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| You have been hired by a nearby town to plan a new petting zoo for the community park.  The town councillors would like **3 to 5 *different* rectangular animal enclosures**, each designed for a different kind of animal.  They have purchased **40 m** of fencing for each enclosure.  When you recommend animals, remember:   * Large animals like llamas need an area of at least **15 m2** for each animal. * Medium animals like goats need at least **8 m2** each. * Small animals like ducks need at least **4 m2** each.   Use grid paper for your plan. One square on the paper represents 1 m2 in the park. Be prepared to present your plan to the council!  As you prepare your plan, you will…   * **create a labeled map** of the petting zoo, with 3 to 5 animal enclosures; * **find the perimeter and area** for each animal enclosure; * **explain your recommendation** for an animal for each enclosure, using mathematical reasoning; and * **find the maximum number of animals** for each enclosure.   **Challenge**: Research to determine the approximate cost of animals for your petting zoo. |

Student \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Before I submit my plan to the council: | **Check** |
| My name is on each page. |  |
| My plan is complete, with 3 to 5 animal enclosures. |  |
| My plan is clearly labeled, including areas and perimeters. |  |
| My work is organized in a way that makes it easy to read and understand. |  |

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| Criteria | Specific Requirements | **Yes** | **Not Yet** | **Teacher Comment** |
| Designs rectangles  (Shape and Space 2)  [PS, R, V] | * Designs rectangles with accurate perimeters |  |  |  |
| * Determines accurate areas. |  |  |

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| Level  Criteria | 4  Excellent | 3  Proficient | 2  Adequate | 1  Limited \* | Insufficient/ Blank \* |
| Make generalizations  (Shape and Space 2)  [C, CN, R] | Justifies choices by using **explicit** mathematical reasoning. | Justifies choices by using **relevant** mathematical reasoning. | Justifies choices by using **simplistic** mathematical reasoning. | Justifies fence choices by using **weak** mathematical reasoning. | No score is awarded because there is insufficient evidence of student performance based on the requirements of the assessment task. |
| Apply multiplication strategies  [ME, R] | Uses **efficient** strategies to determine the maximum number of animals for each enclosure. | Uses **effective** strategies to determine the maximum number of animals for each enclosure. | Uses **workable** strategies to determine the maximum number of animals for each enclosure. | Uses **ineffective** strategies to determine the maximum number of animals for each enclosure. |

\* When work is judged to be limited or insufficient, the teacher makes decisions about appropriate intervention to help the student improve.

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Summarize** **your plan**:

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| **Enclosure** | **Animal** | **Area** | **Perimeter** | **Maximum Number** |
| **A** |  |  |  |  |
| **B** |  |  |  |  |
| **C** |  |  |  |  |
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Explain, **using mathematical reasoning**, why you recommend each animal for each enclosure.

How did you find the maximum number of animals for each enclosure?

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Use 40 m of fence for *each* rectangle. Make each rectangle different. 1 square = 1m2

**Large animals: 15 m2 Medium animals: 8 m2 Small animals: 4 m2**