

## Bean Questions

Purpose:

- ❖ to extract information from a scientific source
- ❖ to organize scientific information in a data chart
- ❖ to interpret scientific information

Read and highlight the reading on **Field Beans**

(<http://teach1.cses.vt.edu/cses3444/3444lec17.html> or <http://www.jdenuno.com/PDFfiles/FieldBeans.pdf> )

Answer the following questions. Use short answers except where an explanation is requested. These questions should be answered in lab notebook.

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|---|---|
| <ol style="list-style-type: none"> <li>1. Where did field beans originate?</li> <li>2. How long ago were beans cultivated?</li> <li>3. Beans combined with which other vegetable, form the basic diet for native American populations of Meso (middle)-America.</li> <li>4. Do beans grow in warm or cold climates?</li> <li>5. What does short-day or day-neutral mean? (Hint: remember photoperiod?)</li> <li>6. What does frost-free period mean.</li> <li>7. How long of a frost-free period do beans need?</li> <li>8. Name a type of soil pest that affects beans</li> <li>9. Explain why continuous planting of beans is a poor cultivation practice</li> <li>10. Name the 4 major bean producing countries</li> </ol> | <ol style="list-style-type: none"> <li>11. Compare the production of beans in the United States to the rest of the world (Hint: This is a math problem)</li> <li>12. What is the scientific name of the common bean?</li> <li>13. Where did the lima bean originate?</li> <li>14. What is the optimum temperature for growing beans?</li> <li>15. Do seedlings or mature plants require more water? <b>Explain your answer!</b></li> <li>16. What is the scientific name for the lima bean?</li> <li>17. What is the scientific name for the runner bean?</li> <li>18. Fill in the following data chart with information on bean types. (You may fill in here and tape in lab notebook or construct your own copy of the data chart)</li> </ol> |
|---|---|

Name	Plant Type	Flower Color	Seed Size	Seed Color	Disease Resistance	Drought-Heat Tolerance	Where Grown
White Pea							
Red Kidney							
Great Northern							
Pinto							
Red Mexican							
Pink							
Tepary							
Mung							
Lima							
Broadbean							



19. What chemicals are added to the soil to increase crop yield?
20. How frequently is zinc sulfate applied to soils
21. What is a pre-emergence herbicide?
22. List the symptoms of bacterial blight
23. Common bean mosaic virus is spread by what insect? What are the symptoms of this bean disease? What are the recommended control measures?
24. List 3 insect pests of bean plants
25. What nutrient do beans provide to the basic human diet?
26. Discuss reasons for a wide distribution of field beans. (Hint: You may want to refer to answers to previous questions. (This answer should be about 4~5 sentences long)
27. Using information from the following chart, write a hypothesis to explain the short growing cycle of *Phaseolus acutifolius* compared to the other beans. What is the common name of *Phaseolus acutifolius*? Describe how you would test your hypothesis.
- 28. Reflection: Your thoughts on beans!!!!**

Species	Altitude (m)	Temperature (°C)	Precipitation (mm/year)	Growth Cycle (days)	Yield (kg plants/hectare)
<i>Phaseolus coccineus</i>	1400~2800	12~22	400~2600	90~365	400~4000
<i>Phaseolus acutifolius</i>	50~1900	20~32	200~400	60~110	400~2000
<i>Phaseolus lunatus</i>	50~2800	16~26	0~2800	90~365	400~5000
<i>Phaseolus polyanthus</i>	800~2600	14~24	1000~2600	110~365	300~3500
<i>Phaseolus vulgaris</i>	50~3000	14~26	400~1600	70~330	400~5000

Data from <http://www.hort.purdue.edu/newcrop/1492/beans.html>

