Lesson 3 – Task Sheet 1 Period: \_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Count the edges to find the perimeter of the figure. List each side measurement and the total. | Figure | Count the squares to find the area of the figure. List each measurement and the total. |
| Top = \_\_\_\_\_ Left Side = \_\_\_\_\_  Bottom = \_\_\_\_\_Right Side = \_\_\_\_\_  Total Perimeter = \_\_\_\_\_ | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | Rows = \_\_\_\_\_  Columns = \_\_\_\_\_  Total Area = \_\_\_\_\_ |
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| How are the perimeter and area measurements related? | | |

Lesson 3 – Task Sheet 2 Period: \_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Count the edges to find the perimeter of the figure. List each side measurement and the total. | Figure | Count the squares to find the area of the figure. List each measurement and the total. |
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| How are the perimeter and area measurements related? | | |

Lesson 3 – Task Sheet 3 Period: \_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Count the edges to find the perimeter of the figure. List each side measurement and the total. | Figure | Count the squares to find the area of the figure. List each measurement and the total. |
| Top = \_\_\_\_\_ Left Side = \_\_\_\_\_  Bottom = \_\_\_\_\_Right Side = \_\_\_\_\_  Total Perimeter = \_\_\_\_\_ | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  | | Rows = \_\_\_\_\_  Columns = \_\_\_\_\_  Total Area = \_\_\_\_\_ |
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| How are the perimeter and area measurements related? | | |

Lesson 4 Task Sheet Period: \_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Compute the area of each figure. Show your work.

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| :::::Desktop:Picture 9.png | :::::Desktop:Picture 2.png |
| 1) Face measurements: | 2) Face measurements: |
| :::::Desktop:Picture 7.png | :::::Desktop:Picture 1.png |
| 3) Face measurements: | 4) Face measurements: |
| Lesson 4 Task Sheet Page 1 | |
| :::::Desktop:Picture 8.png | :::::Desktop:Picture 1.png |
| 5) Face measurements: | 6) Face measurements: |
| :::::Desktop:Picture 1.png | :::::Desktop:Picture 4.png |
| 7) Face measurements: | 8) Face measurements: |
| Lesson 4 Task Sheet Page 2 | |

Lesson 5 and 7 Task Sheet Period: \_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Tracking Sheet for Area & Volume Polygons**

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|  | **Squares & Rectangles** | **Triangles** | **Parallelograms** |  |
| **Net** | Formula:  (Area / Volume) | Formula:  (Area / Volume) | Formula:  (Area / Volume) | **Total** |
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|  | **Squares & Rectangles** | **Triangles** | **Parallelograms** |  |
| **Net** | Formula:  (Area / Volume) | Formula:  (Area / Volume) | Formula:  (Area / Volume) | **Total** |
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Lesson 8 Task Sheet Period: \_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Create a simple definition for the following, illustrate it, and describe a situation where you would use it.

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| Perimeter | Perimeter illustration | Perimeter situation |
| Area | Area illustration | Area situation |
| Lesson 8 Task Sheet Page 1 | | |
| Surface Area | Surface Area illustration | Surface Area situation |
| Volume | Volume illustration | Volume situation |
| Lesson 8 Task Sheet Page 2 | | |

Lesson 8 Task Sheet **Rubric**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **1 pt** | **2 pts** | **3 pts** |
| **Definition** | The student does NOT define perimeter, area, surface area, or volume. | The student includes some elements or vocabulary that help define perimeter, area, surface area, or volume, but the definition is unclear or ambiguous. It may be confused with another measurement. | The student includes all elements or vocabulary necessary to create a precise definition. |
| **Illustration** | The student does NOT illustrate perimeter, area, surface area, or volume. | The student includes some elements to illustrate perimeter, area, surface area, or volume, but the illustration is unclear or ambiguous. It may be confused with another measurement. | The student includes all elements to illustrate perimeter, area, surface area, or volume. |
| **Scenario** | The student does NOT describe a correct scenario for perimeter, area, surface area, or volume. | The student includes some elements or vocabulary describe a correct scenario for perimeter, area, surface area, or volume, but the description is unclear or ambiguous. It may be confused with another measurement scenario. | The student includes all elements or vocabulary necessary to describe a correct scenario for perimeter, area, surface area, or volume. |

**Possible vocabulary used:**

* Perimeter: Linear, edge, outside, and feet, inches, etc. that are not cubed or squared.
* Area: Inside, cover, square(s), flat, and feet, inches, etc. that are squared.
* Surface Area: Inside, cover, square(s), flat, around, wrap, add areas, and feet, inches, etc. that are squared.
* Volume: Cube(s), inside, fill, hold, contain, and feet, inches, etc. that are cubed.

**Formulas that may be mentioned:**

* Area of:
  + Rectangle and parallelogram *bh*
  + Triangle *½ bh*
  + Figures that are a combination of rectangles and triangles
* Surface area of polygonst are a combination of the areas above.
* Volume of:
  + Rectangular prism *bhw*
  + Triangular prims *½ bhw*

Lesson 9 Task Sheet Period: \_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **For each question, explain AND illustrate your answer.** |
| **Problem 1** A rectangular box is 4 centimeters longer and 3 centimeters narrower than a cube with sides of 10 centimeters. The rectangular box and the cube have equal heights.  Which box holds the most centimeter cubes? Prove your answer. |
| Lesson 9 Task Sheet Page 1 |
| **Problem 2:**  **Part 1.** Create a fenced-in space with the maximum area for your cow Bessie, given 100 feet of fencing. How many poles would you have for this area if you need 1 pole every 5 feet? How do you know it is the maximum space available? Explain.  **Part 2.** Now, instead of having the grazing area in the middle of a field you decide to use a side of your barn. With the same amount of fence and the side of the barn being 50 feet, find the maximum space of this alternative grazing pasture. How do you know this is the maximum space available? Explain. |
| Lesson 9 Task Sheet Page 1 |

Lesson 9 Task Sheet **Rubric**

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| --- | --- | --- | --- | --- |
| **#** | **1 pt** | **2 pts** | **3 pts** | **4 pts** |
| **1 – Box vs. cube**  **(Volume)** | The student will have access to the formulas for surface area and volume and may make a few guesses for length, width and height, but they will not be able to successfully calculate these.  Little or no math language will be used. | The student will usually work to find a solution but will ignore one or more of the parameters of the problem (e.g., the relationships between the dimensions of the rectangular box or the fact that the surface areas are equal). They may reach the correct conclusion that the cube holds more, but does not have the evidence to prove it. Some rudimentary math language will be used. | The student will have an approach that works. They are likely to use "guess and test" as a strategy to discover the solution. The student will use accurate and appropriate math language and representations. | The student will recognize the advantage of using algebra to solve this task. The student will use accurate and appropriate math language and include a math representation. They may also include a relevant math connection. |
| **2 – Fencing for the cow (Perimeter & Area)** | This student is applying inappropriate concepts of area and perimeter. His/her strategy does not help to solve the problem. There is little explanation and inaccurate use of a diagram. | The student uses a strategy that is partially useful. They use all the fencing in the second part, but not the first part. There is some evidence of reasoning, but they could not completely carry out the mathematical procedures. The explanation is incomplete. There is some use of mathematical representation. | This student shows a broad understanding of the problem. They use a strategy that will lead to a solution of the problem for rectangles. They use effective mathematical reasoning with a clear explanation and appropriate use of mathematical representation and terminology. | The Student has a deep understanding of the problem and identified the appropriate mathematical concept (maximizing the area by keeping the three sides equal). They use a sophisticated strategy that uses refined and complex reasoning. There is an effective explanation (using mathematical equations to communicate). Mathematical representation is used to help communicate ideas. |