Coonabarabran High School

TAKE HOME ASSESSMENT NOTIFICATION



Subject:	PHYSICS	Weighting:	20%
Teacher:	MOORE	Notification date:	19 May 25
Торіс:	NATURE OF LIGHT	Due date:	Friday 6 June, 9 AM

Outcomes to be assessed:

A student:

- conducts investigations to collect valid and reliable primary and secondary data and information PH11/12-3*
- selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media PH11/12-4
- analyses and evaluates primary and secondary data and information PH11/12-5*
- communicates scientific understanding using suitable language and terminology for a specific audience or purpose PH11/12-7
- describes and analyses evidence for the properties of light and evaluates the implications of this evidence for modern theories of physics in the contemporary world PH12-14*
- explains and analyses the evidence supporting the relationship between astronomical events and the nucleosynthesis of atoms and relates these to the development of the current model of the atom PH12-15*

You will be assessed on how well you:

- Identify key features of stellar spectra.
- Annotate three different Stellar absorption spectra and highlight relevant data.
- Justify findings using relevant data extracted from each stellar absorption spectra, researched theory, and calculations (describe how spectroscopy has been used to provide this information)
- Communicate the relevant links between Physics principles and the spectra using science specific terminology.

Task description:

- Conduct an analysis of three unknown stellar absorption spectra (provided) and prepare a case study for each star.
- Identify the key features and data on each absorption spectra that you have used to determine information about each star including surface temperature, composition, density, luminosity, relative size, stellar classification, colour, evolutionary cycle, age, rotational velocity, translational velocity.
- Explain how the data extracted from each spectrum has been interpreted, inferred, and used to obtain the above information (Physics principles, theories, equations). Include all calculations and any assumptions that have been made.
- Assess the validity, accuracy, and reliability of your findings.
- Include a bibliography.

- Three annotated stellar spectra.
- A case study reporting your findings for each Star (1-2 A4 sheets each, including calculations).
- Bibliography

Feedback (during and after task completion):

To inform future learning your feedback will consist of:

- Written annotations to the submitted model and design.
- Ongoing feedback during the assessment period.

NOTE: This is a compulsory assessment task. You are to make a genuine attempt at the task, and all protocols relating to plagiarism, collusion, and malpractice apply. You are required to submit on the above stated date. Failing to do so may result in the awarding of the grade of 0%. If students are unable to submit by the due date, they must provide a doctor's certificate and/or an Illness & Misadventure Form. All assessment submission protocols, found in the Assessment Handbook, will be followed.

Criter	ia:	Marks:
	edge and Understanding (PH12-14, PH12-15) Demonstrates an extensive knowledge and understanding of spectroscopy, properties of light, properties of stars, and the information that can be obtained from an absorption spectrum. Describes and analyses the key features of an absorption spectrum and H-R diagrams (qualitatively and quantitatively). Applies all relevant equations involving temperature, velocity, frequency, wavelength, energy associated with spectral lines. All relevant working is included, annotated and correct (where appropriate)	/20
Condu	Acting Investigations (PH11/12-3) Effectively conducts an investigation to collect valid and reliable secondary data from stellar absorption spectra. Selects and extracts secondary information from a wide variety of reliable sources acknowledges sources appropriately in a bibliography.	/5
Proces	sing Information (PH11/12-4) Selects appropriate qualitative and quantitative data and information to clearly demonstrate and explain concepts. Represents data using appropriate formats. Evaluates and/or improves the quality of data where appropriate.	/10
Analys	Sing (PH11/12-5) Clearly derives all trends, patterns and relationships in data. Assesses limitations in the data. Evaluates the relevance, accuracy, validity and reliability of data and suggests relevant improvements.	/5
	Presents a logical, well-organised and comprehensive case study of each absorption spectra. Annotations include relevant, clear and concise information. Detailed links between relevant concepts/principles/theories and the model are explained clearly. Selects and uses effective forms of written and visual communication. Selects and extensively applies scientific notations, nomenclature and scientific language to communicate in a variety of contexts.	/10