

**2019 STAAR  
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 2019 Score Distributions and Statistics by Content Area and Grade") of Appendix B. Definitions of statistical terms and concepts in the other sections are given in [Chapter 3](#) or [Chapter 4](#).

### 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 is 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 1<sup>st</sup> and 3<sup>rd</sup> quartiles (or 25<sup>th</sup> and 75<sup>th</sup> percentiles) of the score distribution for the assessment. It is computed by subtracting the score at the 1<sup>st</sup> quartile (the point that splits the lowest 25% of the scores) from the score at the 3<sup>rd</sup> quartile (the point that splits the highest 25% 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 (CUM FREQ)** 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 (CUM PCT)** 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:  $CUM PCT = CUM FREQ \div N \times 100$ .

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**Table B.7.1. Spring 2019 STAAR English Grades 3–8 Assessments  
Scale Score Descriptive Statistics**

Subject	N	Mean	Median	Mode	Range	Interquartile Range		SD	Variance	Skewness	Kurtosis
						Q1	Q3				
Grade 3 Mathematics	374,259	1478.13	1470	1596	1095	201	154.92	24001.50	0.36	0.20	
Grade 4 Mathematics	394,964	1576.65	1570	1627	1140	211	159.86	25555.72	0.48	0.28	
Grade 5 Mathematics	404,089	1651.43	1647	1809	1121	206	162.75	26488.84	0.32	0.07	
Grade 6 Mathematics	401,216	1647.06	1629	1586	1148	196	145.34	21122.62	0.60	0.50	
Grade 7 Mathematics	352,968	1659.89	1646	1558	1116	181	139.84	19556.11	0.72	0.95	
Grade 8 Mathematics	337,761	1712.21	1713	1728	1178	176	143.39	20560.11	0.33	0.60	
Grade 3 Reading	356,913	1448.50	1439	1579	1126	210	150.50	22650.64	0.34	0.15	
Grade 4 Reading	380,162	1521.06	1519	1619	1153	207	145.79	21255.95	0.25	0.26	
Grade 5 Reading	394,750	1578.55	1582	1698	1143	197	144.60	20909.08	0.28	0.28	
Grade 6 Reading	410,024	1573.90	1571	1650	1151	201	139.07	19340.63	0.29	0.31	
Grade 7 Reading	399,426	1653.59	1657	1753	1181	200	144.84	20979.26	0.17	0.26	
Grade 8 Reading	392,556	1690.15	1700	1814	1187	196	140.00	19599.82	-0.07	0.18	
Grade 4 Writing	379,120	3719.14	3693	3896	5803	865	616.22	379726.84	0.35	0.86	
Grade 7 Writing	399,570	3866.15	3802	4121	6093	953	700.17	490236.07	0.58	1.18	
Grade 5 Science	402,556	3913.49	3888	4239	4467	732	574.56	330118.79	0.27	0.24	
Grade 8 Science	393,904	3998.87	3963	4180	5473	757	616.76	380392.25	0.32	0.74	
Grade 8 Social Studies	395,567	3780.19	3780	3936	4942	718	524.36	274955.10	0.38	0.44	

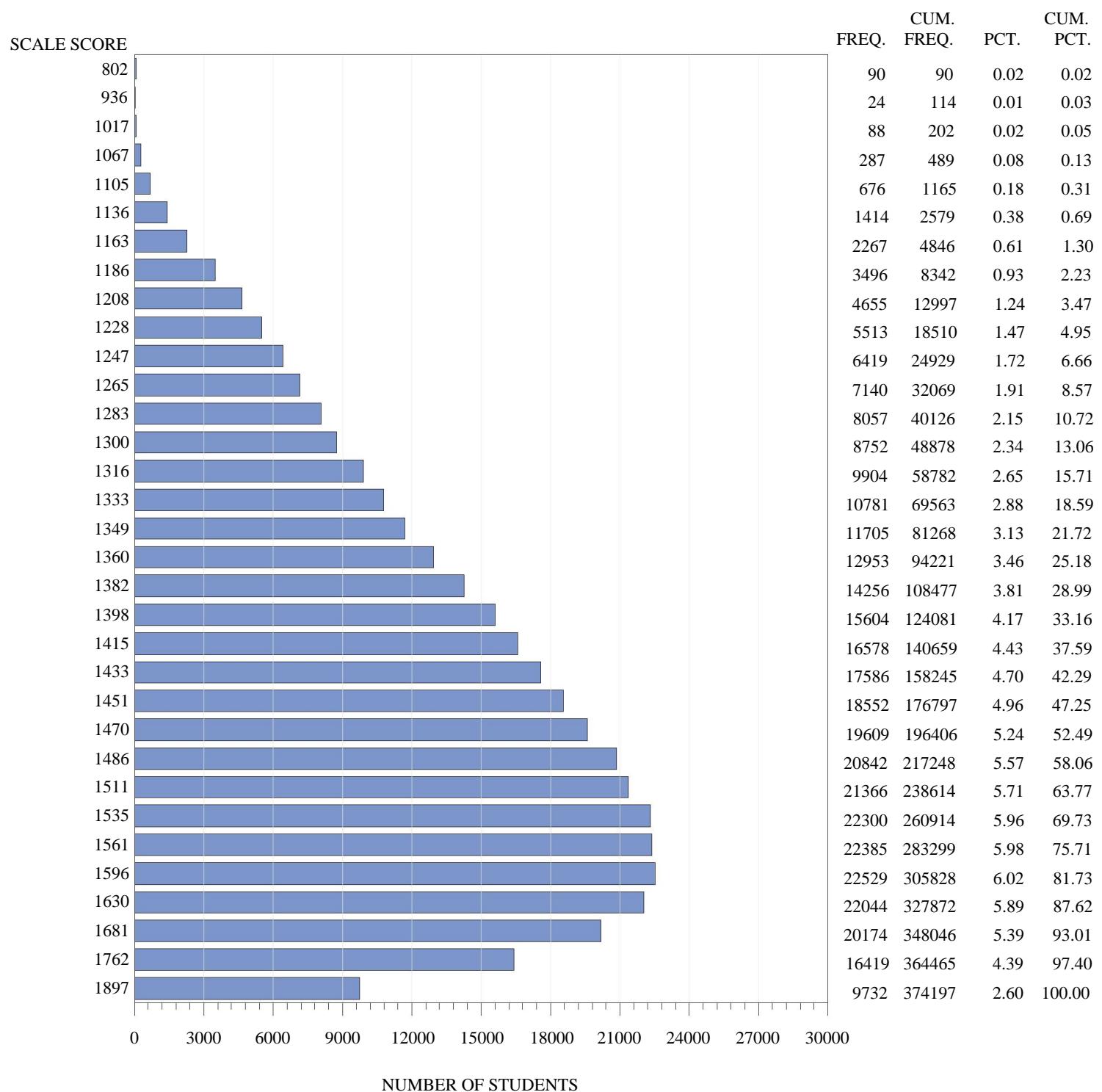
**Table B.7.2. Spring 2019 STAAR Spanish Grades 3–5 Assessments**  
**Scale Score Descriptive Statistics**

Subject	N	Mean	Median	Mode	Range	Interquartile Range		SD	Variance	Skewness	Kurtosis
						Q1	Q3				
Grade 3 Mathematics	15,774	1417.06	1415	1486	1095	195	136.95	18755.40	0.32	0.53	
Grade 4 Mathematics	10,358	1497.15	1490	1378	1140	194	139.44	19444.66	0.69	0.75	
Grade 5 Mathematics	6,053	1536.95	1519	1578	988	208	149.80	22440.15	0.54	0.36	
Grade 3 Reading	33,060	1404.50	1390	1390	1310	226	160.70	25826.09	0.58	0.69	
Grade 4 Reading	25,566	1457.51	1452	1470	1345	186	152.72	23324.58	0.57	0.80	
Grade 5 Reading	15,979	1581.74	1582	1659	1364	203	147.17	21658.69	0.24	0.33	
Grade 4 Writing	26,221	3820.22	3825	4155	6390	908	672.29	451968.38	0.46	0.76	
Grade 5 Science	8,349	3497.75	3450	3393	4467	650	485.63	235839.43	0.51	0.36	

**Table B.7.3. Spring 2019 STAAR EOC Assessments**  
**Scale Score Descriptive Statistics**

<b>Subject</b>	<b>N</b>	<b>Mean</b>	<b>Median</b>	<b>Mode</b>	<b>Range</b>	<b>Interquartile</b>	<b>SD</b>	<b>Variance</b>	<b>Skewness</b>	<b>Kurtosis</b>
						<b>Range</b>				
Algebra I	416,354	4190.41	4156	4438	4794	812	639.41	408838.95	0.51	0.67
Algebra II	8,490	3980.97	3969	3923	5286	753	568.14	322779.79	0.61	0.99
English I	467,850	3977.88	3945	4372	5249	801	562.04	315883.42	0.30	0.49
English II	445,466	4016.64	4000	4000	5455	758	546.26	298404.59	0.24	0.57
English III	4,624	4044.19	4051	4000	3236	566	465.13	216342.86	-0.03	0.04
Biology	409,371	4199.11	4182	4380	4890	772	569.01	323771.47	0.46	0.73
U.S. History	360,061	4352.03	4375	4701	5723	701	546.73	298914.84	0.08	0.73

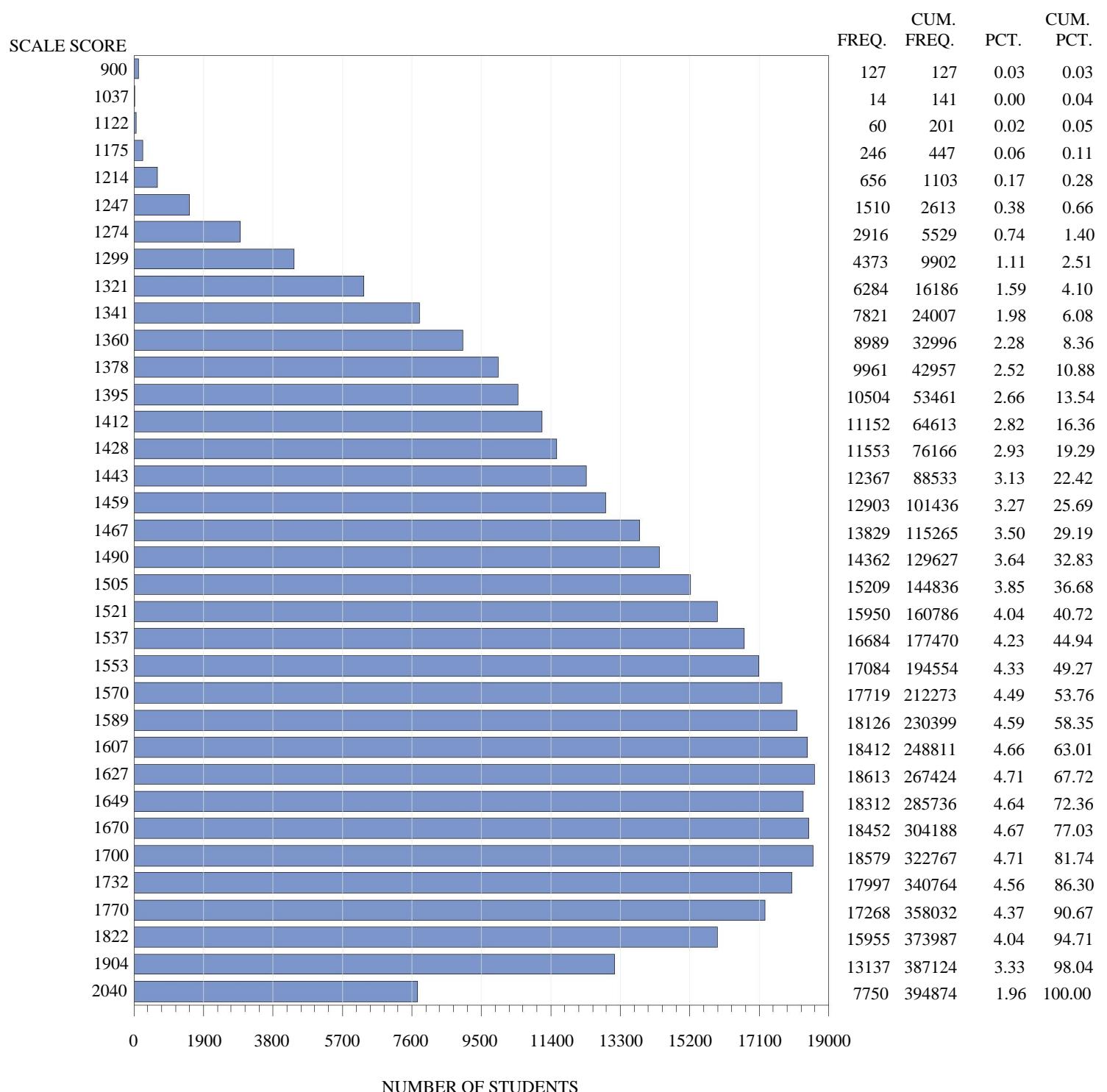
**Figure B.7.1. Spring 2019 STAAR English Grade 3 Mathematics  
Frequency Distribution of Scale Scores  
All Students**



**Notes:**

Students who took the Braille or the ASL or the paper STAAR with Embedded Supports version of the test are not included in the frequency distribution tables.

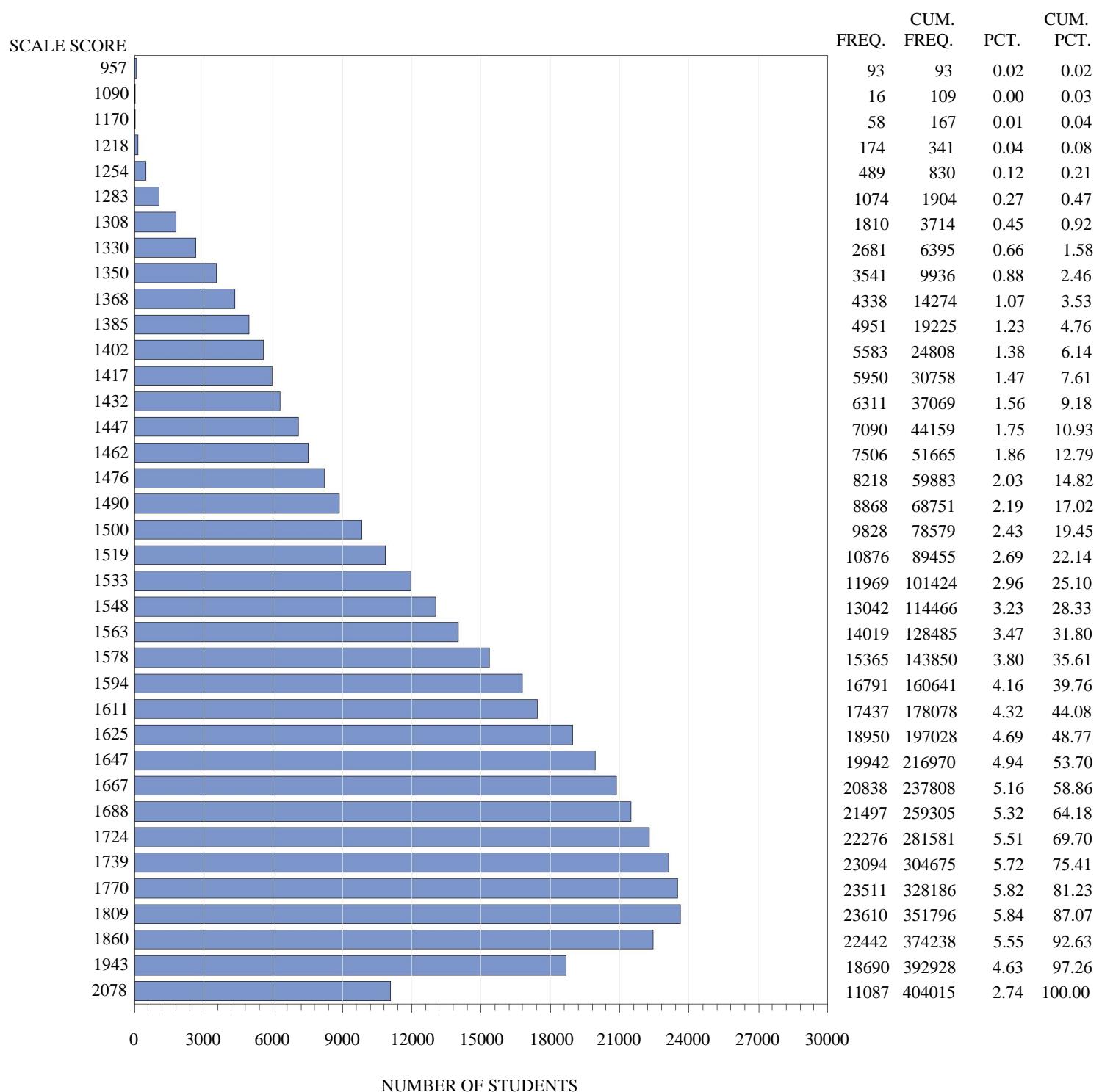
**Figure B.7.2. Spring 2019 STAAR English Grade 4 Mathematics  
Frequency Distribution of Scale Scores  
All Students**



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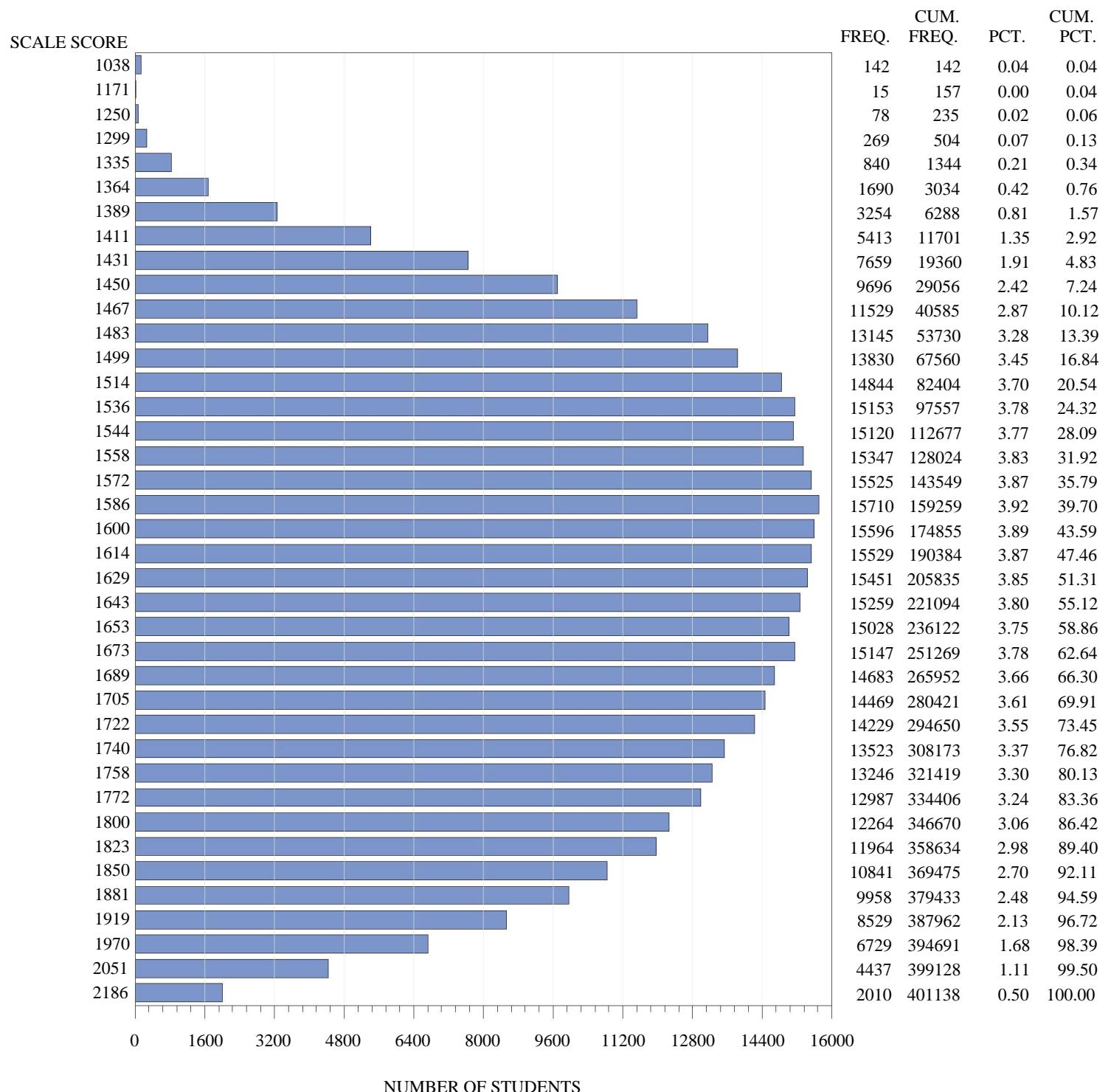
**Figure B.7.3. Spring 2019 STAAR English Grade 5 Mathematics  
Frequency Distribution of Scale Scores  
All Students**



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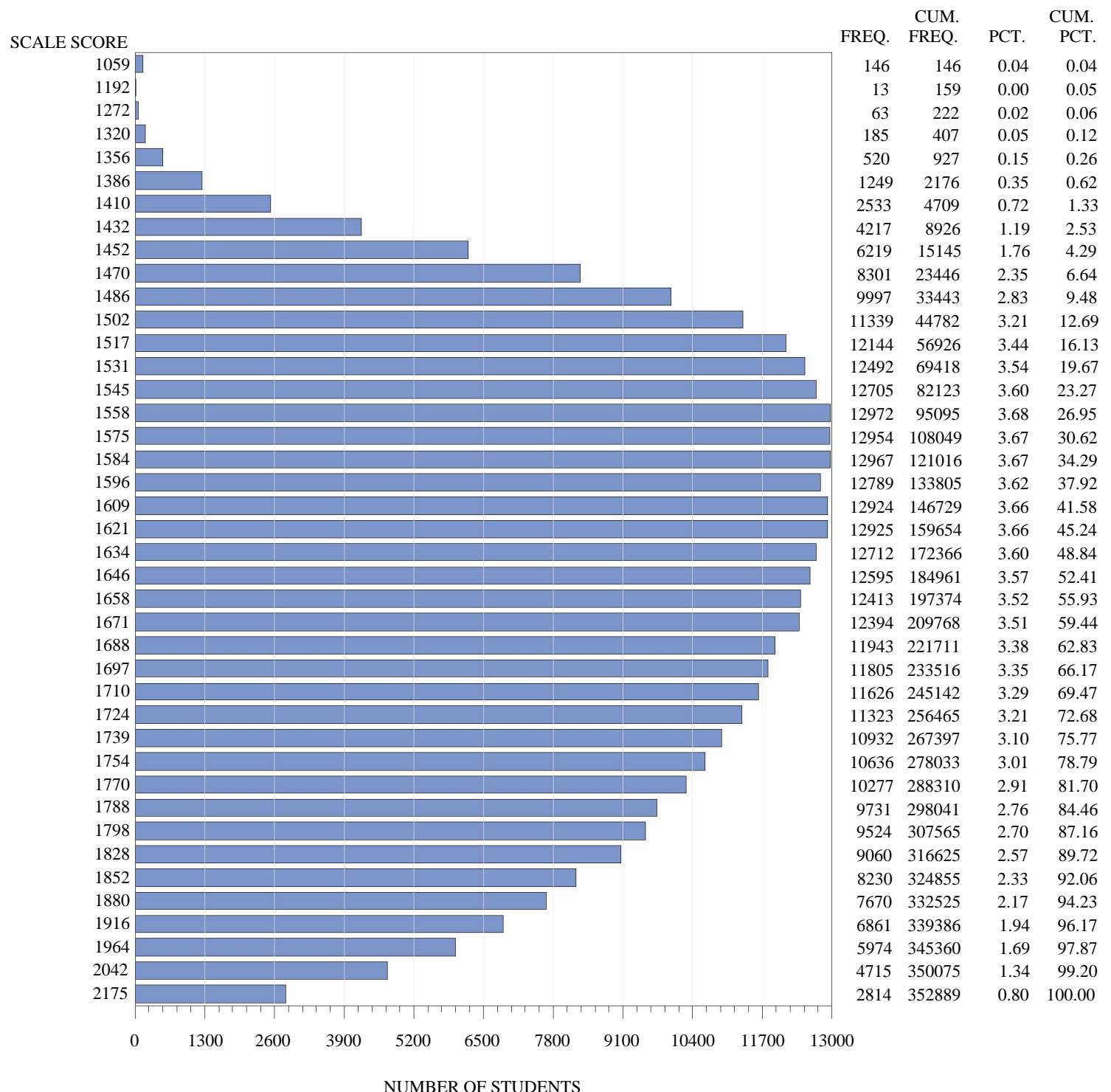
**Figure B.7.4. Spring 2019 STAAR English Grade 6 Mathematics  
Frequency Distribution of Scale Scores  
All Students**



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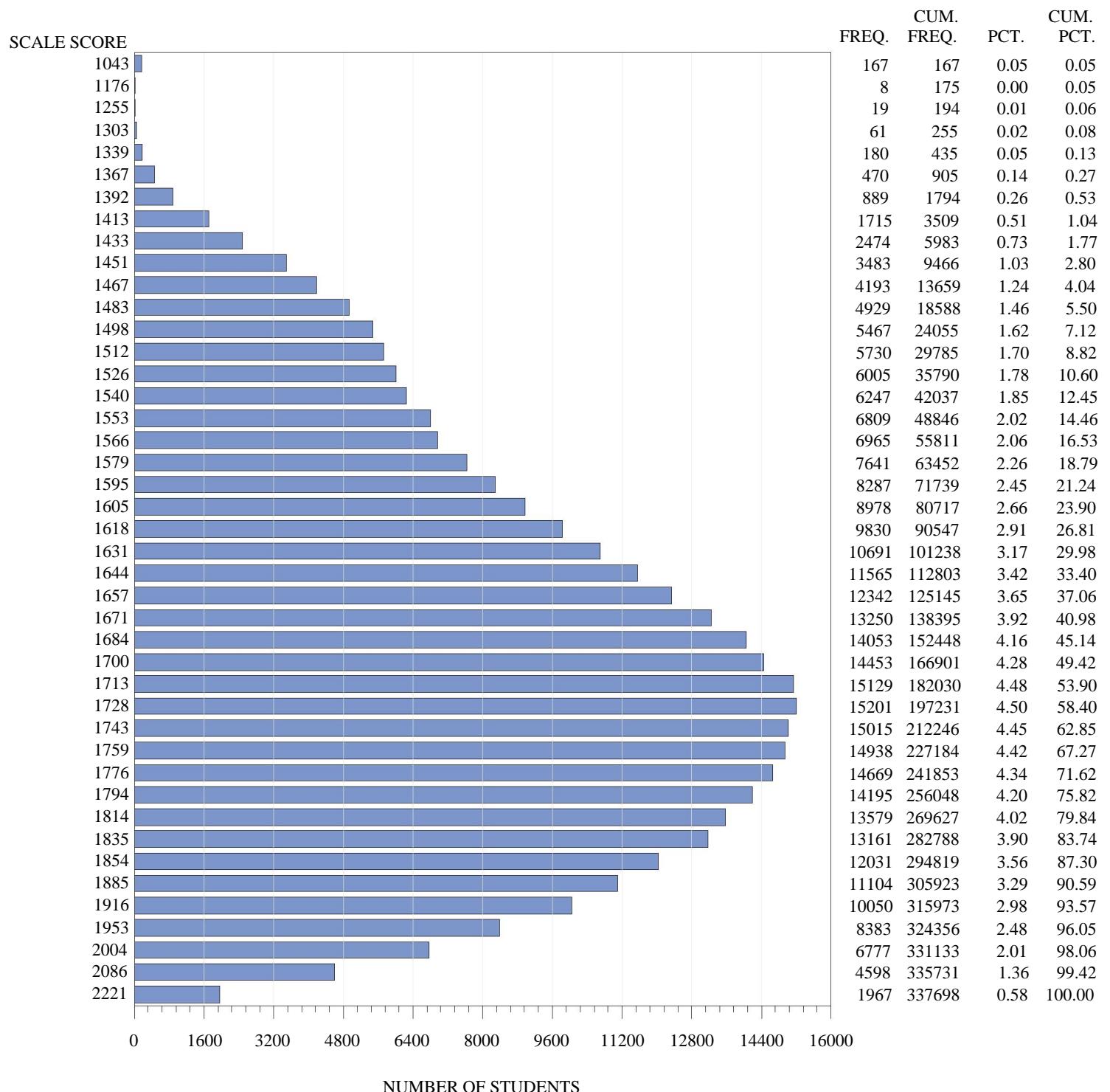
**Figure B.7.5. Spring 2019 STAAR English Grade 7 Mathematics  
Frequency Distribution of Scale Scores  
All Students**



**Notes:**

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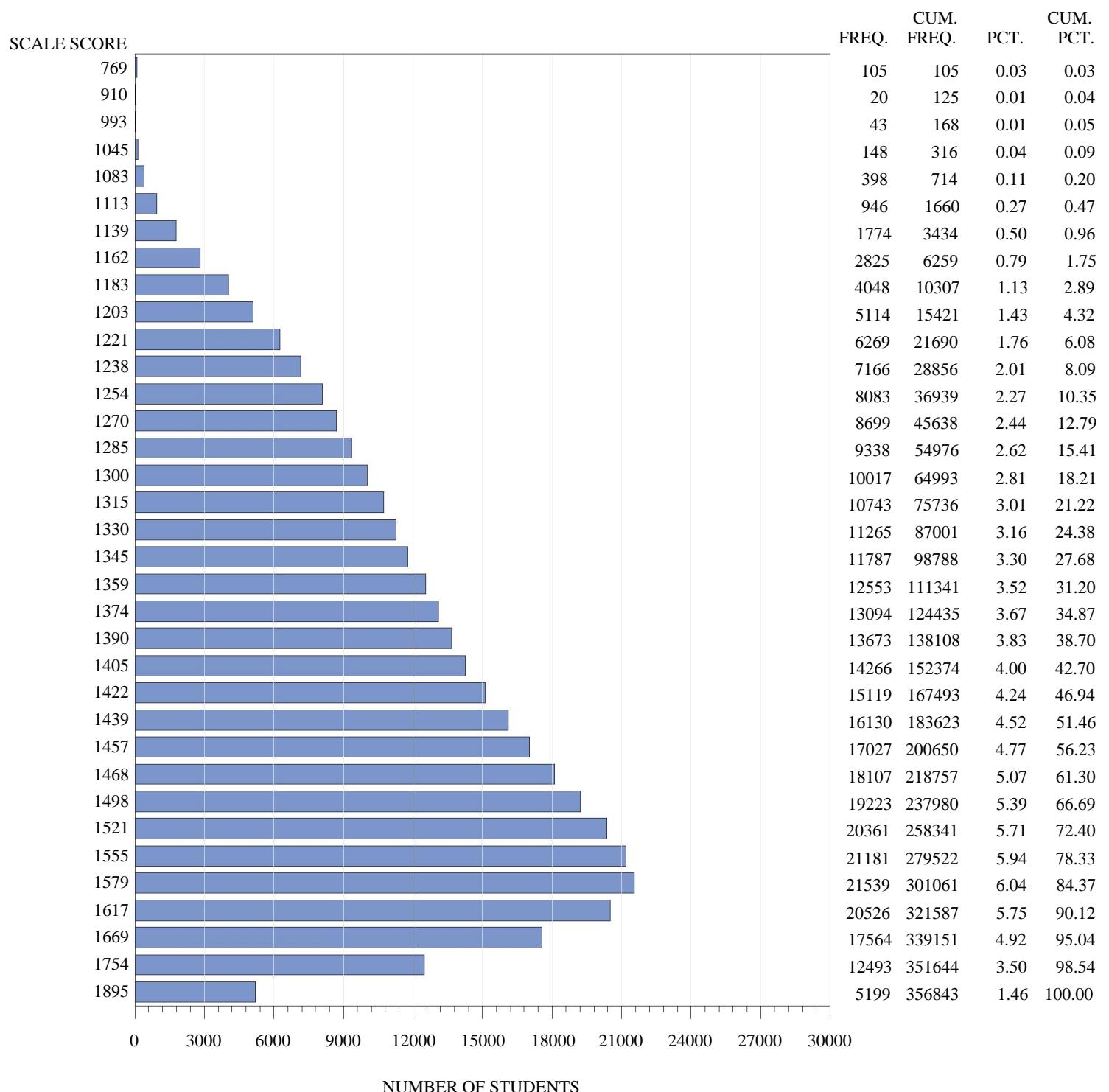
**Figure B.7.6. Spring 2019 STAAR English Grade 8 Mathematics  
Frequency Distribution of Scale Scores  
All Students**



**Notes:**

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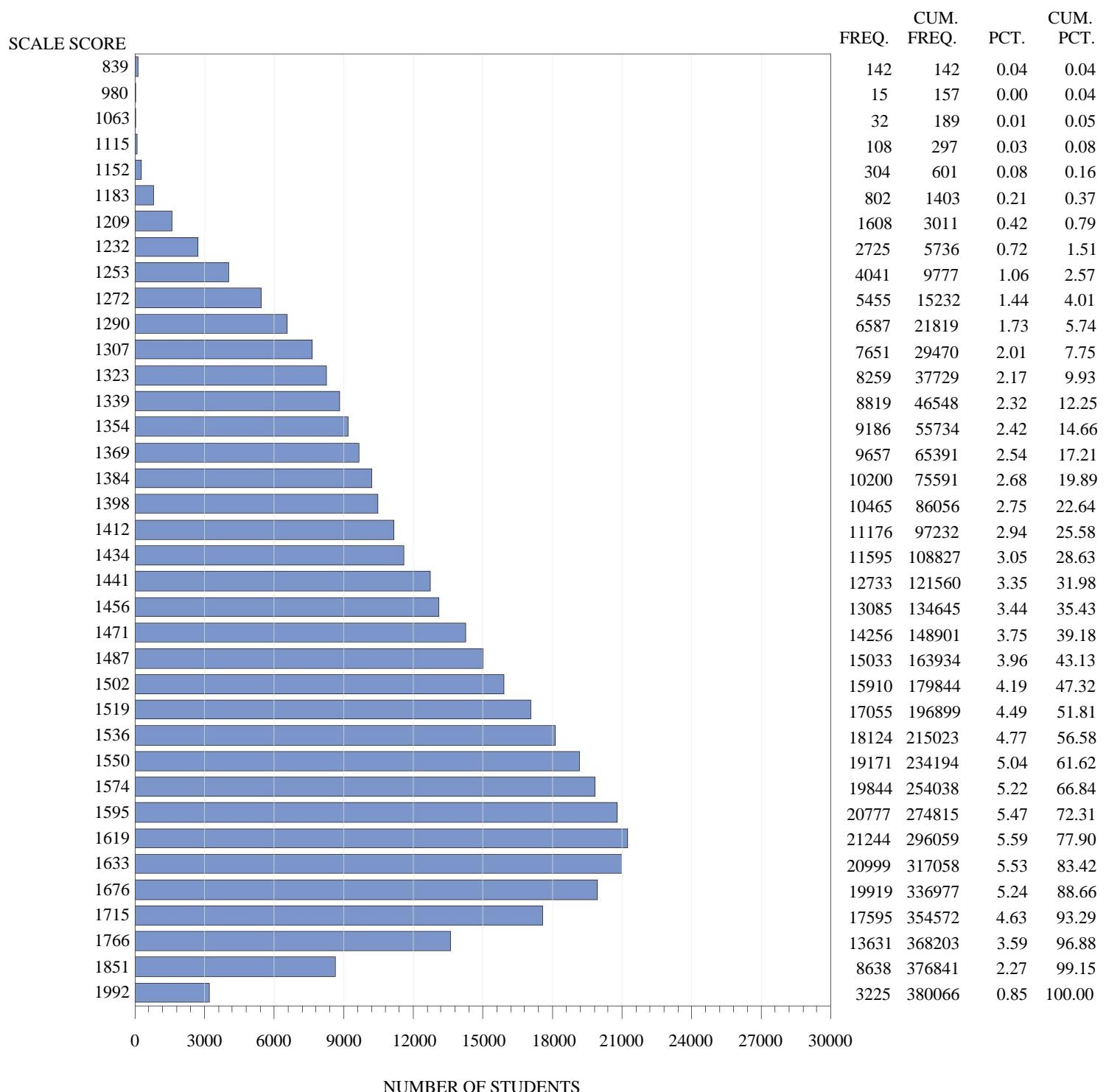
**Figure B.7.7. Spring 2019 STAAR English Grade 3 Reading  
Frequency Distribution of Scale Scores  
All Students**



**Notes:**

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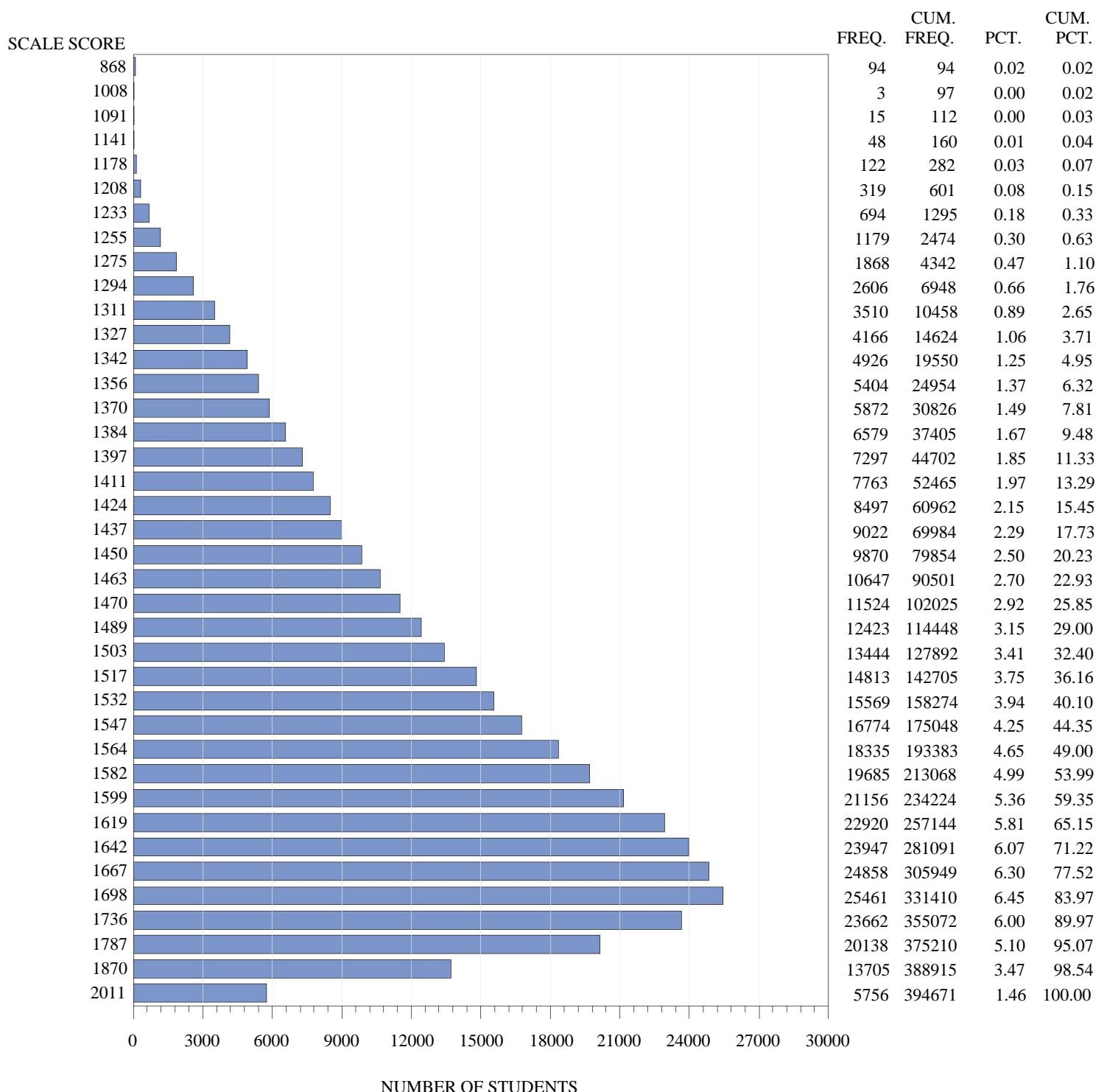
**Figure B.7.8. Spring 2019 STAAR English Grade 4 Reading  
Frequency Distribution of Scale Scores  
All Students**



**Notes:**

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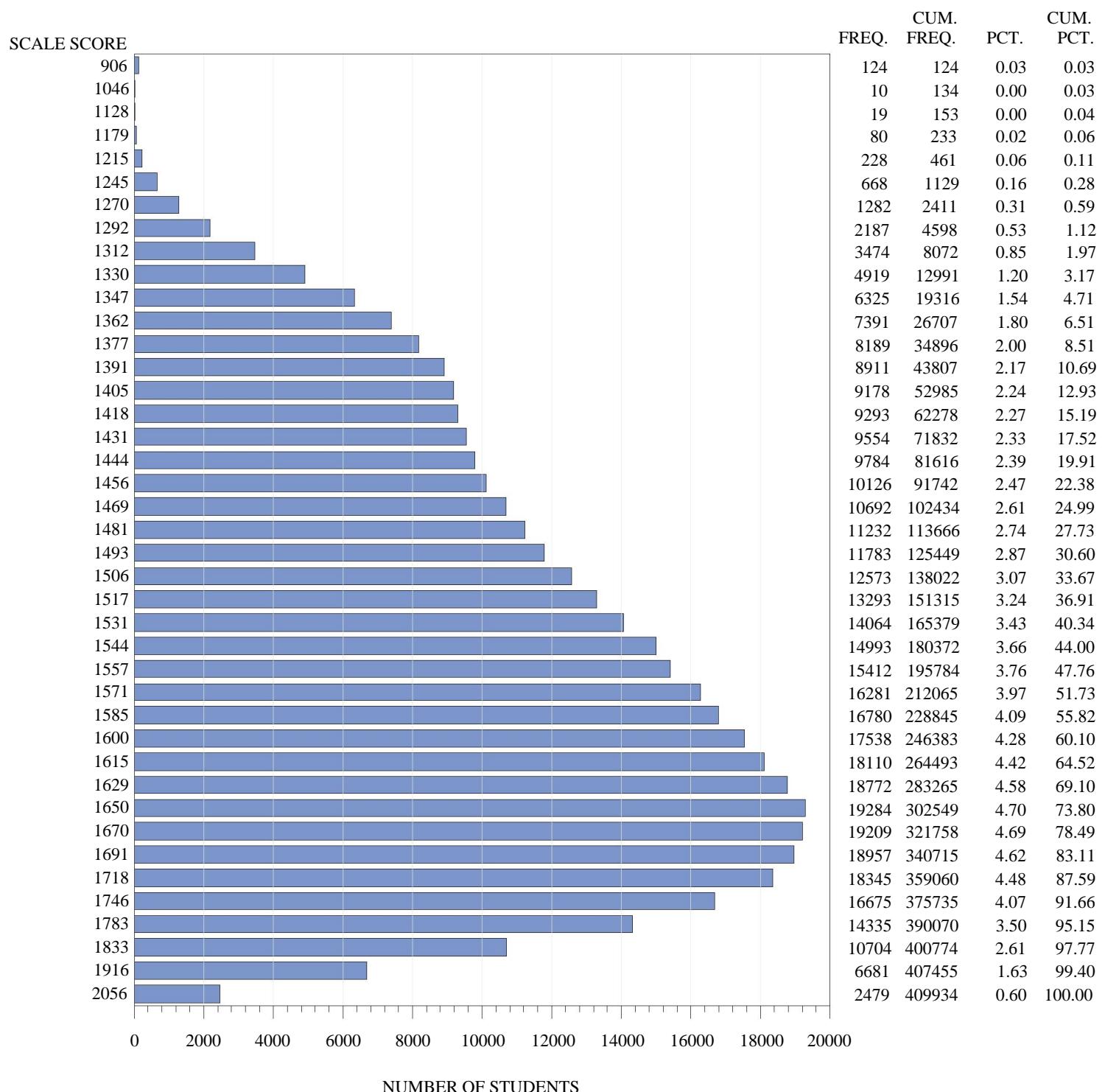
**Figure B.7.9. Spring 2019 STAAR English Grade 5 Reading  
Frequency Distribution of Scale Scores  
All Students**



**Notes:**

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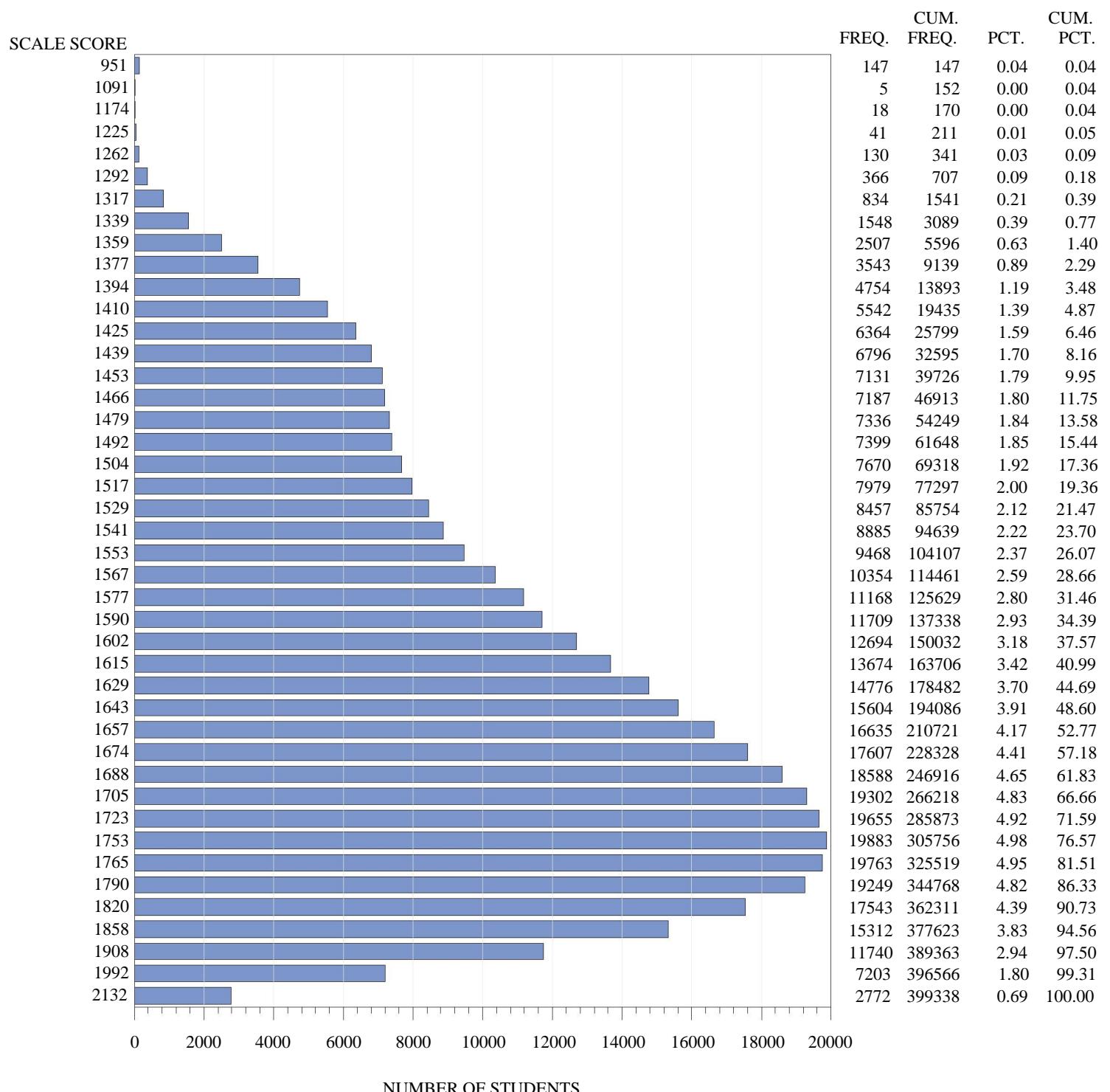
**Figure B.7.10. Spring 2019 STAAR English Grade 6 Reading Frequency Distribution of Scale Scores All Students**



**Notes:**

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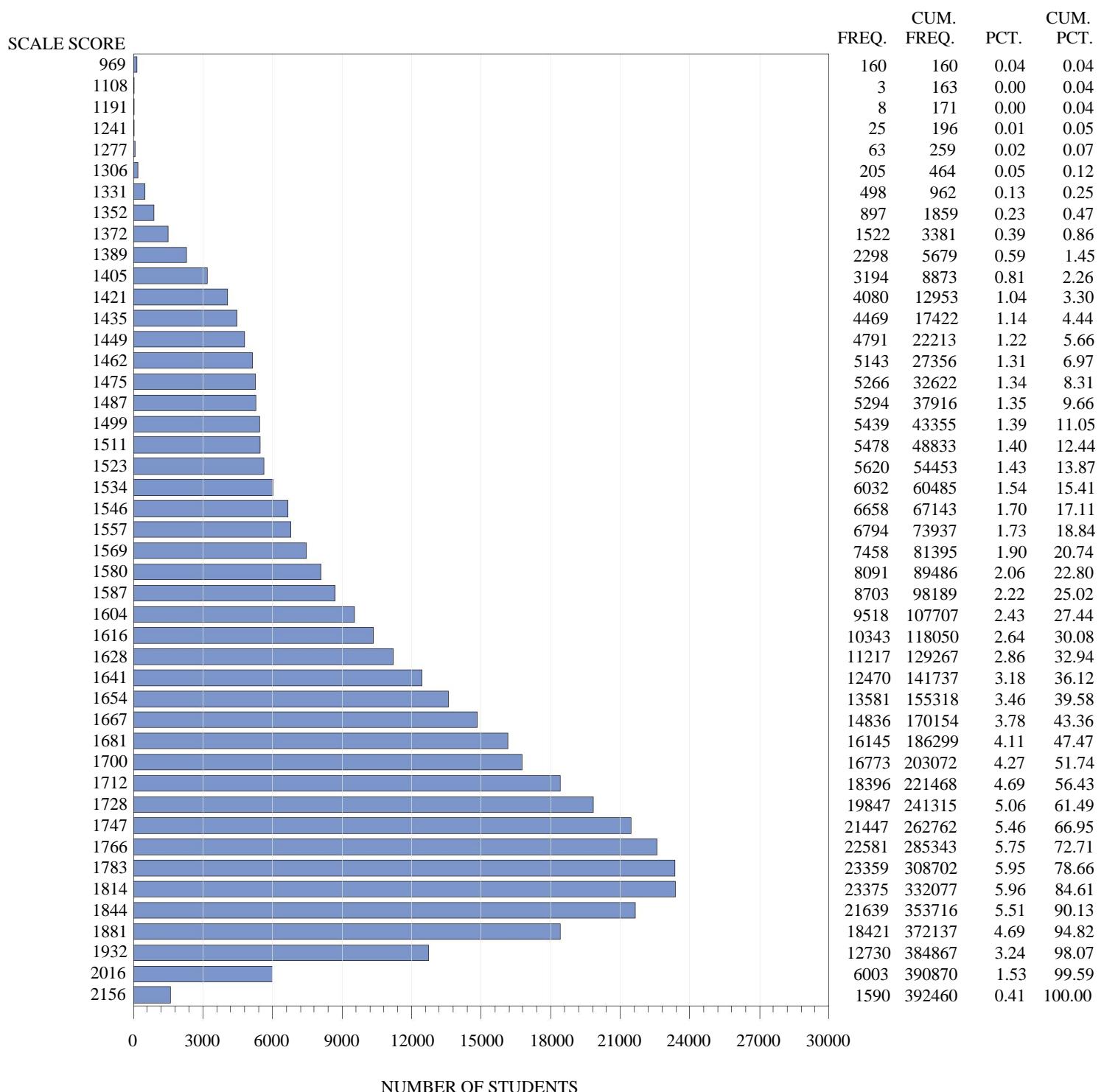
**Figure B.7.11. Spring 2019 STAAR English Grade 7 Reading  
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All Students**



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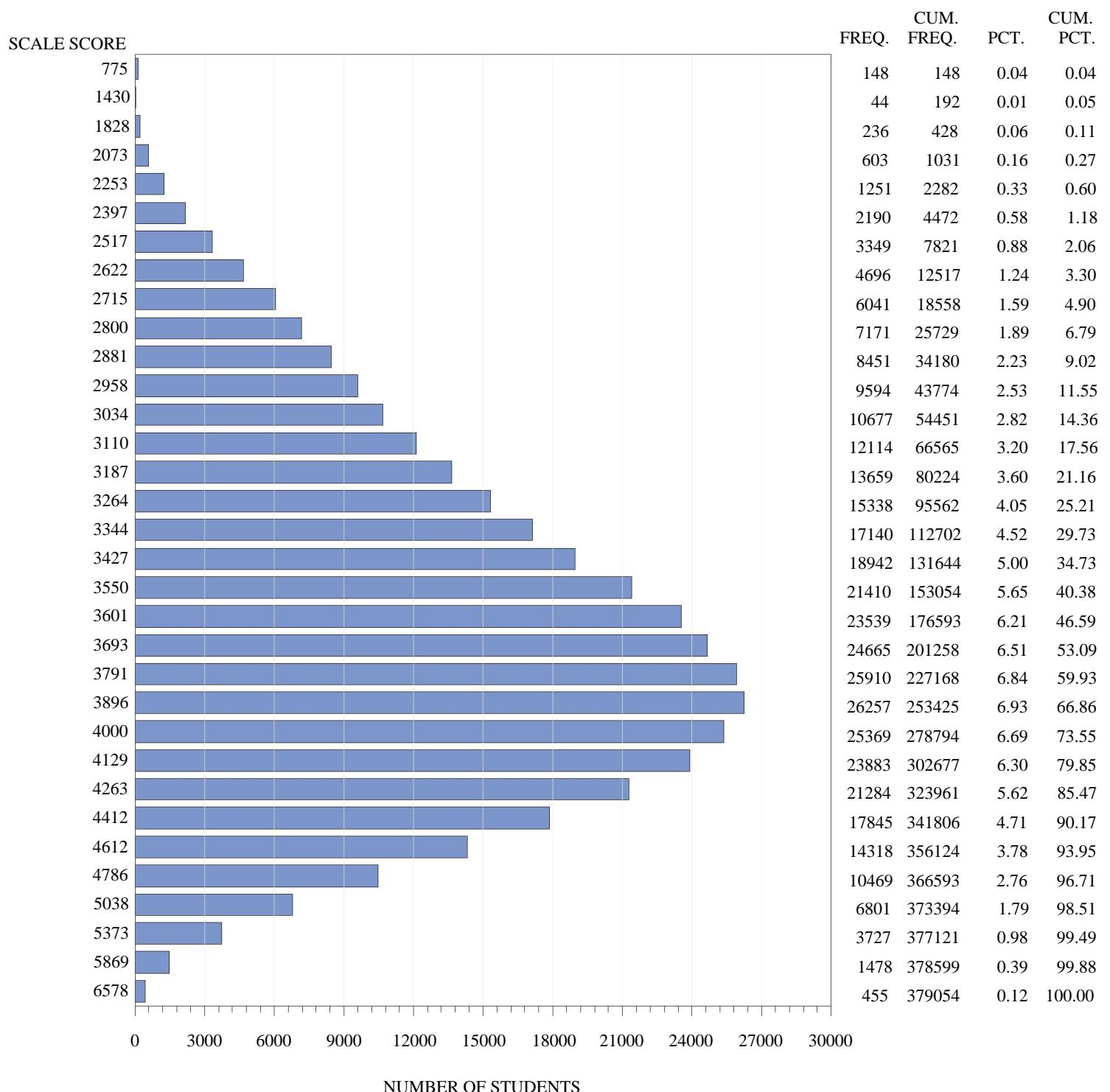
**Figure B.7.12. Spring 2019 STAAR English Grade 8 Reading Frequency Distribution of Scale Scores All Students**



**Notes:**

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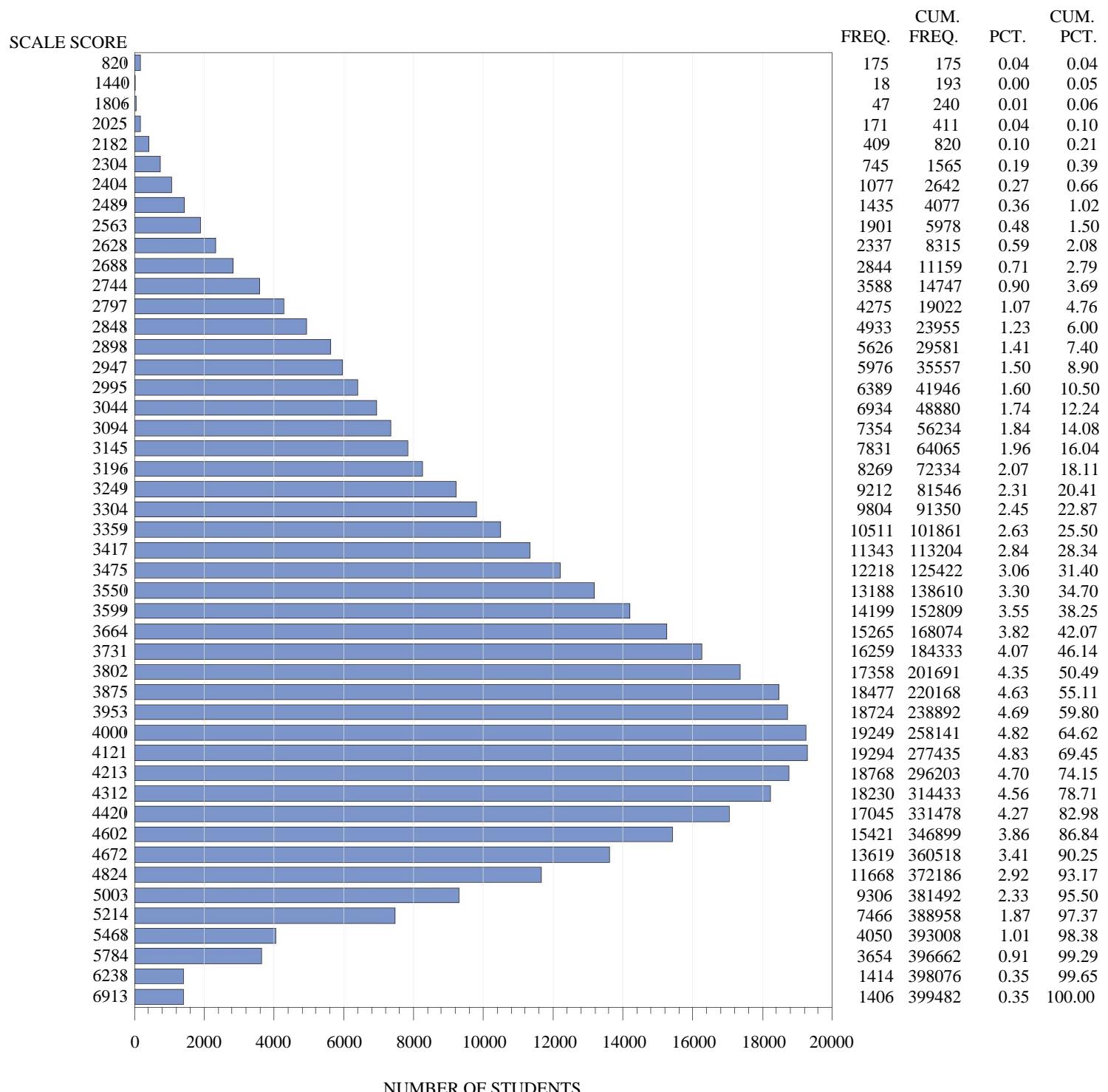
**Figure B.7.13. Spring 2019 STAAR English Grade 4 Writing  
Frequency Distribution of Scale Scores  
All Students**



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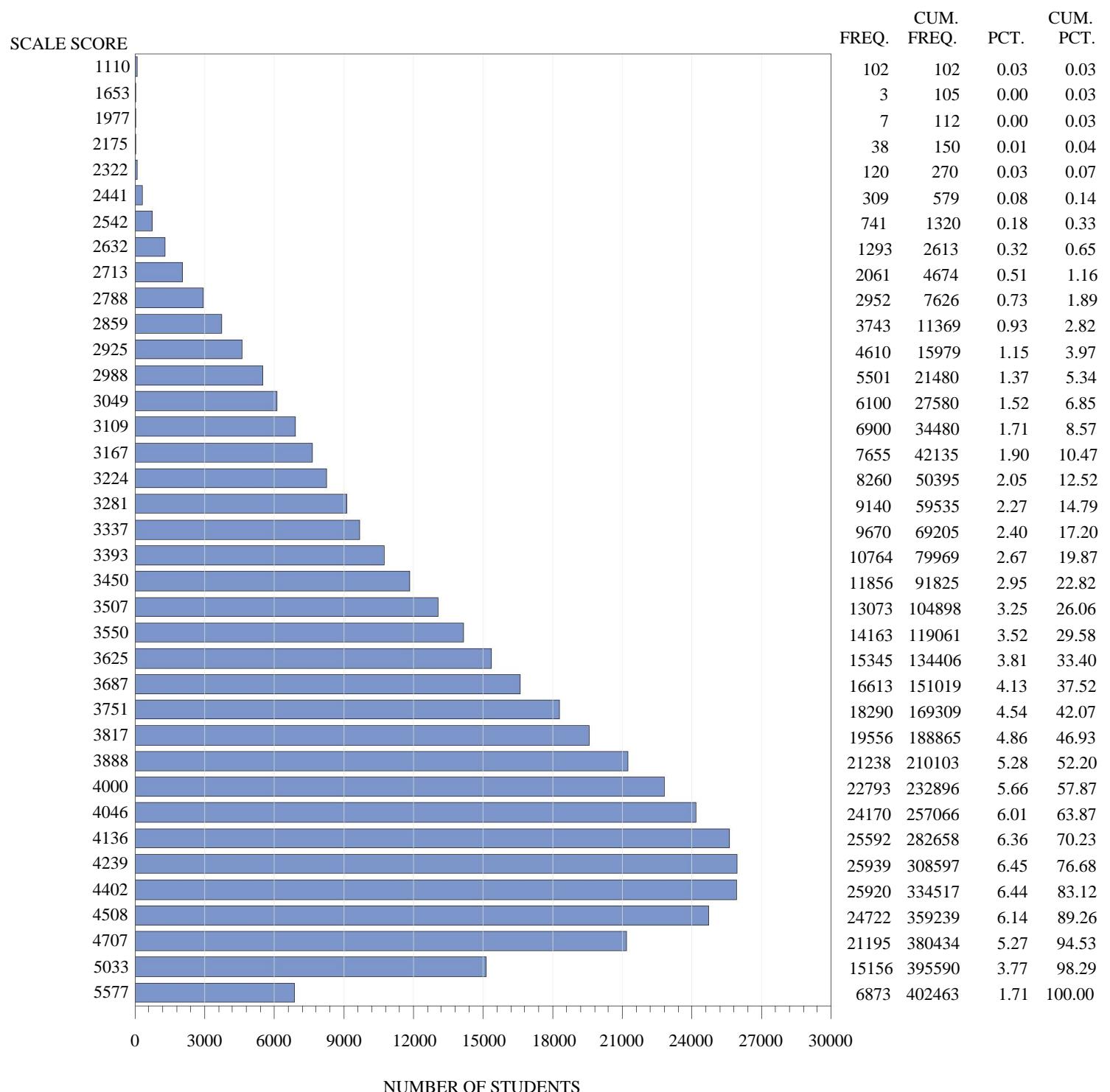
**Figure B.7.14. Spring 2019 STAAR English Grade 7 Writing  
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All Students**



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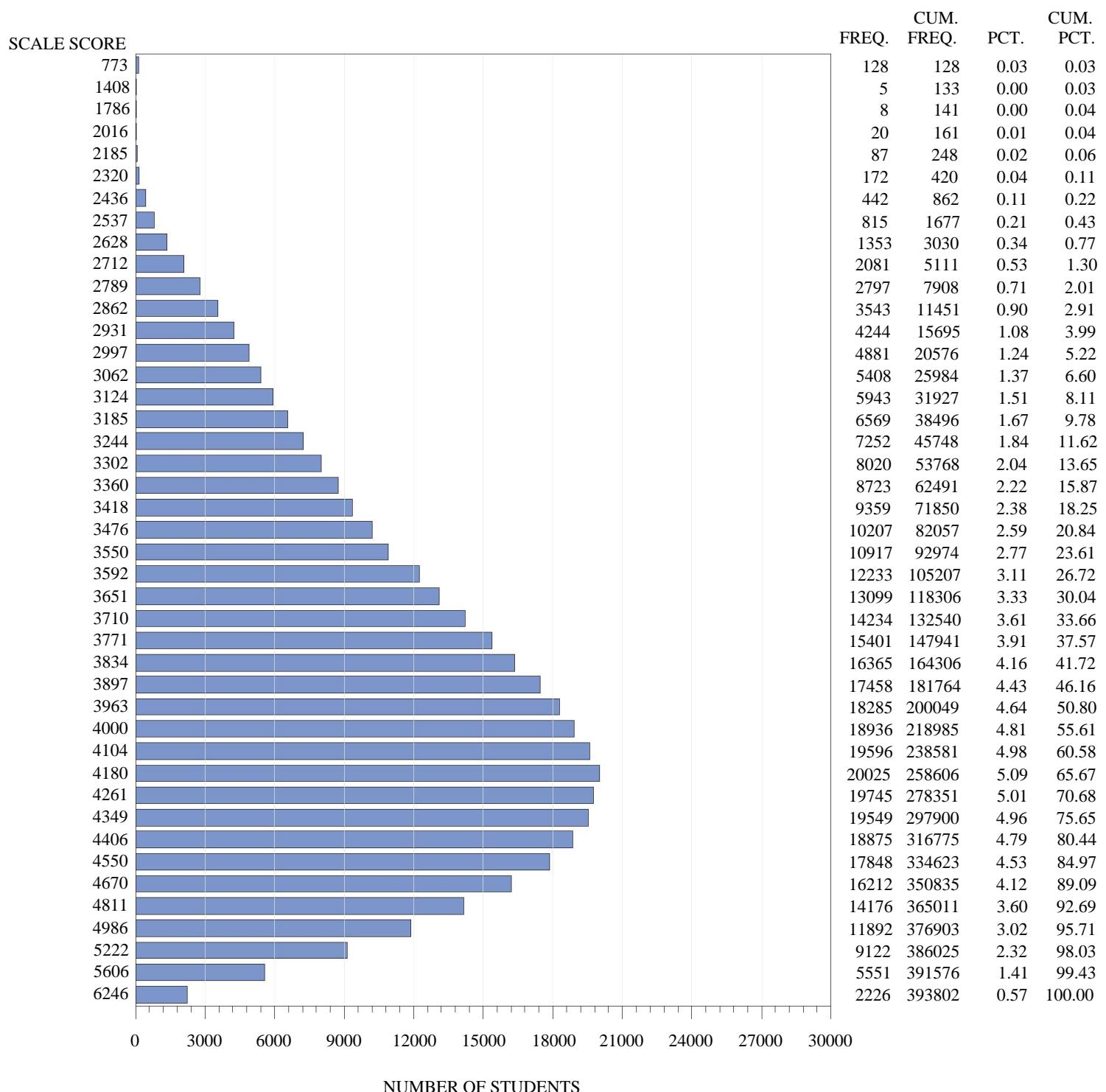
**Figure B.7.15. Spring 2019 STAAR English Grade 5 Science  
Frequency Distribution of Scale Scores  
All Students**



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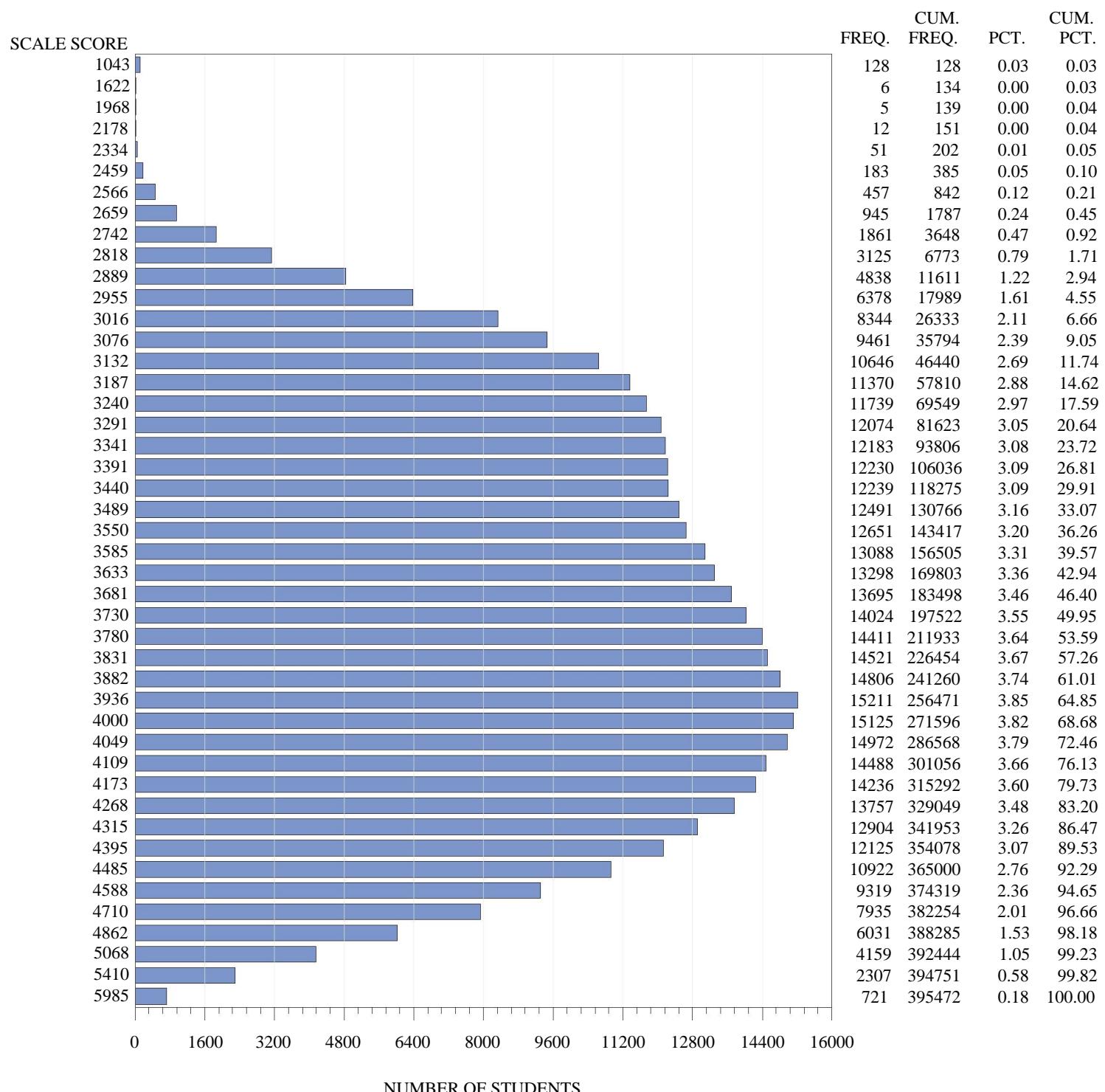
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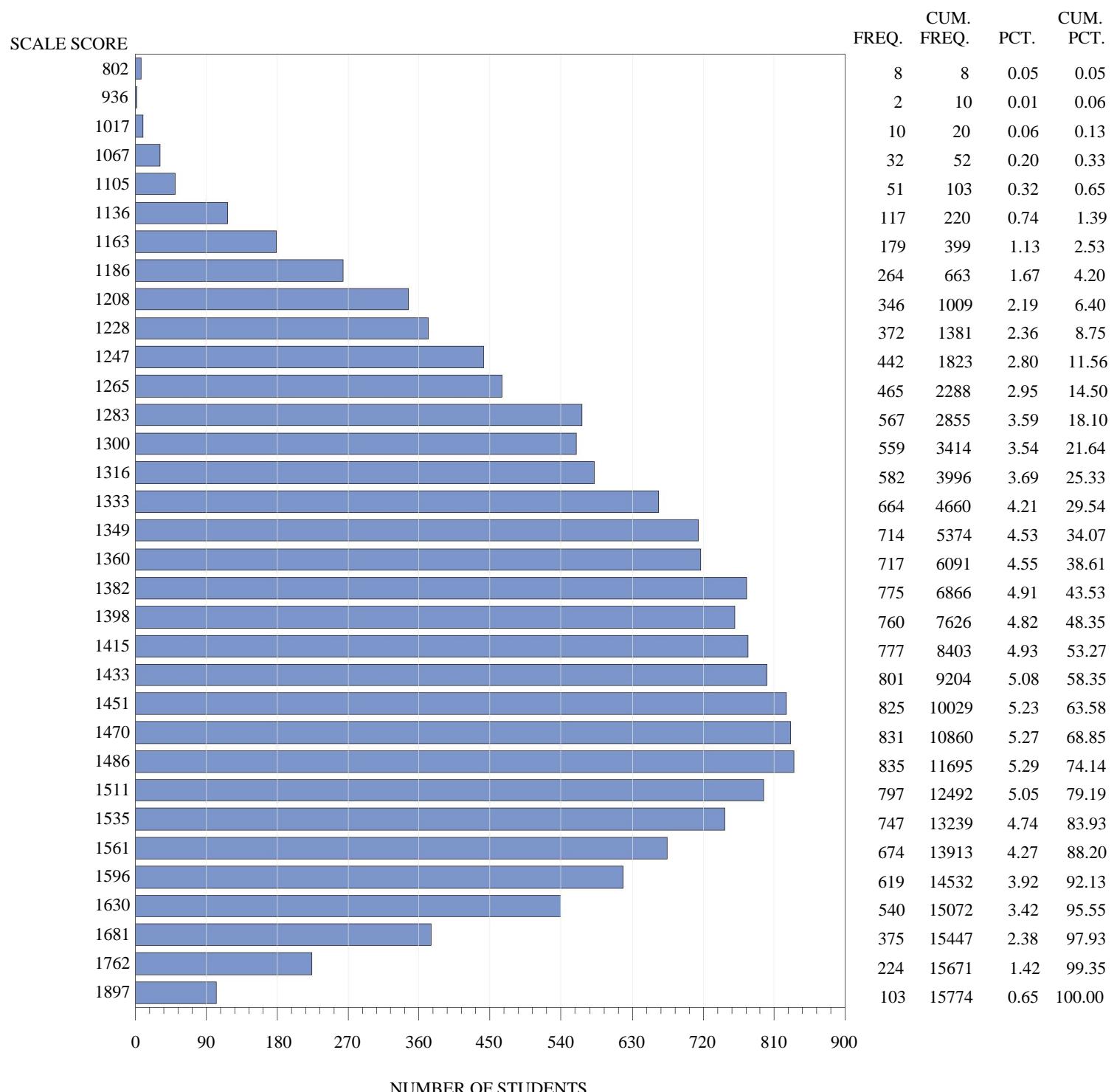
**Figure B.7.17. Spring 2019 STAAR English Grade 8 Social Studies  
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All Students**



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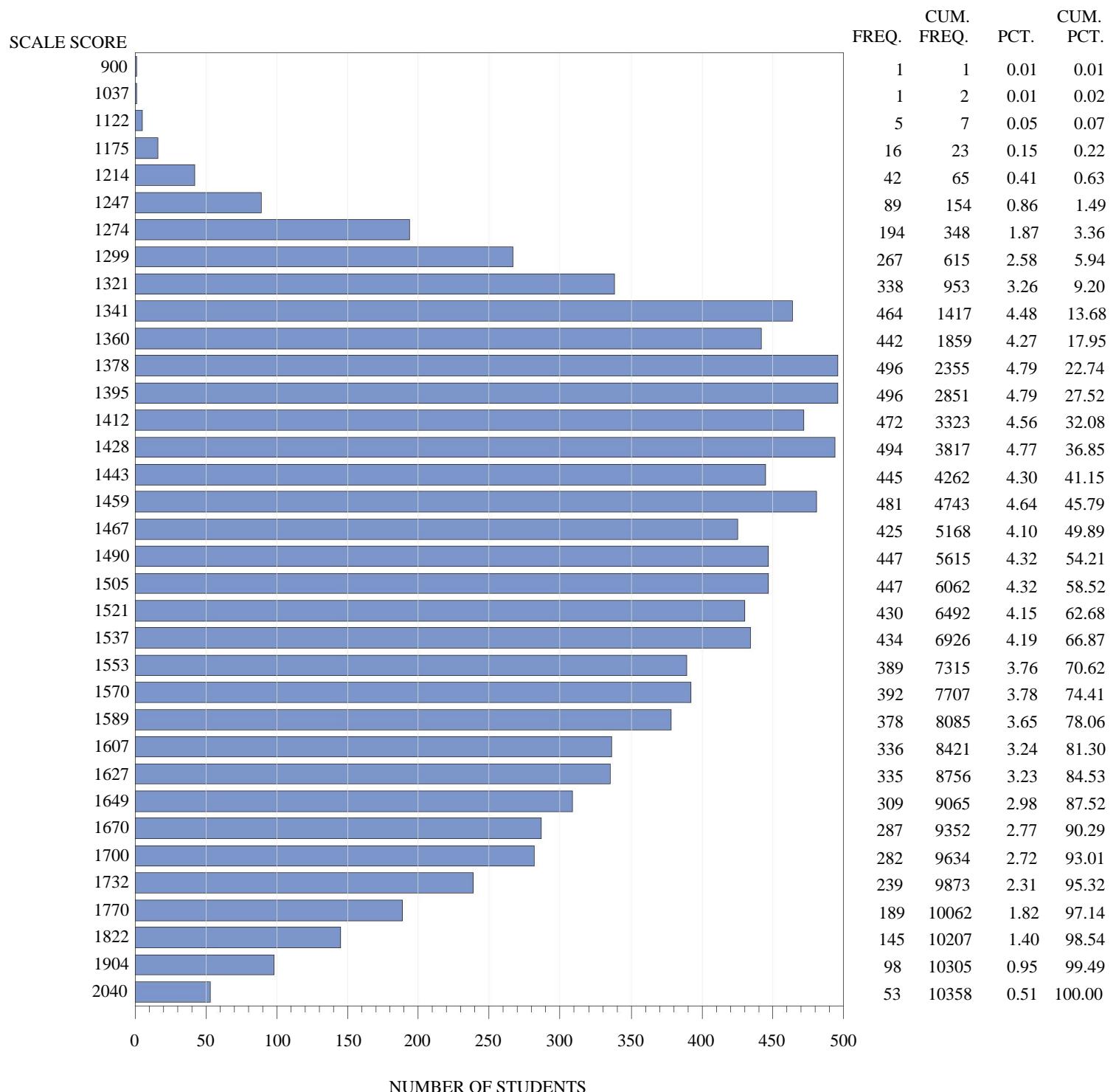
**Figure B.7.18. Spring 2019 STAAR Spanish Grade 3 Mathematics  
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All Students**



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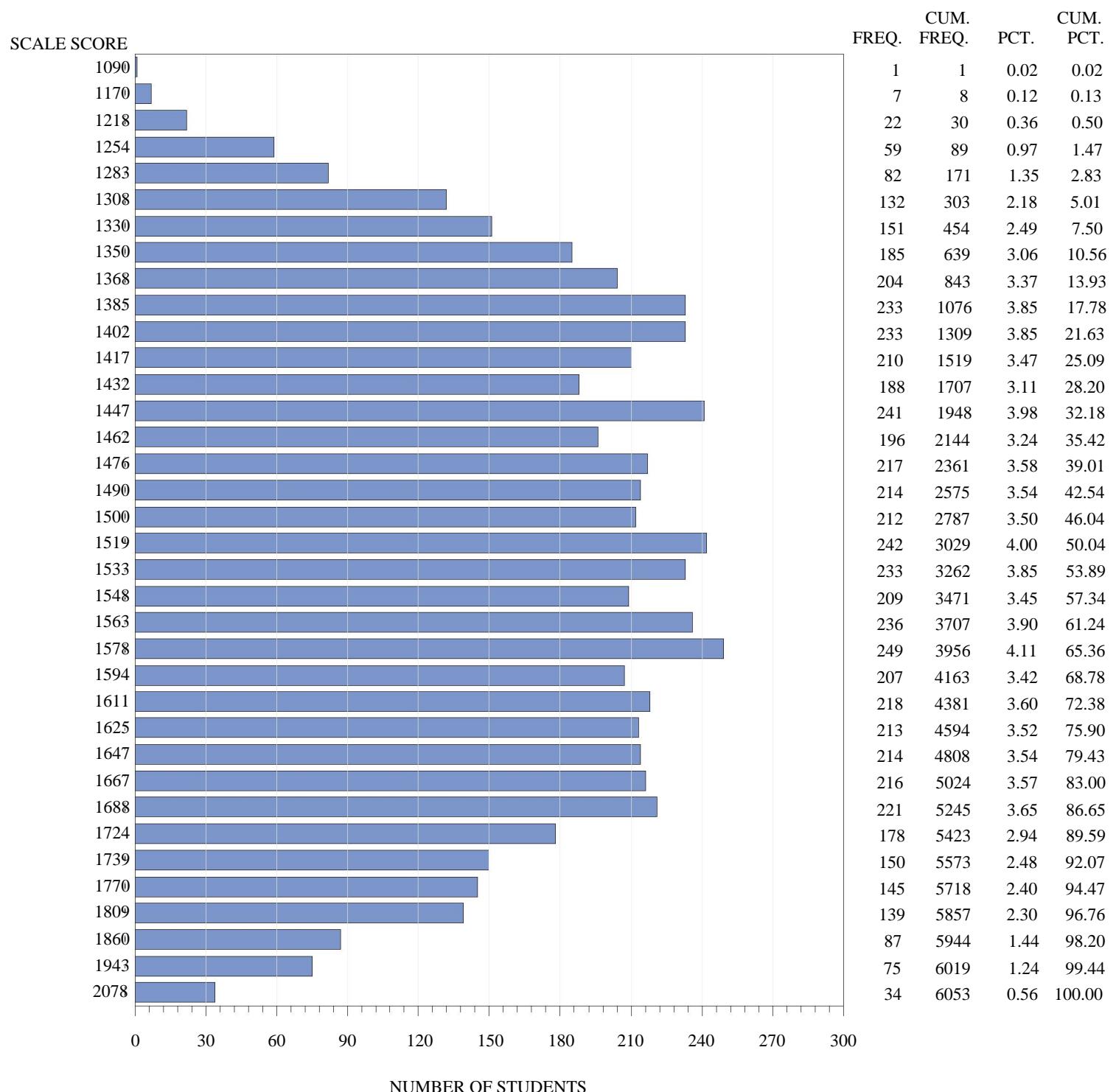
**Figure B.7.19. Spring 2019 STAAR Spanish Grade 4 Mathematics  
Frequency Distribution of Scale Scores  
All Students**



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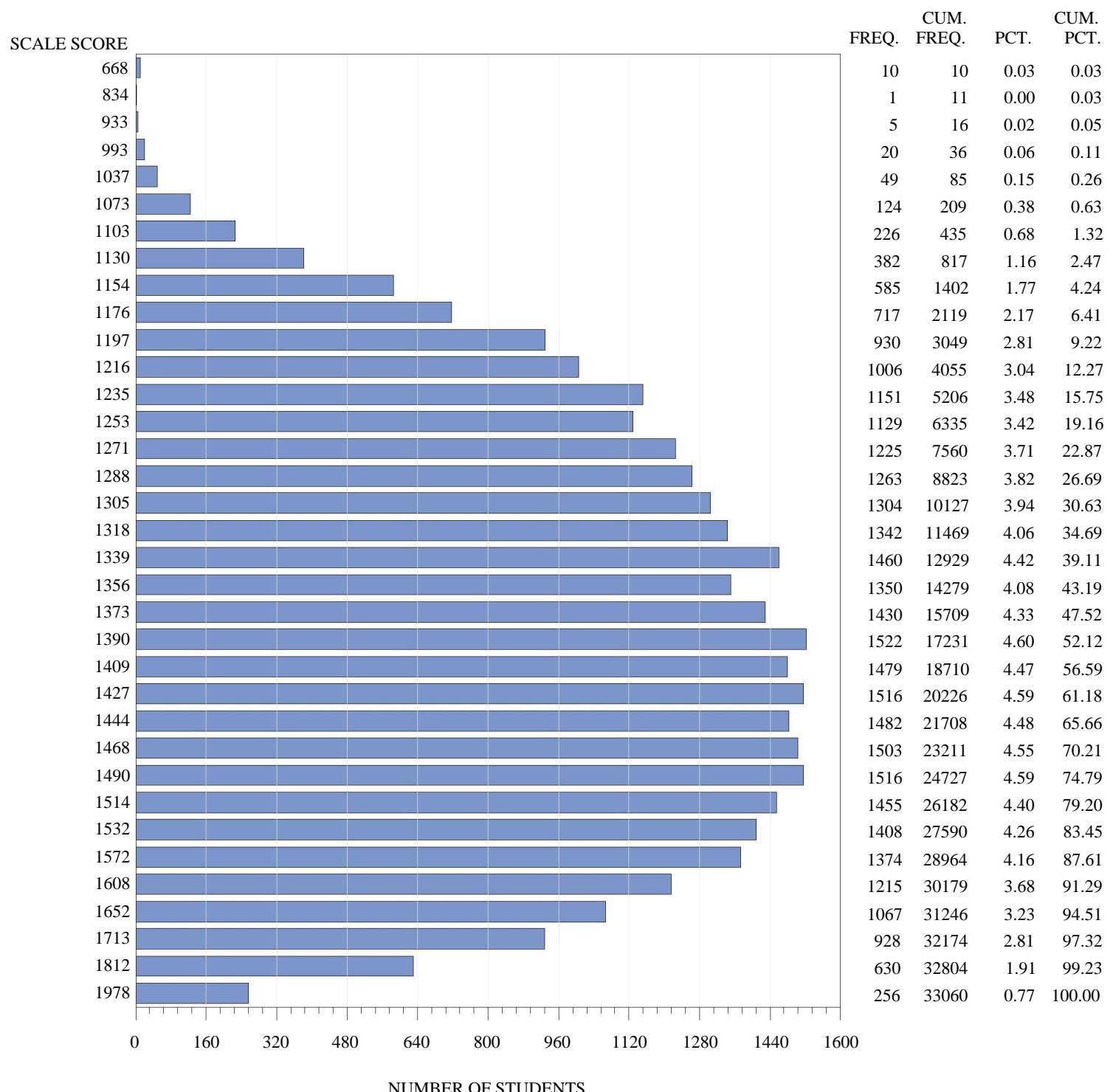
**Figure B.7.20. Spring 2019 STAAR Spanish Grade 5 Mathematics  
Frequency Distribution of Scale Scores  
All Students**



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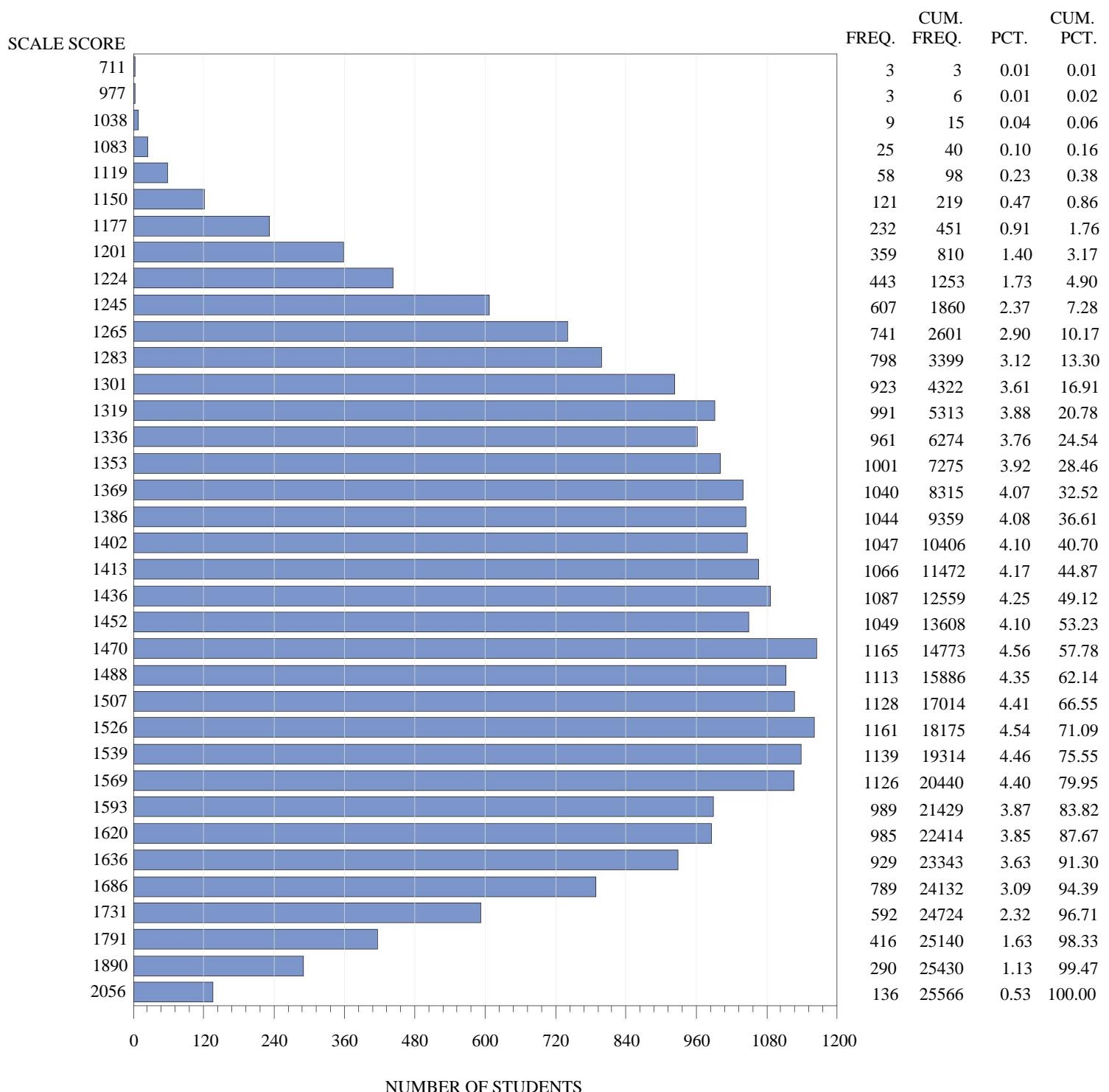
**Figure B.7.21. Spring 2019 STAAR Spanish Grade 3 Reading Frequency Distribution of Scale Scores All Students**



**Notes:**

Students who took the Braille or the ASL or the paper STAAR with Embedded Supports version of the test are not included in the frequency distribution tables.

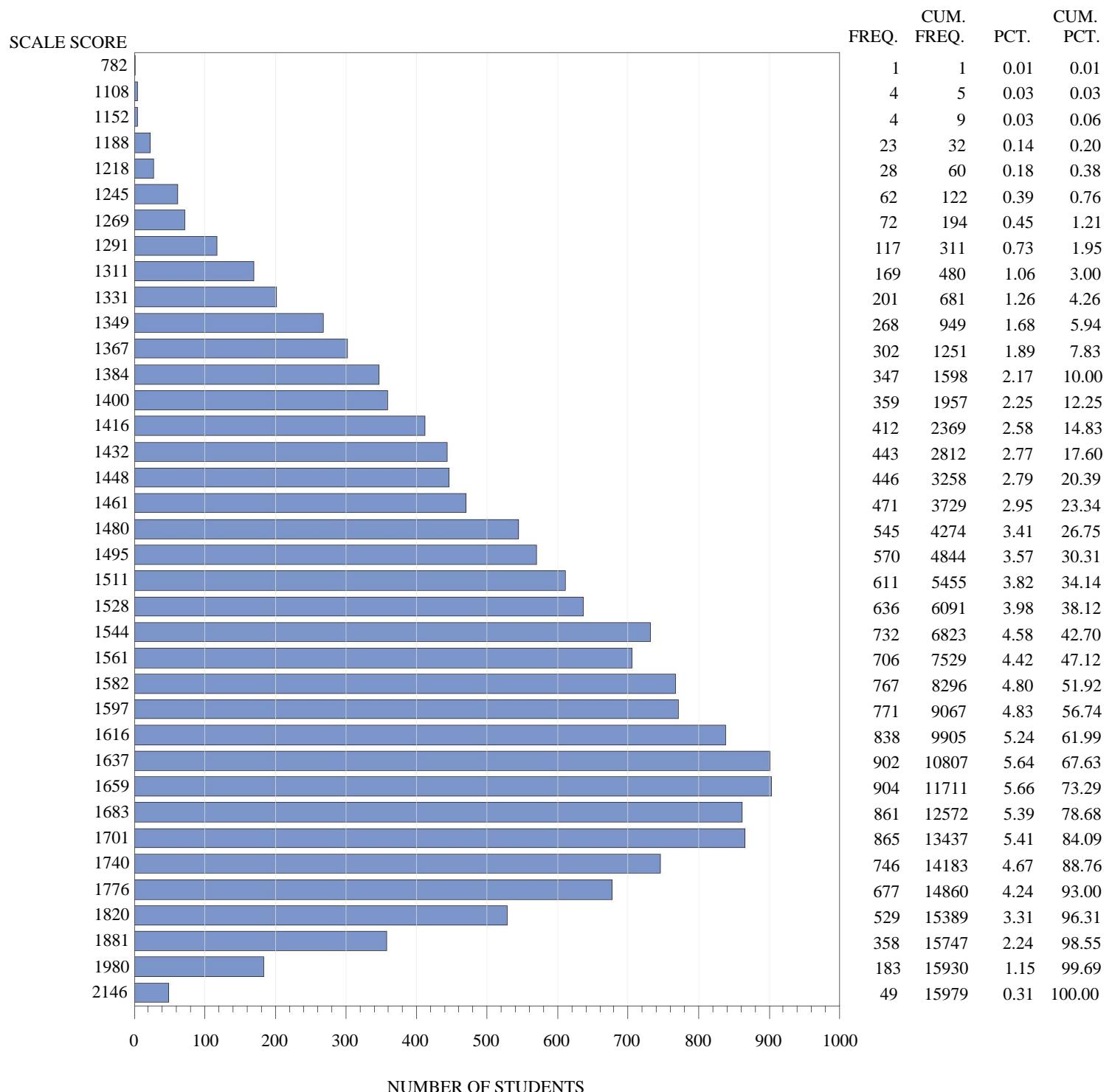
**Figure B.7.22. Spring 2019 STAAR Spanish Grade 4 Reading Frequency Distribution of Scale Scores All Students**



**Notes:**

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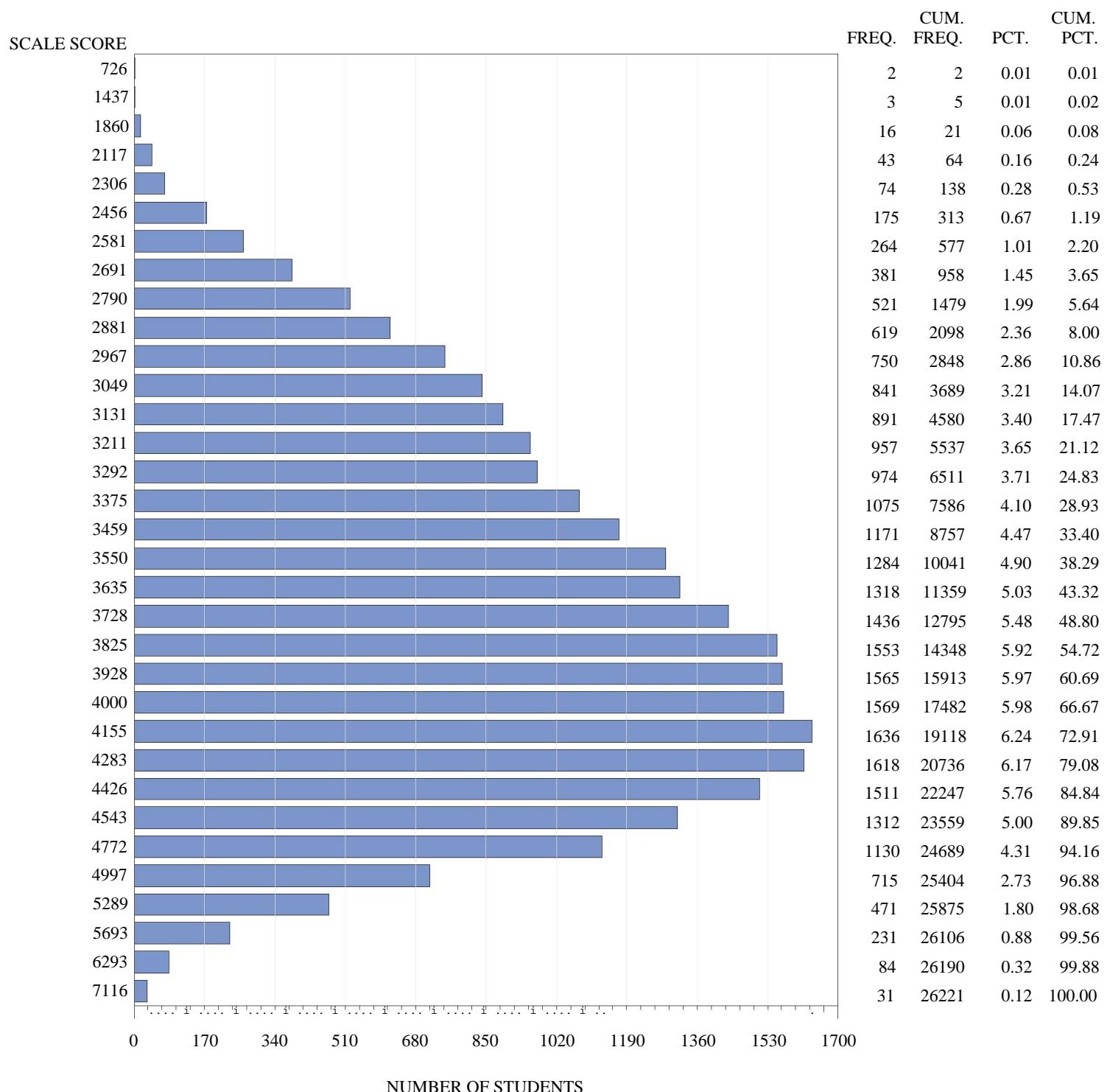
**Figure B.7.23. Spring 2019 STAAR Spanish Grade 5 Reading Frequency Distribution of Scale Scores All Students**



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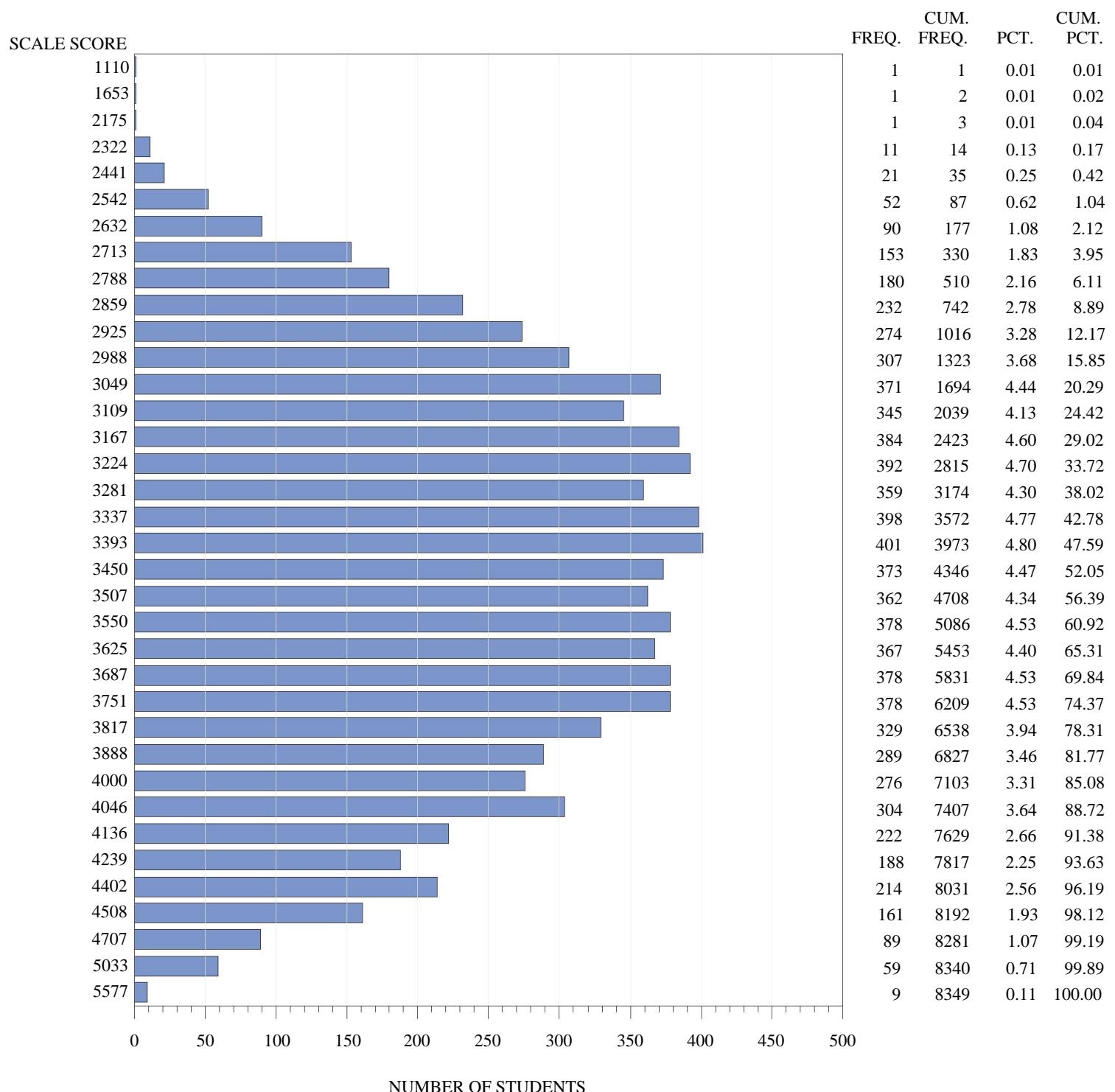
**Figure B.7.24. Spring 2019 STAAR Spanish Grade 4 Writing  
Frequency Distribution of Scale Scores  
All Students**



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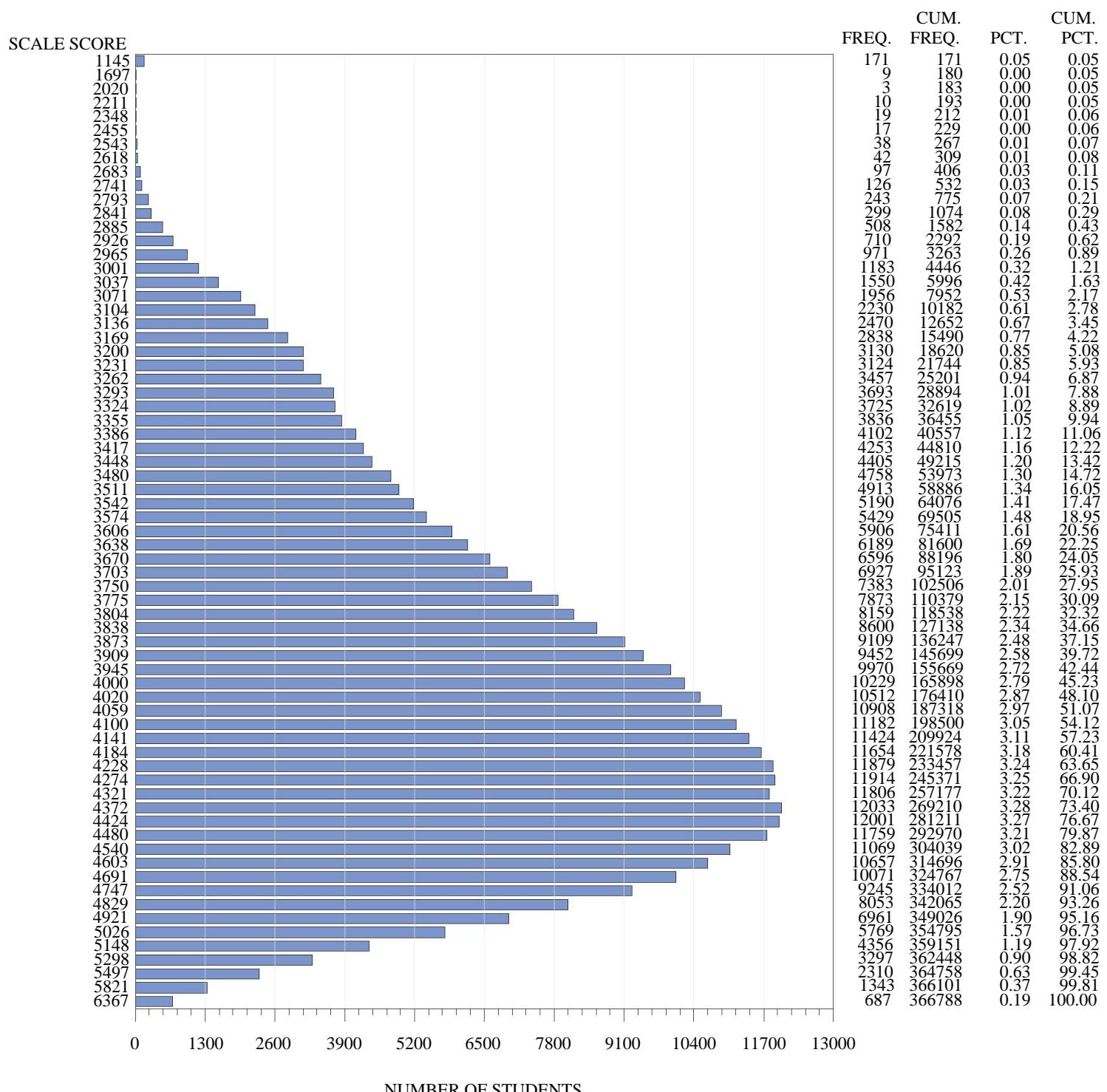
**Figure B.7.25. Spring 2019 STAAR Spanish Grade 5 Science  
Frequency Distribution of Scale Scores  
All Students**



**Notes:**

Students who took the Braille or the ASL or the paper STAAR with Embedded Supports version of the test are not included in the frequency distribution tables.

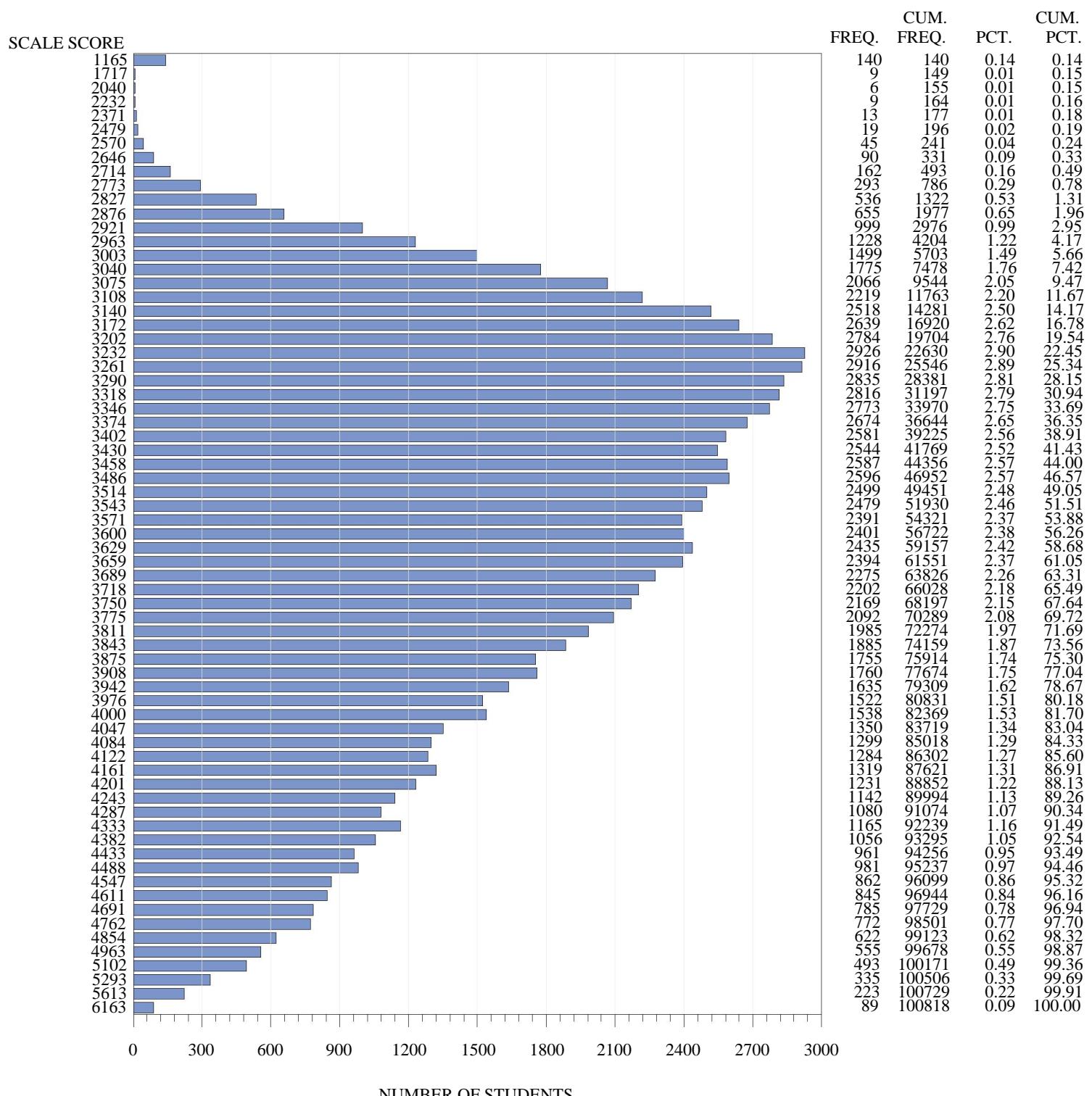
**Figure B.7.26. Spring 2019 STAAR EOC English I  
Frequency Distribution of Scale Scores  
Paper Students**



**Notes:**

Students who took the Braille or the paper STAAR with Embedded Supports version of the test are not included in the frequency distribution tables.

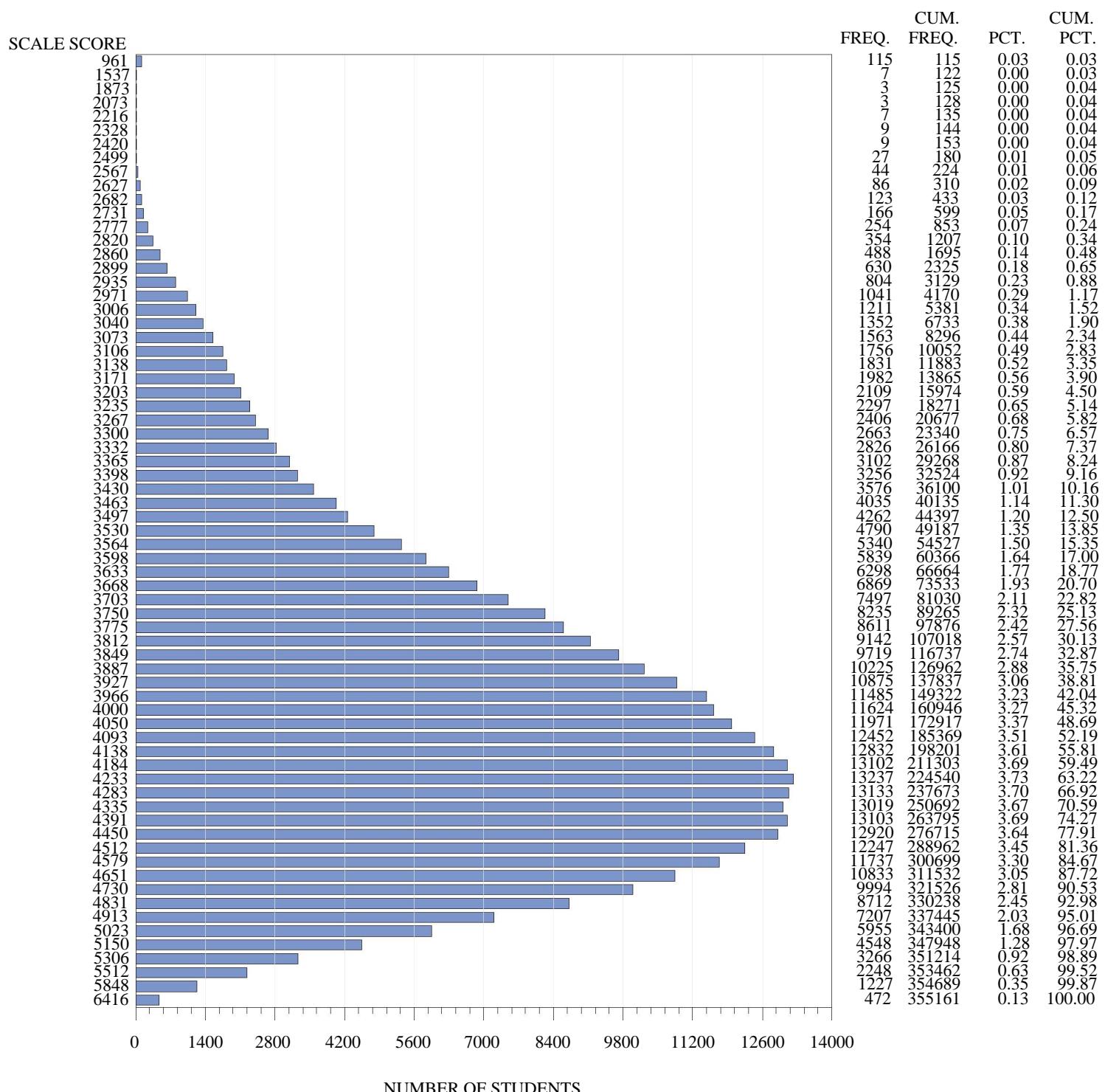
**Figure B.7.27. Spring 2019 STAAR EOC English I  
Frequency Distribution of Scale Scores  
Online Students**



**Notes:**

Students who took the Braille or the ASL version of the test are not included in the frequency distribution tables.

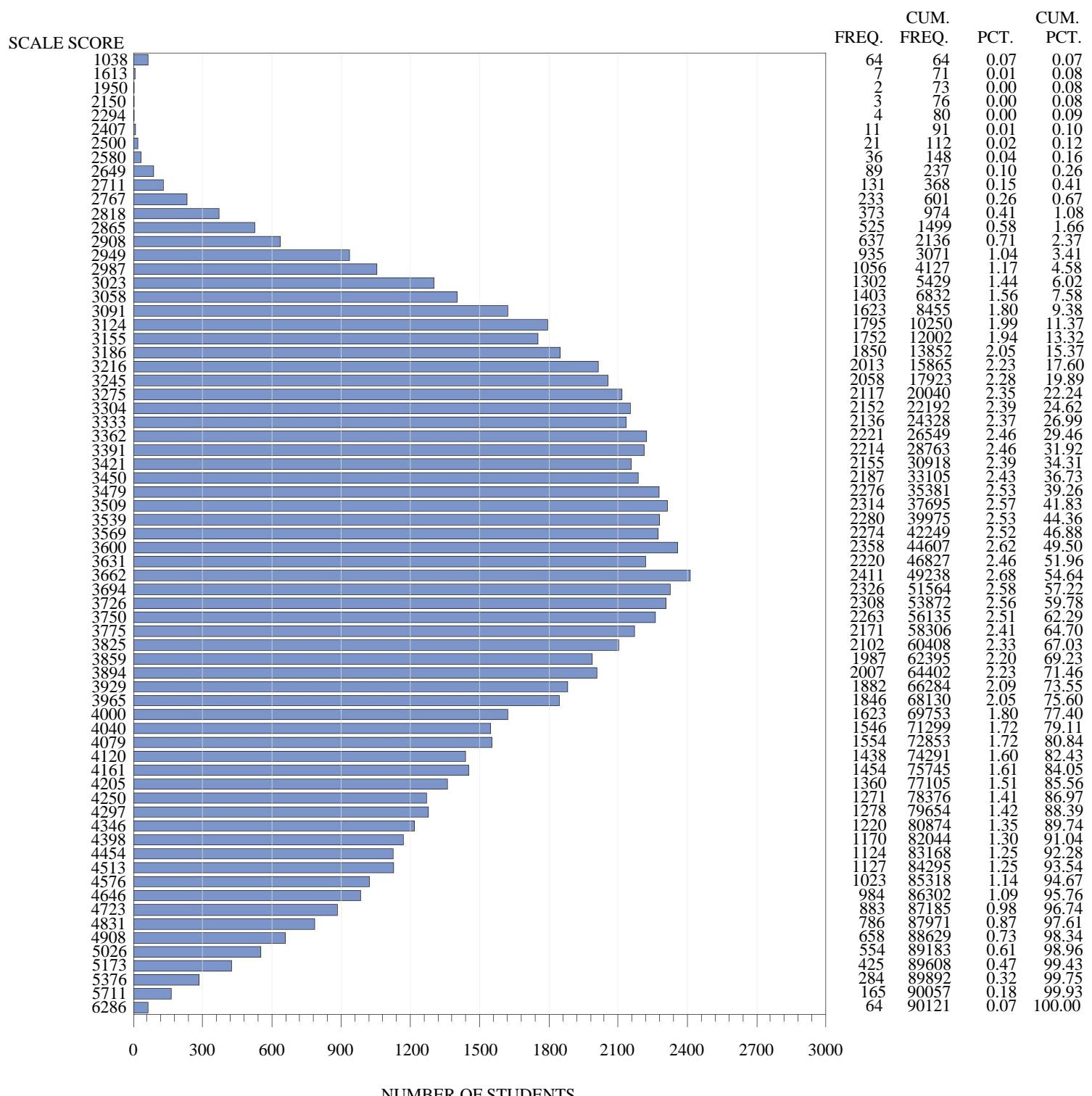
**Figure B.7.28. Spring 2019 STAAR EOC English II  
Frequency Distribution of Scale Scores  
Paper Students**



**Notes:**

Students who took the Braille or the paper STAAR with Embedded Supports version of the test are not included in the frequency distribution tables.

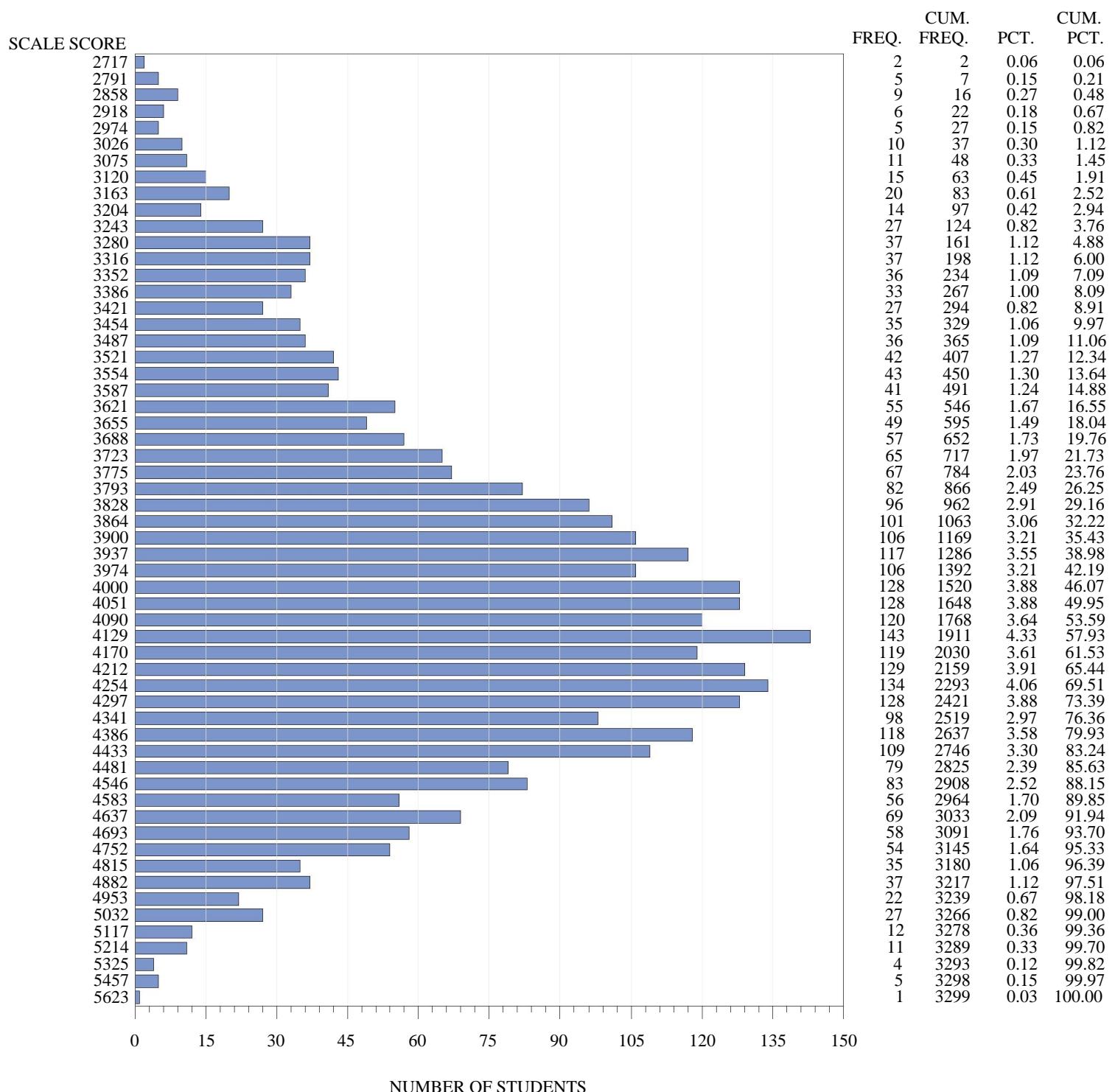
**Figure B.7.29. Spring 2019 STAAR EOC English II  
Frequency Distribution of Scale Scores  
Online Students**



**Notes:**

Students who took the Braille or the ASL version of the test are not included in the frequency distribution tables.

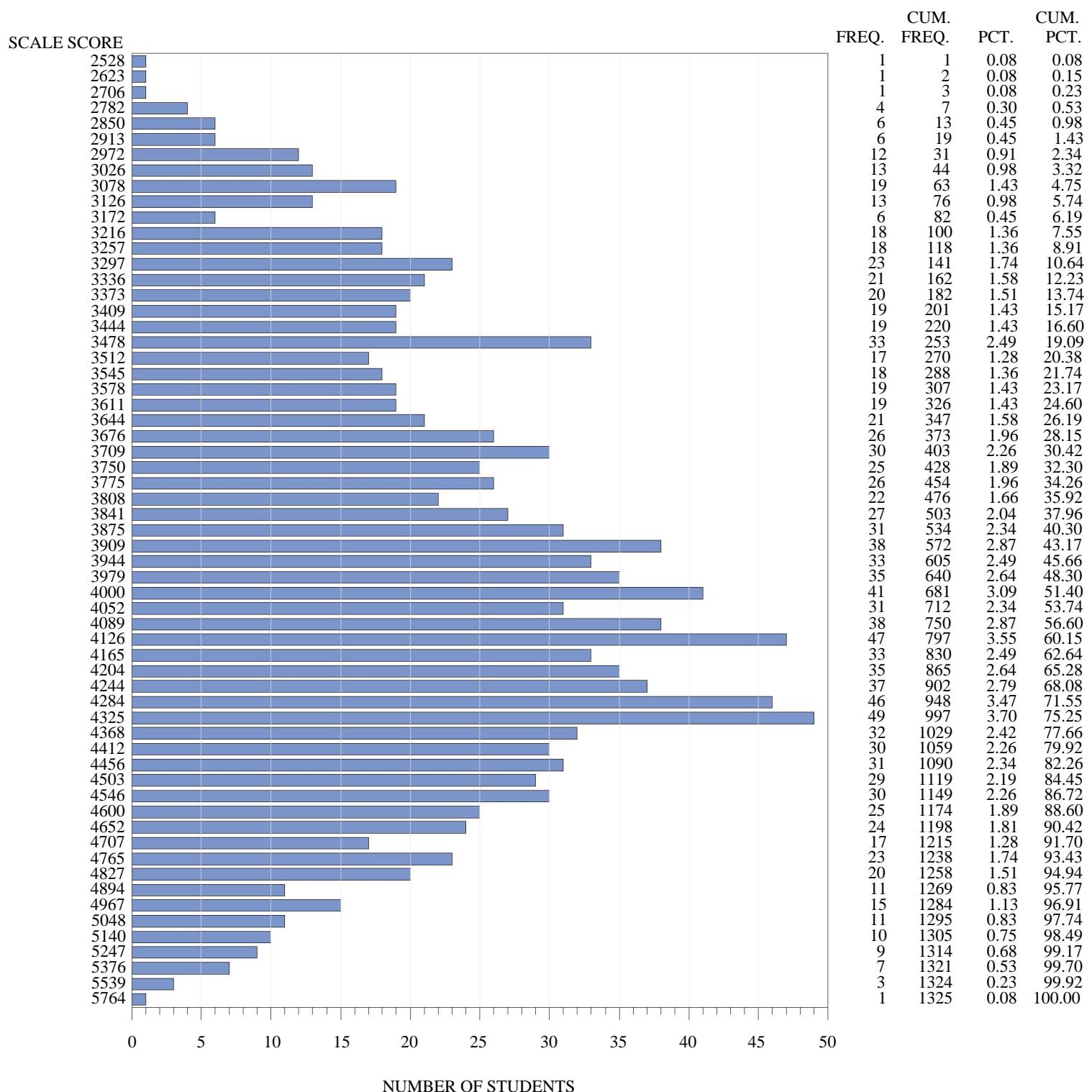
**Figure B.7.30. Spring 2019 STAAR EOC English III  
Frequency Distribution of Scale Scores  
Paper Students**



**Notes:**

Students who took the Braille or the paper STAAR with Embedded Supports version of the test are not included in the frequency distribution tables.

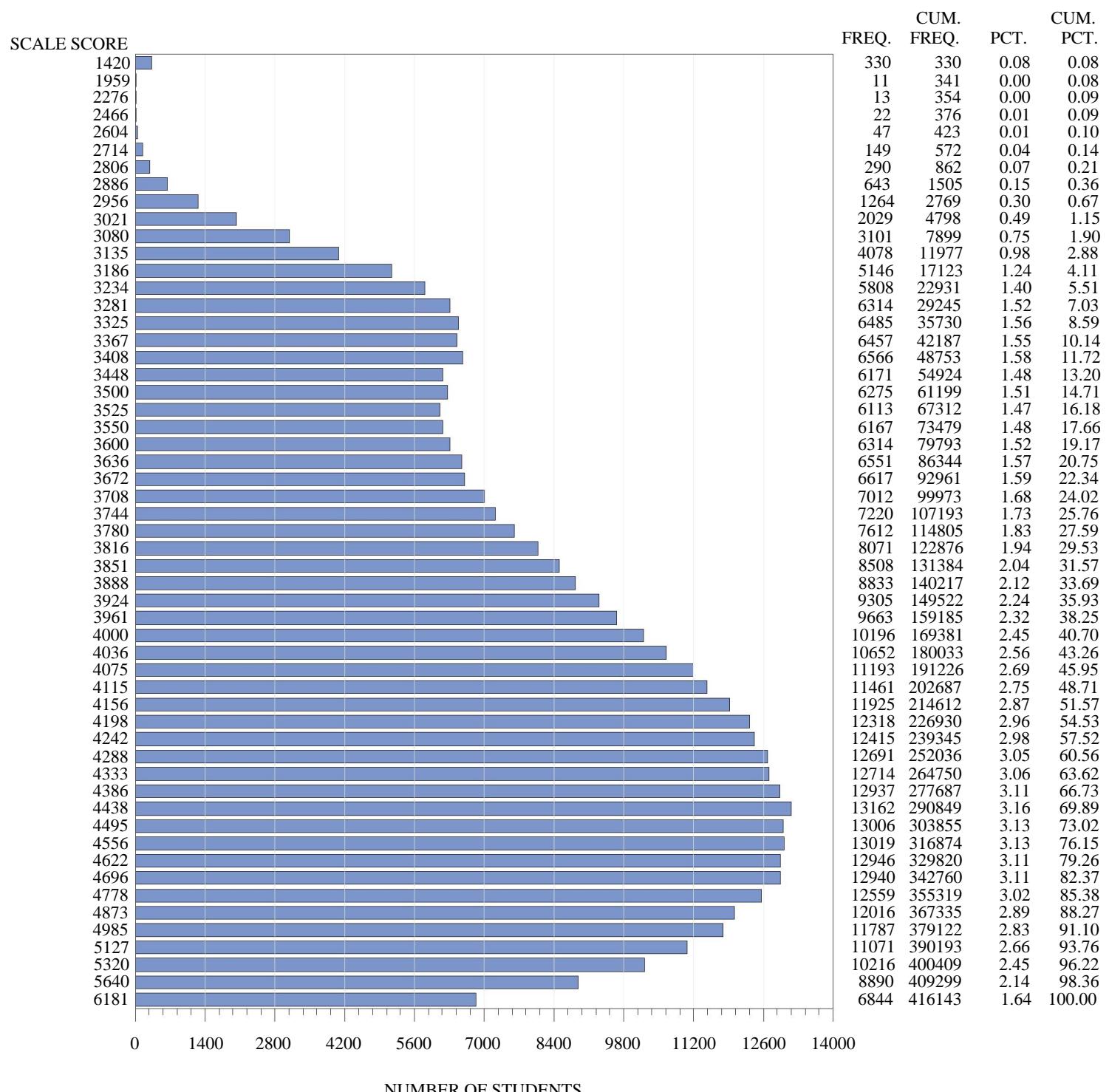
**Figure B.7.31. Spring 2019 STAAR EOC English III  
Frequency Distribution of Scale Scores  
Online Students**



**Notes:**

Students who took the Braille or the ASL version of the test are not included in the frequency distribution tables.

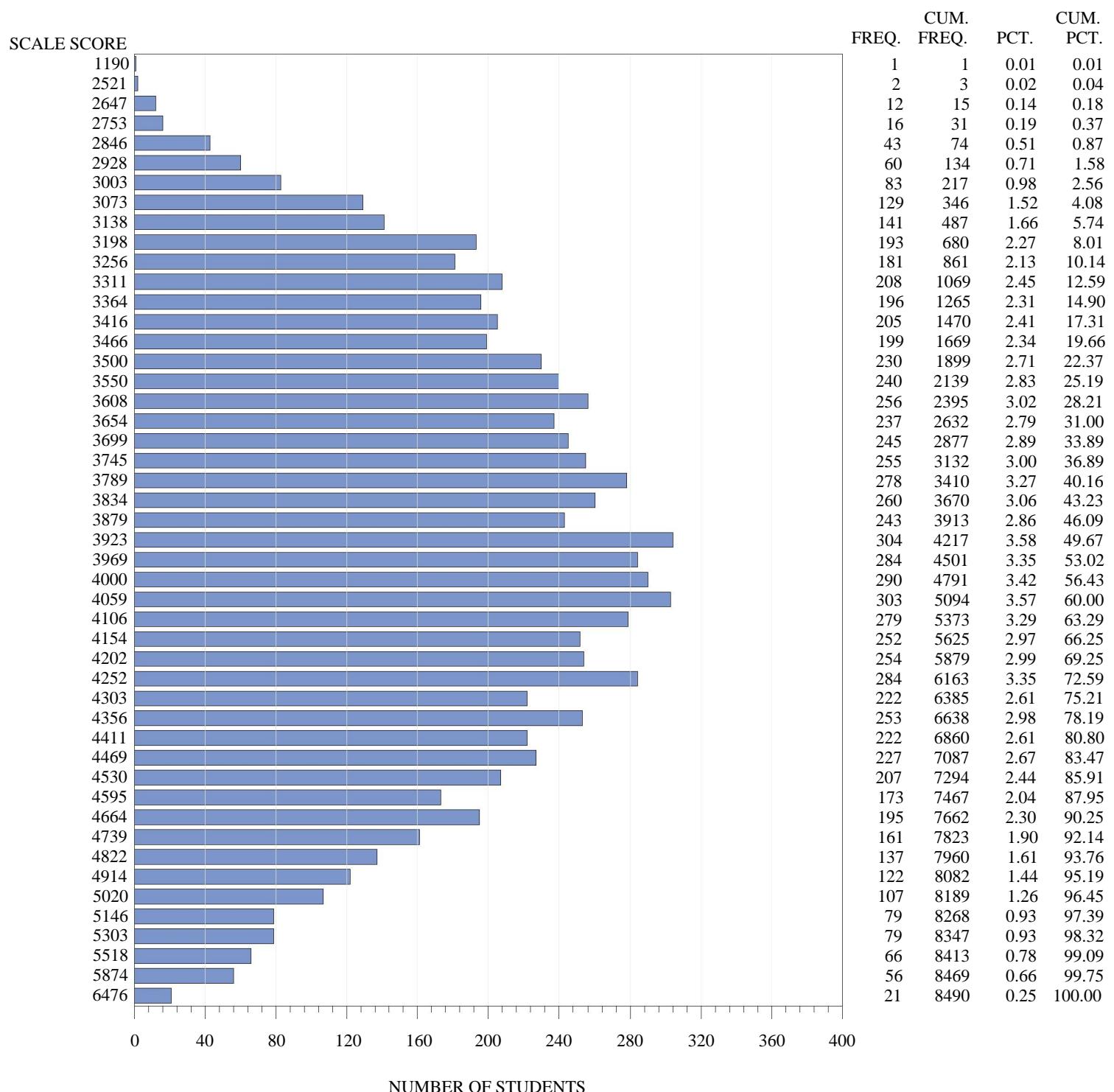
**Figure B.7.32. Spring 2019 STAAR EOC Algebra I  
Frequency Distribution of Scale Scores  
All Students**



**Notes:**

Students who took the Braille or the ASL or the paper STAAR with Embedded Supports version of the test are not included in the frequency distribution tables.

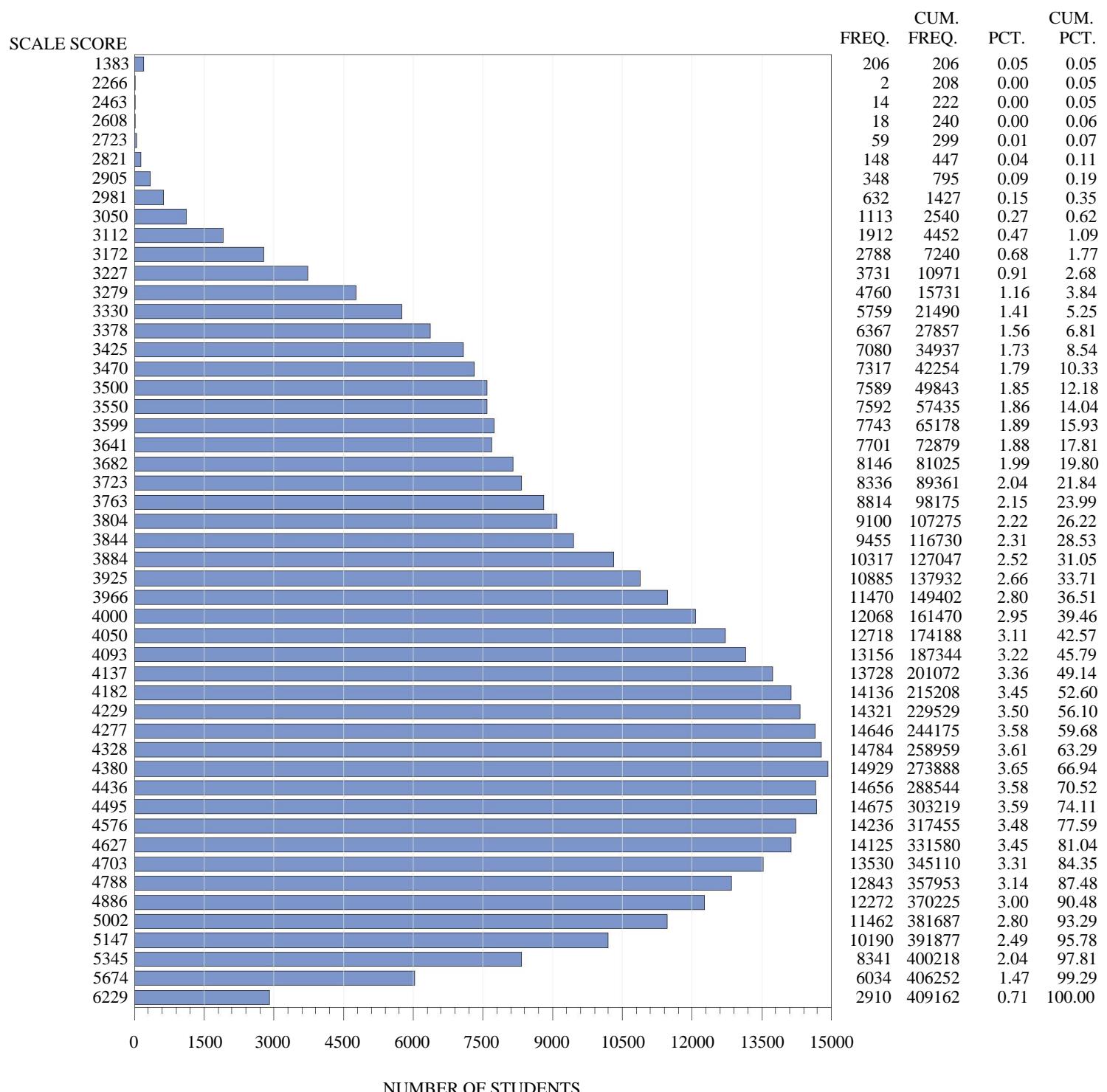
**Figure B.7.33. Spring 2019 STAAR EOC Algebra II  
Frequency Distribution of Scale Scores  
All Students**



**Notes:**

Students who took the Braille or the ASL or the paper STAAR with Embedded Supports version of the test are not included in the frequency distribution tables.

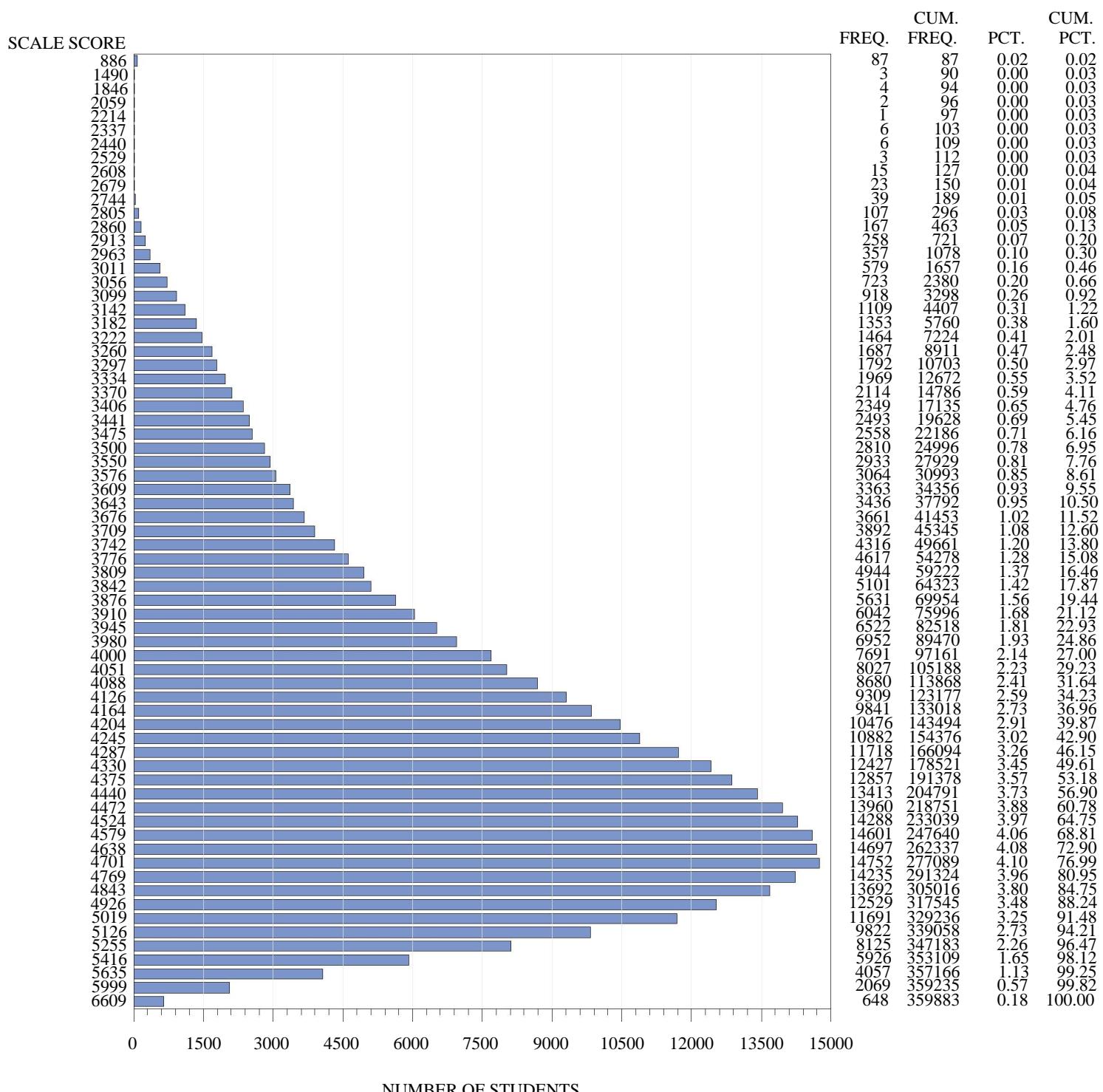
**Figure B.7.34. Spring 2019 STAAR EOC Biology  
Frequency Distribution of Scale Scores  
All Students**



**Notes:**

Students who took the Braille or the ASL or the paper STAAR with Embedded Supports version of the test are not included in the frequency distribution tables.

**Figure B.7.35. Spring 2019 STAAR EOC U.S. History  
Frequency Distribution of Scale Scores  
All Students**



**Notes:**

Students who took the Braille or the ASL or the paper STAAR with Embedded Supports version of the test are not included in the frequency distribution tables.