**Biotechnology Notes**

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| **Biotechnology is . . .**  | * the use of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to make living organisms or parts of living organisms.
* a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with many questions and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ associated with it.
* an \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in job opportunities in the research field, particularly in NC.
* the use of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to produce food, drugs, or other items.
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| **A type of Biotechnology: *GMO*****GMOs can lead to . . .**  | * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ deaths of helpful insects (such as pollinators – bees)
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for herbicide resistance might be transferred to weeds by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ effectiveness of pesticides
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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| **GMOs can lead to . . .**  | * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with wild plants
* Unknown \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in humans
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ resistance
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ tolerance
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - nutrients added
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ medicines and vaccines
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| **Transgenic Crops** | * A plant contains a gene or genes which have been \_\_\_\_\_\_\_\_\_\_\_\_\_\_ inserted instead of the plant acquiring them through \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Can \_\_\_\_\_\_\_\_\_\_\_\_\_\_ with wild plants.
* Can cause \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in humans.
* Can cause unknown \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in humans.
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| **Modern Biotechnology**  | * Uses genetically engineered organisms to produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (or other pharmaceuticals)
* Creates liquid fuels form \_\_\_\_\_\_\_\_\_\_\_\_\_\_ matter
* Example: biofuel – \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (from corn)
* Corn is used the most in biotechnology
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ concerns should be considered when creating or changing living organisms
* Changing the genetic makeup of an organism is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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| **Stem Cells**  | * Can develop into any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the body during early life and growth.
* Types: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ stem cells and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ stem cells.
* Embryonic stem cells – come from \_\_\_\_\_\_\_\_\_\_\_\_\_\_; formed about 5 days after fertilization.
* Adult stem cells – come from various \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in adults.
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