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eCurriculum System eMAP Licensed to: TRUMBULL PUBLIC SCHOOLS

COURSE: Bio 300 CODE:

UNIT: Molecular Genetics and Biotechnology MAP LEVEL:

CONTACT: Jenny Ogrodnick GRADE: 10

TIME FRAME: 2 weeks

PERFORMANCE STANDARDS

27.3 SCIENCE - LIFE SCIENCE (V,VI,VII)

27.3.6.10.28 Students will describe the general role of DNA in protein synthesis and cell reproduction.

27.5 SCIENCE - SCI TECH IN SOCIETY (XI)

27.5.11.10.34 Students will describe, in general terms, how the genetic information of organisms can be altered to make them produce new materials.

27.5.11.10.35 Students will explain the risks and benefits of altering the genetic composition and cell products of existing organisms.

ESS/FOCUS QUESTIONS

Essential Question:

How are traits chemically programmed and processed in cells?

How does technology apply this information for human purposes?

Focus Questions:

What are the building blocks of nucleic acids- DNA and RNA?

By what process do DNA molecules copy themselves?

What processes allow for the expression of the traits determined by DNA?

What is a vector?

How are vectors used in creating recombinant DNA?

How does recombinant DNA technology benefit humans?

CONTENT

1. The monomer of a nucleotids contains 5-Carbon sugar, phosphate,

and a nitrogenous base (adenine/thymine-uracil/cytosine/guanine)

2. DNA molecules warehouse genetic information

3. DNA replication allows for genetic information to be copied

4. Transcription produces RNA molecule from DNA.

5. Translation synthesizes protein causing the expression of traits.

6. Mistakes that happen during protein synthesis cause mutations.

SKILLS

ASSURED EXPERIENCES

ASSESSMENTS

OPTIONAL ACTIVITIES

RESOURCES

ADDITIONAL NOTES