**Across**

1. method to separate sizes of DNA fragments (2 words)
4. a protein that combines with a specific antigen
6. bioinsecticide *Bacillus thuringiensis* (abbreviation)
10. a way of identifying an individual based on patterns of DNA fragments (2 words)
12. the complete DNA in an organism
13. using genetic engineering to produce pharmaceuticals in plants or animals (2 words)
18. a protein that catalyzes a metabolic chemical reaction
19. using computers to organize biological information
22. living organism used to control insect pests
23. genetically identical cells or organisms
26. a bacterium that fixes nitrogen for legume plants
27. using plants to clean up pollution
28. microorganisms that supply nutrients to plants
29. ethics, philosophy and social commentary that deals with life sciences

Biotech Crossword

Test your biotech knowledge and vocabulary!

30. 3-dimensional structure of DNA (discovered by Watson and Crick) (2 words)
31. composed of DNA and protein; found in nucleus
32. cultivation of aquatic animals or plants in controlled environments
33. substance that induces specific antibody formation

Down

1. directed manipulation of genes (2 words)
2. method used to amplify specific DNA sequences
3. a nuclease that recognizes a specific sequence of DNA and cuts it (2 words)
5. determining the sequence of the bases in DNA (2 words)
6. firing of DNA-coated metal particles into cells at a very high speed
7. fungus that helps plants with phosphorus uptake (2 words)
8. using the properties of living things to make a product or run a process
9. growing plants from a small piece of tissue
11. variation in length of DNA fragments generated by a restriction endonuclease
14. beneficial ecological relationship between two organisms
15. hereditary unit within a chromosome
16. branch of biotechnology that uses microorganisms to clean up pollution
17. carrying one or more genes introduced by genetic engineering
20. bacteria & fungus are broadly termed as ...
21. DNA sequences that help to identify specific genes
24. living organism used to control weeds
25. the smallest unit of living matter able to grow and reproduce independently

Bonus Question: The letters DNA are short for the full name of _____.

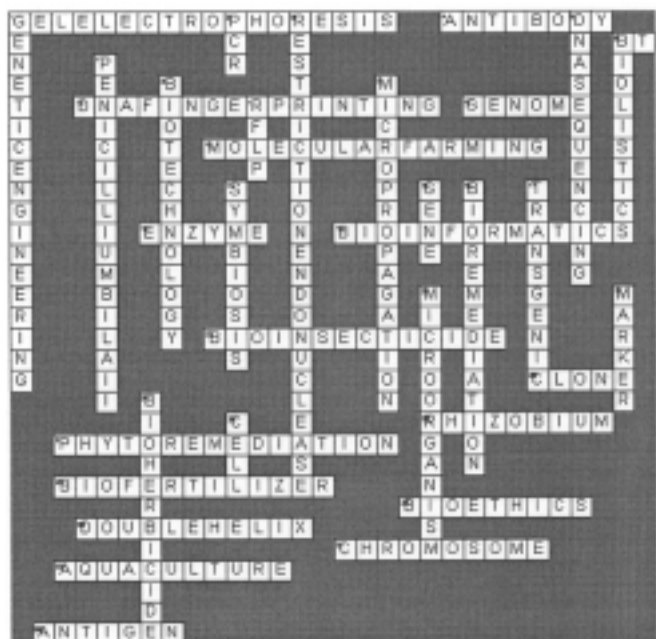
Words & Terms:

Antibody, Antigen, Aquaculture, Bioethics, Biofertilizer, Bioherbicide, Bioinformatics, Bioinsecticide, Biolistics, Bioremediation, Biotechnology, *Bt*, Cell, Chromosome, Clone, DNA fingerprinting, DNA sequencing, Double helix, Enzyme, Gel electrophoresis, Gene, Genetic engineering, Genome, Marker, Microorganism, Micropropagation, Molecular farming, PCR, *Penicillium bilaii*, Phytoremediation, Restriction endonuclease, RFLP, *Rhizobium*, Symbiosis, Transgenic

Win a prize!

The first ten (correctly) completed **Biotechnology Crosswords** with a correctly answered **Bonus Question** sent back to Ag-West Biotech Inc. will receive a free T-shirt. The next ten will receive a free pen from the Saskatchewan Agricultural Biotechnology Information Centre. **Please include your name, age, mailing address and shirt size.**

Answer Key:



The “DNA Song”

to “Row, row, row your boat”

“We love DNA, made of nucleotides
Sugar, phosphate, and a base
Bonded down one side

Adenine and thymine make a lovely pair
Guanine without cytosine
Would be really bare!”

(Author unknown)

More biotech fun:

Food Safety and Biotech Songs by Carl Winter
<http://foodsafety.ucdavis.edu/music.html>

Fun Food Stuff – A fun site from the University of Wisconsin Biotechnology Center
<http://www.biotech.wisc.edu/Education/FunFoodStuff/>

Science2Discover – A Guide to Science and Biotechnology for Students and Teachers
<http://www.science4kids.com/index.html>

European Initiative for Biotechnology Education
<http://www.rdg.ac.uk/EIBE/ENGLISH/INTRO.HTM>

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