

Why Measure Numeracy?

Numeracy is the ability to solve quantitative reasoning problems and to make well-reasoned judgments derived from quantitative information in a variety of contexts. More than being able to compute or calculate a solution to a mathematical equation, numeracy includes understanding how quantitative information is gathered, represented, and correctly interpreted using graphs, charts, tables and diagrams. A person with strong numeracy skills can apply his or her knowledge of numbers, arithmetic, algebraic relationships, geometric relationships, and mathematical techniques to situations that require the interpretation or evaluation of quantitative information. The person with strong numeracy skills is able to recognize and use quantitative information, patterns, ratios, percentages, spatial relationships, and statistical information intelligently and correctly when drawing conclusions, making estimates, explaining or predicting events or behavior.

Strong numeracy skills distinguish successful business executives, managers, health care professionals, engineers, architects, scientists, real estate agents, sales professionals, financial analysts, and policy makers. Spreadsheets are the order of the day. Professionals in every field know that key decisions often depend on a thorough weighing of costs and benefits, accurate projections of likely outcomes, and the ability to interpret correctly the complex numerical relationships represented in tables, charts, graphs, blueprints, or diagrams.

Numeracy is for everyone. From political polling data to the stats on the sports pages, from the economic news about stocks and interest rates, to the impact on our lives of the price of gas and food, our lives are awash in numerical data. What does an increase in the cost of living index or a decrease in the unemployment rate mean for me and my family? How important to my health is achieving a 5% decrease in my risk of heart attack, my blood pressure, or my BMI? How much will it cost to earn a college degree and what impact would that degree have on my earning potential? If I put this purchase on my credit card, what will it actually cost me? How does a change in the tax code impact my take-home pay?

The development of numeracy skills, like critical thinking skills, begins in childhood. Australia has identified numeracy as a national educational goal. That nation operationalizes numeracy for curricular purposes as calculating and estimating, recognizing and using patterns, using fractions, decimals, ratios, rates and percentages, using spatial reasoning, interpreting and drawing conclusions from statistical information, and using measurement. In the United States the Common Core State Standards Initiative, 2011 reform effort locates critical thinking about math as a central learning outcome at all grade levels. Critical thinking applied to math focuses on mathematical problem solving, quantitative reasoning, argument construction, argument evaluation, structural analysis and strategic application of tools to solve math problems, and modeling with mathematics. Numeracy skills can be thought of as the application of analysis, inference, interpretation, explanation, evaluation, as well as reflection on one's own reasoning process (metacognition) to numerical and spatial information and relationships.

Children, adolescents and adults alike need to be able to think critically about the mathematical and numerical information that surrounds them in the media, on the Internet, in schools and workplaces, and in society at large. Leading scholars and educators have consistently argued that numeracy rivals reading literacy and language fluency in its importance for learning and for life. Numerically literate individuals understand the social and pragmatic function of mathematics and can reason about mathematical information.

Numeracy is essential in our data-driven world, if one hopes to be successful in the workplace, to achieve academically, to be engaged citizens, and to make thoughtful and well supported decisions in any domain of life that admits of the relevance of quantitative information.

Given the central importance of numeracy, Insight Assessment is proud to offer augmented versions of our most popular skills tests which report scores on numeracy as well as critical thinking:

- [Assessments for college students](#): CCTST, BCTST, HSRT, TER, CSS
- [Assessments for working adults in Business, Health Care, Defense, Science and Engineering](#): INSIGHT
- [Assessments for K-12 Education](#): EDUCATE INSIGHT

What is Numeracy?

