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|  | Materials  30 Excel sparkler radish seeds  5 planters ( at least 6 inches deep )  4500 mg each of Vitamins A and C and the minerals magnesium and potassium  about 45 cups of water  metric ruler  Procedure  Planting Instructions:  1.)Place the soil in the five planters and rake so that the top is level and loose.  2.)Make six holes about 1/2 inch deep and about 4 inches apart in each planter.  3.)Place the seeds in the holes and cover with dirt. Smooth the top soil so that it is level. Label each planter with the vitamin or mineral ( A, C, magnesium, or Potassium) which its radishes will be grown on and label one Control.  Vitamin Mixture instructions:  1.) Obtain five covered jars and label one Vitamin A, one Vitamin C, one Potassium, one Magnesium, and one control.  2.) Add one cup of water to each jar.  3.) Place 500 mg of the correct vitamin into its corresponding jar. ( Add only 500 mg of Vitamin A to the Vitamin A jar, only 500 mg of potassium to the potassium jar, ect.)  4.) Cover the jars to prevent evaporation and allow the jars ( including the control water) to sit for 24 hours.  5.) After 24 hours, stir the solutions to insure that all the vitamin or mineral has dissolved.  ( Note- Vitamin A will not dissolve because it is fat soluble)  6.) Water each group of radishes with the appropriate mixture.  7.) The mixtures should be made and added to plants once each week.  Experiment:  1.) Water each radish group with the appropriate mixture once a week. ( If water is needed more than once a week then water without vitamins may be given to plants as long as it measured and all groups receive the same amount)  2.) Each week measure how tall the radish tops have grown ( in cm ) and record the data. Germination takes 3 -10 days.  3.) Continue to water and track the radish for eight weeks or until they reach maturity.  4.) At the end of eight weeks find the average height of the radishes in each test group for each week.  5.) Graph the data. You should be able to see a difference in growth rate.  6.) To calculate the average rate of growth ( cm/week), draw a regression line for each group of radishes and find the equation of the line. ( This can be done easily using a TI -82, 85, or computer graphing program.) The slope of the line is the average rate of growth in cm/week . The line with the steepest/largest slope is the group with the fastest growth rate. |

*This Web Site is Best viewed with 256 or more colors.*

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