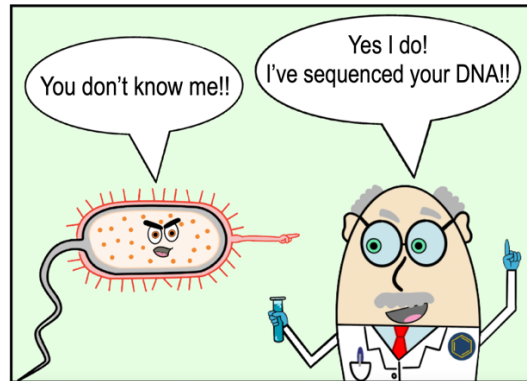


CONCEPT: INTRODUCTION TO DNA SEQUENCING

- DNA _____: the process of determining the complete sequence of nucleotides in a DNA molecule.
 - Can be used to sequence a fragment of DNA, or the _____ genome of an organism.

EXAMPLE: DNA sequencing can sequence entire genomes of a bacterial species.



- *Dideoxy Nucleotides* are commonly used in DNA sequencing techniques due to their unique features.

Dideoxy Nucleotides

- Recall: **phosphodiester bonds** form between the 3' OH & the phosphate group of 2 nucleotides during DNA synthesis.
- **Dideoxy nucleotides (ddNTPs)**: nucleotides that contain a 3' instead of 3' group.
 - Replacing the 3' OH with H _____ covalent formation of the **phosphodiester bond**.
- Elongation during DNA synthesis is **terminated** by the incorporated **ddNTP** at the _____' end of the new DNA strand.

EXAMPLE: Dideoxynucleotides terminate elongation during DNA synthesis.

