Accuracy Analysis – scientific concept/event 1	Exemplary evaluation that includes: An evaluation of the accuracy of one specific example in the movie. A detailed explanation of why it is accurate or inaccurate. Refers to a scientific theory, law, or current research. Uses graphs, diagrams, or illustrations in the analysis.	A thorough evaluation that includes: An evaluation of the accuracy of one specific example in the movie. A basic explanation of why it is accurate or inaccurate. Refers to a scientific theory, law, or current research. Uses graphs, diagrams, or illustrations in the analysis.	Three of the features of a thorough evaluation.	Two of the features of a thorough evaluation.	At least one of the features of a thorough evaluation.
Accuracy Analysis – scientific concept/event 2	Exemplary evaluation that includes: An evaluation of the accuracy of a second specific example in the movie. A detailed explanation of why it is accurate or inaccurate. Refers to a scientific theory, law, or current research. Uses graphs, diagrams, or illustrations in the analysis.	A thorough evaluation that includes: An evaluation of the accuracy of one specific example in the movie. A basic explanation of why it is accurate or inaccurate. Refers to a scientific theory, law, or current research. Uses graphs, diagrams, or illustrations in the analysis.	Three of the features of a thorough evaluation.	Two of the features of a thorough evaluation.	At least one of the features of a thorough evaluation.
Accuracy Analysis – scientific concept/event 3	Exemplary evaluation that includes: An evaluation of the accuracy of a third specific example in the movie. A detailed explanation of why it is accurate or inaccurate.	A thorough evaluation that includes: An evaluation of the accuracy of one specific example in the movie. A basic explanation of why it is accurate or inaccurate.	Three of the features of a thorough evaluation.	Two of the features of a thorough evaluation.	At least one of the features of a thorough evaluation.

	Refers to a scientific theory, law, or current research. Uses graphs, diagrams, or illustrations in the analysis.	Refers to a scientific theory, law, or current research. Uses graphs, diagrams, or illustrations in the analysis.			
Implications of the movie's influence on Science	A thorough discussion, providing points for and against, about the ethical implications of the movie's influence on science.	A good discussion, providing points for and against, about the ethical implications of the movie's influence on science.	A discussion, providing points for or against, about the implications of the movie's influence on science.	A discussion, providing a point for or against, about the implications of the movie's influence on science.	A point about the movie's influence on Science.
Poster Presentation	Includes all of the following: Suitable, well-presented layout. Suitable colour scheme, easy to read. Suitable font size for headings, subheadings, and text. Incorporated diagrams, screenshots, graphs, and/or equations to justify and support analysis and explanations.	Includes most of the following: Suitable, well-presented layout. Suitable colour scheme, easy to read. Suitable font size for headings, subheadings, and text. Incorporated diagrams, screenshots, graphs, and/or equations to justify and support analysis and explanations.	Includes three of the following: Suitable, well-presented layout. Suitable colour scheme, easy to read. Suitable font size for headings, subheadings, and text. Incorporated diagrams, screenshots, graphs, and/or equations to justify and support analysis and explanations.	Includes two of the following: Suitable, well-presented layout. Suitable colour scheme, easy to read. Suitable font size for headings, subheadings, and text. Incorporated diagrams, screenshots, graphs, and/or equations to justify and support analysis and explanations.	Includes at least one of the following: Suitable, well-presented layout. Suitable colour scheme, easy to read. Suitable font size for headings, subheadings, and text. Incorporated diagrams, screenshots, graphs, and/or equations to justify and support analysis and explanations.
Communication of scientific understanding	Communicates scientific understanding using suitable language and terminology for a specific audience or purpose. Always use the correct punctuation, grammar, and spelling.	Communicates scientific understanding using suitable language and terminology. Mostly use the correct punctuation, grammar, and spelling.	Communicates scientific understanding using simple language and terminology. Sometimes use the correct punctuation, grammar, and spelling.	Communicates scientific understanding using basic language. Sometimes use the correct punctuation, grammar, and spelling.	Scientific communication is limited.
Bibliography	Five correctly referenced resources, using APA, including the movie.	Four correctly referenced resources including the movie.	Three correctly referenced resources.	Two correctly referenced resources.	One correctly referenced resource.
Total	/45				

<b>Assessment Criteria</b>		
<b>Grade</b>	<b>Description</b>	<b>Mark Range</b>
<b>Outstanding (O)</b>	The student has an extensive knowledge and understanding of the content and can readily apply this knowledge. In addition, the student has achieved a very high level of competence in the processes and skills and can apply these skills to new situations.	<b>79.5-100</b>
<b>High (H)</b>	The student has a thorough knowledge and understanding of the content and a high level of competence in the processes and skills. In addition, the student is able to apply this knowledge and these skills to most situations.	<b>69.5-79</b>
<b>Sound (S)</b>	The student has a sound knowledge and understanding of the content and has achieved a good level of competence in the processes and skills.	<b>49.5-69</b>
<b>Basic (B)</b>	The student has a basic knowledge and understanding of the content and has achieved a basic level of competence in the processes and skills.	<b>19.5-49</b>
<b>Limited (L)</b>	The student has an elementary knowledge and understanding in a few areas of the content and still requires further work to achieve competence in the processes and skills.	<b>0-19</b>

### **Satisfactory completion of courses**

A course has been satisfactorily completed when the student has:

- Followed the course developed/endorsed by the NSW Educational Standards Authority (NESA)
- Applied himself/herself with diligence and sustained effort to the set tasks and experiences provided in the course.
- Achieved some or all of the course outcomes