**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. |
| **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 * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **GMOs can lead to . . .** | * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with wild plants * Unknown \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in humans * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ resistance * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ tolerance * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - nutrients added * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ medicines and vaccines |
| **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. |
| **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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **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. |