Year 11 Essentials
Practical Application 2 - Baldivis Blitz

Baldivis Secondary College

Score: ___/72

Weighting: 5%

Name: _____

Student Spaces

Project Scope

Year 11 Essentials Mathematics students have been given the task to re-design an existing area of Baldivis Secondary College to make it more inviting for people to spend time in. This area is outdoors and located at the rear of the school grounds. The designs will be put to a vote amongst Year 11 students and the most popular design will be built. If this project is done well by you, there may be opportunity for Year 11 students to design an outdoor space on school grounds for your year group to use in Year 12.

As this is an outdoor area, there are items need to be included:

- Seating
- Shade, (trees, shade cloth, etc)
- Wind breaks (walls, plants)
- Plants (grass, flowers, etc)
- Ground covering, (cement, paving)

You need to include these features in your garden. How you do this is up to you. The requirement is that it must all fit in the designated area.

You will need to show all your working out and calculations where required to earn all available marks.

You have a total of 4 lessons to complete this task and will be required to submit this assessment task at the end of the final lesson. If you misplace this copy, it is your responsibility to print off a copy of this task from your Connect Class.

Task 1 – Viewing the Area

Measurements

When viewing the area there will be measurements that need to be recorded. Have a good look at the items existing in the area. Make details of any features you would like to keep, and don't forget to list what you would like removed.

Dimensions of the Garden Area

Measure the space that has been set aside. Be sure to measure all the sides.

Side 1 Length: _____ Side 2 Length: _____

Side 3 Length: _____ Side 4 Length: _____

Diagram of Garden Area

Draw a diagram of the garden in the space provided. Label each side with its length. Include major existing features.

What is the total area of the garden? Show all your working out and calculations.

Items for Removal

List the items that you would like to have removed from the space.

Garden Planters for Removal

The School Board would like the planter boxes removed. They are also offering to pay for the removal, so you need to work out the total volume of material that needs to be removed so that they know what skip bin to order.

You will need to record the measurements of the length, width, and height of each planter in metres.

Length: _____ Width: _____ Height: _____

To calculate the volume of each planter, use the formula:

$$Volume = Length \times Width \times Height$$

Calculate the total volume of material that needs to be removed. The unit of measurement is cubic metres, (m^3). Don't forget to include it. This is the unit of measurement that will help determine what skip bin to hire.

What assumptions did you make about the planter box for your calculations?

Task 2 – Design

Required Features

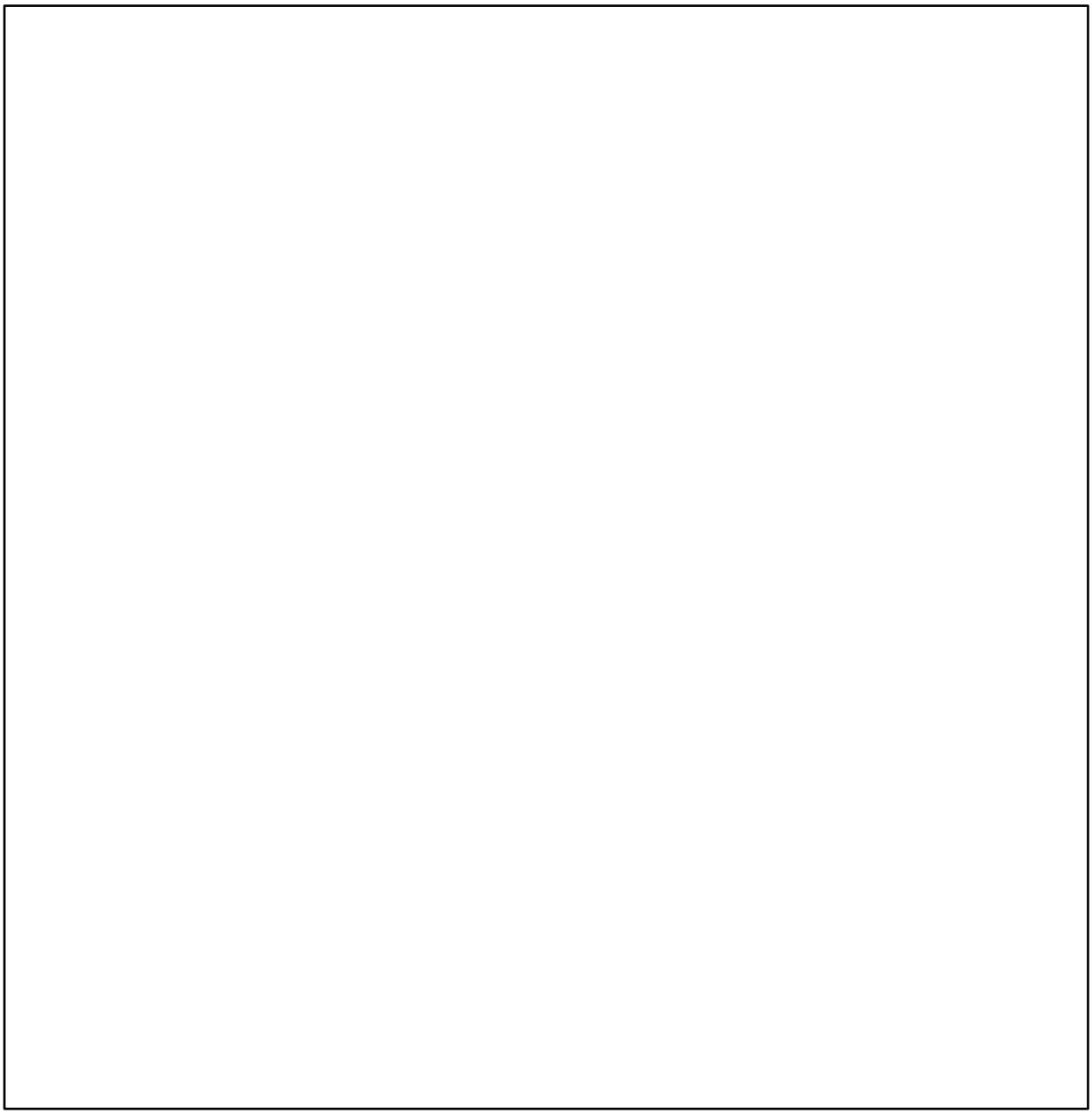
These are the features for the outdoor area that must be included.

- Seating, (It does not need to be benches.)
- Shade, (trees, shade cloth, pergolas)
- Wind breaks (walls, plants)
- Plants (shrubs, trees, flowers,)
- Ground covering, (cement, paving, grass)

Include measurements of how large these items will be. If it is a plant, research how large it will be when it is fully grown to ensure that it is an appropriate size. A recommended site for this information is http://www.plants4perth.com.au.

Cost of materials for other features, try https://www.bunnings.com.au/ and

Plan your design in the space provided. Leave enough space for people to move around.



Task 3 – Budget

Materials

Keep a record of prices of your chosen features and materials used. You will be provided with a prepared Excel Spreadsheet which will help in calculating the final costs. You will need to submit a list of features and their prices as well as the Excel Spreadsheet when you submit your design.

No project goes ahead without a budget so no matter how wonderful your design is, a budget is needed. If you need a bigger table for more items, please let your teacher know.

Item	Number	Supplier	Cost
		Total	

Task 3 – Budget

Labour

Using the Microsoft Excel spreadsheet, (access this from your Essentials Maths Connect Class), determine the estimated cost of labour for building your garden design. Match the roles of the trades to the tasks that need to be done. Copy the details into this table. If you need a bigger table for more items, please let your teacher know.

Trade	Job	Rate	Cost
		Total	

Task 4 – Submission

Your task is to produce a one A4 page letter to convince the BSC community that your design is the one to build.

Explain how you meet the requirements for the design. For each requirement give an advantage of your chosen materials and fittings. Compare it to existing options available at BSC. Include the details of the final cost of the project.

Marking Guide

Item	Marks	Marks Available
Task 1		
Dimensions of the student space		4
Calculation of the area of student space		2
Diagram		
- Labelled		1
- Measurements		1
- Ruled lines		1
- Pencil Used		1
Items for Removal		
- Measurements		3
- Calculation of volume of one planter box		2
- Total volume of material removed		1
- Assumptions		2
Task 2		
Diagram		
- Labelled		1
- Measurements		1
- Ruled lines		1
- Pencil Used		1
- Legend		1
- Consideration given to movement of people		1
- Required features		5
- Presentation		3
Task 3		
Items clearly listed		1
Suppliers named		1
Costs calculated		5
Total cost of materials calculated		1
Correct trades selected		3
Providers named		3
Costs calculated		5
Total cost of labour calculated		1
Task 4		
Report		
- Introduction		2
- Benefits		5
- Explanation of choices made		5
- Included budget calculations as evidence		3
- Demonstrate how design requirements have been met		5
Total		71