

COHORT 4			
Learning Task Name	Learning Task Expected Duration	Learning Task Description	Assessment Task Duration
<b>ELA</b>			
Cohort 4 Foundational US Documents	This task will take up to 5 class periods	In this task, students will read the Preamble to the Constitution and the Declaration of Independence in order to analyze their themes, purpose, and rhetorical features.	75 minutes
Cohort 4 Satirical Essays from American Literature	This task should take the equivalent of four class periods, including time for reflection and discussion.	In this task, students will read a range of American texts that include satire. Students will determine and analyze main ideas, and analyze the author's craft and point of view.	90 minutes
Cohort 4 Analysis of a Short Story	4 (45 minute) class periods	In this task, students will identify and analyze the main elements of a short story including theme and the author's use of language in order to create meaning. In their analysis, students will cite strong and thorough textual evidence through their writing in order to compose explanatory text.	45 minutes
Cohort 4 Cultural Experiences in World Literature	90-120 minutes	Students will read a passage from Things Fall Apart by Chinua Achebe; and write a well-developed essay that analyzes a situation from a culture outside the U.S.	45 minutes
<b>Math</b>			
Alg I Apple Orchard LT	3 to 4 45-minute class periods	The student will design an apple orchard with given criteria. The student will draw models of the situation, write equations to represent relationships in the situation, and use the equations to solve problems.	30 to 45 minutes
Alg II Exploring Absolute Value Functions LT	2 to 3 45-minute class periods	The student will explore absolute value functions by making tables and graphs of distances. The student will write the equations of functions modeled by the graphs. The student will analyze the absolute value functions that represent the openings of two different tents. Then the student will write an absolute function that represents the opening of a third tent.	30 to 45 minutes
Geo Exploring Congruent Triangles LT	2 to 3 45 - minute class periods	The student will use geometric reasoning skills about congruent figures by creating different quadrilaterals and triangles, constructing different examples of triangles using a straightedge, a compass, and a protractor, and doing an on line activity.	30 to 40 minutes
PreCal/Trig Unit Circle Exploration LT	3 45 - minute class periods	Students will explore the relationship between the cosine and sine of angles on the unit circle in each of the four quadrants. To do this, students will draw and cut out right triangles formed by reference angles on the unit circle. They will use these triangles to help determine coordinates for the intersection of other angle's rays on the unit circle.  Students will then determine, compare, and analyze the cosines and sines of angles as they relate to the unit circle.	45 to 60 minutes
<b>Science</b>			

Cohort 4 Atomic Structure	2 sessions: Session 1: 45 minutes Session 2: 60–90 minutes	Students will investigate the structure of an atom. Students will use simulations as atomic models. A model based on Dalton’s theory, a model from Rutherford’s gold foil experiment, and an orbital model from Bohr’s work will be used. Note that it is not intended that these models be used in exactly the same way as what actually happened in the history of science, which is covered in the chemistry syllabus and model curriculum.	15 minutes
Cohort 4 Density	Session 1: 60 minutes Session 2: 120 minutes	During this Learning Task, students will investigate and apply the ratio ( $D=m/V$ ) to determine the density of regular and irregular solids, liquids and various concentrations of solutes, and gases. Students will investigate the relationship between the temperature of a substance, the spatial arrangement and average velocity of the molecules of a substance, and the density of a substance. Students will investigate how the transfer of energy in a fluid is related to differences in density and convection currents in the fluid. Students will investigate changes in the density of water at different temperatures and as a solid, liquid, and gas.	AT1: 15 minutes AT2:15 minutes
Cohort 4 Gas Laws	Session 1:- 20 - 30 minutes Session 2:- 30 - 40 minutes Session 3:- 30 - 40 minutes	The task allows students to explore the qualitative and quantitative aspects of kinetic molecular theory (KMT)). First, students will be using the Gas Laws PhET applet to investigate the relationships between pressure, volume, and temperature with the number of molecules held constant.	30-45 minutes
Cohort 4 Periodicity	Session 1: 90-180 min Session 2: 60 min	Students will investigate periodic patterns and trends seen in the periodic table, through experimentation and online data analysis. Students will apply their knowledge of periodic trends to design an experiment to determine the identity of an unknown chemical.	60 minutes
Cohort 4 Photosynthesis	4 Sessions Session 1: 60–90 minutes Session 2: 60 minutes Session 3: 60 minutes Session 4: 60 minutes	During this learning task, students will investigate the process of photosynthesis at the cellular level with an emphasis on the transformation of energy and the cycling of matter. During this Learning Task, students will use a variety of scientific inquiry skills including designing and conducting an investigation, predicting, measuring, mathematical reasoning, analyzing data, graphing, modeling, and formulating conclusions. In developing students’ understanding, this learning task addresses content from two areas of the High School Biology Model Curriculum: Diversity and Interdependence of Life and Cells.	AT1: 15-30 minutes AT2: 15-30 minutes
Cohort 4 Population Ecology	Session 1: 30 minutes Session 2: 60 minutes Session 3: 30 minutes Session 4: 60 minutes Session 5: 60 minutes	Students working in small groups will acquaint themselves with the general aspects of invasive species ecology. After a brief introduction, students will learn to use a food web modeling program. Finally they will use the program and make predictions about how populations of higher and lower trophic levels, specifically a small Great Lakes food web of near shore bay species including plankton, detritus, crayfish, and smallmouth bass, are affected by invasive species, zebra mussels and round gobies.	30-60 minutes

Cohort 4 Projectile Motion	<p>Session 1: 30 – 45 minutes (computer needed)</p> <p>Session 2: 30 – 45 minutes (computer needed)</p> <p>Session 3: 20 – 30 minutes (computer needed)</p> <p>Session 4: 30 – 45 minutes (no computer needed)</p> <p>*Optional Session 5: 30 – 45 minutes (no computer needed)</p>	In groups, students will explore the conceptual foundation of projectile motion, that horizontal and vertical motions are independent. After this understanding is established, groups of students will begin to investigate projectiles, the equations that can be used to describe their motion, and how those equations simplify for horizontal projectile motion.	60 minutes
Cohort 4 Velocity and Acceleration	Sessions 1-3: 45 minutes each	Students will explore concepts of motion through the creation and interpretation of position and velocity-vs.-time graphs. Through a structured exploration, chosen by the teacher, the students will gain the skills and knowledge necessary to analyze the motion of an object.	30 minutes
<b>Career Tech</b>			
Cohort 4 Animal Science	<p>Session 1: 30 – 45 minutes</p> <p>Session 2: 90 – 120 minutes</p> <p>Session 3: 90 – 150 minutes</p>	Upon completion of this task, the student will be able to apply principles of genetics to plan an appropriate swine cross-breeding program to maximize expression of desirable traits.	30-60 minutes
Cohort 4 Wind Energy Systems	Four class sessions (45 minutes per session)	Students individually will design and plan the installation of a wind energy system over the course of three class sessions	60 minutes
<b>Social Studies</b>			
C4 SST Citizens, Issues, and Media	4 hours	Students apply understanding of opportunities for civic involvement to evaluate examples of civic action by individuals and interest groups and the impact of media on civic involvement.	1 hour
C4 SST Connecting the World Wars	4 hours	Upon completion of this task, the student will understand how the consequences of World War I set the stage for the rise of totalitarianism, aggressive Axis Expansion, and World War II.	30 minutes
C4 SST Effects of Industrialization	4 hours	Students use primary sources to evaluate the social, political, and economic effects of the Industrial Revolution.	30 minutes
C4 SST World War II Mobilization	3 hours	Students analyze primary source materials to understand the mobilization of economic and military resources during World War II. Students draw conclusions about mobilization methods.	35 minutes