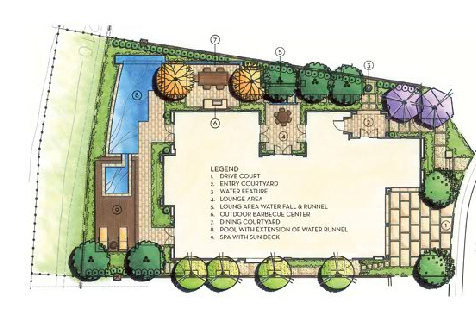
**Project 00**



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**Backyard Design Project**

**Many students enjoy watching home and landscape design shows. So many of our students have a passion for art and enjoy expressing themselves creatively. This project marries elements of geometry, art and technology and allows your students to realize how important math is in design and landscaping.**

**GOAL\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Working individually, students will create a backyard landscape design proposal for a potential customer. Students are to make a scale drawing which will use specified geometric shapes and include specific design elements. Students will calculate areas of specified regions of the design. Then using a predetermined material with a predetermined cost (teacher chooses), students will create a budget using Excel to propose to their client.

**Math Skills to Highlight\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Making a scale drawing
2. Dimensional analysis and unit conversion
3. Areas of polygons, circles, and composite figures
4. Calcualting residual areas by subtracting known areas
5. Using a compass
6. Creating an Excel spreadsheet
7. Inputting and building formulas in Excel
8. Gaining an appreciation of the importance of mathematics in design

**Special Materials/Equipment\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Compass
2. Computers with Excel program
3. Print out of materials used collectively by the class in the budget: garden dirt, decking material, and sod.

**Development\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

This project would best be introduced after students have studied polygons and circles and their areas. Students should be proficient in calculating the areas of triangles, quadrilaterals, circles or half-circles, composite figures and residual areas. Students also need to be able to convert dimensions of inches, feet, and yards. Plan on completing this project over three weeks with benchmark due dates for students to submit rough draft of design and calculations. Designate four class periods of time to introduce the lesson, check in with students, build the Excel spreadsheet and share projects. Allow a partial period to introduce the lesson. Designate two partial class periods to full class periods for students to peer edit and receive feedback from the teacher regarding their design proposal. The day before the projects are due, spend the class period teaching the students how to build an Excel spreadsheet for their budget. Allow a final partial period to conclude the lesson and share projects with the class.

**•** Begin this project by showing the students part ofan episode of “Going Yard” on DIY or some other landscape design show. Have the students record on a piece of notebook paper instances when math was used or discussed in the show either with respect to design or budget. At the end of the clip or episode have students share what they recorded. Discuss how math is used in landscape design. This will help excite and inspire the students for their project.

**•** Tell the students they are to design abackyard and create a budget to propose to a client. Distribute a copy of Student Guide 00.1, graph paper on Data Sheet 00.2 to students, and Data Sheet 00.4. Review the information with the students and state the timeline for the project. Tell the students they will have 3 weeks to complete the project and assign the due date for the rough draft and the completed project. Tell the students they must bring the competed project in on a specific day to work as a class on the budget with Excel.

**•** Emphasize the elements of design that must be included in the design: decking area, grass area, water feature area (can be pool, fountain, pond etc.), garden area. Also emphasize four DIFFERENT shapes must be used and the students must include a circle or half circle. Reiterate the instructions a scale must be included, and the drawings must be drawn to scale with dimensions labeled. Also encourage creativity and reinforce drawings must be colored.

**•** Encourage students to include additional areas and items as their design creatively produces. Students may include any other areas (trampoline, fire pit, gazebo, play structure, basketball court) and any other design elements that have unit costs (heat lamps, flowers, patio furniture, trampoline etc.) For each additional item, students need to bring a print-out from an on-line source or retailer of the item description and cost of the item to input into the budget.

**•** Students are to use Data Sheet 00.4 to record the dimensions of their design areas and area calculations. Reinforce the students must show all work for their calculations.

**•** For the decking material, garden dirt and sod, tell the students they do not need to print out those materials and costs. Rather, the class will be using the same material to build the budget from. Show the students the materials and costs associated with the items. For example in the sample budget below the following materials were used:

1. Dirt: Found at The Home Depot - $398/pallet that covers 500ft2
2. Decking material: Found at The Home Depot - $62.36/ box of (11) 1ft x 1ft deck tiles
3. Sod: Found at The Home Depot - $7.97/bag that covers 8ft2

**•** Distribute a copy of Data Sheet 00.3. This is a basic concept backyard design. Instruct the students to find the area of the regions needing decking material, garden dirt, and sod. Students are to work this problem for homework and bring it to class the next day to discuss.

**•** On the day the students bring in their drafts and Data Sheet 00.4 for review, group the students into groups of 3- 4. Students are to write feedback comments on sticky notes and attach it to the draft. As students are working in small groups, move around the room providing individual feedback to students regarding their draft. On the second day of review, students may spend time making edits and revisions to their draft and start their final draft.

**•** The day before the project is due, instruct students to bring their devices (computers) to class. If that is not an option then bring school computers into the classroom (one per student) or take students to the school computer lab the day this part of the project will be completed. Make sure you have the capability to project on an Active Board or Smart Board Excel and the template of the budget you will be building.

**•** Build an Excel spread sheet as a class to calculate the total cost of each student’s backyard design proposal. Instruct the class how to format and create formulas in the spreadsheet. Students will input the areas of their regions. Using formulas inputted into the spreadsheet, calculate how much of each material will be needed. With inputted formulas, find the cost for each garden area, decking area, and lawn area using the standard costs for dirt, decking material and sod. Then using formulas, the students will find a total for their backyard design proposal. An example spreadsheet is provided below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Backyard Design Budget Proposal** | | | |  |
|  |  |  |  |  |
| **Item** | **Cost Per Unit** | **Area** | **Number of Units Needed** | **Total Cost for Item** |
| Sod | $398.00 | 1182 | 2.364 | $940.87 |
|  |  |  |  |  |
| Garden Dirt | $7.97 | 121 | 15.125 | $120.55 |
|  |  |  |  |  |
| Decking | $62.36 | 1608 | 146.1818182 | $9,115.90 |
|  |  |  |  |  |
| Fountain | $1,000.00 |  | 1 | $1,000.00 |
|  |  |  |  |  |
| Pool | $24,000.00 |  | 1 | $24,000.00 |
|  |  |  |  |  |
| Heat Lamps | $325.00 |  | 4 | $1,300.00 |
|  |  |  |  |  |
| Patio Set | $3,700.00 |  | 1 | $3,700.00 |
|  |  |  |  |  |
| **TOTAL** |  |  |  | $40,177.32 |
|  |  |  |  |  |

**Wrap-Up\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

On the day the project is due, allow a partial class period for students to share their project design and budget proposal. Allow time for students to share their thoughts on the project: what was meaningful in the experience and what was a challenge.

**Extension\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**•** Instead of students having an unlimited budget, propose a set budget to the students. Students must create their backyard design proposal to meet the constraint of the budget. With this extension, students would need to be introduced to building a spreadsheet in Excel prior to designing their backyard.

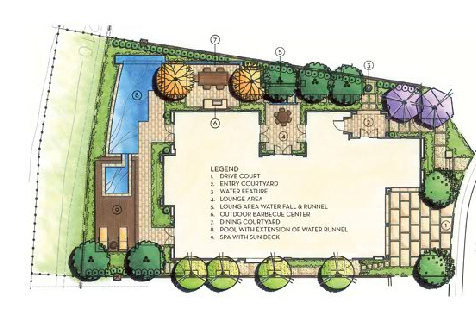
**•**Teach students other functions of Excel such as ROUNDUP function to better model the Number of Units Needed.

**•** Have students mount their presentations and material lists to design boards for more formal presentations.

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Draft Due Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_Project Due Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_

STUDENT GUIDE 00.1

**Backyard Design Project**



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**Situation/Problem**

Working individually, you are to create a landscape design proposal for a potential customer who wants you to design their backyard. Using Data Sheet 00.2, you are to create a colored scale drawing which will use specified geometric shapes and include specific design elements. You must include in your design four different shapes and you must include a circle or half-circle. In your backyard design you must have areas designated for a deck, a garden, a water feature (pool, fountain, pond etc.) and grass/sod. You will calculate areas of the regions of your design including but not limited to: deck, garden, water feature and grass area using Data Sheet 00.4. Then using a predetermined material with a predetermined cost, you will create in class a budget using Excel to propose to your client. You will need to research online the cost to build your water feature and print out that cost analysis and bring that to class the day we create our budget. You may add in any additional items that have a unit cost. Research these items online and print out their descriptions and costs. Be creative and include in your design any additional items such as vegetation, recreational areas/equipment, lawn or deck furniture. After finishing your project, you will show it to the class and explain your design and final cost analysis.

**Possible Strategies**

1. Watch “Going Yard” on DIY with the class and make a list on a piece of notebook paper all the times you hear math referenced and in what context. Also use this time to brainstorm ideas for your own design.
2. Make a list of all the items you want to include in your design and start researching those items
3. Print out all materials and costs associated with them that they will use. Make sure the dimensions are listed on any items that will occupy area (pool, fountain, trampoline, gazebo, firepit).
4. Be creative and add as many elements of design to make your design appealing (heat lamps, plants, vegetables, trees, stones, furniture, outdoor fireplace etc.).

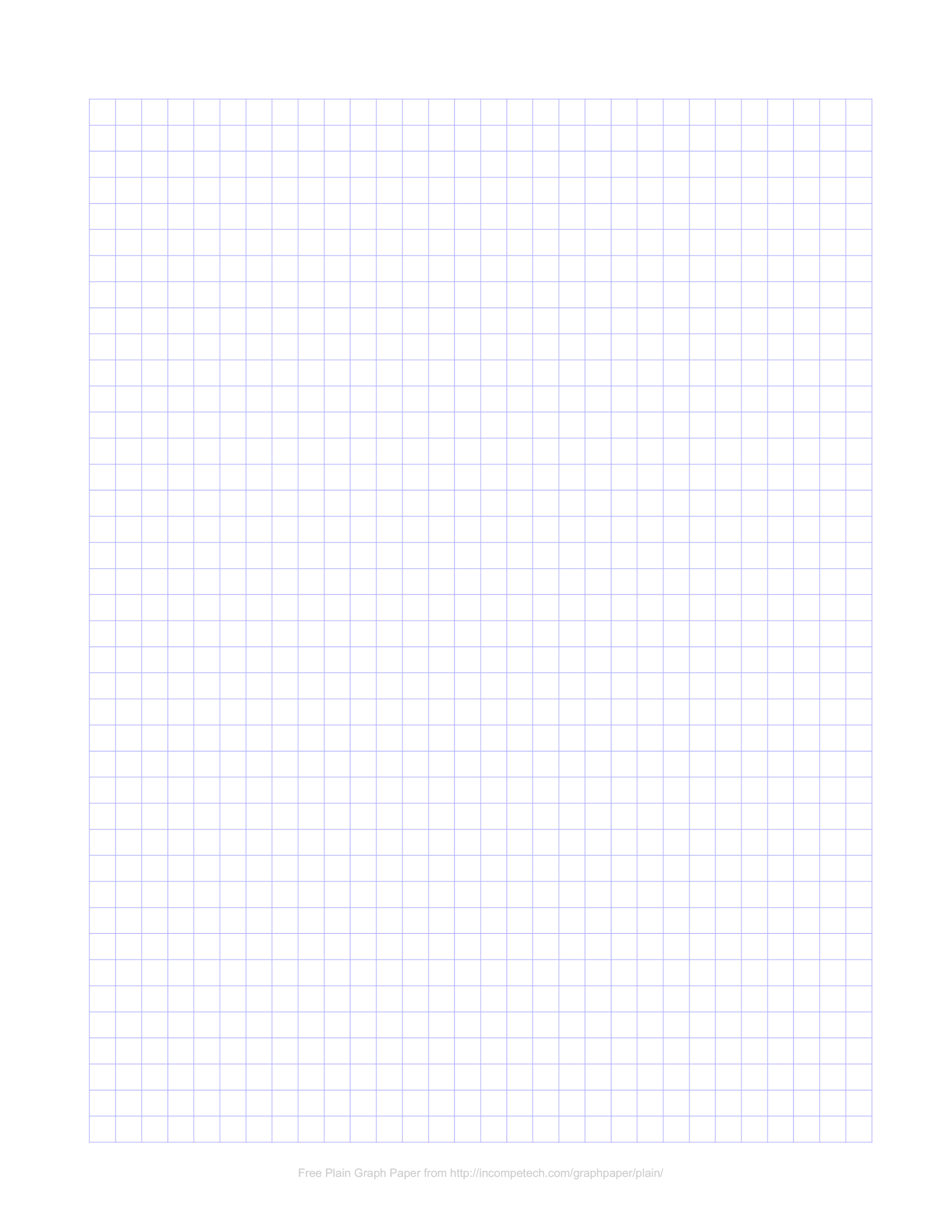
**Special Considerations**

1. Practice calculating areas with Data Sheet 00.3. This is an assignment and is due:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Once you have determined all the areas you are going to include in your design, convert any dimensions of features you are using to the same unit of measure you are using to scale your design.
3. Carefully draw to scale your areas and label each area (garden, lawn, deck etc.).
4. Label all dimensions of each area on your drawing.
5. Calculate the areas of each region and record on Data Sheet 00.4.
6. Calculate the area for sod as a residual area in which you add up all the areas of the backyard and subtract that sum from the total area of your backyard.
7. Create a pencil draft using datasheet 00.2 with all dimensions labeled and areas calculated on Data Sheet 00.4 by the rough draft due date. Feel free to make additional copies of Data Sheet 00.2 for edited revisions of your design.
8. Bring the printouts of all materials and elements you added to your project with your final edited design to class the day before the due date.
9. If you are bringing your own device to create the Excel spreadsheet for your budget, make sure your devise is charged.
10. Remember to save changes as you are creating the cost analysis document in class. Print out a copy of your final budget proposal and attach it to your design.

**To Be Submitted**

1. Your completed final scaled drawing of your Backyard Landscape Design.
2. A printout of all the materials/items/elements used in your design with dimensions and costs clearly identified.
3. Data Sheet 00.4 filled in with all work for calculations shown.
4. A printout of your final budget for your project created on Excel.

**Notes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



Data Sheet 00.2

Data Sheet 00.3

<-------------------------------------------------------------------------60 feet----------------------------------------------------------------------🡪

🡨----------------------------22 feet-------------------------------🡪

A

GARDEN

DECK

GRASS/SOD

🡨---------10 feet--------🡪

🡨---------------------------------------------------------40 feet---------------------------------------------🡪

🡨--------------------------20 feet----------------------------🡪

15 feet

**Calculate the following:**

1. **Area of Deck 3. Area of Grass/Sod**
2. **Area of Garden**

Data Sheet 00.4

**Area Calculations**

1. **Deck**

What is the shape of your deck? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the formula you need to calculate the area?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the dimensions you need? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the area of your deck? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Garden**

What is the shape of your garden? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the formula you need to calculate the area?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the dimensions you need? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the area of your garden? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Water Feature**

What is the shape of your water feature? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the formula you need to calculate the area?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the dimensions you need? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the area of your water feature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Lawn/Sod**

What is the sum of the areas of your regions that will not be sodded? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the area of your entire backyard?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the area of the residual region that will be covered with sod\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Other Area \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

What is the shape of your other area? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the formula you need to calculate the area?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the dimensions you need? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the area of your other area? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Other Area \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

What is the shape of your other area? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the formula you need to calculate the area?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the dimensions you need? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the area of your other area? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Other Area \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

What is the shape of your other area? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the formula you need to calculate the area?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the dimensions you need? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the area of your other area? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Other Area \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

What is the shape of your other area? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the formula you need to calculate the area?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the dimensions you need? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the area of your other area? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_