

Block: \_\_\_\_\_

**UNIT SQUARED/CUBED 101*****Architectural 3D Building Project***

Congratulations on becoming a new student designer, architect, and builder!

**Goals:**

- To create a detailed 3D model of a house, building, or structure
- To calculate the surface area of the 3D model (e.g., painted walls, glass surfaces, deck, etc.)
- To calculate the volume of the room's furnishings (e.g., vases, swimming pools, etc.)

**Project Requirements:**

The 3D model is to include the following:

- Minimum of 2 levels
- Minimum of 2 rooms on each levels
- Dimensions will not exceed 18 inches in length and or width. Height should not exceed 24 inches
- Detailed furnishing\*inside. Minimum of 3 items per room. Volume calculations for the 3 items per room must be included.
- Detailed furnishing outside. Minimum of 3 items placed outside.
- Model should be designed in a way that viewer is able to have visual access to every room clearly

*\*To include a pool, tub, vase, etc. and clearly calculate/display the volume of the object.*

**Group Size:** Create groups of 3 within your block.

**Materials:** Suggested items to collect for this project may include:

- Boxes (various sizes), containers, etc.
- Toilet paper rolls, yarn, branches, wood sticks, etc.
- Colour card stock, origami paper, etc.
- Recyclable items to decorate and furnish the inside and outside

**Surface area & Volume Calculations:**

- Diagrams with the room's layout must be properly labelled in centimeters. Answers must be rounded to the nearest tenths and labelled with proper units.
- Calculations must be clearly stated.
- Diagrams and calculation must be presented on a poster board

**Final Project Results:**

1. A 3D house model
2. A poster with the name of the house, a brief explanation of how your group was inspired to build this house, surface area and volume calculations accompanied by matching diagrams
3. Model will be displayed for others to view and the most popular 3D house model will be selected

Due Date: \_\_\_\_\_

## Evaluation Rubrics

The project will be evaluated using the following rubrics.

Requirements	0	1	2	3	Subtotal
Layers in the house (Minimum of 2 levels)	Not meeting requirements	Meeting requirements			
Number of rooms (Minimum of 2 rooms on each level)	Not meeting requirements	Meeting requirements			
Dimensions of 3D Home (Maximum dimensions: 18 in by 18 in by 24 in)	Exceed the specified dimension limits	Meeting within the specified dimension limits			
Easy viewing of the interior of the 3D home	<i>Not viewable</i> from the outside	<i>Difficult to view</i> the interior of the house	<i>Somewhat easy</i> to view the interior of the house	<i>Easy</i> to view the interior of the house	
Exterior Furnishing (Minimum 3 pieces)	Not meeting the requirements	Meeting requirements			
Interior Furnishing (Minimum 3 pieces per room)	No furnishing was placed in rooms	Did not meet the minimum requirements for number of pieces of furnishing	Meeting the minimum requirement for the number of pieces of furnishing		
Volume Calculation for interior furnishings	None were given	Calculations were done but answers are incorrect	Calculations were done but some mistakes occurred	Calculations are all correct and rounded correctly	___ x 3 =
Diagrams (e.g., nets) of each room (Minimum of 4 rooms)	None were given	<ul style="list-style-type: none"> <li>▪ Diagrams are <i>poorly</i> drawn</li> <li>▪ Diagrams' measurements are not measured accurately</li> </ul>	<ul style="list-style-type: none"> <li>▪ Diagrams are <i>mediocrely</i> drawn</li> <li>▪ Some diagrams' measurements are not accurate</li> </ul>	<ul style="list-style-type: none"> <li>▪ Diagrams are <i>well</i> drawn</li> <li>▪ Majority of diagrams' measurements are accurate</li> </ul>	___ x 3 =
Surface Area Calculations (Minimum of 4 rooms)	None were given	<ul style="list-style-type: none"> <li>▪ Calculations were completed but were not accurate</li> </ul>	<ul style="list-style-type: none"> <li>▪ Calculations were completed but some mistakes occurred</li> </ul>	<ul style="list-style-type: none"> <li>▪ Calculations were completed correctly with good accuracy</li> </ul>	___ x 3 =
Poster Display accompanying the 3D Model	No poster display was presented	<ul style="list-style-type: none"> <li>▪ Poster was poorly designed</li> <li>▪ Poster was unable to communicate the 3D house layout and show the calculations clearly</li> </ul>	<ul style="list-style-type: none"> <li>▪ Poster was designed but more improvements are needed</li> <li>▪ Poster was able to communicate the 3D house layout and the calculations but improvements are needed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Poster was designed well</li> <li>▪ Poster was able to communicate the 3D house layout and the calculations clearly</li> </ul>	___ x 2 =
Creativity	Not much creative thought was put into project	Minimal amounts of creative thoughts were put into project	Some creative thoughts were put into the project	Lots of creative thoughts were put into the project	
				<b>Total marks out of</b>	<b>/45</b>

Visual Examples: Not limited to the following...

