Bioethics: Genetically Modified Food

**Directions: Choose the best term to represent the space provided.**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ contains a gene or genes which have been artificially inserted instead of the plant acquiring them through pollination.
2. Plants containing transgenes are often called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. The underlying reason that transgenic plants can be constructed is the universal presence of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the cells of all living organisms.
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ recognizes and cuts the DNA at a specific region of DNA.
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ join the ends of two DNA fragments.

**Answer Key Questions 1 - 5**

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| 1. Genetically modified 2. DNA 3. restriction enzyme 4. ligase 5. transgenic crop |

1. **The general sequence of events by which the information encoded in DNA is expressed in the form of proteins via mRNA intermediary is**
2. DNA transcribes to mRNA, which translated to protein that represents the trait
3. mRNA translates to DNA, which transcribes to a trait that represents a protein
4. DNA transcribes to mRNA, which transcribes to a trait that represents a protein
5. A protein transcribes to a protein, which translates to DNA that represent mRNA
6. **Once a gene has been isolated and cloned, it must undergo 4 modifications before it can be effectively inserted into a plant. What are the correct order for designing genes for insertion?**
7. Selectable marker gene, termination sequence, cloned gene modification, promoter sequence
8. Terminations sequence, selectable marker gene, cloned gene modification, promoter sequence
9. Promoter sequence, cloned gene modification, termination sequence, selectable marker gene
10. Cloned gene modification, promoter sequence, selectable marker gene, termination sequence
11. **Is the heritable change in a cell or organism brought about by the uptake and establishment of introduced DNA?**
12. Alteration
13. Transformation
14. Hertigation
15. None of the above
16. All of the above