COVER PAGE FOR

MODULE 6: ALTERNATIVE SPLICING

SUBMISSION DETAILS

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LESSON OVERVIEW

Lesson abstract:	Many genes have exons that can be linked together in more than one way to produce a variety of different (though related) transcripts. In this lesson, students will examine how alternative splicing of a gene can lead to different mRNAs and how alternative splicing can lead to the production of different polypeptides and result in drastic changes in phenotype.
Lesson keywords:	Alternative Splicing Exon Intron Messenger RNA
Organism(s) that are the focus of this lesson:	None
Type(s) of student learning assessments:	Short answer formative questions
Websites and online databases used:	GEP UCSC Genome Browser (http://gander.wustl.edu)
Resources in addition to the lesson instructions	YouTube videos

Learning Topics

Topics in scientific fields:	Genetics Genomics Molecular Biology
Topics in mathematics or statistics:	None
Topics in bioinformatics or data science:	Similarity searches (BLAST, Multiple Sequence Alignment) Data visualization

Student Prerequisites

Recommended prior course work:	High school level biology
Recommended computer skills:	Basic: Familiarity with web browsers, word processing

Instructor Prerequisites

Recommended computer skills:	Basic: Familiarity with web browsers, word processing
Instructional requirements:	Basic Computer Lab (Access to laptops/desktops, no large memory or CPU requirements)

Implementation Recommendations

Instructional time required:	1 class period or less
Students work as individuals or teams?	Either individual or team work is possible
Number of students in a class:	More than 50 students (assume no TAs and one computer for each student)

ACCESSIBILITY

Available languages:	English
Additional materials for students with disabilities:	None