

Learning Mathematics, Science, and Technology: It's Personal

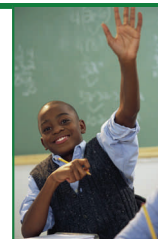
According to President Obama, “America cannot succeed unless our students take personal responsibility for their own education ... and responsibility for our children's education must begin at home.” Learning is a personal task and responsibility.

Mathematics, science, and technology skills have become the “global languages” of the 21st Century and are driving the opportunities that await students after high school graduation.

Postsecondary education and career opportunities now require an emphasis on what people can do with knowledge rather than the individual units of knowledge they have.



Students — therefore — must learn to solve problems creatively, with an emphasis on how to discover, analyze, interpret, organize, chart, graph, and communicate information in a variety of ways to be fully equipped for the opportunities that await them.



Parent and Student Personal Learning Expectations

Parents Should Expect Your Child to:

1. take engaging and demanding mathematics and science courses and to know that personal effort is the most important cause of success;
2. learn mathematics and science very differently from the way you were taught, and to expect that their learning will include significant application of technology;
3. take four years of mathematics, including at least Algebra I, Geometry, and Algebra II (including a math course during the senior year), and to take three years of science with a minimum of two laboratory courses, to be prepared for post secondary school opportunities;
4. work in study groups, both face-to-face and with internet-based technology; and
5. collaborate with others, solve real problems, be innovative, communicate clearly, and use technology as natural paths to learn mathematics, science, technology, and other subjects.



Students Should Expect to:

1. take courses that challenge your mind and draw on your imagination and creativity to solve problems;
2. struggle at times with rigorous mathematics, science, and technology courses and to seek help from classmates, teachers or others when needed;
3. be asked to apply mathematics, science, and technology in “real-world problem-solving applications” during classroom and homework learning experiences.
4. use technology skillfully and to carefully examine the accuracy or truthfulness of information available over the internet.
5. **graduate** from high school with the skills to immediately enter technical or higher education programs or to begin an entry-level job.
6. **make learning a personal responsibility.**



Learning Mathematics, Science and Technology: It's About Better Jobs & Pay

Continuing Education Considerations

- CT has 29 independent colleges/universities, and 18 public colleges: 12 community colleges, and numerous occupational schools.
- All CT State and independent higher education institutions require proficiency in mathematics as a qualification for enrollment.
- Students enrolling in the four CSUS universities - Central, Eastern, Southern and Western - and the CT community colleges for an Associate's Degree are required to take a math placement test that includes algebraic concepts. Depending on competency, students may be required to take a remedial algebra course for no credit and for full tuition charge.
- Beginning in 2015, the four CSUS universities will raise student academic admission standards:
 - * 4 years of mathematics including, as required courses, Algebra I, Geometry and Algebra 2
 - * 3 years of Science, including two laboratory science courses.
- Some occupational private schools require a math entrance test.
- Military services require a math test to enlist.
- Advanced placement (AP) college-level courses and exams in high school can earn college credit and enhance students' admission prospects.
- The PSAT test taken in the sophomore year provides feedback on strengths and weaknesses on skills necessary for college study.
- Many colleges require the SAT test (11th grade) as part of their admissions process..

Job & Career Considerations

- High school dropouts have greater difficulty finding and holding jobs and will earn considerably less over their life times than graduates.
- The CT Department of Labor predicts that more than 75 percent of the top 100 fastest growing occupations will require knowledge in a single or combination of mathematics and science skills.
- Employed CT public college graduates (Class of 2007) earned an average of over \$40,000 a year.
- Of all the jobs in CT, about 38% are classified as requiring only short-term on-the-job training. Pay is relative low, with an average hourly wage of \$14.04 (2007) compared to \$23.83 and \$35.21/hour for occupations that require Associate or Bachelor degrees respectively
- **Education Pays:** The U.S. Bureau of Labor Statistics earnings data for workers 25 and older, by education attainment for median weekly and annual earnings in 2008.
 - ◇ Professional Degree \$1,923 = \$100,000/yr
 - ◇ Doctoral Degree \$1,527 = \$79,400/yr
 - ◇ Master's Degree \$1,179 = \$61,300/yr
 - ◇ Bachelor's Degree \$ 979 = \$50,900/yr
 - ◇ Associate's Degree \$ 781 = \$40,600/yr
 - ◇ Some college \$ 714 = \$37,100/yr
 - ◇ High school graduate \$ 606 = \$31,500/yr
 - ◇ Less than HS diploma \$ 450 = \$23,400/yr

Resources for Parents and Students

- <http://review.careerforward.org/careerforward> CareerForward is a free site for students and parents to better understand the importance of education, improve motivation, and help to make learning and career decisions.
- www.ed.gov/parents/academic/help/hyc.html Helping Your Child Learn Math & Science and www.ed.gov/parents/landing.jhtml The Parents Portal are publications from the U.S. Department of Education.
- www.KnowHow2GoCT.org A free site sponsored by the CT State Departments of Education and Higher Education to provide specific steps on how to get into higher education institutions.
- www.ctdhe.org/edinfo Education & Employment Information Center, 1-800-842-0229 A toll-free hotline for info on learning and career opportunities in CT
- www.ctdol.state.ct.us/lmi CT Department of Labor's job and career market information
- www.ctjobandcareer.org A comprehensive source of information on jobs and careers in Connecticut.
- www.ctacad.org CT Academy for Education website with many math, science and technology learning links

These organizations endorse this message: CT Parent Teacher Association; CT Technology Council; CT Society of Professional Engineers; Society of Hispanic Professional Engineers; CPEP; Future Problem Solving Program of CT, Inc; CT Association of Biology Teachers; CT Women's Education & Legal Fund; CT Science Fair Association; Project to Increase the Mastery of Math & Science; CT Geographic Alliance; and CT Mathematics, Science, and Technology Leadership Council.