



Task Number	1	Task Name	Investigative Assignment
Course	Mathematics	Faculty	Mathematics
Teacher	Broadley, Tyson, Cabot, Whitehall.	Head Teacher	Humphrys
Issue date	21/3/2024	Due date	4/4/2024
Focus (Topic)	Geometric Representations. How accessible is your school?	Task Weighting	25%

Outcomes

Topic	Outcomes
	<p>Student;</p> <ul style="list-style-type: none"> develops understanding and fluency in mathematics through exploring and connecting mathematical concepts, choosing, and applying mathematical techniques to solve problems, and communicating their thinking and reasoning coherently and clearly MAO-WM-01 identifies and applies the properties of similar figures and scale drawings to solve problems MA5-GEO-C-01 solves problems involving the characteristics of graphs/networks, planar graphs and Eulerian trails and circuits MA5-NET-P-01

Task description

Our school is about to welcome a new student who uses a wheelchair to assist with their mobility. The principal has approached the SRC to seek their assistance with determining what modifications will need to be made to ensure accessibility for all.

You will investigate the necessary accessibility requirements and the existing pathways around your school to make recommendations about how we might improve accessibility.

Marking Guidelines

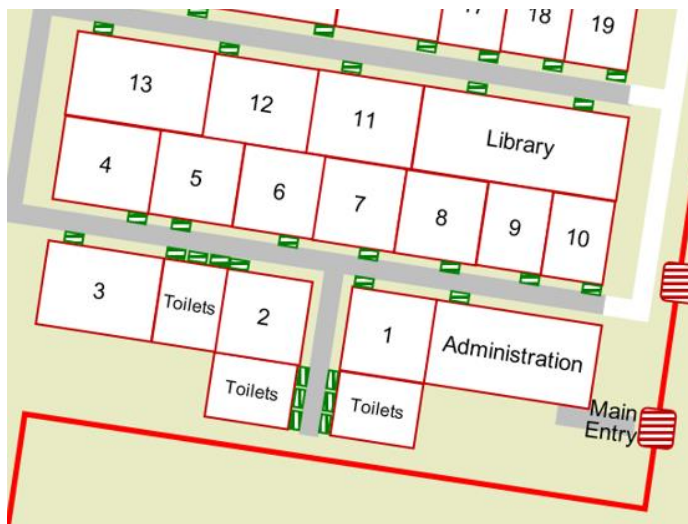
A marking rubric is provided at the end of this document

Section 1
Part A

Identifying Ramps in your School



Above are 2 photos of ramps in our school. Accurately mark on the school map where these are located. (2 Marks)



Part B

Create a scale drawing of a ramp

Choose one of the ramps. Make a neat 2D scale drawing of the ramp from the side view. Show clearly the scale used. Show any calculations you have made in creating the drawing. Use a ruler. Label the length and the height on your diagram.

Put Drawing here (3 marks)

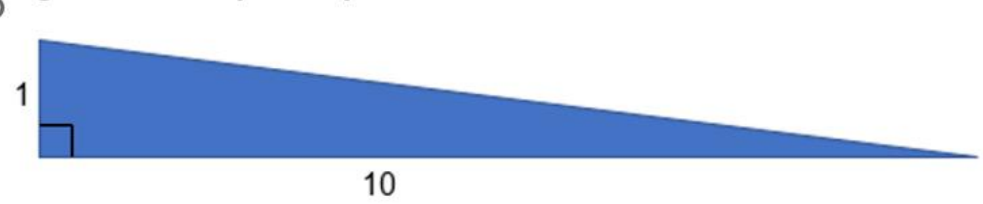
Part C

State the length and height of your ramp. Length = Height =
(2 Marks)

Part D Comparing Ramps

Ramps are required for accessibility where steps or kerbs exist. Ramps are measured using the ratio of the perpendicular height to the horizontal distance. For example, the ramp below would have a ratio of 1:10.

Figure 1 – example ramp



Different ratios are required depending on where the ramp is placed. This information can be seen in the table below.

Table 1 – Australian Standards for ramps, landings, and walkways

Ramp type	Ratio (maximum steepness)
Kerb ramp	1:8
Step ramp (for 1 step)	1:10
Stair ramp (flight of stairs)	1:14

Consider the ramp in your scale drawing in Part B.

Does it satisfy the Australian Standard? Justify your answer with appropriate calculations.
(2 marks)

Section 2 Movement throughout the school

Part A

The SRC are collecting “ a day in the life of a student “ information. You will select a day of your timetable, sketch your movements on a map, then convert this into a network diagram.

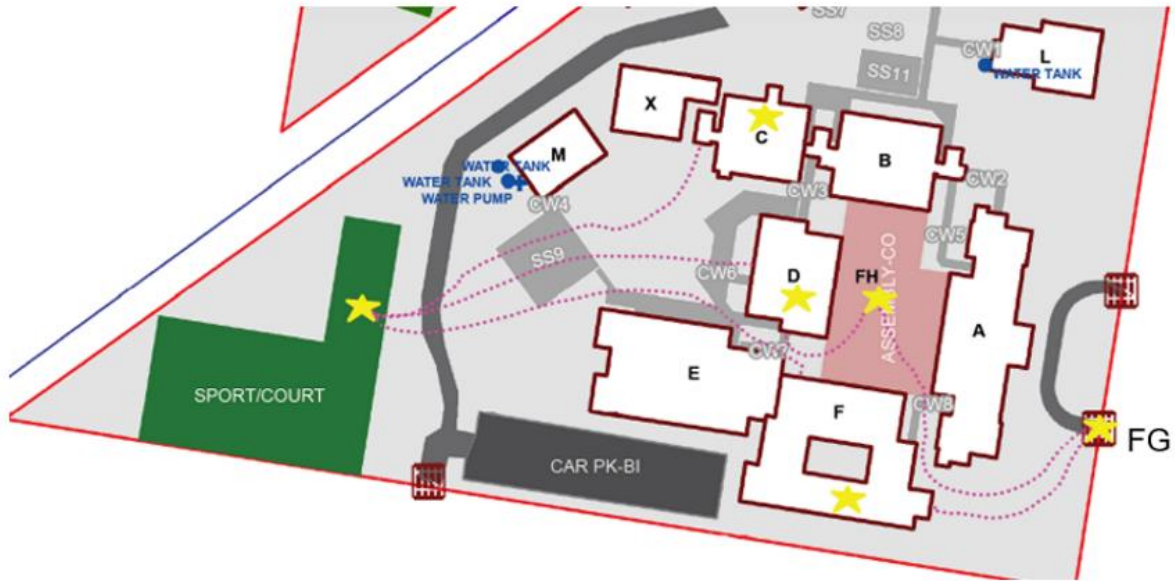
Select one day of your timetable. For example, Thursday B Week.
List the room number of your classes (1 mark)

Timetable day -

Roll call -	Lesson 4 -
Lesson 1 -	Lesson 5 -
Lesson 2 -	Lesson 6 -
Lesson 3 -	Lesson 7 -

Part B

This is an example of a diagram that another student made at a different school



Draw the path you take from when you enter the school to when you leave on the map below. If you take the same path more than once do not repeat that path. (2 marks)



Part C

Convert to a network diagram

Construct a network diagram that shows the different rooms of each of your lessons are in, as well as any major areas (such as the Koala quad or Canteen) that you pass through on your way to each lesson.

Each building or major area is a vertex.

Each edge represents the path that you take to get between each building or major area.

(3 marks)

Year 9 Mathematics Assessment task 1 2024 Marking Rubric								
1 A (1.)	1 A (2.)	1 B (3.)	1 C (4.)	1 A (5.)	2 A (1.)	2 A (2.)	2 A (3.)	2 B (4.)
Photos of 2 ramps (2 mark)	Ramp 1 Length = Height = (1 mark)	Neat scale drawing of 1 ramp includes measurements and scale with relevant calculations. Made with ruler (3 marks)	Correctly states Yes or No for both ramps (2 marks)	Correctly states Yes or No with calculation (2 marks)	State timetable day and includes photo/image (2 marks)	Path correctly shown on map (2 marks)	Same path not repeated (1 mark)	Network diagram fully correct for timetable (3 marks)
Photo of 1 ramp (1 mark)	Ramp 2 Length = Height = (1 mark)	Neat scale drawing of 1 ramp includes measurements or scale or both but not with relevant calculations. Made with ruler (2 marks)	Correctly states Yes or No for one ramp (1 mark)	Correctly states Yes or No without calculation (1 mark)	State timetable day (1 mark)	Path shown with some error (1 mark)		Network diagram partially correct for timetable (2 marks)
		Attempt at scale drawing, multiple errors (1 mark)						Limited attempt Network diagram (1 mark)
/2	/2	/3	/2	/2	/2	/2	/1	/3

Total /19