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| **Human Genome Project** | **Biotechnology** | **Gene Therapy** |
| Vocabulary:  1.  2. | Vocabulary:  1.  2. | Vocabulary:  1.  2. |
| What is it? | Write a definition for biotechnology. | What is it? |
| List the 3 goals of the HGP:  1.  2.  3. | What does it mean to manipulate organisms?  Why do you think humans would want to select the characteristics an organism has? | What is the role of the virus in gene therapy?  Describe a positive benefit of gene therapy: |
| **Video Reflection** | **Video Reflection** | **Video Reflection** |
| What is a genome? | What is biotechnology? | Corey could not see correctly because his \_\_\_\_\_\_\_\_\_ was mutated.  So, now that Corey’s eye has the correct sequence of DNA, his eye can make the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it needs to see again. |
| Why did scientists want to read all of the human DNA? | All cells in our bodies have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the nucleus.  What does it mean that all cells speak the same language? | Explain how this is an example of gene therapy. |
| What percent of the nucleotides (A,T,C,G’s are important? (code for a gene) | What is the goal of biotechnology? |

**Biotechnology**

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| **Stem Cell Research** | **Cloning** |
| Vocabulary:  1.  2. | Vocabulary:  1.  2. |
| What are stem cells? | What is cloning? |
| What is the difference between adult and embryonic stem cells? | What is a positive benefit from cloning? |
| Why is stem cell research controversial? | What is a negative aspect of cloning? |
| **Video Reflection** | **Video Reflection** |
| What is a **pluripotent** cell? | Explain the process of cloning. |
| What makes stem cells so important? | How did the scientists clone the dog Tracker? |
| What “jobs” do stem cells have? What are they being used for today? |  |