

What is Quantitative Literacy in the 21st Century?

An Agenda for San Jose State University

What is Quantitative Literacy (QL)?

Quantitative literacy is the ability to use and understand numbers, and the ability to apply mathematics, statistics, and technology, as well as understanding the limitations of their use, in one's everyday life as a student or an educated citizen.

Why do we need QL?

- To be better students of science and life
- To be better citizens

MATHEMATICS and DEMOCRACY
The Case for Quantitative Literacy

<http://www.maa.org/QL/mathanddemocracy.html>

QL Skills

Numbers

- The ability to use ratio and proportion to solve problems in context.
- The ability to calculate and compare measurements in different systems of units.
- The ability to use percent to solve problems in context.
- The ability to model and solve problems using linear equations and systems of linear equations with two variables.
- The ability to apply and manipulate simple mathematical formulas to solve problems.

QL Skills

Data Analysis

- The ability to create and understand graphical displays of data (pie charts, line graphs and bar graphs, histograms, etc).
- The ability to calculate and understand averages (mean and median).
- The ability to calculate and understand weighted averages (GPA, expected value, etc.)
- The ability to make estimates and predictions based on data.
- The ability to distinguish between reasonable and unreasonable claims based on data.

QL Skills

Technology

- The ability to use a calculator to perform standard mathematical operations.
- The ability to use a spreadsheet program (Microsoft Excel) to create and manipulate tables of numbers.

QL Issues Across the Curriculum

- Computing the correct dosage of a drug (Nursing)
- Computing district-wide performance on the STAR exam (Education)
- Measuring distance and area (Geography)

QL Resources

- National Numeracy Network
<http://www.math.dartmouth.edu/~nnn/>
- Spreadsheets Across the Curriculum
<http://www.evergreen.edu/washcenter/project.asp?id=75>
- Mathematics Association of America
Special Interest Group on Quantitative
Literacy

<http://pc75666.math.cwu.edu/~montgomery/sigmaaq/>