CREATING 3D NETS
MINI IN-CLASS ASSIGNMENT

Essential Learning Outcome: student is able to recognize, construct and assemble a 3D net object

Instructions: You are to construct a net for a 3D object that will meet the following criteria below. This 3D model will be displayed in our classroom.

Criteria (grading):

- **Format:** create a label tag that includes your name, name of 3D object, significance of objects name; and the physical attributes (# of faces, # of edges, # of vertices; types of shapes seen and how many shapes)
- **Mathematical Procedures-** complete 3D nets independently without teacher assistance
- **Construction of net-**net is constructed and assembled accurately and is able to hang freely with label tag
- **Physical Attributes of 3D net object**- all answers of the physical attributes to the 3D net are accurately answered

Materials Needed:

-scissors
-markers
-rulers
-string
-gluestick
-3D net object

Procedure:

1. Colour and design your 3D net shape (15-20 minutes)
2. Cut out your 3D net shape carefully using scissors (20 minutes)
3. Using a glue stick; fold, assemble and glue together your 3D shape. (15 minutes)
4. Create a '_Label Tag'_ for your 3D object that includes the following (15 minutes)
    i)   an appropriate title for your 3D object and
    ii)   significance of objects name (eg what does the name of a cube tell you about its shape?)
    iii) your name
    iv)   physical attributes for your shape (face, vertex, edge, and how many shapes, and type of shapes seen)
5. Write out the appropriate headings for your 3D objects _physical attributes_ (eg Number of Faces, Number of Edges, Number of Vertices, how many shapes, type of shapes)
6. Write out the answer to the physical attributes of your 3D net object onto the _Label Tag_
7. Place your _Label Tag_ onto your 3D object that can be easily seen.
8. Attach a string to your 3D object so it can be hung in the classroom.

MATH RUBRIC- Creating 3D Nets

REPORT ELEMENT / *ESSENTIAL LEARNING* / ASSESSABLE ELEMENT	DESCRIPTORS					K&U	INV	COMM	REF
	E	D	C	B	A				
	The student work typically demonstrates evidence of the following:								
Format (e.g Label Tag that includes title, headings, underlined, student names, neatness) **Communication**	**Disjointed communication through:** - missing or inaccurate title describing 3D object - missing headings or headings don't match - missing name of student/s - missing or unclear diagrams with limited or no label - format very difficult to read		**Sound communication through:** - broadly described title describing 3D object - most headings used appropriately - appropriate underlining of headings - clearly visible name of student/s - appropriate diagrams with accurate labels - legible or readable format		**Clear and accurate communication through:** - accurate and detailed title describing 3D object - all relevant headings used - appropriate underlining of headings - clearly visible name of student/s - neatly presented 3D object with all necessary items included and labelled accurately - 'easy to read' format				
Mathematical Procedures **Knowledge and Understanding**	*Shows very limited knowledge and understanding of assignment:* -Very minimal use of mathematical procedures to reflect a vague understanding of the assignment -teacher assistance was required when constructing 3D net objects		*Shows satisfactory knowledge and understanding of assignment:* -Use of concepts and procedures to reflect an understanding of the lab topic. -Some teacher assistance required when constructing 3D net objects		*Shows comprehensive knowledge and understanding of assignment* -Insightful and skilful use of concepts and procedures to reflect a thorough understanding of the assignment -A complete set of accurate 3D nets independently constructed				
Construction of 3D net **Investigating**	*Limited application of mathematical procedures through construction of 3D net:* -construction of net is incomplete and inaccurate; 3D object is not recognizable -label is not seen on 3D object		*Sound application of mathematical procedures through construction of 3D net:* -construction of net is complete; 3D object is recognizable but few errors seen in overall construction of shape -label is seen on 3D object but		*Insightful application of mathematical procedures through construction of 3D net* -construction of net is assembled completely and accurately; 3D object is able to freely hang without pieces falling apart -label is appropriately and uniquely placed onto 3D object				
Physical Attributes of 3D net object -significance of the 3D name -number of faces, number of edges, number of vertices -specifically lists all types of shapes seen in object (eg 6 isosceles triangles; 1 pentagonal base) **REFLECTING**	*Cursory reflection of the assignment due to:* -significance of name is not mentioned -many errors in answering physical attributes of 3D net object -variable knowledge of the types of shapes and how many shapes are found in 3D object		*Satisfactory reflection of the assignment due to:* -a minimal explanation of the significance of 3D objects name -1 -2 answers to physical attributes are incorrect -satisfactory knowledge of the types of shapes and how many shapes are found in the 3D object		*Highly perceptive reflection of the assignment by skilfully exploring:* -concise and accurate explanation of the 3D objects name -all answers to physical attributes are thoroughly answered and correct -a comprehensive, thorough and specific description of the types of shapes and how many shapes are found in the 3D object				
	On Balance Judgement								