**Bozeman**

**Molecular Biology**

1. What’s so cool about Taq polymerase? Where did they first find this enzyme?
2. Mr. Anderson uses the ransom note analogy to explain the evolution of molecular biology. List the events that occurred from earliest to latest with a brief description of each. During the video, you may want to take notes about each of these as he describes how they work and their importance to molecular biology.

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| Restriction Enzymes |  |
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|  |  |
|  |  |
| DNA Sequencing |  |

1. He also uses everyday items as analogies to tools used for biotechnology describe each analogy below.

|  |  |
| --- | --- |
| Scissors |  |
| Glue |  |
| Ruler |  |
| Copier |  |
| Eye |  |

1. Where do restriction enzymes come from? Why are they found there?
2. What sequence does EcoRI recognize? HindIII?
3. First rDNA came from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. What pulls the DNA in electrophoresis? What determines how far the DNA will travel?
5. What’s a ladder? Why is it helpful?
6. In PCR, describe why the following things are needed to copy the DNA.

|  |  |
| --- | --- |
| Sequence to be copied |  |
| Primer |  |
| Taq Polymerase |  |
| Nucleotides |  |

1. What enzyme copies DNA in our cells?
2. Why does the PCR machine heat and cool the DNA?
3. DNA sequencing has given us the order of the letters from the human genome project, but what do we need to figure out next?