

**2022 STAAR Alternate 2
Score Distributions and Statistics
by Content Area and Grade**

Glossary

This glossary provides definitions for the statistical terms that appear in the tables and graphs in this section (“STAAR Alternate 2 2022 Score Distributions and Statistics by Content Area and Grade”) of Appendix C. Definitions of statistical terms and concepts in the other sections are given in [Chapter 3](#) or [Chapter 5](#).

Descriptive Statistics

Mean The mean is a measure of central tendency. It is the average score for the assessment. It is computed by summing the scores of all students and dividing the sum by the total number of students (N).

Median The median is another measure of central tendency. It is the score at the middle of the frequency distribution for the assessment. It is computed by finding the score at which there are the same number of scores above as there are below.

Mode The mode is another measure of central tendency. It is the most frequently obtained score for the assessment. It is determined by computing the frequency distribution and finding the score point with the highest frequency (n-count).

Range The range is a measure of statistical dispersion (variability or spread). It is the difference between the lowest and highest scores obtained by students on the assessment. It is computed by subtracting the lowest score from the highest score.

Interquartile Range The interquartile range is another measure of statistical dispersion (variability or spread). It is the difference between the 1st and 3rd quartiles (or 25th and 75th percentiles) of the score distribution for the assessment. It is computed by subtracting the score at the 1st quartile (the point that splits the lowest 25 percent of the scores) from the score at the 3rd quartile (the point that splits the highest 25 percent of the scores).

Standard Deviation (SD) The standard deviation is another measure of statistical dispersion (variability or spread). It is an indicator of the degree of score variation around the mean. It is computed using the following formula:

$$SD = \sqrt{\frac{\sum_{i=1}^N (X_i - \bar{X})^2}{N - 1}},$$

where X_i is the score for student i , \bar{X} is the mean score and N is the total number of students who took the assessment.

Variance The variance is another measure of statistical dispersion (variability or spread) around the mean. It is computed as the square of the standard deviation (SD).

Skewness The skewness is an indicator of the shape of the score distribution. It measures the extent to which the score distribution “leans” to one side of the mean. A positive skewness indicates that the score distribution leans below the mean. A negative skewness indicates that the score distribution leans above the mean. A skewness of zero indicates that the score distribution is symmetric around the mean. It is computed using the following formula:

$$Skewness = \frac{N}{(N-1)(N-2)} \sum_{i=1}^N \left(\frac{X_i - \bar{X}}{S_X} \right)^3,$$

where X_i is the score for student i , \bar{X} is the mean score, S_X is the standard deviation (SD) and N is the total number of students who took the assessment.

Kurtosis The kurtosis is another indicator of the shape of the score distribution. It measures the “peakedness” of the score distribution. A positive kurtosis is referred to as *leptokurtic*, meaning that the distribution has a more acute peak around the mean and fatter tails. A negative kurtosis is called *platykurtic*, meaning the distribution has a lower, wider peak around the mean and thinner tails. It is computed using the following formula:

$$Kurtosis = \frac{N(N+1)}{(N-1)(N-2)(N-3)} \sum_{i=1}^N \left(\frac{X_i - \bar{X}}{S_X} \right)^4 - \frac{3(N-1)^2}{(N-2)(N-3)},$$

where X_i is the score for student i , \bar{X} is the mean score, S_X is the standard deviation (SD) and N is the total number of students who took the assessment.

Frequency Distributions

Frequency (Freq) This is the number of students who obtained the particular score point on the assessment.

Cumulative Frequency (CumFreq) This is the number of students who obtained a score that is less than or equal to the particular score point on the assessment.

Percentage (Pct) This is the percentage of students who obtained the particular score point on the assessment. It is computed as: $Pct = Freq \div N \times 100$.

Cumulative Percentage (CumPct) This is the percentage of students who obtained a score that is less than or equal to the particular score point on the assessment. It is computed as: $CumPct = CumFreq \div N \times 100$.

List of Tables

**Table C.6.1. Spring 2022 STAAR Alternate 2 Grades 3–8 Assessments
Scale Score Descriptive Statistics**

**Table C.6.2. Spring 2022 STAAR Alternate 2 EOC Assessments
Scale Score Descriptive Statistics**

List of Figures

**Figure C.6.1. Spring 2022 STAAR Alternate 2 Grade 3 Mathematics Frequency Distribution
of Scale Scores All Students**

**Figure C.6.2. Spring 2022 STAAR Alternate 2 Grade 4 Mathematics Frequency Distribution
of Scale Scores All Students**

**Figure C.6.3. Spring 2022 STAAR Alternate 2 Grade 5 Mathematics Frequency Distribution
of Scale Scores All Students**

**Figure C.6.4. Spring 2022 STAAR Alternate 2 Grade 6 Mathematics Frequency Distribution
of Scale Scores All Students**

**Figure C.6.5. Spring 2022 STAAR Alternate 2 Grade 7 Mathematics Frequency Distribution
of Scale Scores All Students**

**Figure C.6.6. Spring 2022 STAAR Alternate 2 Grade 8 Mathematics Frequency Distribution
of Scale Scores All Students**

**Figure C.6.7. Spring 2022 STAAR Alternate 2 Grade 3 Reading Frequency Distribution of
Scale Scores All Students**

**Figure C.6.8. Spring 2022 STAAR Alternate 2 Grade 4 Reading Frequency Distribution of
Scale Scores All Students**

**Figure C.6.9. Spring 2022 STAAR Alternate 2 Grade 5 Reading Frequency Distribution of
Scale Scores All Students**

**Figure C.6.10. Spring 2022 STAAR Alternate 2 Grade 6 Reading Frequency Distribution of
Scale Scores All Students**

**Figure C.6.11. Spring 2022 STAAR Alternate 2 Grade 7 Reading Frequency Distribution of
Scale Scores All Students**

**Figure C.6.12. Spring 2022 STAAR Alternate 2 Grade 8 Reading Frequency Distribution of
Scale Scores All Students**

Figure C.6.13. Spring 2022 STAAR Alternate 2 Grade 5 Science Frequency Distribution of Scale Scores All Students

Figure C.6.14. Spring 2022 STAAR Alternate 2 Grade 8 Science Frequency Distribution of Scale Scores All Students

Figure C.6.15. Spring 2022 STAAR Alternate 2 Grade 8 Social Studies Frequency Distribution of Scale Scores All Students

Figure C.6.16. Spring 2022 STAAR Alternate 2 Algebra I Frequency Distribution of Scale Scores All Students

Figure C.6.17. Spring 2022 STAAR Alternate 2 English I Frequency Distribution of Scale Scores All Students

Figure C.6.18. Spring 2022 STAAR Alternate 2 English II Frequency Distribution of Scale Scores All Students

Figure C.6.19. Spring 2022 STAAR Alternate 2 Biology Frequency Distribution of Scale Scores All Students

Figure C.6.20. Spring 2022 STAAR Alternate 2 U.S. History Frequency Distribution of Scale Scores All Students

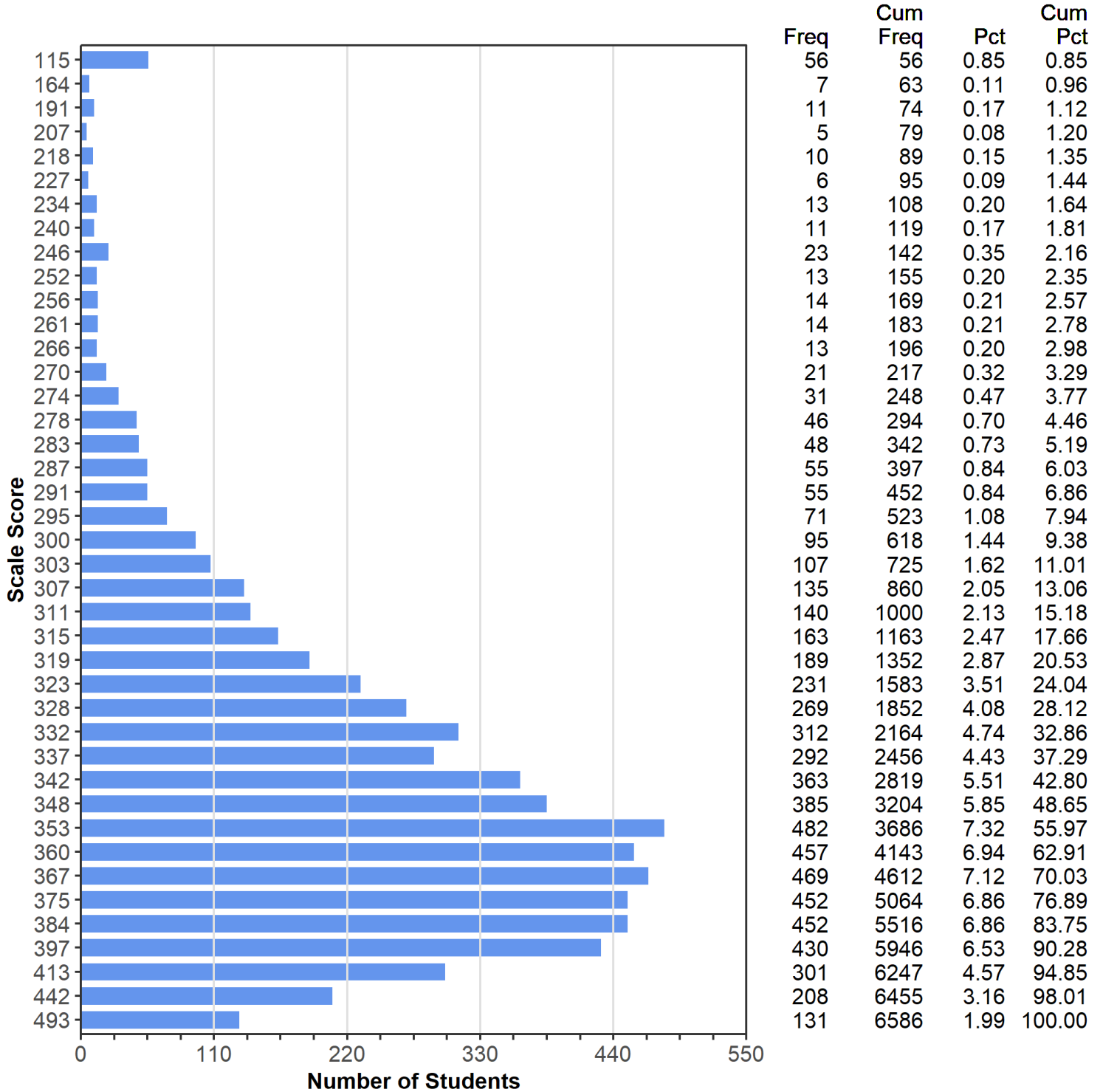
**Table C.6.1. Spring 2022 STAAR Alternate 2 Grades 3–8 Assessments
Scale Score Descriptive Statistics**

Subject	N	Mean	Median	Mode	Range	Interquartile Range	SD	Variance	Skewness	Kurtosis
Grade 3 Mathematics	6,586	351.47	353	353	378	47	48.88	2389.05	-0.65	4.78
Grade 4 Mathematics	6,408	360.71	358	371	375	50	47.23	2230.86	-0.33	3.79
Grade 5 Mathematics	6,205	362.39	358	411	377	65	51.90	2693.73	0.13	2.06
Grade 6 Mathematics	6,176	365.49	363	391	411	59	54.87	3010.30	-0.18	3.01
Grade 7 Mathematics	6,120	369.43	367	360	410	53	52.76	2783.55	0.05	3.19
Grade 8 Mathematics	5,798	361.86	355	370	405	53	49.82	2482.14	-0.11	4.38
Grade 3 Reading	6,583	335.16	336	336	373	52	47.01	2209.81	-0.69	5.21
Grade 4 Reading	6,404	344.96	341	374	387	57	48.07	2310.71	-0.24	3.24
Grade 5 Reading	6,203	350.25	349	357	399	54	49.68	2467.88	-0.17	3.39
Grade 6 Reading	6,179	344.79	343	350	390	51	45.79	2097.16	-0.35	4.49
Grade 7 Reading	6,127	352.65	348	371	391	48	48.46	2348.31	0.08	3.29
Grade 8 Reading	5,794	358.70	356	379	382	56	50.81	2581.98	-0.15	2.79
Grade 5 Science	6,200	371.67	365	414	393	57	55.79	3112.82	-0.23	2.10
Grade 8 Science	5,793	370.68	363	406	346	46	46.94	2203.00	-0.22	3.04
Grade 8 Studies	5,796	362.10	362	380	384	45	47.98	2302.05	-0.24	3.86

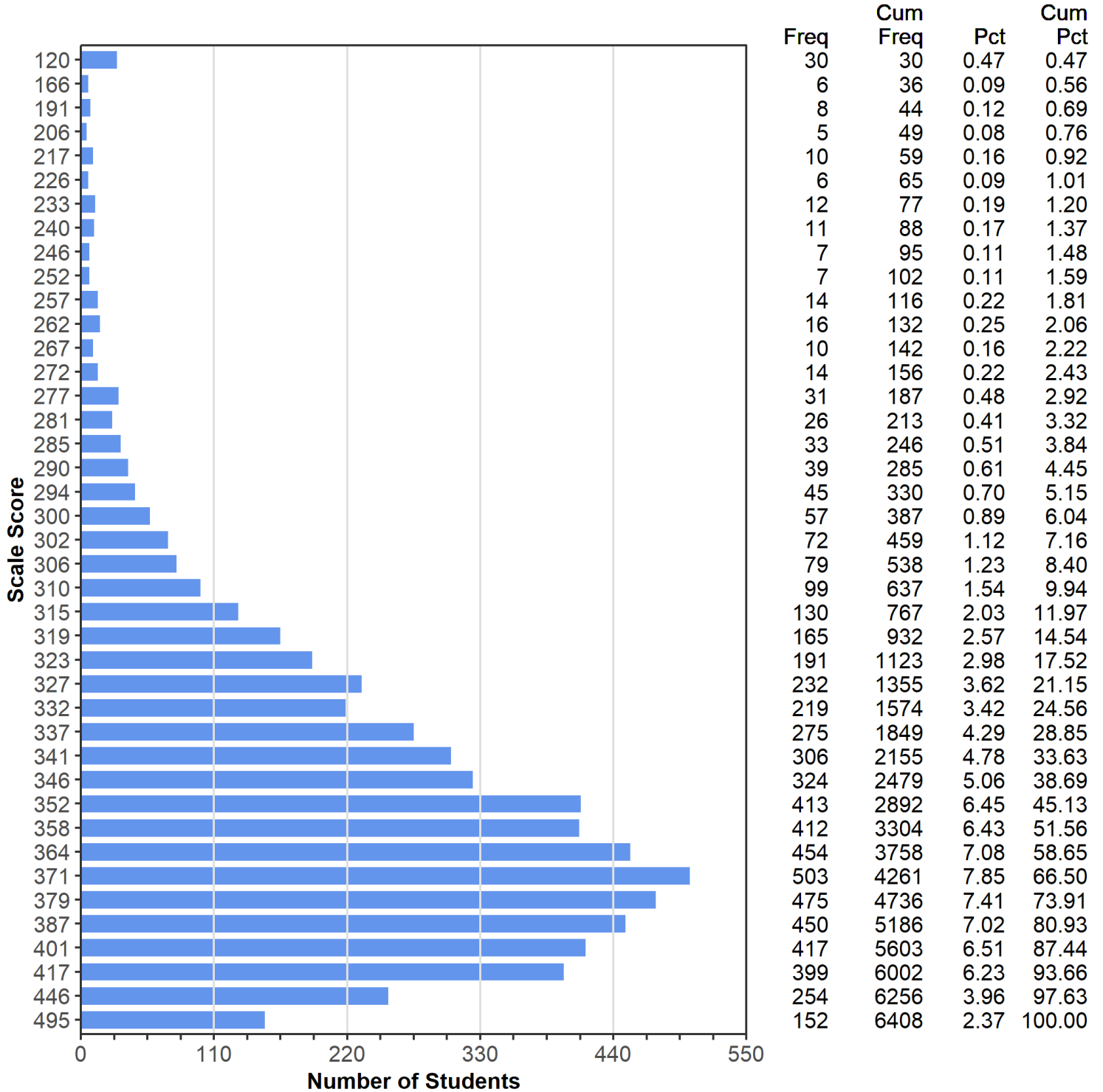
**Table C.6.2. Spring 2022 STAAR Alternate 2 EOC Assessments
Scale Score Descriptive Statistics**

Subject	N	Mean	Median	Mode	Range	Interquartile Range	SD	Variance	Skewness	Kurtosis
Algebra I	5,993	352.42	350	356	400	46	49.35	2435.58	-0.20	4.37
English I	6,006	361.30	355	395	401	65	57.31	3284.72	-0.09	2.29
English II	5,490	361.19	358	386	407	54	51.19	2620.81	-0.33	4.19
Biology	5,860	370.65	364	407	350	52	49.06	2406.95	-0.29	2.99
US History	5,045	368.41	368	410	384	52	52.39	2744.63	-0.20	2.41

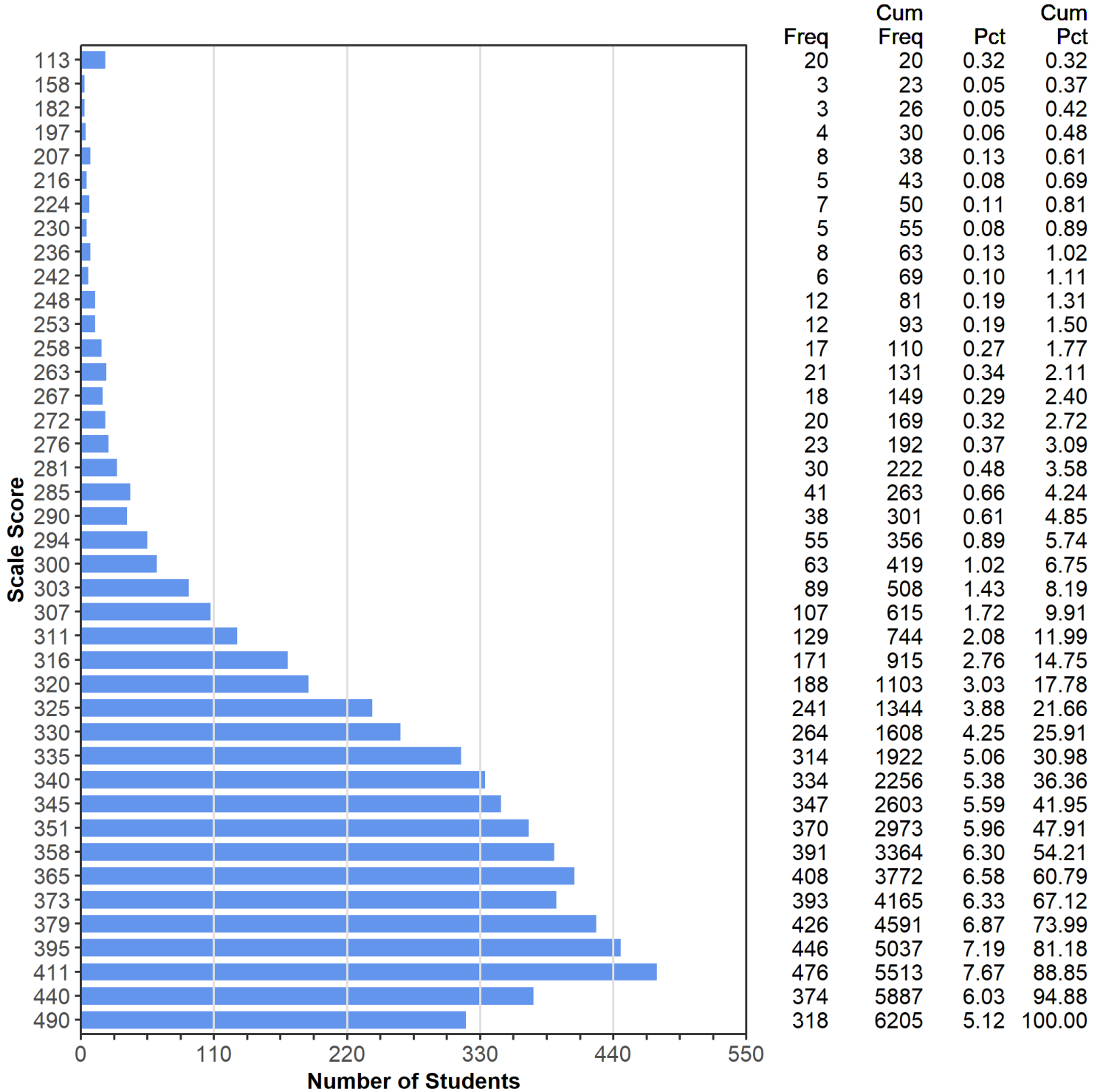
**Figure C.6.1. Spring 2022 STAAR Alternate 2 Grade 3 Mathematics
Frequency Distribution of Scale Scores
All Students**



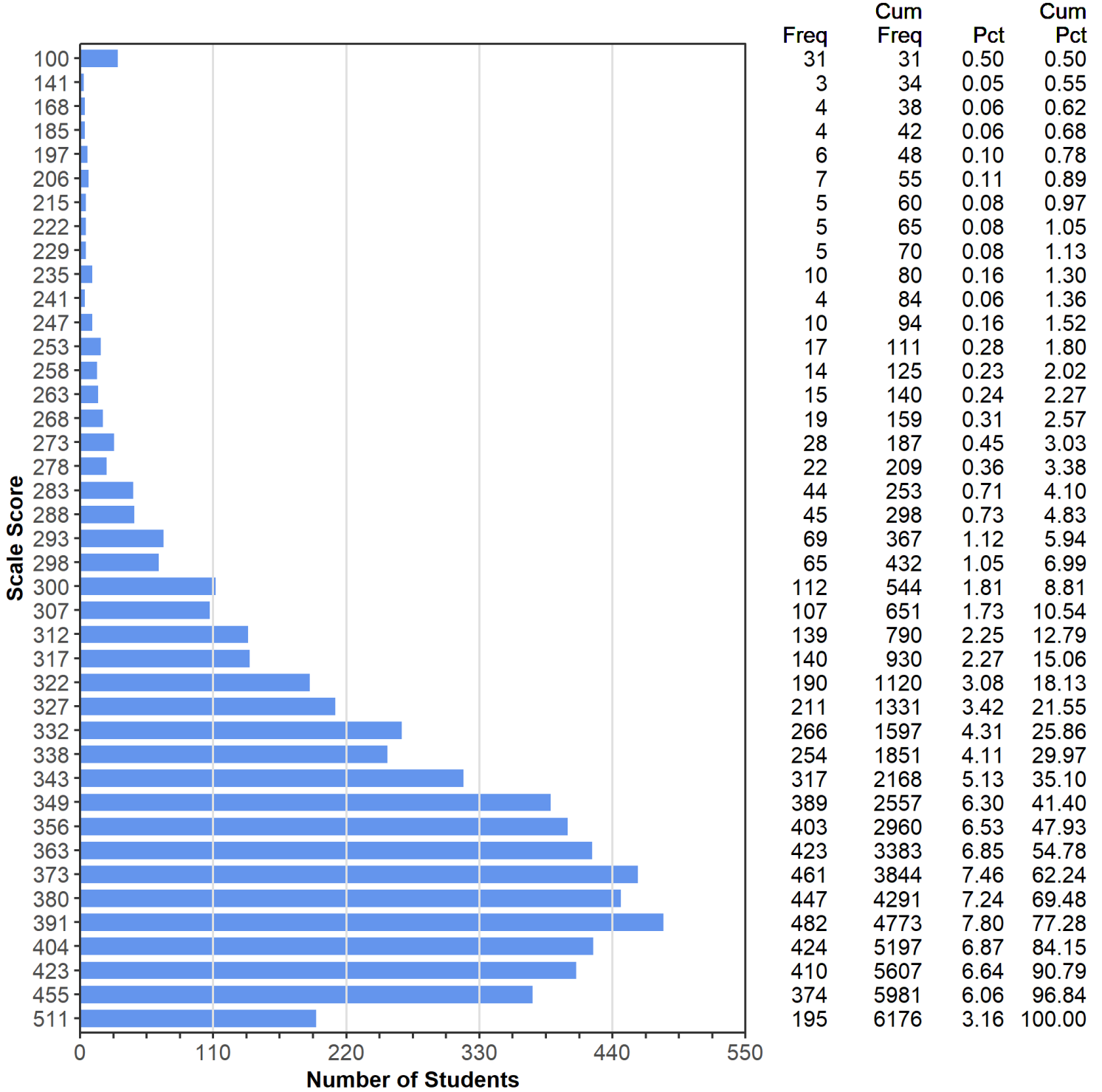
**Figure C.6.2. Spring 2022 STAAR Alternate 2 Grade 4 Mathematics
Frequency Distribution of Scale Scores
All Students**



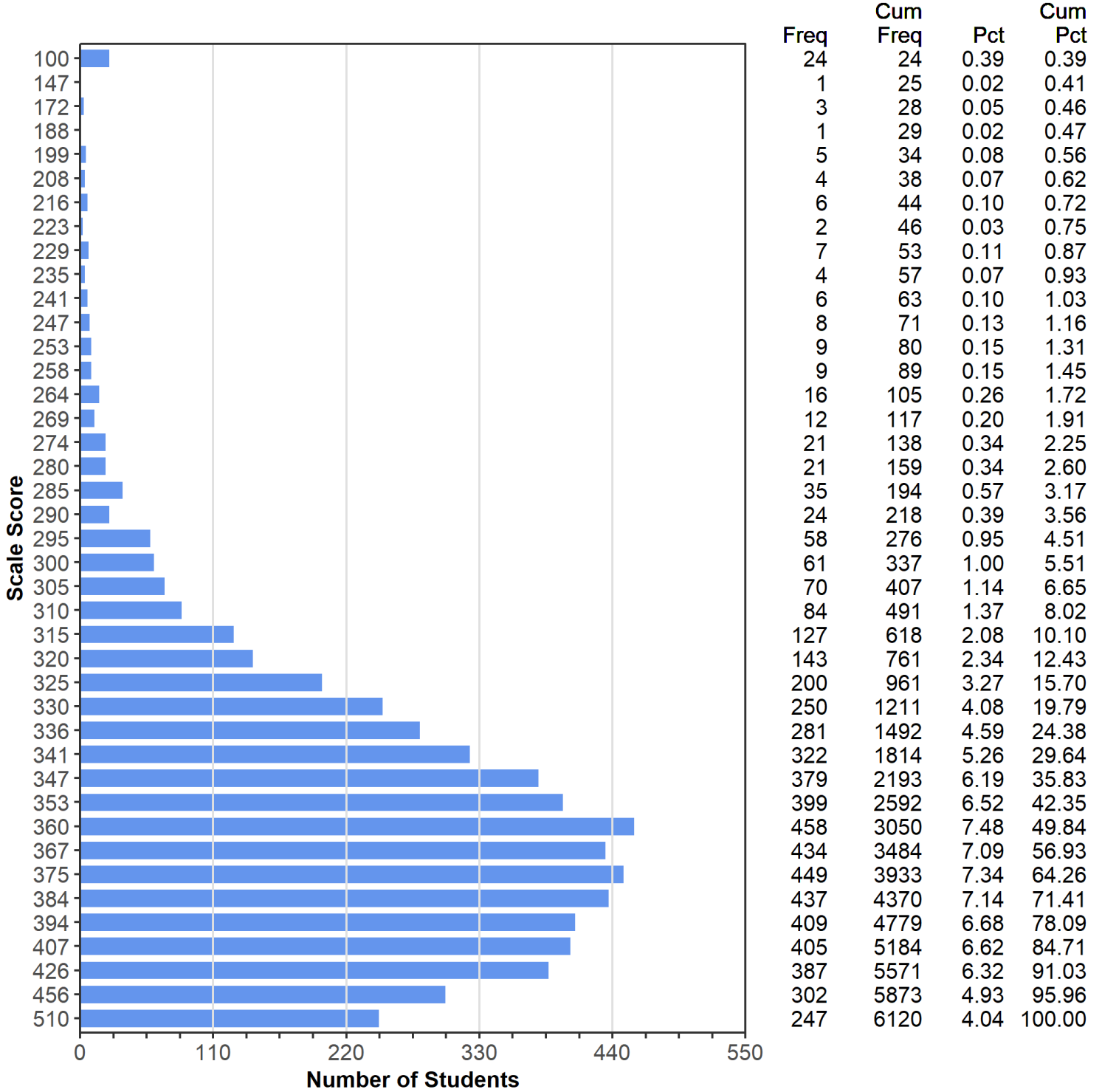
**Figure C.6.3. Spring 2022 STAAR Alternate 2 Grade 5 Mathematics
Frequency Distribution of Scale Scores
All Students**



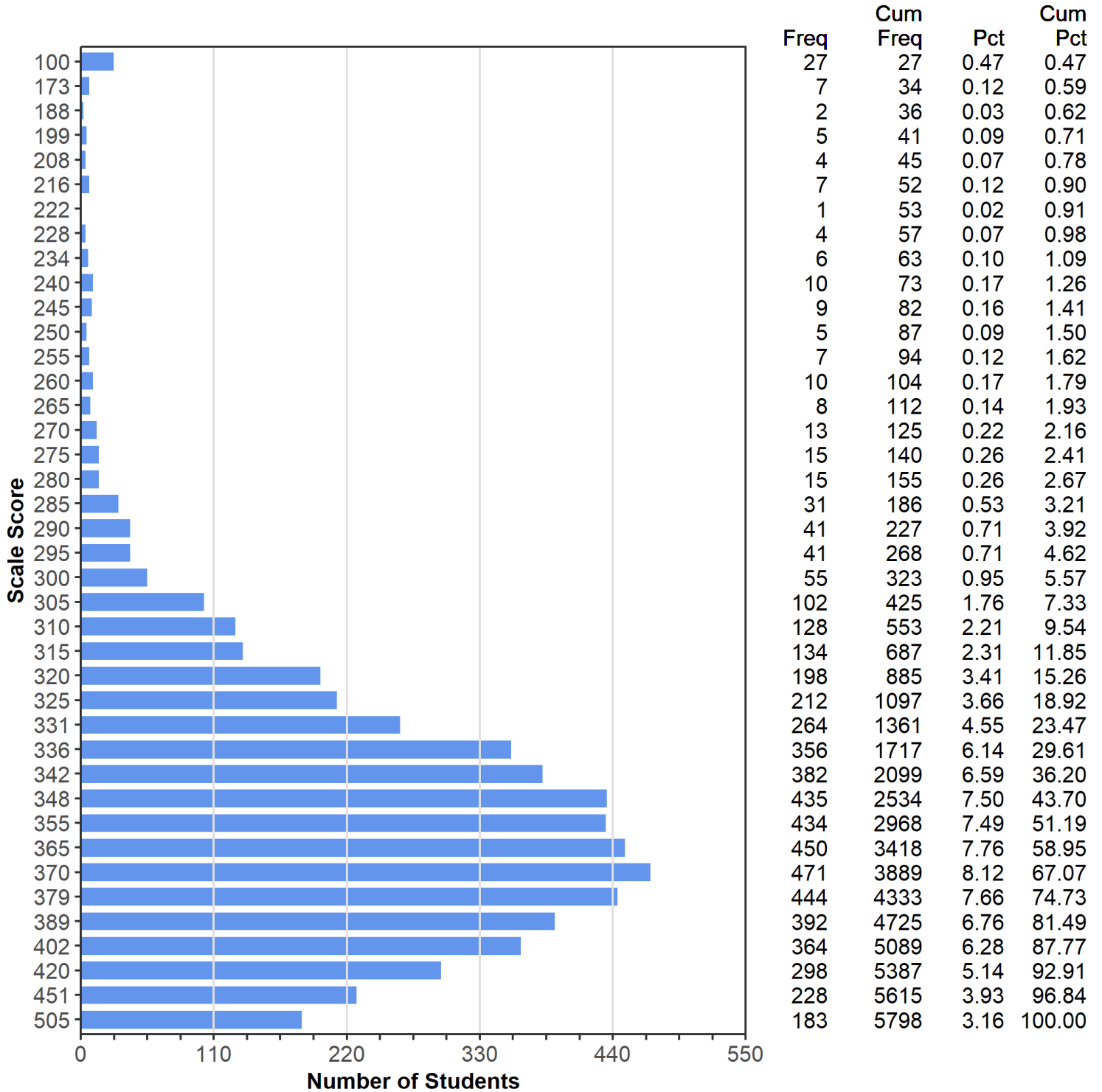
**Figure C.6.4. Spring 2022 STAAR Alternate 2 Grade 6 Mathematics
Frequency Distribution of Scale Scores
All Students**



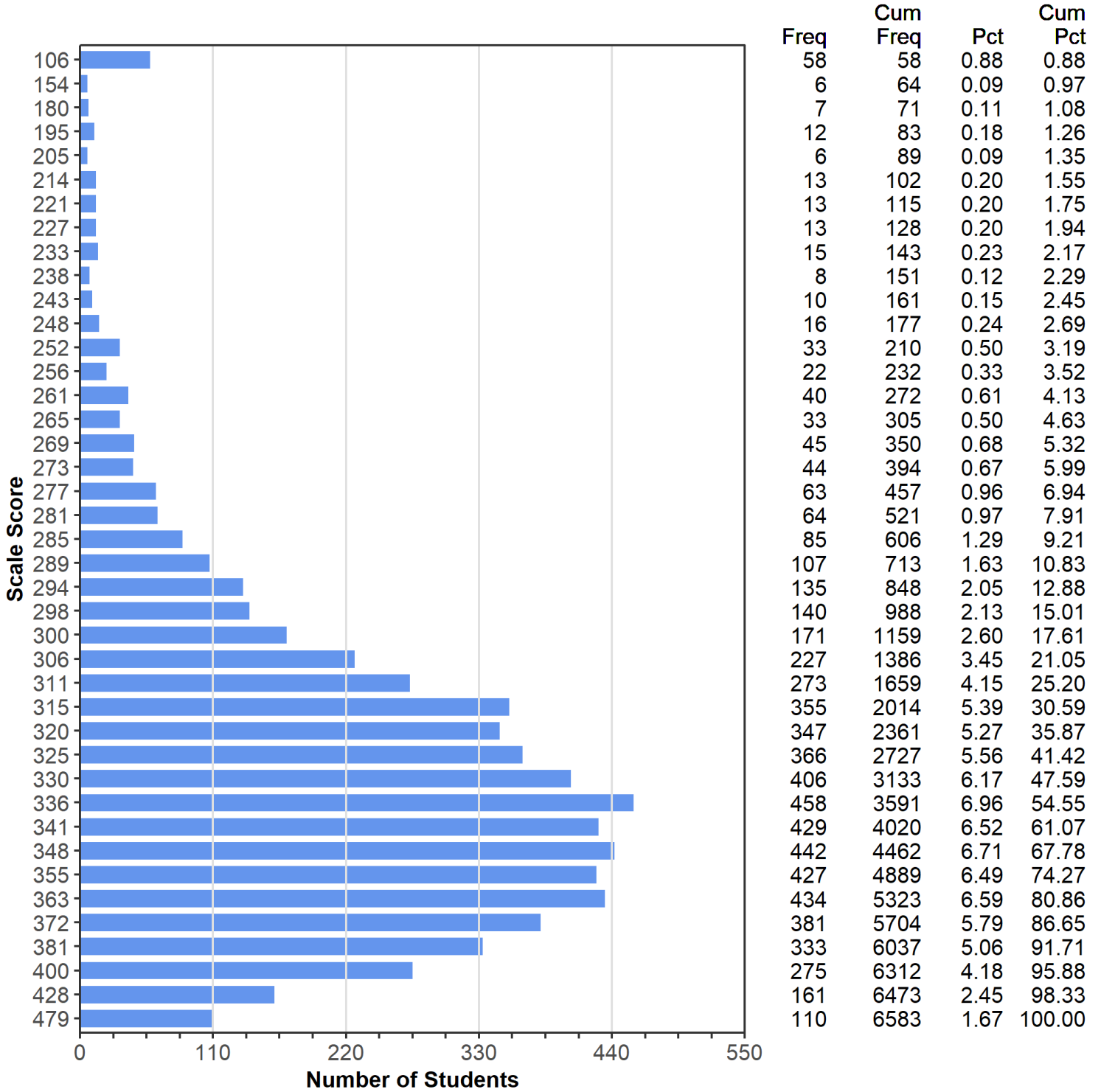
**Figure C.6.5. Spring 2022 STAAR Alternate 2 Grade 7 Mathematics
Frequency Distribution of Scale Scores
All Students**



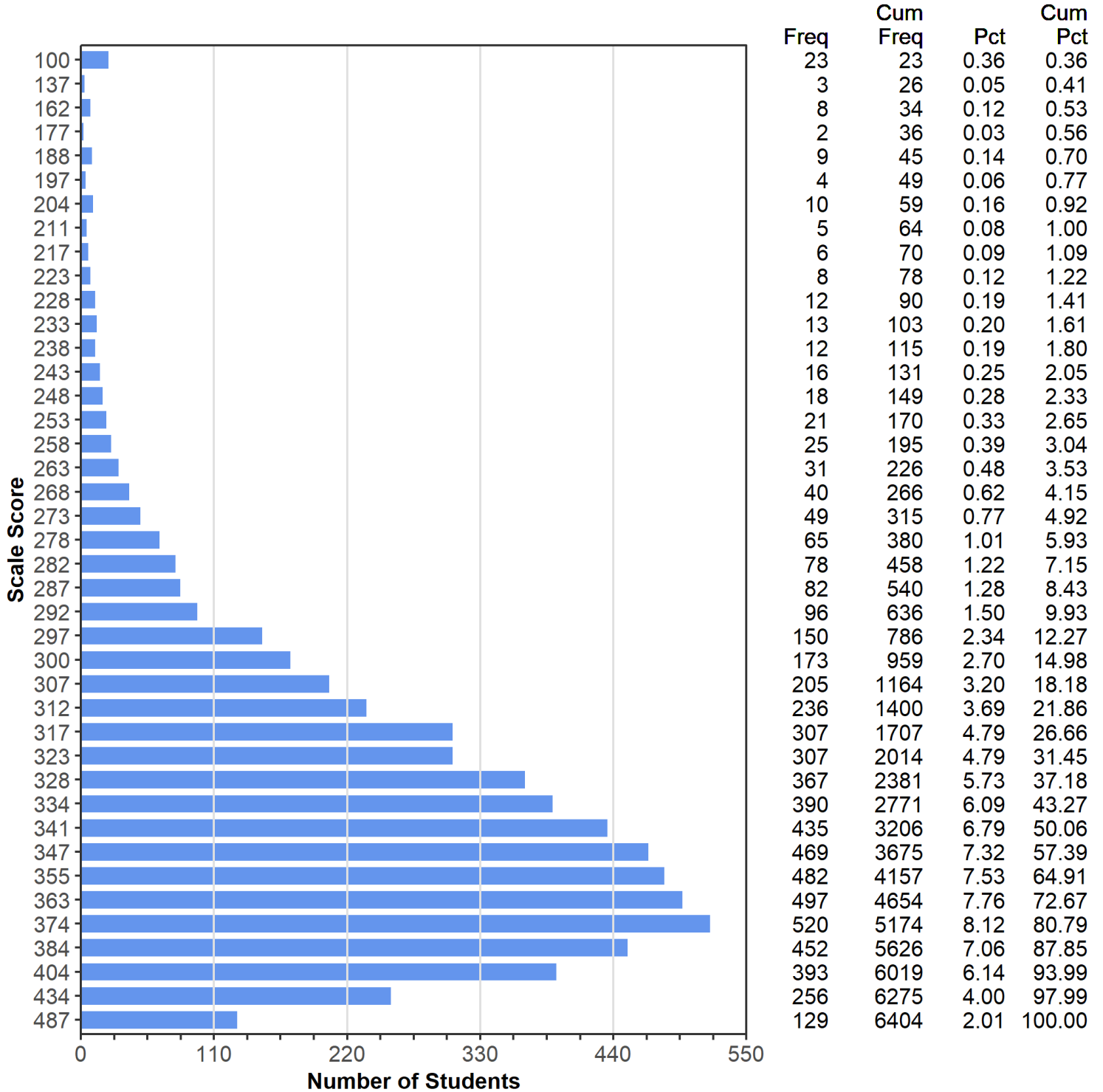
**Figure C.6.6. Spring 2022 STAAR Alternate 2 Grade 8 Mathematics
Frequency Distribution of Scale Scores
All Students**



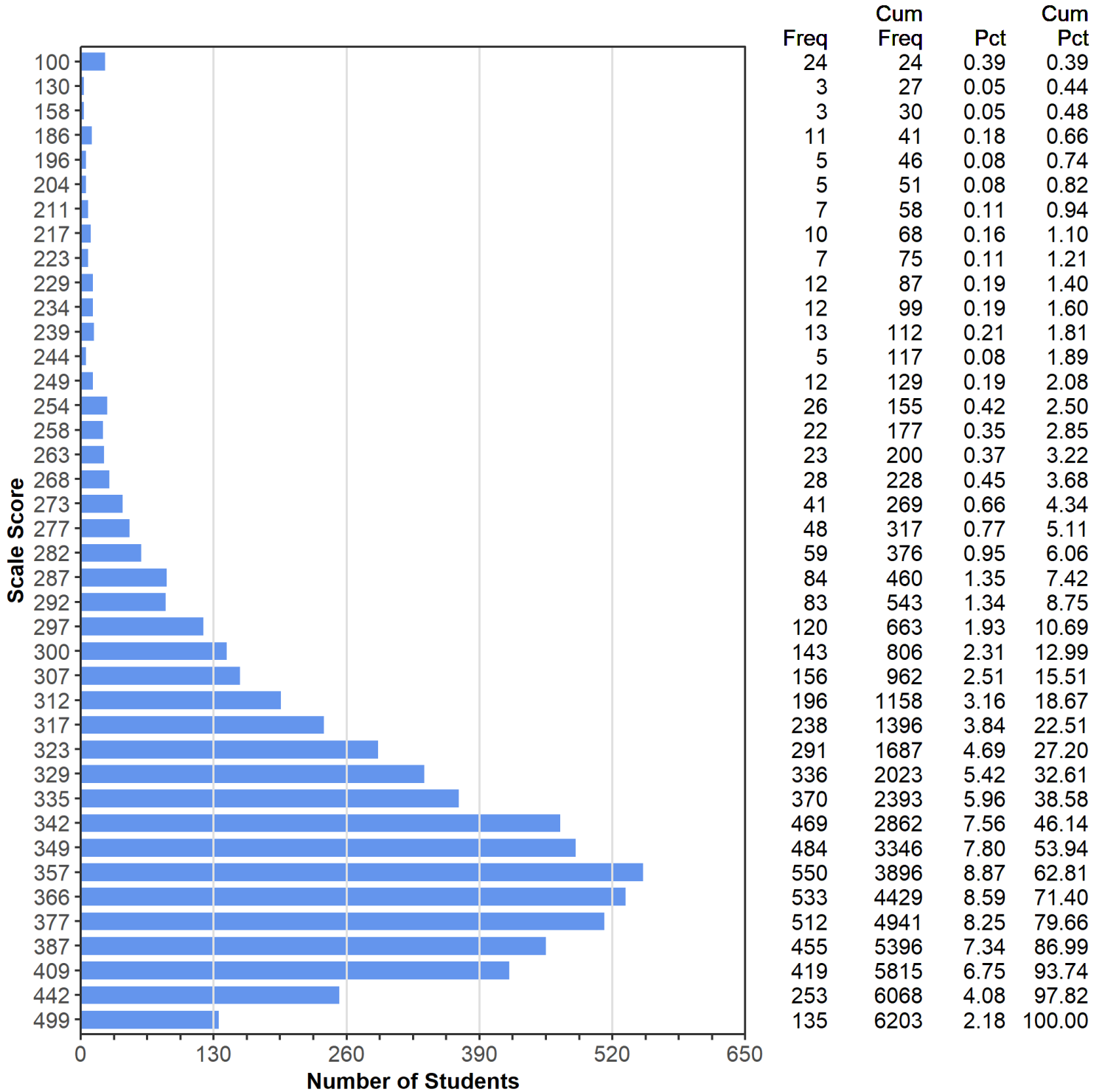
**Figure C.6.7. Spring 2022 STAAR Alternate 2 Grade 3 Reading
Frequency Distribution of Scale Scores
All Students**



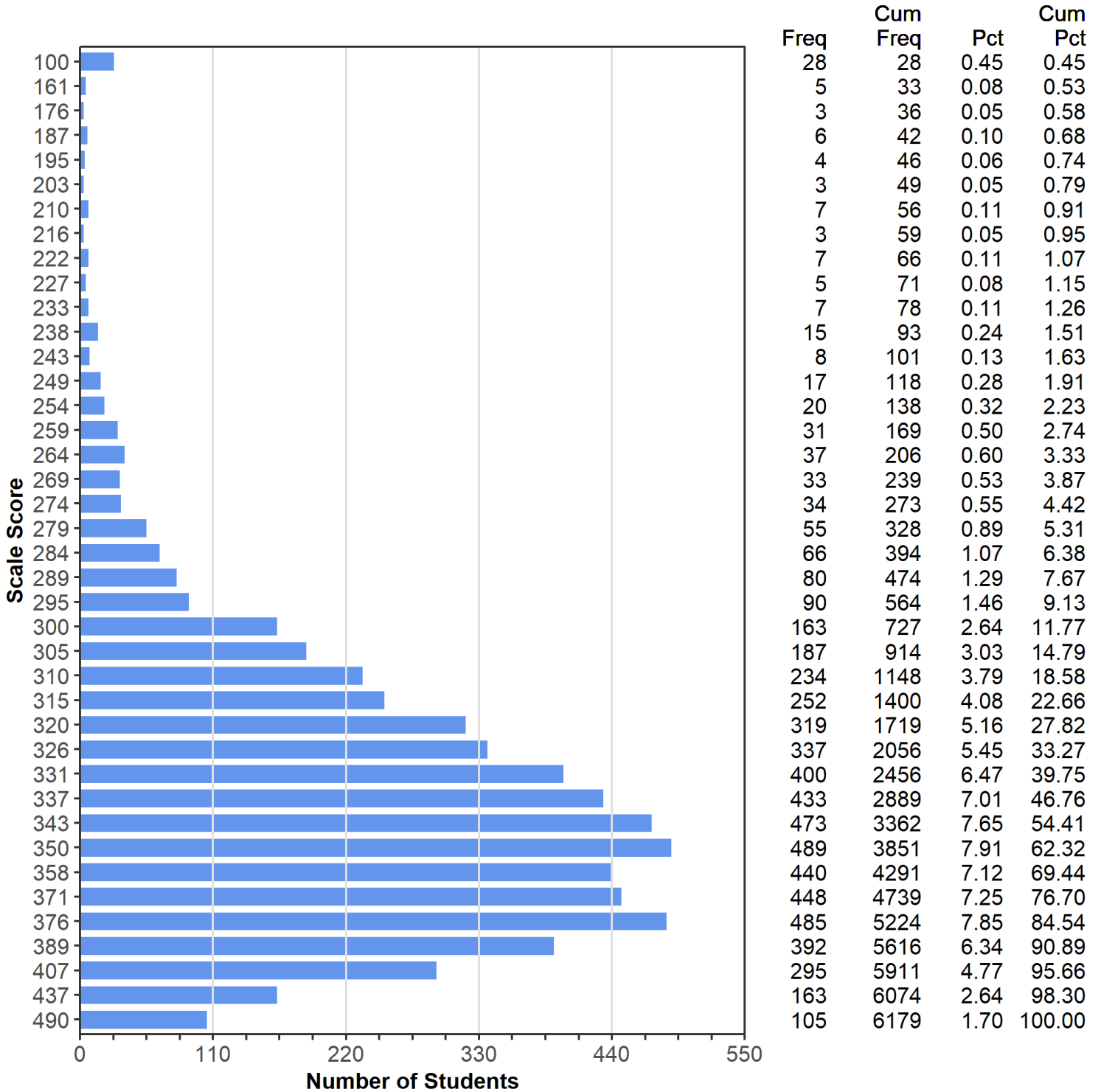
**Figure C.6.8. Spring 2022 STAAR Alternate 2 Grade 4 Reading
Frequency Distribution of Scale Scores
All Students**



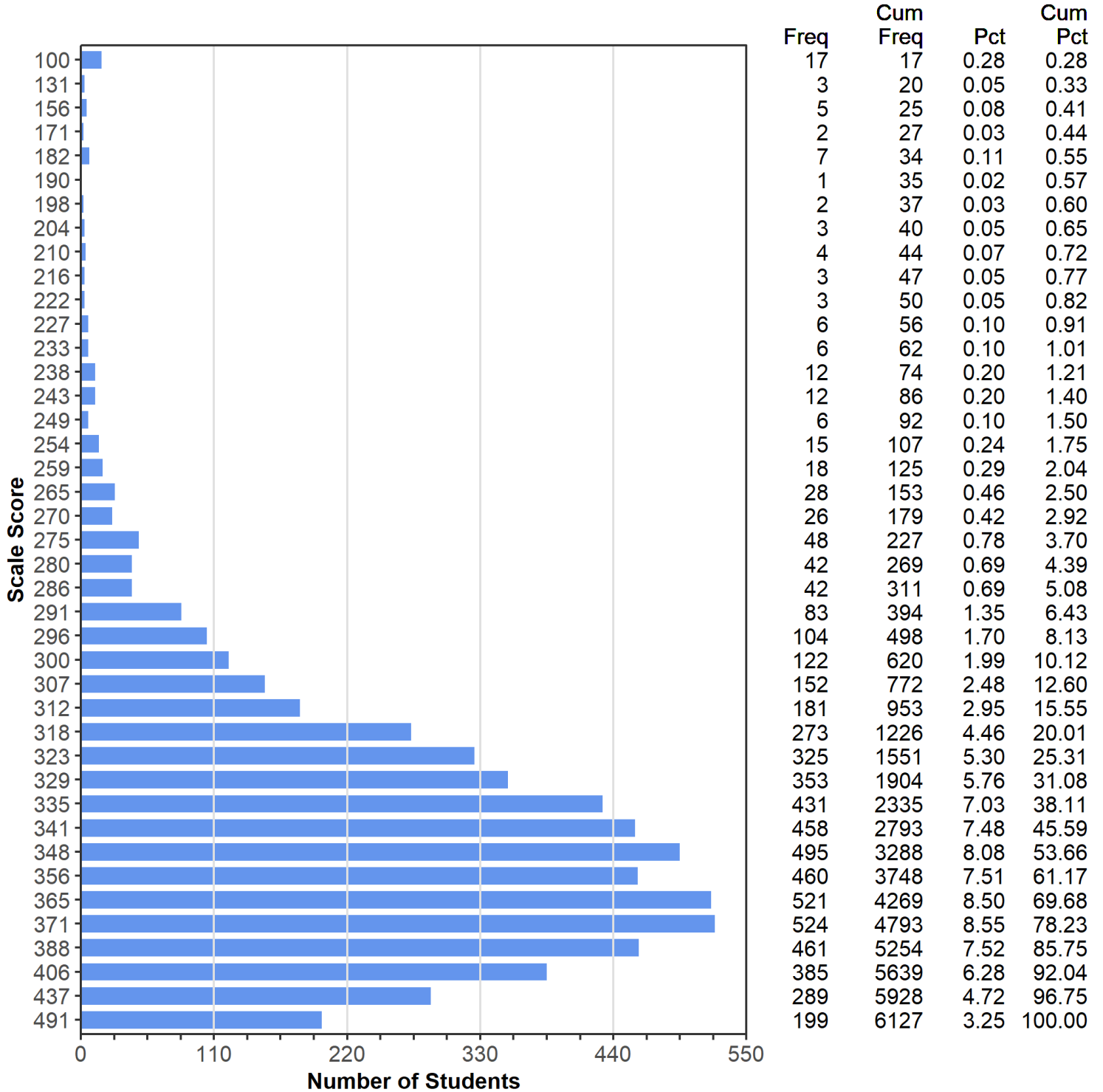
**Figure C.6.9. Spring 2022 STAAR Alternate 2 Grade 5 Reading
Frequency Distribution of Scale Scores
All Students**



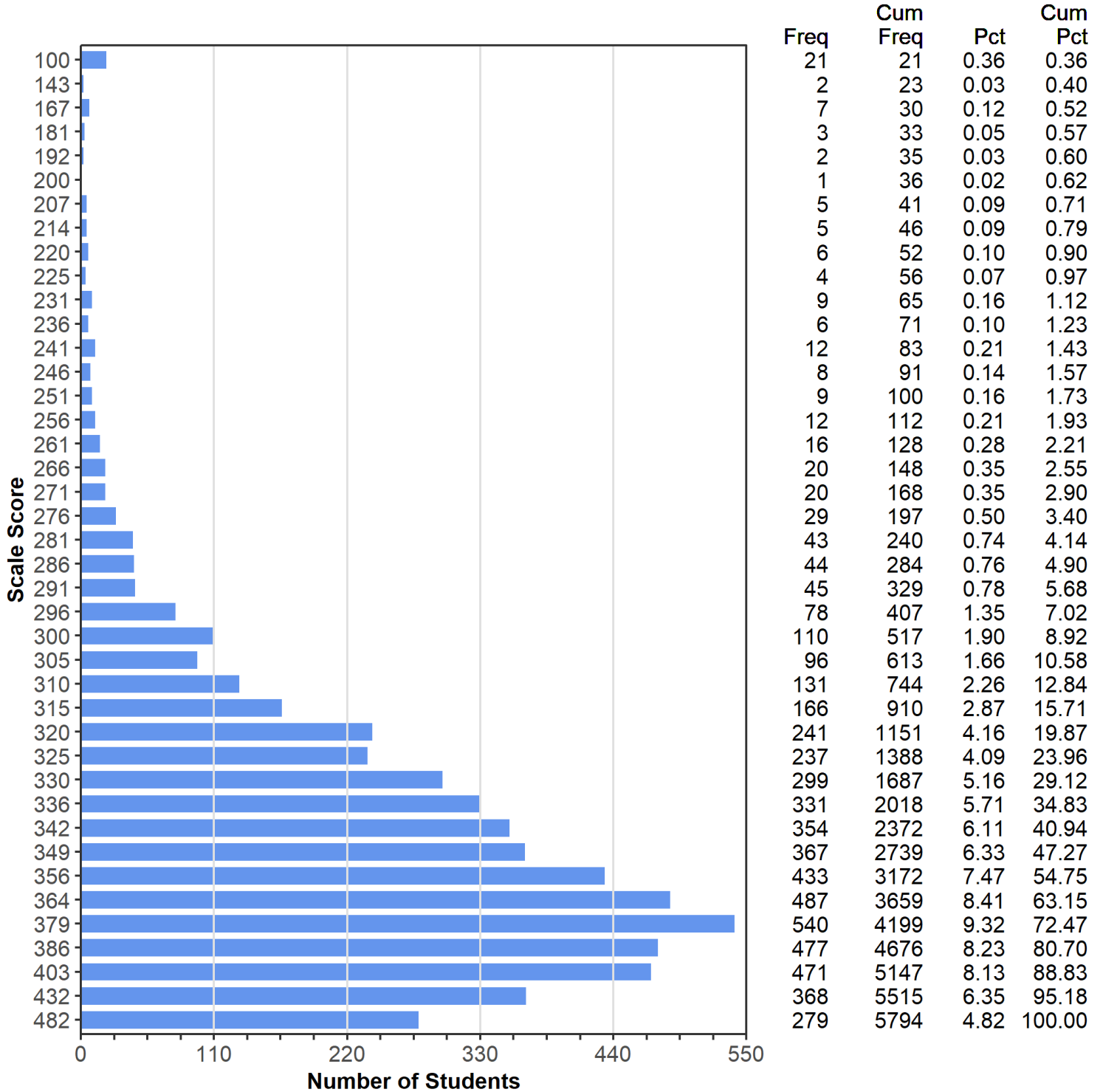
**Figure C.6.10. Spring 2022 STAAR Alternate 2 Grade 6 Reading
Frequency Distribution of Scale Scores
All Students**



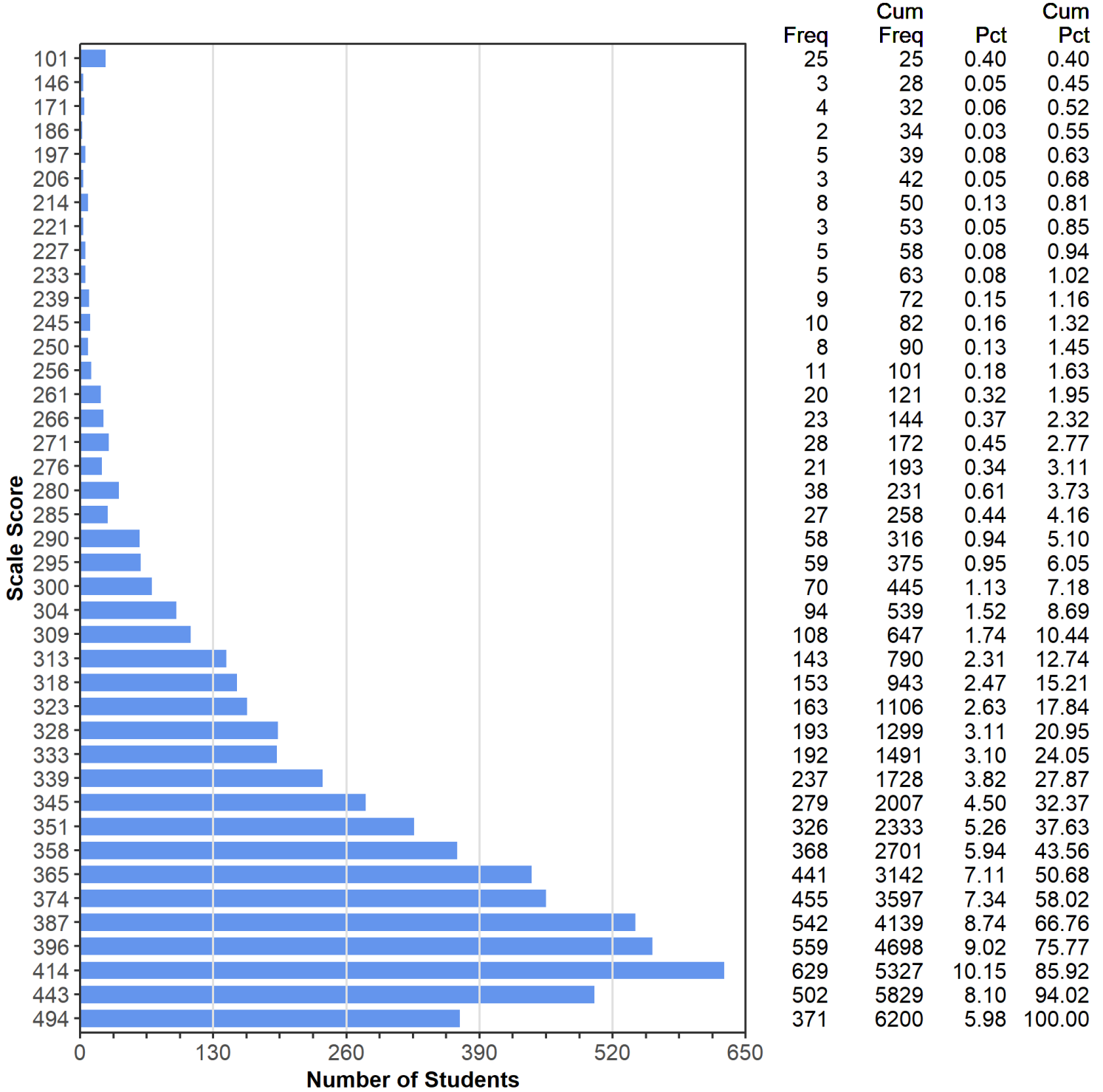
**Figure C.6.11. Spring 2022 STAAR Alternate 2 Grade 7 Reading
Frequency Distribution of Scale Scores
All Students**



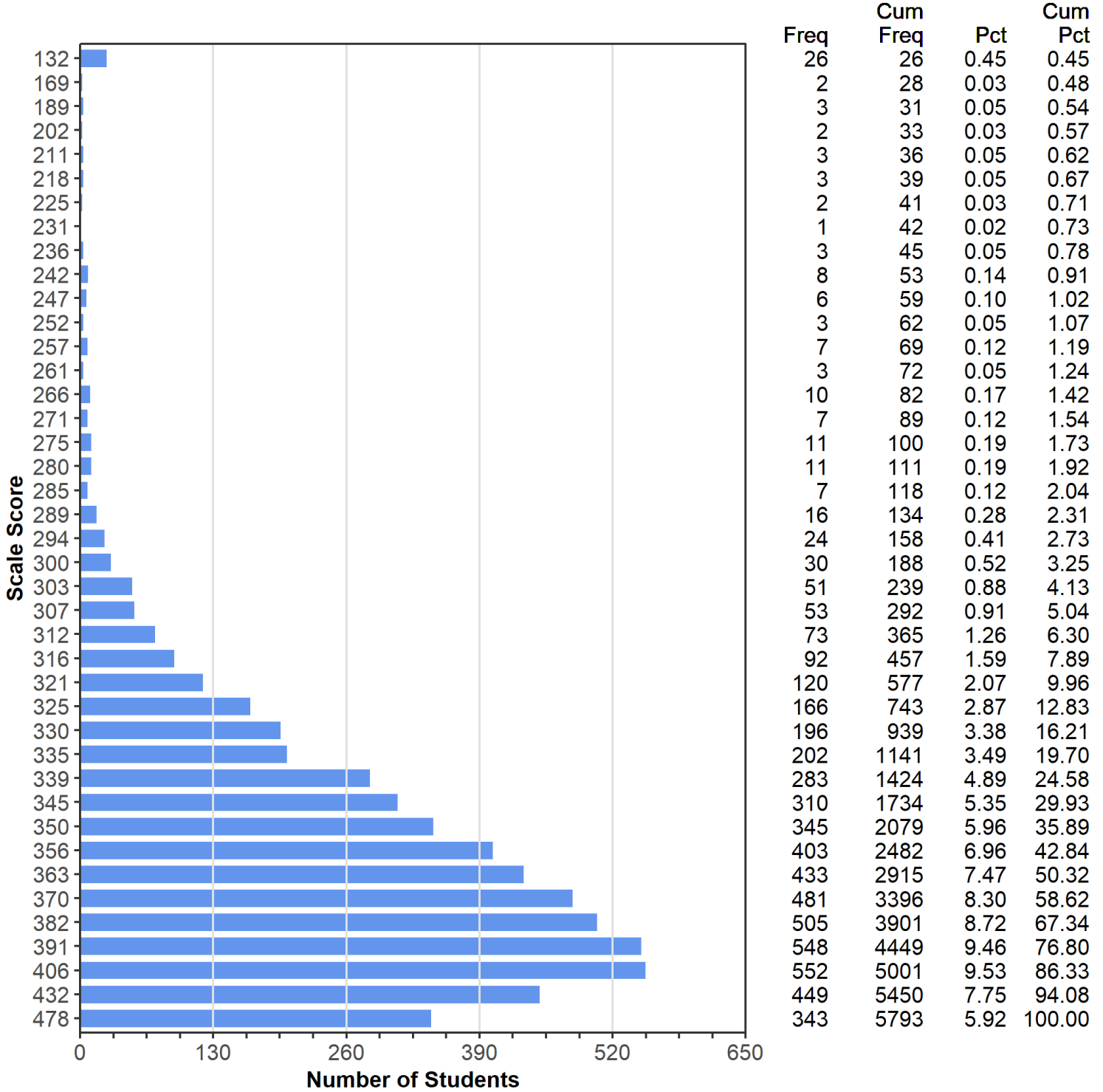
**Figure C.6.12. Spring 2022 STAAR Alternate 2 Grade 8 Reading
Frequency Distribution of Scale Scores
All Students**



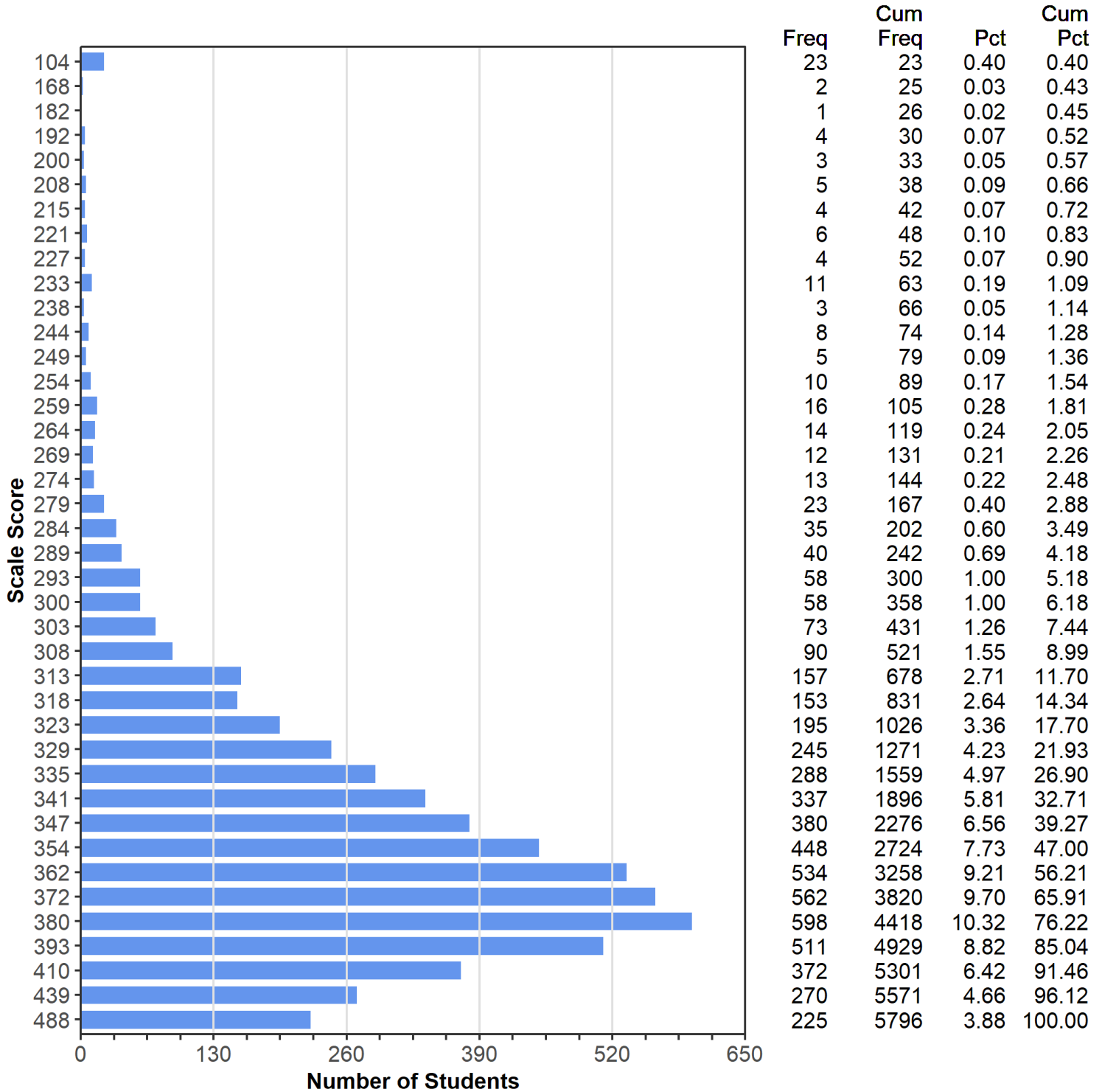
**Figure C.6.13. Spring 2022 STAAR Alternate 2 Grade 5 Science
Frequency Distribution of Scale Scores
All Students**



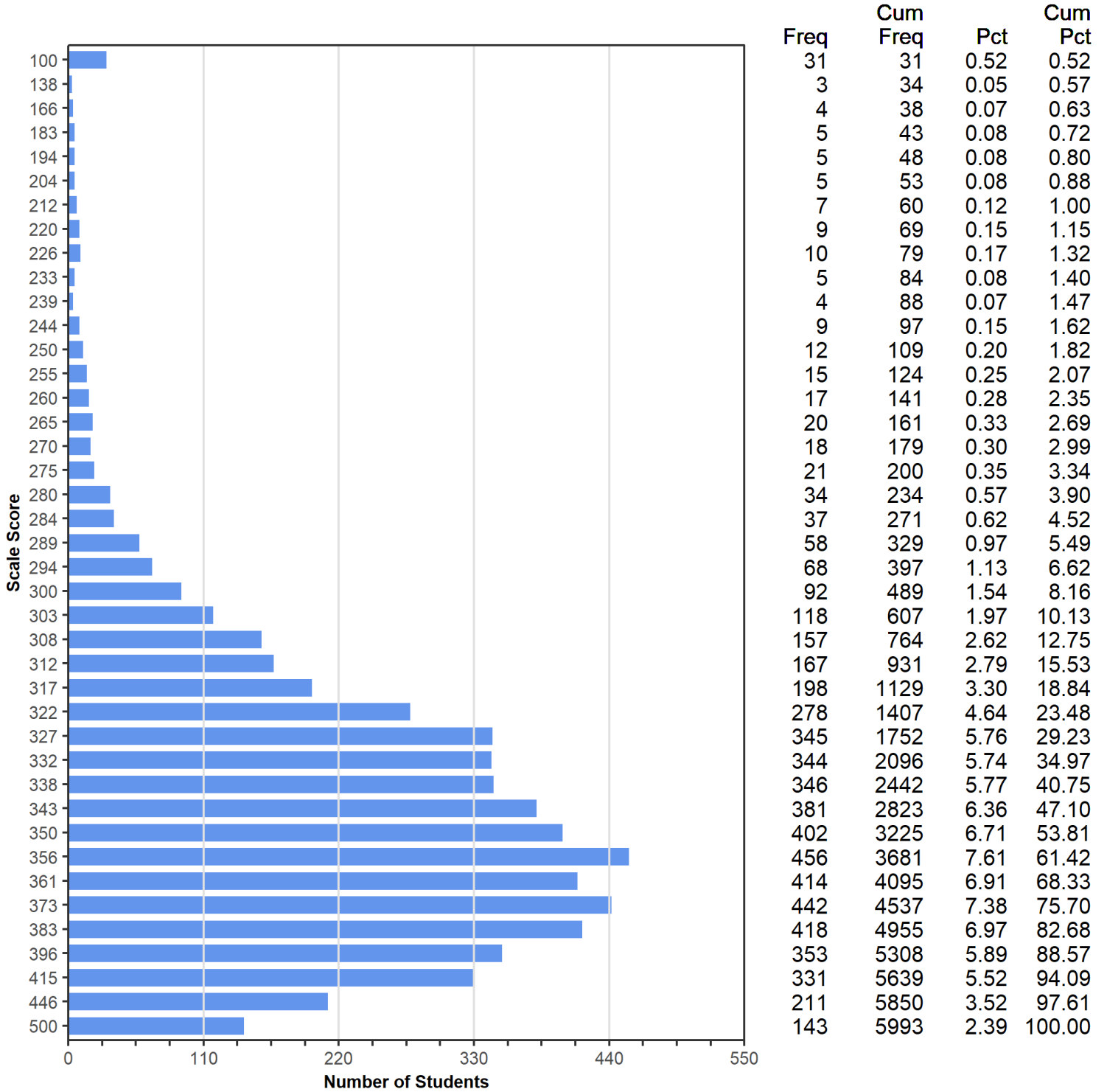
**Figure C.6.14. Spring 2022 STAAR Alternate 2 Grade 8 Science
Frequency Distribution of Scale Scores
All Students**



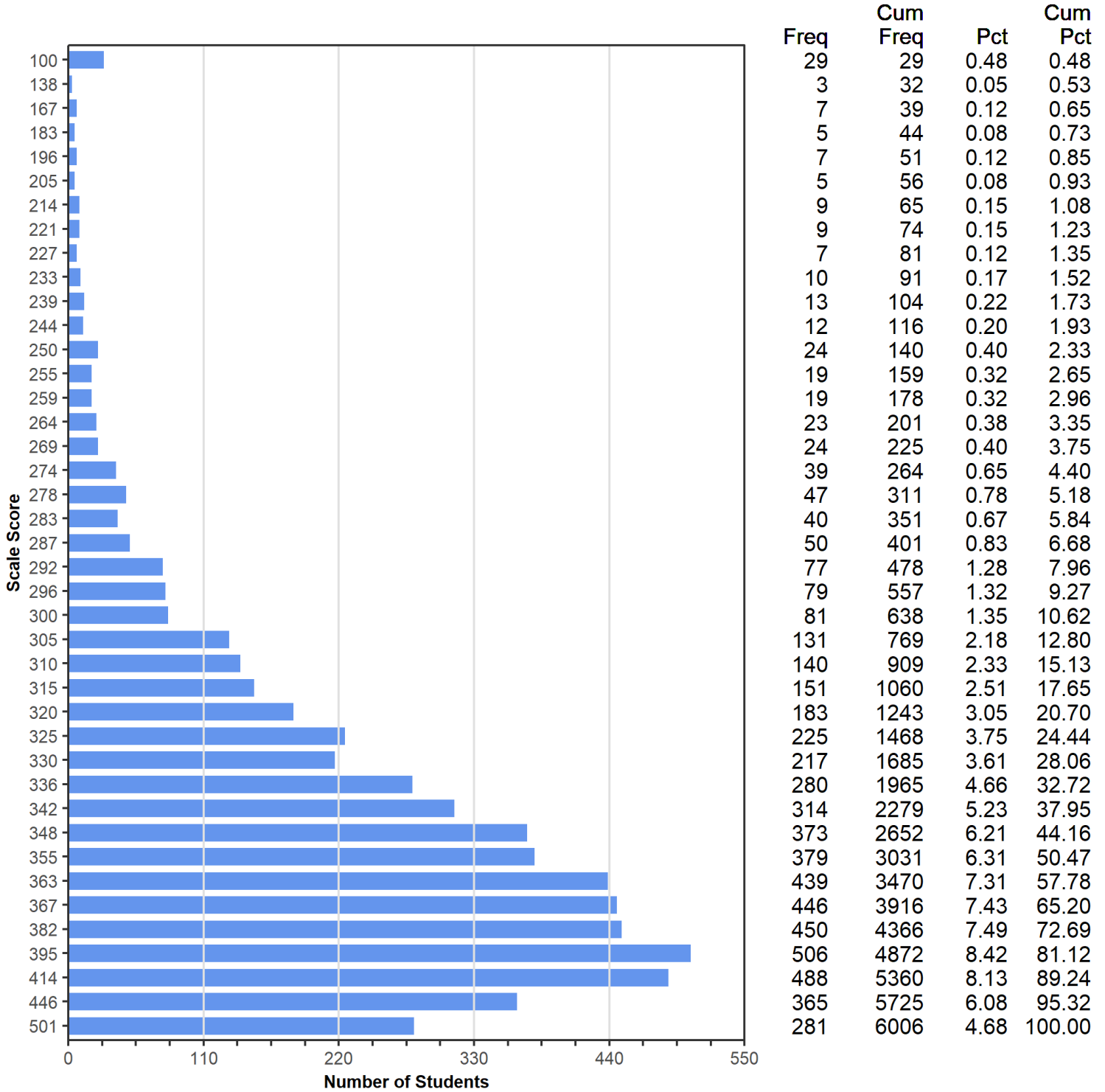
**Figure C.6.15. Spring 2022 STAAR Alternate 2 Grade 8 Social Studies
Frequency Distribution of Scale Scores
All Students**



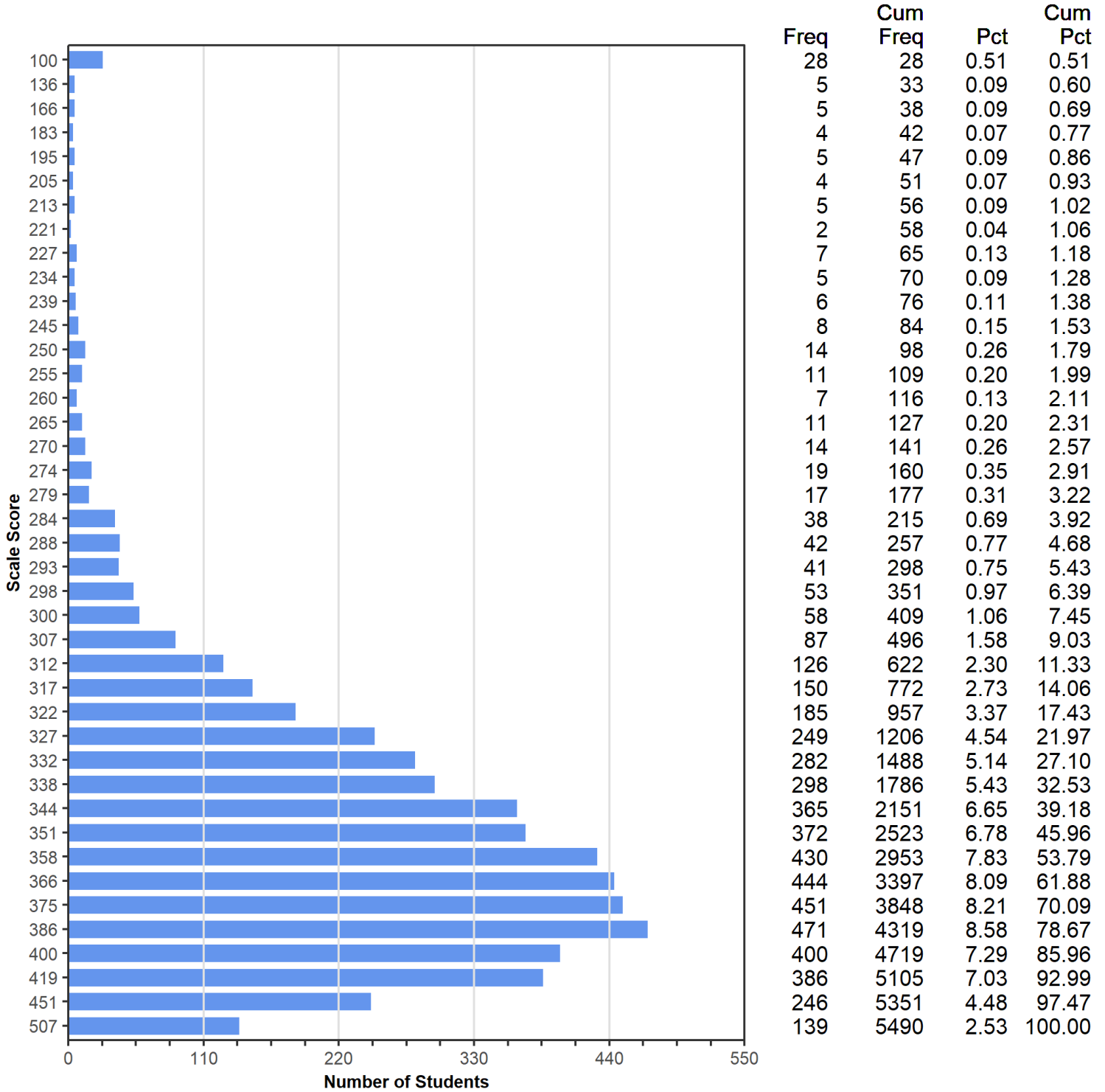
**Figure C.6.16. Spring 2022 STAAR Alternate 2 Algebra I
Frequency Distribution of Scale Scores
All Students**



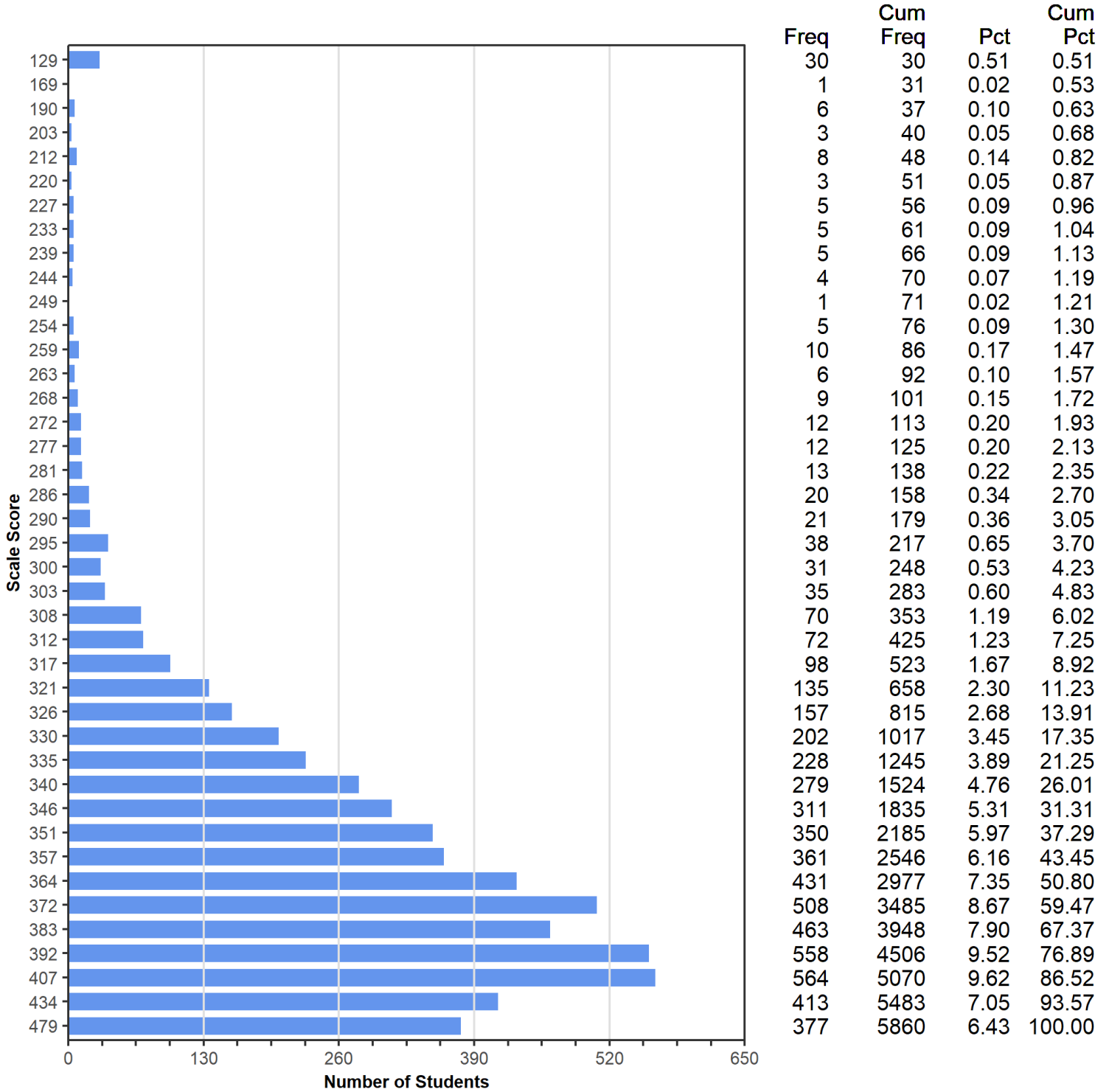
**Figure C.6.17. Spring 2022 STAAR Alternate 2 English I
Frequency Distribution of Scale Scores
All Students**



**Figure C.6.18. Spring 2022 STAAR Alternate 2 English II
Frequency Distribution of Scale Scores
All Students**



**Figure C.6.19. Spring 2022 STAAR Alternate 2 Biology
Frequency Distribution of Scale Scores
All Students**



**Figure C.6.20. Spring 2022 STAAR Alternate 2 U.S. History
Frequency Distribution of Scale Scores
All Students**

