

Mastery-Based Learning Model for Mathematics

A BLENDED LEARNING MATH CURRICULUM



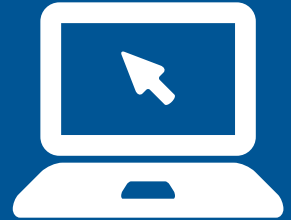
think
MATHEMATICALLY



CTHSS
CONNECTICUT TECHNICAL
HIGH SCHOOL SYSTEM

Mastery-Based Learning (MBL) Model for mathematics is an instructional strategy to teach math to CTHSS students. The goal of the program is for students to utilize technology, interact with their peers and teachers to master each mathematics unit before moving onto the next. Each unit addresses the readiness and processing speed of the student so the task is not simple enough to bore them, and does not frustrate them by being too challenging.

The Connecticut Technical High School System is dedicated to staying current with emerging technology and the STEM (science, technology, engineering and math) demands of college and work environments. We are also implementing blended learning into the classroom by giving students access to online learning and technology. The MBL Model utilizes these goals and implements them in math classes.



how it works

Students learn through a technology software program named ALEKS (Assessment and Learning in Knowledge Spaces) and through the interaction of various problem-solving activities. While using the ALEKS software, students work independently and with embedded instruction, and the use of web-based videos and games. Peers aid in the learning process and the teacher enhances the learning process by acting as a coach/facilitator for learning.

The technology software program assesses the students and monitors their growth. Each student is reassessed until they reach a level of predetermined proficiency. Once they have mastered a unit, then they will move onto the next unit until the course is completed.

In addition to the ALEKS software program, student learning activities engage them in problem-solving activities on a regular basis to help develop a well-rounded approach. These problem-solving activities promote the skills needed to “think mathematically,” while applying math to the real world.

Student progress is reported weekly and quarterly reports include feedback on student effort and work habits, progress through the curriculum and their mutually set goals. End of course grades are based solely on their academic performance on:

- ALEKS
- tests and quizzes
- their problem-solving assessments



why it works

The MBL Model is successful because it is based on Student-Centered Learning. It is achievement-based to ensure learning and preparation for future math courses and helps to develop 21st century skills like independent learning, collaboration, problem-solving and using technology effectively. The instruction matches a student's needs while still challenging them to demonstrate a high standard of success.

- Students who have strong background knowledge and are motivated and work hard have the opportunity to complete multiple courses in a year.
- Students who need to move slower or develop background knowledge will be given the opportunity to solidify their learning before moving on.

achievement-based
independent learning
problem-solving
collaboration

PARTICIPATING SCHOOLS 2017-2018

Grades 9-10

- Bullard-Havens Technical High School
- Eli Whitney Technical High School
- Emmett O'Brien Technical High School
- H.C. Wilcox Technical High School
- Henry Abbott Technical High School

Grades 9-11

- A.I. Prince Technical High School
- E.C. Goodwin Technical High School
- Howell Cheney Technical High School
- Oliver Wolcott Technical High School
- Platt Technical High School
- Vinal Technical High School

Grades 9-12

- Ella T. Grasso Technical High School
- Harvard H. Ellis Technical High School
- J.M. Wright Technical High School
- Norwich Technical High School
- Windham Technical High School
- W.F. Kaynor Technical High School

For more information on the Connecticut Technical High School System, or the Mastery-Based Learning Model please visit cttech.org or contact Alexander Pitsas at alexander.pitsas@ct.gov.

