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Assessment Task Notification

Task Number	2	Task Name	Trigonometry Learning Journal
Course	Mathematics Advanced Preliminary	**Faculty**	Mathematics
Teacher	Prince	**Head Teacher**	Humphrys
Issue date	Tues, 7 May 2024	**Due date**	Mon, 10 June 2024 10.10am
Focus (Topic)	Discovering Trigonometry	**Task Weighting**	30%

Outcomes

MA11-8 - uses appropriate technology to investigate, organise, model and interpret information in a range of contexts

Spiral Bound Notes on Trigonometry
(https://drive.google.com/file/d/1bejTbyaOpR1gnnnOE-toi_uT4IMtwTKM/view?usp=sharing)

MA-T1 - Trigonometry and Measure of Angles **MA-T2** - Trigonometric Functions and Identities

MA11-4 uses the concepts and techniques of periodic functions in the solutions of trigonometric equations or proof of trigonometric identities

MA11-3 uses the concepts and techniques of trigonometry in the solution of equations and problems involving geometric shapes.

Task description

This assignment involves producing a learning journal that records your learning journey as you progress through the subtopic: 'Introduction to Trigonometry'.

The Learning Journal should include at least one entry for each lesson that is studied on the subtopic.

The Learning Journal should be written regularly over the course of the subtopic.

Further guidance can be found on the attached sheet: 'Learning Journal Frequently Asked Questions' or directly from your teacher.

Marking Guidelines

See Assessment task page 7 - Rubric

Mathematics Advanced Year 12

Trigonometry Learning Journal

Assessment Task

Discovering Trigonometry

Context

Students concurrently engage in learning for the subtopic, Investigating Trigonometric functions, whilst completing this assignment. Over the course of this assignment, they will participate in activities to develop knowledge of the concepts of Trigonometry and skills to solve a variety of problems.

Students will be required to submit their spiral bound notebook(Trigonometry 2024 Mathematics Advanced Prelim HSC RRHC Section 1 of 1) that includes the cloze passages they are to complete as homework autonomously.

Students will require approximately four hours of independent preparation in addition to class time spent on the topic and including time during class to discuss the notification and task requirements.

Discovering Trigonometry

Task number: 2	Weighting: 30%	Timing: Term 2

Outcomes assessed

MA11-8 - uses appropriate technology to investigate, organise, model and interpret information in a range of contexts

Spiral Bound Notes on MA-T1 - Trigonometry and Measure of Angles MA-T2 - Trigonometric Functions and Identities

MA11-4 uses the concepts and techniques of periodic functions in the solutions of trigonometric equations or proof of trigonometric identities

MA11-3 uses the concepts and techniques of trigonometry in the solution of equations and problems involving geometric shapes.

Nature of the task

This assignment involves producing a learning journal that records your learning journey as you progress through the subtopic: 'Investigating Trigonometry'. The assignment also takes into consideration the notes made by students during the delivery of the lessons on Trigonometry in their spiral bound notebook(Trigonometry 2024 Mathematics Advanced Prelim HSC RRHC Section 1 of 1).

The Learning Journal should include at **least one entry for each lesson that is studied** on the subtopic. It is recommended that you spend approximately 10 minutes each day capturing the key aspects of your learning. Entries should be approximately ½ a page (or equivalent) in length, including any diagrams and hyperlinks. When preparing your Learning Journal, focus on the quality and communication of your learning, not on quantity and presentation.

The Learning Journal will be submitted a week after the conclusion of the subtopic to allow some time to refine your submission, but the content should be written regularly over the course of the subtopic. The Learning Journal must be your original work and record your individual understanding of the 'Investigating Trigonometry' subtopic.

There is no set format for the layout of the Learning Journal. For example, it could be:

- a handwritten or digital diary
- a digital presentation
- an online blog
- a portfolio

The Learning Journal could include some or all of the following:

- a list of new terminology or key concepts used in the subtopic or with their meaning expressed in your own words
- a brief explanation of what the subtopic is about and why it is worth studying
- some historical facts about the development of Trigonometry
- notes on questions you have studied in class
- screen shots of applets or desmos activities you have explored with annotations explaining how it helped your learning
- reflections on what you are learning and how you are learning it
- Investigations of the types of problems you can now solve, for example:
    - problems you found difficult with annotations about how you corrected your errors
    - problems you are proud of solving
    - problems you found interesting with an explanation of why they were interesting
    - a problem you particularly feel helped you develop your understanding with an explanation of why it was useful

- a mind-map showing the links between concepts

- a written description of an occasion when extra help was needed, sought and obtained, and how this influenced your learning journey

- a short film explaining how to solve a problem

- links to internet resources you found interesting or helpful

- formulae you may need to memorise and examples of how to apply them

- a revision sheet for the subtopic that you have created

Further guidance can be found on the attached sheet: 'Learning Journal Frequently Asked Questions' or directly from your teacher.

Marking criteria

You will be assessed on how well you:

- keep regular, well organise notes of the content covered in class in the form of your spiral bound notebook(Trigonometry 2024 Mathematics Advanced Prelim HSC RRHC Section 1 of 1).

- use Trigonometry to solve familiar and unfamiliar problems.

- show a developing understanding of the topic, applying this understanding to the solving of familiar and unfamiliar problems.

- use appropriate technology to investigate, organise, model and interpret information.

- evidence adjustments in learning strategies and justify those adjustments.

- provide reasoning to support conclusions both in regard to the subtopic and your own learning.

Marking guidelines

- You will receive a copy of the marking guidelines that your teacher will use to determine your mark for the task. The marking guidelines will clarify the scope and expectations of the task.

Feedback provided

- The teacher will provide feedback outlining strengths and areas for improvement to build on knowledge, understanding and skills for future learning.

Learning Journal Frequently Asked Questions

What is a Learning Journal?

A learning journal is a personal record of what you are learning and how you are learning it.

Why write a Learning Journal?

Writing a Learning Journal encourages you to become actively involved in your learning. It helps you explore concepts and ideas in relation to your development and helps you to become an independent learner. Recording what you are learning helps deepen understanding of what you have learnt in the past. It can reveal things you do not yet understand and prompt you to do address this. Keeping a Learning Journal can help improve and change something you were not even aware of in the first place!

A Learning Journal can provide you with evidence that you are progressing. It allows you to freely express your own ideas and understanding and provides you with a safe place in which to be self-critical. A Learning Journal can also be a useful tool to aid you in your preparation for examinations and in particular, the HSC Mathematics examination. Recording the areas in which you experienced difficulty will help you set the direction for your revision.

What does a Learning Journal look like?

There is no set look to a Learning Journal and it is best to choose whatever structure or form works best for you. You may find that over time, your journal will start to change form as you become more comfortable with reflecting on your learning. This does not mean that you need to start again, but explain the adaption, and allow the journal to grow and change with your learning.

How should I begin writing a Learning Journal?

If you are unsure how to start, try:

- describing the experience you had in the classroom during the last lesson:
  - record the learing intention and success criteria for each lesson during the subtopic.
  - making notes about the activity you did each lesson, who worked with you and how they contributed to your learning
  - summarising the purpose of the activity
  - describing what helped or hindered your learning
  - listing the things from today's lesson that you already knew and things that were new to you

- listing the things you might do differently because of your experience in class today

- making a note of something that you need to follow-up on, revise or check with your teacher, explaining how you identified this

- using exercises done in class and at home to provide you with examples to illustrate your thoughts

What is 'reflection' in Mathematics?

Reflection is thinking for an extended period about your recent experiences and relating them to your past experiences. Reflection includes looking for things that are common to what we already know and for things that are different.

In mathematics, reflection is thinking about the new concepts you are learning and linking them to things that you have learnt in the past, either in previous mathematics lessons or in other subject areas. Reflection includes thinking about how you solved a problem. It also includes thinking about how you can solve a problem more efficiently or more elegantly in the future. Reflection is thinking about how you can use the new learning you have acquired in a variety of situations.

What if I was absent for a lesson?

If you were absent on a day with a mathematics lesson, enter 'absent' on that date in your journal. It is still your responsibility to catch up on the learning done in class, but that entry will appear later in your journal.

How will the Learning Journal be marked?

You have been provided with marking criteria guidance on the notification sheet that indicates the qualities that your teacher is looking for in your Learning Journal. Remember that it is not the form or structure of your journal that is being assessed but rather the evidence of your learning. This includes the accuracy and clarity of your mathematical communication, the work samples you supply as evidence of your learning and your annotations and reflections on those samples.

Marking Guidelines

The student:	Novice 0-1 marks per cell	Apprentice 2-3 marks per cell	Practitioner 4-5 marks per cell	Expert 6-7 marks per cell
uses the concepts and techniques of trigonometry in the solution of equations and problems involving geometric shapes. MA11-3	There is some evidence that Trigonometry has been used to solve simple problems.	There is evidence that Trigonometric methods are used accurately and efficiently to solve familiar problems.	There is evidence that Trigonometric methods are used with confidence to solve both familiar and unfamiliar problems. There is some attempt to compare the relative merits of solution techniques.	There is significant evidence that both Trigonometric methods and Identities are applied confidently to solve both familiar and unfamiliar problems. The relative merits of alternative solution techniques are compared where appropriate and arguments are communicated clearly.
uses the concepts and techniques of periodic functions in the solutions of trigonometric equations or proof of trigonometric identities MA11-4	Journal entries are descriptions of results rather than a sequence of learning steps. There is some evidence that the student identifies the Trigonometric function as periodic.	Journal entries are largely descriptions of results and there is some evidence of a sequence of learning steps. There is evidence that techniques of periodic functions in the solutions of trigonometric equations are understood. Identities are determined accurately and familiar practical problems are solved confidently.	Journal entries reveal a clear understanding of the meaning of the periodic functions. There is evidence of growth in understanding through a sequence of learning steps. Periodic functions, their graphs and solutions of trigonometric equations are determined accurately and are used competently to solve familiar practical and unfamiliar problems.	Journal entries reveal deep understanding of the meaning of the periodic function. There is evidence of independent learning and insights that extend beyond the experiences in the classroom. Periodic functions, their graphs, solutions of trigonometric equations and their proof are determined accurately and efficiently. They are used competently to solve familiar and unfamiliar practical problems. Understanding of the meaning and nature of the trigonometric identities is used to pose and/or solve theoretical problems.
Spiral Bound Notes on Trigonometry and Measure of Angles MA-T1 Trigonometric Functions and Identities MA-T2	Only descriptions of theoretical knowledge are evident. There is little or no evidence of reasoning.	Evidence of drawing on some relevant previous knowledge is present. There is evidence of some relevant reasoning.	There is evidence of a learning journey or pathway, including self-correction of error and planning for self-improvement. Evidence of solidifying prior knowledge and applying it to problem-solving is present.	There is evidence of adjustments in learning strategies, if necessary, and/or the consideration of alternative problem-solving strategies. Evidence of deep thinking about new concepts is present, including analysing ideas in mathematical terms and extending prior knowledge.
uses appropriate technology to investigate, organise, model and interpret information in a range of contexts MA11-8	There is some evidence that technology has been used to investigate and explore. No use of formal mathematical terms or symbolic notations to interpret information is evident.	There is evidence that technology has been used in some situations to investigate and explore. An attempt is made to use formal mathematical language to interpret information. Some use of formal mathematical terms or symbolic notation is evident in explanations.	There is significant evidence that technology has been used to explore and investigate a variety of different concepts. Formal mathematical language is used to share and clarify ideas. Many formal mathematical terms or symbolic notations are evident in explanations.	There is extensive evidence that technology has been used to explore and investigate a variety of different concepts. This evidence includes an example of a self-initiated exploration or the creation of an exploratory experience that uses technology.eg Desmos, Geogebra Formal mathematical language and symbolic notation is used to consolidate thinking, interpret information and to communicate ideas.