
COVER PAGE FOR MODULE 3: TRANSCRIPTION PART II

SUBMISSION DETAILS

Submitter:	Laura Reed (lreed1@ua.edu)
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Authors:	Cathy Silver Key, North Carolina Central University Chiyedza Small, Medgar Evers College CUNY
Corresponding author:	Laura Reed (lreed1@ua.edu)

LESSON OVERVIEW

Lesson abstract:	This module teaches about the three key steps that are involved in converting the pre-mRNA into a mature mRNA: 1) The addition of a 5' cap, 2) The addition of a 3' poly(A) tail, 3) The removal of introns through splicing. The specific nucleotide sequences that guide the maturation process are highlighted. The student will observe that introns are removed during this process and adjacent exons are brought together in the mRNA message.
Lesson keywords:	Genome Browser cDNA mRNA Splicing 5' Cap 3' Poly(A) Tail RNA Maturation

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	None

LEARNING TOPICS

Topics in scientific fields:	Genetics Genomics Molecular Biology
Topics in mathematics or statistics:	None
Topics in bioinformatics or data science:	None

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