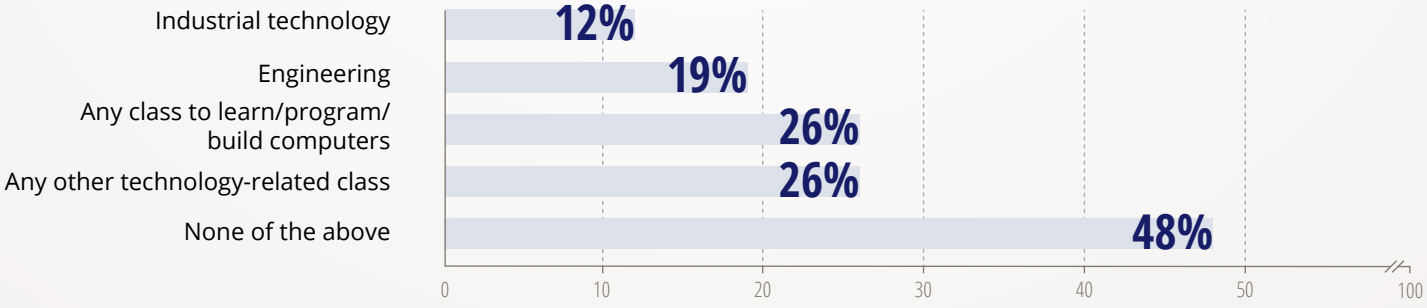
Where Do Students Learn About Technology and Engineering Literacy?

Students live in a world of rapid technological change affecting life at home, school, and the workplace. The increased emphasis on 21st century skills in K-12 education led the National Assessment of Educational Progress (NAEP) to administer the first-ever Technology and Engineering Literacy assessment. In 2014, this assessment was administered to 21,500 eighth-grade students in about 840 schools across the nation. Students' opportunities to learn about and use technology and engineering happen both inside and outside the classroom. The Technology and Engineering Literary assessment includes a survey asking about these experiences across and within the three content areas – Technology and Society, Design and Systems, and Information and Communication Technology.

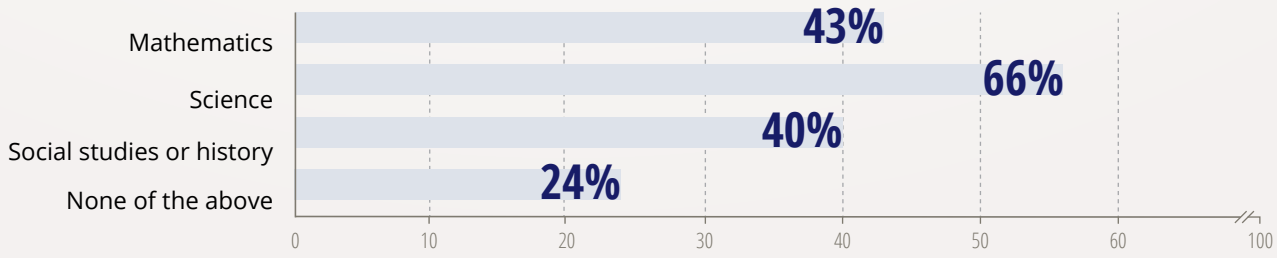
Student Coursetaking: Where eighth-graders learn about technology and engineering

What percentage of eighth-grade students have taken or are taking the following technology and engineering-related classes in school?



Percentage of eighth-grade students assessed in NAEP technology and engineering literacy (TEL), by students' reported technology/engineering-related classes taken: 2014

What percentage of eighth-grade students report having studied technology and engineering topics in any of the following classes in school?



Percentage of eighth-grade students assessed in NAEP technology and engineering literacy (TEL), by students' reported technology/engineering-related topics studied: 2014

WHO TAUGHT EIGHTH-GRADERS MOST OF WHAT THEY KNOW ABOUT BUILDING THINGS, FIXING THINGS, OR HOW THINGS WORK?

Percentage distribution of eighth-grade students assessed in NAEP technology and engineering literacy (TEL), by who taught them most of what they know about building things, fixing things, or how things work: 2014

63% FAMILY MEMBERS

19% I TAUGHT MYSELF

13% TEACHERS

3% FRIENDS

2% SOMEONE ELSE

Students' experiences with technology and society

How frequently do eighth-graders learn about technology and society as part of school work?

LEARNED ABOUT INVENTIONS THAT CHANGE THE WAY PEOPLE LIVE

Percentage distribution of eighth-grade students assessed in NAEP technology and engineering literacy (TEL), by frequency with which they learned about inventions that change the way people live as part of school work: 2014

8% NEVER

20% RARELY

45% SOMETIMES

27% OFTEN

Students' experiences with design and systems

How frequently do eighth-graders learn about the nature of technology, the development process, and basic principles of dealing with technology as part of school work?

BUILT/TESTED A MODEL TO SEE IF IT SOLVES A PROBLEM

Percentage distribution of eighth-grade students assessed in NAEP technology and engineering literacy (TEL), by frequency with which they built or tested a model to see if it solves a problem as part of school work: 2014

23%
NEVER

39%
ONCE OR TWICE

24%
THREE TO FIVE TIMES

13%
MORE THAN FIVE TIMES

LEARNED ABOUT DESIGNING SOMETHING WHEN THERE'S LIMITED TIME/MONEY/MATERIALS

Percentage distribution of eighth-grade students assessed in NAEP technology and engineering literacy (TEL), by frequency with which they learned about designing something when there is limited time, money, or materials, as part of school work: 2014

16%
NEVER

32%
ONCE OR TWICE

38%
THREE OR FIVE TIMES

15%
MORE THAN FIVE TIMES

Students' experiences with information and communication technology

How frequently do eighth-graders use a computer or other digital technology as part of school work?

USE A COMPUTER TO CREATE A PRESENTATION

Percentage distribution of eighth-grade students assessed in NAEP technology and engineering literacy (TEL), by frequency with which they use a computer to create a presentation as part of school work: 2014

10%	37%	37%	12%	4%
NEVER OR ALMOST NEVER	A FEW TIMES A YEAR	ONCE OR TWICE A MONTH	ONCE OR TWICE A WEEK	EVERY DAY OR ALMOST EVERY DAY

USE A COMPUTER TO CREATE A SPREADSHEET

Percentage distribution of eighth-grade students assessed in NAEP technology and engineering literacy (TEL), by frequency with which they use a computer to create a spreadsheet as part of school work: 2014

30%	33%	21%	11%	5%
NEVER OR ALMOST NEVER	A FEW TIMES A YEAR	ONCE OR TWICE A MONTH	ONCE OR TWICE A WEEK	EVERY DAY OR ALMOST EVERY DAY

INTERPRETING THESE RESULTS

NAEP survey questionnaire results are intended to place results in context and CANNOT be used to infer cause-and-effect relationships between student characteristics and achievement.