GARDEN DILEMMA PBL

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| **Standards** | 3.OA.1: Interpret products of whole numbers as the total number of objects in groups of objects each.  3.OA.7: Fluently multiply and divide within 100, using flexible strategies, such as the relationship between multiplication/division.  3.MD.5: Recognize area as an attribute of plane figures.  3.MD.6: Measure area by counting unit squares.  3.OA.8: Solve two-step word problems and assess reasonableness of answers.  3.NBT.2: Fluently add/subtract within 1000 using strategies based on place value and properties of operations.  3.W.3.2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly. |

You and your partner have been hired to design a garden for the local community in order to provide more opportunities for people to buy local produce. The total area for the garden is 48 square feet. Use the information about each of the vegetables in your design. Schedule a conference with your teacher after each part of the plan.

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| Carrots | Corn |
| The wild carrot from which the  Can fit 3 seeds per square foot  12 seeds per packet  $1.20 – 1 packet | An ear of raw corn : Free  Can fit 2 seeds per square foot  8 seeds per packet  $0.90 – 1 packet |
| Tomatoes | Peppers |
| File:Tomato-top.png  Can fit 4 seeds per square foot  10 seeds per packet  $1.30 – 1 packet | File:Green-Bell-Pepper.jpg  Can fit 1 seed per square foot  5 seeds per packet  $0.75 – 1 packet |

PART A – What are possible layouts for your garden (use a square tile for each square foot)? Draw and label your sample layouts below in square feet (use graph paper or tiles as needed):

I can display and measure area in square units.

Conference With Teacher: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (date)

Constructive Feedback/Reflection:

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PART B – Select one layout and plan your placement of vegetables. Use the information about each vegetable to determine how many can be in each square foot.

I can use what I know about multiplication and division to solve a complex problem.

Conference With Teacher: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (date)

Constructive Feedback/Reflection:

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PART C – Based on your layout design and placement of vegetables, how much will your garden cost? Create a chart to display your budget.

I can solve two step problems using different operations. I can add/subtract numbers using flexible strategies.

Conference With Teacher: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (date)

Constructive Feedback/Reflection:

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PART D – Write a letter/speech to the Town Commission proposing the new garden and why it will be beneficial to the community. (include all details pertaining to design and cost) Put all of your data and letter/speech into a presentation for the Town Commission.

Think Beyond: What area of town would be best for this garden to be successful? What do the plants used need in order to survive in their environment?

I can write about a topic to convey my ideas and information clearly. I have developed my topic with facts, definitions, and details.

Conference With Teacher: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (date)

Constructive Feedback/Reflection:

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**HOW YOU WILL BE ASSESSED**:

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|  | 4 | 3 | 2 | 1 |
| Problem Solving | I can multiply to find area and use arrays to accurately design an area of 48 sq. feet. I used various strategies to help me find my answer. | I can multiply mostly accurately to find area and use arrays to accurately design an area of 48 sq. feet. I used some strategies to help me find my answer. | I can multiply somewhat accurately to find area and use arrays to accurately design an area of 48 sq. feet. I a strategy to help me find my answer. | I can multiply inaccurately to find area and use arrays to accurately design an area of 48 sq. feet. |
| Design/  Creativity | I created a design that accurately uses all vegetables, all diagrams are labeled, and I represented total square feet in an original way. | I created a design that mostly accurately uses all vegetables, all diagrams are labeled, and I represented total square feet. | I created a design that somewhat accurately uses all vegetables, most diagrams are labeled, and I represented total square feet. | I created a design that uses all vegetables, some diagrams are labeled, and I represented total square feet. |
| Presentation & Communication | I supported my design with evidence and included all details neatly and clearly communicated my thoughts, ideas, and solutions in my letter/speech. | I supported my design with some evidence and included most details neatly and mostly communicated my thoughts, ideas, and solutions clearly in my letter/speech. | I supported my design with minimal evidence and included some details neatly and clearly in my letter/speech. I somewhat communicated my thoughts, ideas, and solutions, but some may be difficult to understand. | I supported my design with inaccurate evidence and included some details in my letter/speech. I communicated very little thoughts, ideas, or solutions or they are difficult to understand. |
| Reflective & Receptive to Feedback | Written reflections after conferences are detailed, specific, and critical. I used feedback to help me improve my skills and final product. | Written reflections after conferences are detailed and specific. I used some feedback to help me improve my skills and final product. | Written reflections after conferences are somewhat specific. I used minimal feedback to help me improve. | Written reflections after conferences are incomplete or very general. I ignored feedback when moving through tasks. |