

- Cognates [words that are similar in spelling and pronunciation to words in another language such as angle/el ángulo (Spanish), negative/ negativo (Spanish)]
- Idioms [stumbling block, cover all the bases]
- Pronunciation and spelling that change word forms [verb – organize and noun – organization]

The language of mathematics uses complex structures not typically found in everyday activities:

- comparatives [7 is 3 greater than 4; x is three times as dense as y]
- prepositions [divided into, divided by, multiplied by, x exceeds 3 by 5]
- passive voice [when 3 is added to a number, the result is 8]
- reversals [the number b is 6 less than c]

In addition, the language of math lacks redundancy. There are no repetitions to allow students to confirm meaning. There is also a lack of one-to-one correspondence between symbols and words. For example, “*The number a is 7 less than the number b* is not $a = 7 - b$ ”.

When reading equations and word problems, students must be able to comprehend dense vocabulary and symbols. Frequently two or more concepts are used to form a new concept such as “least common denominator”. Also, several words can signal the same mathematical operation [add, sum, total, and, plus, and combine].

Students must be taught to read math texts, databases, spreadsheets, and graphical information, including

- maps
- tables and charts
- diagrams
- graphs (line, column, pie, bar) and
- timelines

Cultural differences also pose difficulties for LEP students learning mathematics. Measurement may be challenging, as prior knowledge may be based upon the metric system, not the English system of measurement. Likewise, fractions may be unfamiliar, as previous instruction most likely focused on decimals. The use of periods and commas in numeric expressions may be another source of confusion. Some languages use periods, whereas English uses commas in writing multiples of 1000 (7.532 v. 7,532) and a comma instead of a period in decimals (6,5 v. 6.5).

Components and Strands

There are three components and four strands interwoven throughout the English as a Second Language (ESL) Essential Standards. The extent to which each component is exhibited within the communication of an English learner reflects the level of that student’s English language proficiency, as evidenced in the Performance Definitions. Linguistic complexity, vocabulary usage, and language control increase incrementally as students progress from one ELP level into the next. The four strands designate the four domains of language at each proficiency level.