**The Planting Puzzle**

**Objective**: *To determine the most space efficient way in which to plant fall crops such that crop yield is maximized and soil nutrient depletion is minimized.*

**Directions**: *Create a diagram that illustrates the planting configuration for each of the selected fall plants. Include the following*:

* Raised bed dimensions
* Plant locations (with labels or a key) \_\_\_\_10 pts
* Measurements between plants (cm) \_\_\_\_10 pts
* Explanation describing your rationale for your planting design. \_\_\_\_10 pts
* Place fall planting diagram in agriculture journal

**Key Information:**

* Raised bed dimensions: 4’ x 6’. We have 4 raised beds available for fall planting.
* There are several planting configurations recommended for raised beds. See attached for examples.
* Fall plants – radish, carrot, garlic, potato, lettuce, broccoli, swiss chard, strawberry, chives, and cilantro
* Some plants are most successful when planted with a companion plant (friend), while others may be adversely affected when planted with another plant (foe). To identify the friends and foes of each of the above plants, visit <https://www.almanac.com/content/companion-planting-chart-plant-list-10-top-vegetables> or <https://www.ufseeds.com/learning/companion-planting> .
* The growing requirements (e.g., spacing, light, water) of plant type varies and impacts the planting arrangement for the raised bed. Visit <https://extension.usu.edu/yardandgarden/fruits-vegetables-herbs> to determine the requirements specific to the selected plants.

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| **Plant** | **Friends** | **Foes** | **Spacing Requirements** |
| Radish | Onions, spinach, basil, coriander, tomatoes | Beans, kohlrabi | Plant when soil is 40oF1-2 in between plants10-12 in between rowsPlanted in 10 day intervalsFull sun |
| Carrot | Beans, lettuce, onions, peas, tomatoes radish, sage, rosemary | Anise, dill, parsley | 2-3 in. between plants12-18 in between rowsUniform & moist soilFull sun |
| Lettuce | Asparagus, Beets, Brussels  sprouts, Cabbage, Carrots, Corn,Cucumbers, Eggplant, Onions, Peas, Potatoes, Radishes, Spinach,Strawberries, Sunflowers | Broccoli | 8-12 in apart12-18 in. between rowsDirect, full sunWater 1-2 “/week |
| Cabbage | Beans, celery, cucumber, dill, kale, lettuce, onion, potato, sage, spinach, thyme | Broccoli, cauliflower, strawberry, tomato | 12-18 in. apart2-3 ft. between rowsPlanted 2-3 weeks before frost Full sun |
| Garlic | Dill, beets, kale, spinach, potato, carrot, eggplant, tomato, pepper, cabbage, cauliflower, broccoli, kohlrabi | Asparagus, peas, beans, sage, parsley | Plant late Sept – NovUse well developed, dry bulbPlant unpeeled, pointed end up.3-4 inches deep6-10 in between rowsFull, direct sunWater 18 “ deep, 1/week |
| Broccoli | Celery, potato, onion, rosemary, sage dill, mint, beets | Tomato, beans, squash, strawberry | 12-18 in. apart2-3 ft. between rowsPlanted 2-3 weeks before frost |
| Swiss chard | Tomato, onion, cabbage, broccoli, Brussel sprout, bean, radish, lettuce, celery | Most herbs, potato, corn, cucumber, melon | Plant when soil is 40oF6 in between plants12 in between rowsFull sun |