

Converting a STAAR Scale Score to a Percentile

To convert a STAAR scale score to a percentile, you must first have access to the appropriate STAAR scale score frequency distribution. Then a simple formula can be used to find the percentile of any STAAR scale score value.

The formula for the percentile $p(x)$ is as follows*:

$$p(x) = \frac{n}{N} \times 100$$

where

x = scale score of interest

n = cumulative frequency associated with the next lowest scale score (number of students with a scale score less than x)

N = population size (total number of students tested).

(*The percentile calculation used here yields the same value as the cumulative percentage of the next lowest scale, as presented in the last column in the frequency distribution)

Example:

Below is a worked out example using the STAAR grade 7 mathematics spring 2013 test results (you will need to look at the STAAR grade 7 mathematics spring 2013 frequency distribution on the next page to follow this example). Suppose we wish to find the percentile for the scale score of 1707. Looking at the frequency distribution on the next page, it can be verified that

$$x = 1707$$

$$n = 246126 \text{ (the cumulative frequency for scale score 1696)}$$

$$N = 323192 \text{ (the cumulative frequency for scale score 2189)}$$

and, thus,

$$p(1707) = \frac{246126}{323192} \times 100 = 76.15$$

Usually, percentiles are expressed as whole numbers. In this case, since the calculated percentile is not a whole number, the percentile is rounded down to the closest whole number:

$$p(1707) = 76$$

FREQUENCY DISTRIBUTION - SCALE SCORES
 STAAR ENGLISH SPRING 2013
 GRADE 7 MATHEMATICS
 ALL STUDENTS - EXCLUDING BRAILLE

