

STAAR
2017 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 2017 Score Distributions and Statistics by Content Area and Grade") of Appendix B. Definition 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 it 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 is 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 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% of the scores) from the score at the 3rd 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: $CUM PCT = CUM FREQ \div N \times 100$.

Scale Score Descriptive Statistics for 2017 STAAR English 3–8 Assessments

Subject	N	Mean	Median	Mode	Range	Interquartile Range		SD	Variance	Skewness	Kurtosis
						Q1	Q3				
GRADE 3 MATHEMATICS	389765	1472.97	1472	1625	1063	236	157.50	24805.54	0.2249	-.0629	
GRADE 4 MATHEMATICS	395332	1569.81	1572	1701	1053	214	154.19	23774.41	0.3437	0.1072	
GRADE 5 MATHEMATICS	387610	1626.36	1617	1710	1099	180	149.32	22297.07	0.4638	0.3943	
GRADE 6 MATHEMATICS	384610	1631.32	1617	1517	1069	205	144.77	20959.75	0.7017	0.6488	
GRADE 7 MATHEMATICS	355878	1654.28	1638	1527	1091	185	139.12	19355.26	0.7202	0.6968	
GRADE 8 MATHEMATICS	324154	1681.49	1679	1719	1133	182	137.87	19007.59	0.5063	0.7744	
GRADE 3 READING	370790	1440.32	1437	1577	1128	243	160.52	25766.53	0.1723	-.1937	
GRADE 4 READING	380063	1514.88	1508	1633	1129	197	151.60	22981.12	0.3833	0.1772	
GRADE 5 READING	379532	1552.67	1542	1688	1126	185	146.10	21343.83	0.3291	0.1706	
GRADE 6 READING	391613	1576.24	1571	1669	1149	187	139.01	19323.49	0.2912	0.3563	
GRADE 7 READING	389226	1640.42	1637	1732	1147	191	137.22	18829.62	0.2702	0.3213	
GRADE 8 READING	380566	1676.02	1679	1762	1179	175	133.51	17825.48	0.1063	0.3924	
GRADE 4 WRITING	378591	3727.35	3718	3909	5526	825	597.48	356979.25	0.4681	0.8606	
GRADE 7 WRITING	389357	3801.76	3788	3934	5851	836	622.77	387846.47	0.4738	0.9952	
GRADE 5 SCIENCE	385853	3845.29	3839	4058	4392	656	513.34	263518.89	0.3698	0.4374	
GRADE 8 SCIENCE	382710	3897.31	3912	4111	5410	758	571.84	327001.09	0.2420	0.7897	
GRADE 8 SOCIAL STUDIES	383327	3735.51	3691	3787	4820	737	539.23	290770.05	0.5187	0.5354	

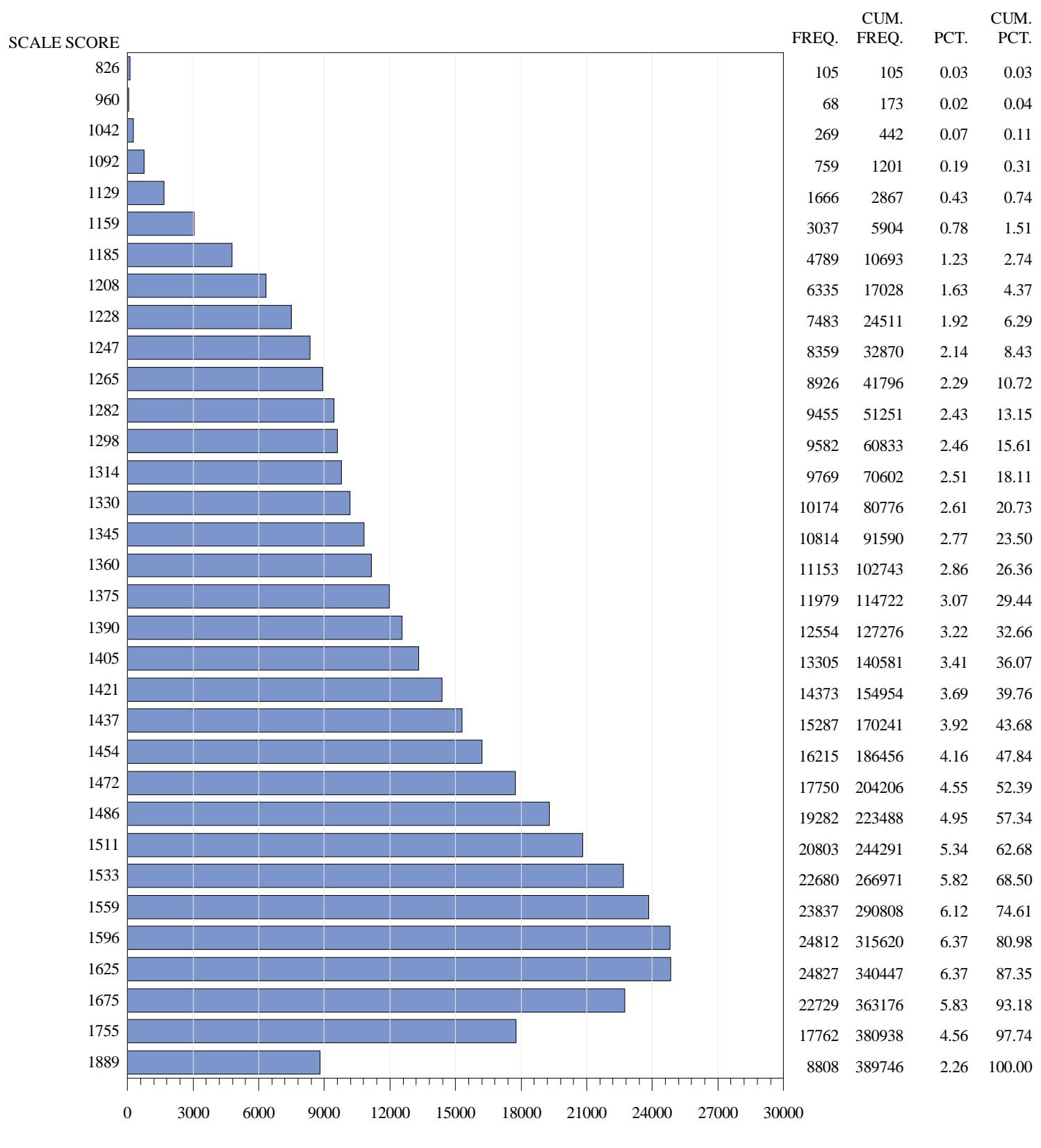
Scale Score Descriptive Statistics for 2017 STAAR Spanish 3–5 Assessments

Subject	N	Mean	Median	Mode	Range	Interquartile Range	SD	Variance	Skewness	Kurtosis
GRADE 3 MATHEMATICS	16823	1427.60	1421	1533	1063	219	146.84	21562.70	0.3668	0.1587
GRADE 4 MATHEMATICS	9439	1499.22	1484	1556	1053	189	139.64	19498.06	0.5537	0.4626
GRADE 5 MATHEMATICS	5241	1513.91	1500	1460	1099	171	125.01	15626.27	0.5230	0.7294
GRADE 3 READING	35697	1375.86	1367	1424	1318	245	166.95	27872.98	0.4804	0.2386
GRADE 4 READING	24667	1447.85	1443	1539	1335	230	153.53	23572.14	0.4115	0.3237
GRADE 5 READING	13763	1548.78	1552	1569	1359	182	135.65	18401.28	0.2636	0.4947
GRADE 4 WRITING	25904	3743.03	3680	3863	5679	915	643.47	414058.30	0.3945	0.4496
GRADE 5 SCIENCE	7794	3511.10	3489	3274	3176	556	415.03	172251.77	0.4826	0.3053

Scale Score Descriptive Statistics for 2017 STAAR EOC Assessments

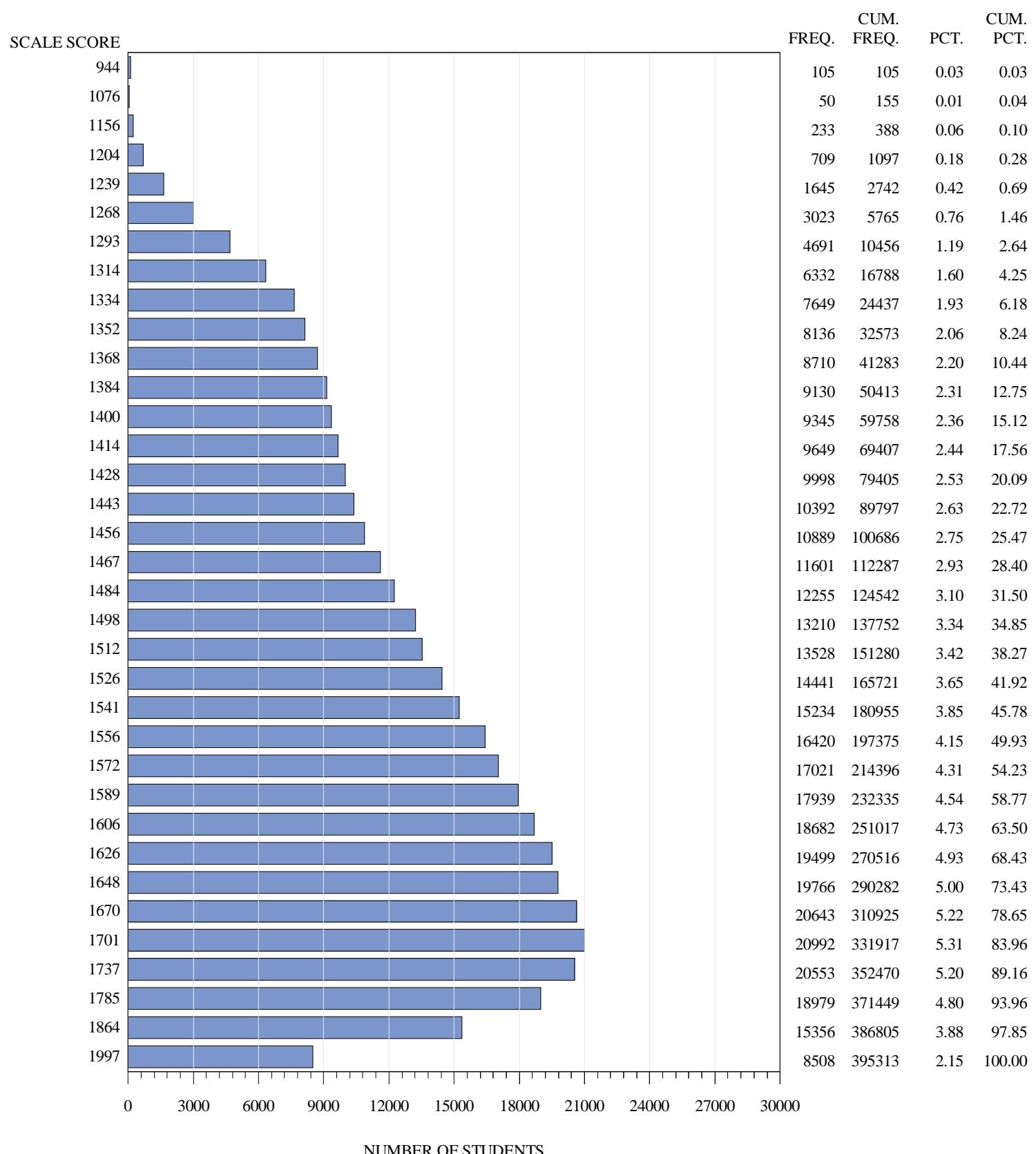
Subject	N	Mean	Median	Mode	Range	Interquartile Range		Variance	Skewness	Kurtosis
						Q1	Q3			
ALGEBRA I	433496	4038.05	4000	4083	4713	680	551.04	303641.27	0.6356	1.1374
ALGEBRA II	13326	4014.67	3970	4263	5308	765	590.76	349003.05	0.6442	1.3320
ENGLISH I	479552	3922.38	3895	4000	5171	732	529.22	280069.33	0.3279	0.6807
ENGLISH II	435855	3949.77	3922	4264	5381	774	566.23	320611.03	0.3192	0.5665
ENGLISH III	10076	3969.75	4000	4000	5339	629	469.70	220617.32	-0.2117	1.2756
BIOLOGY	403989	4124.78	4122	4294	4928	697	543.61	295514.33	0.4238	0.7650
U.S. HISTORY	352038	4241.14	4216	4581	5549	713	545.31	297361.23	0.3053	0.6463

**FREQUENCY DISTRIBUTION – SCALE SCORES
STAAR ENGLISH SPRING 2017
GRADE 3 MATH
ALL STUDENTS^a**



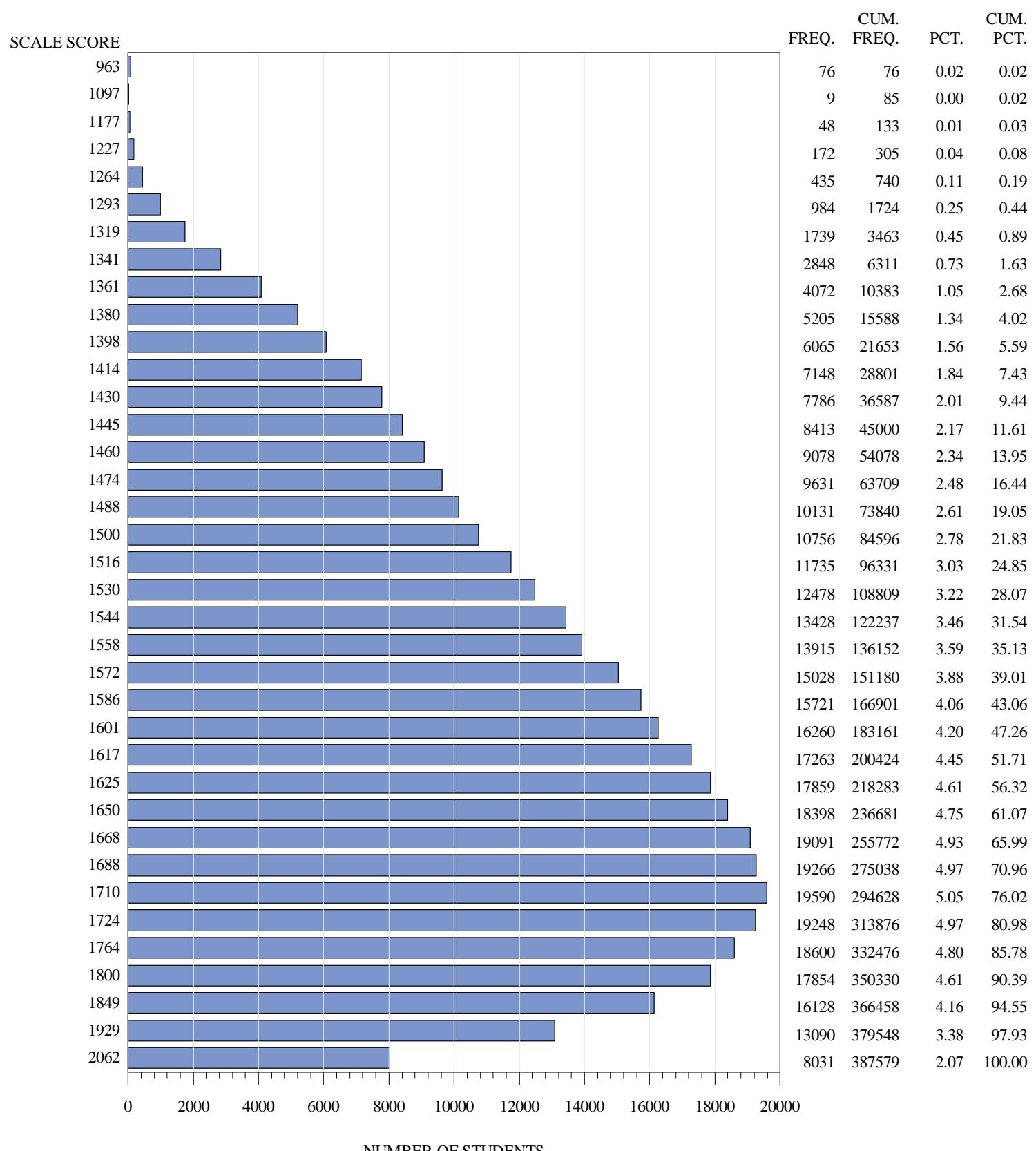
^aStudents who took the braille or the paper STAAR with Embedded Supports version of the test are not included in the frequency distribution tables.

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GRADE 4 MATH
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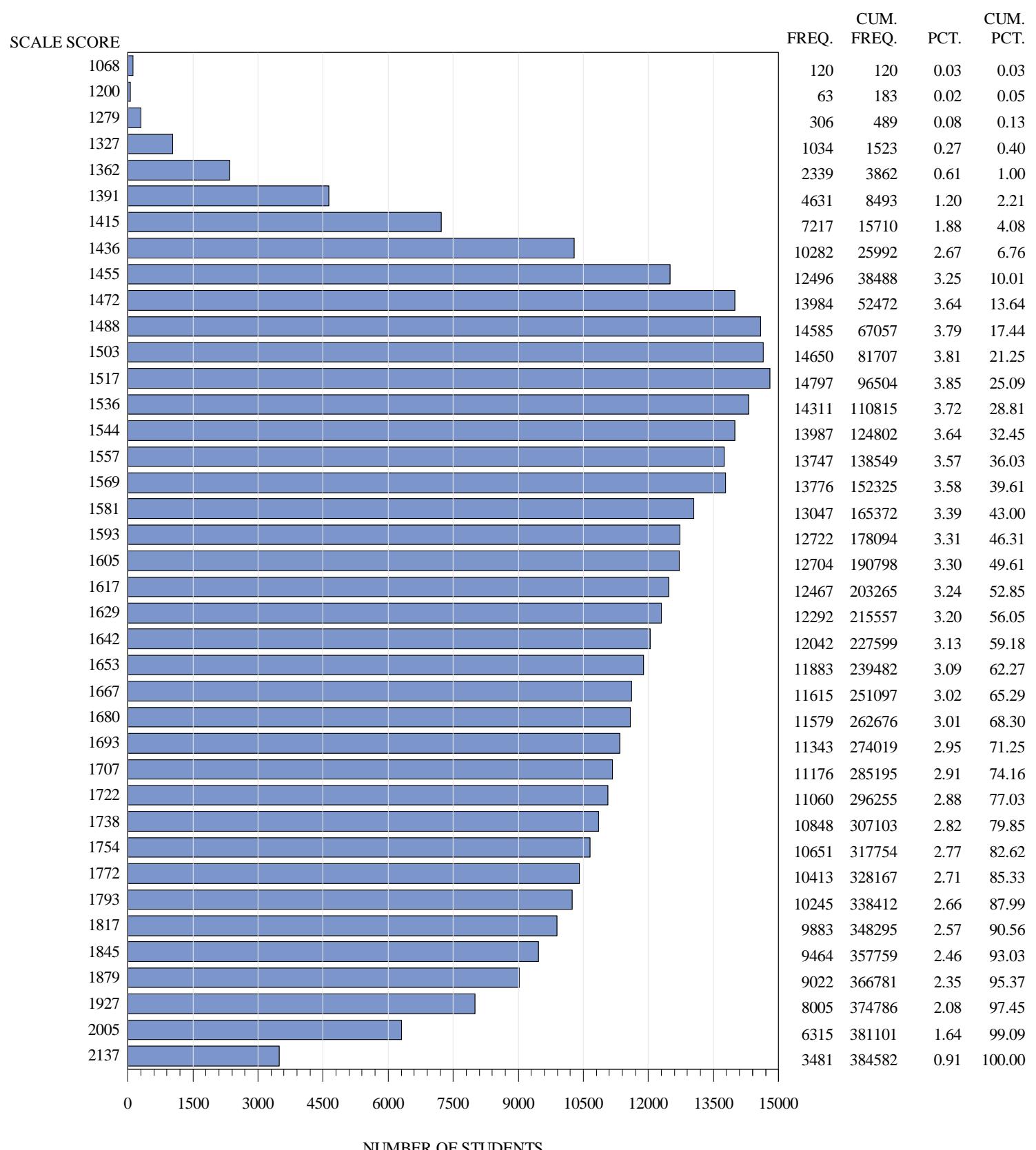
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STAAR ENGLISH SPRING 2017
GRADE 5 MATH
ALL STUDENTS^a**



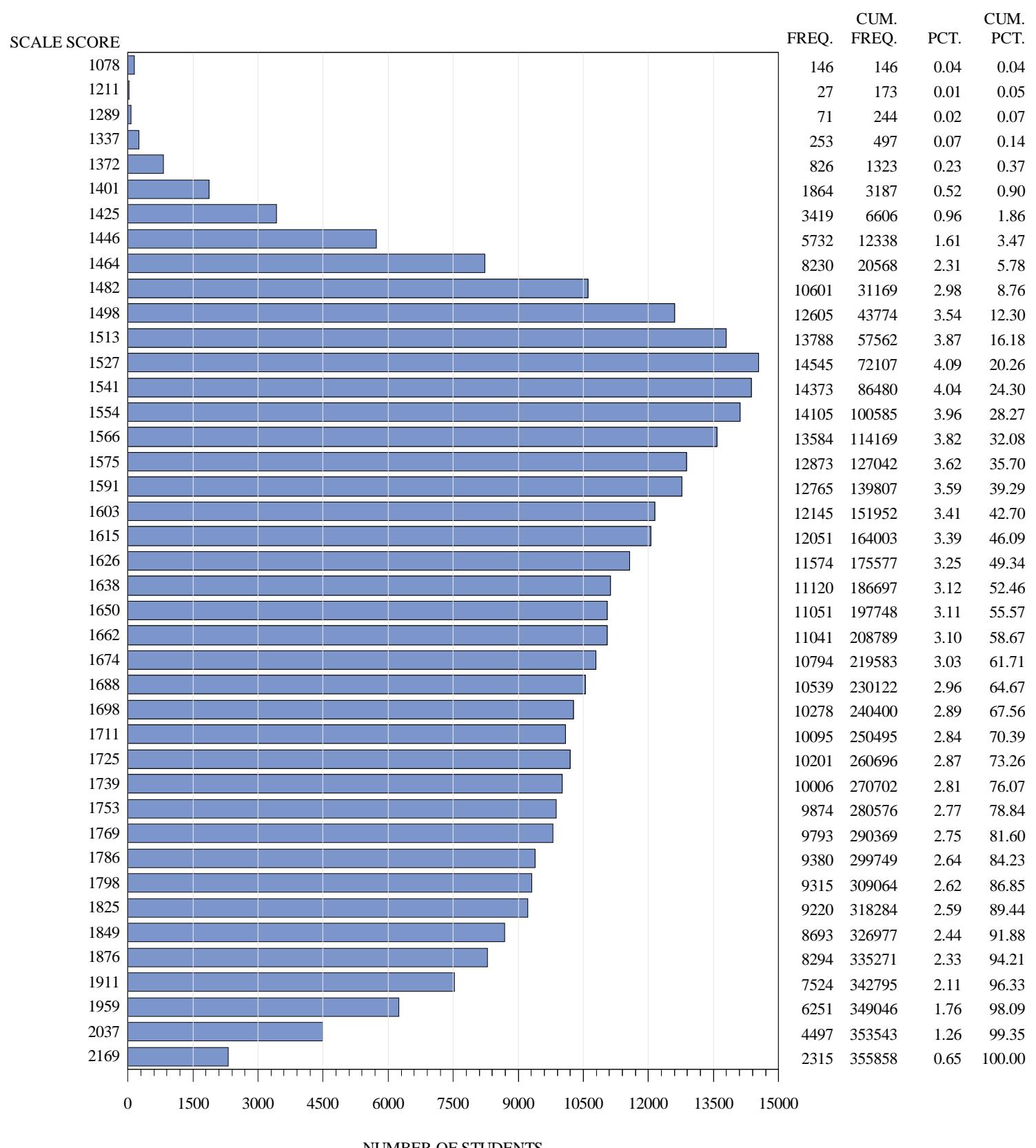
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GRADE 6 MATH
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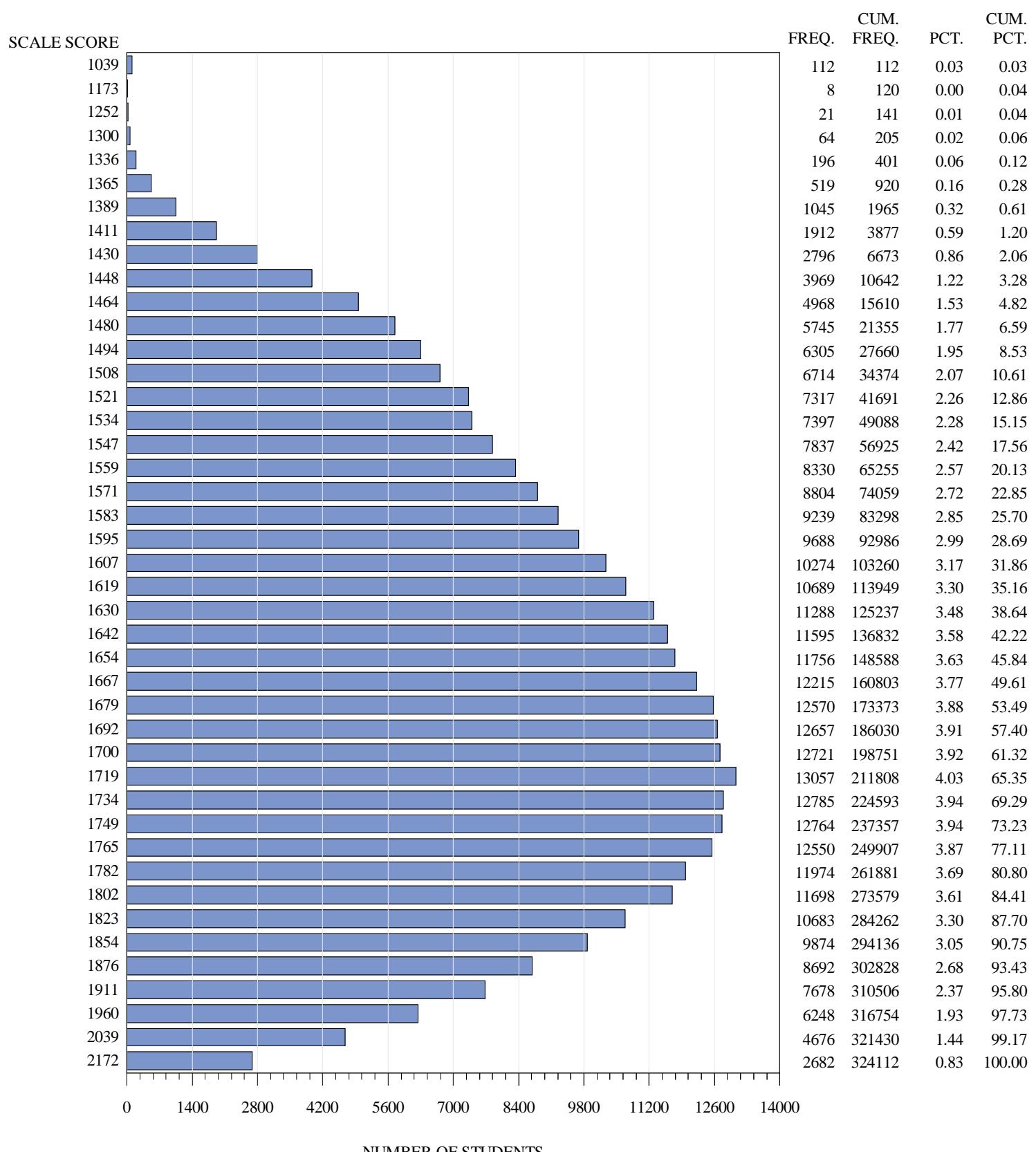
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GRADE 7 MATH
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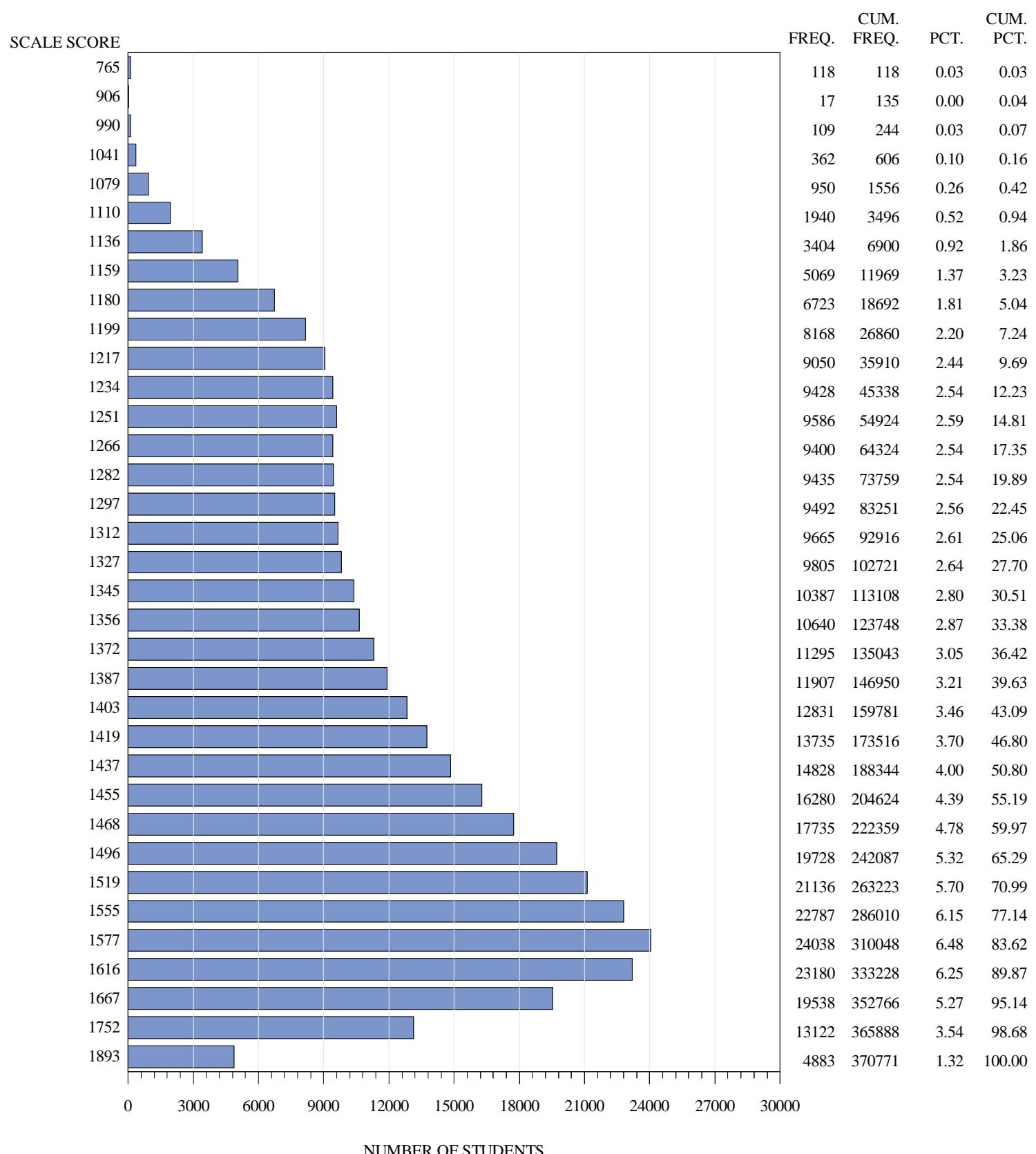
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GRADE 8 MATH
ALL STUDENTS^a**



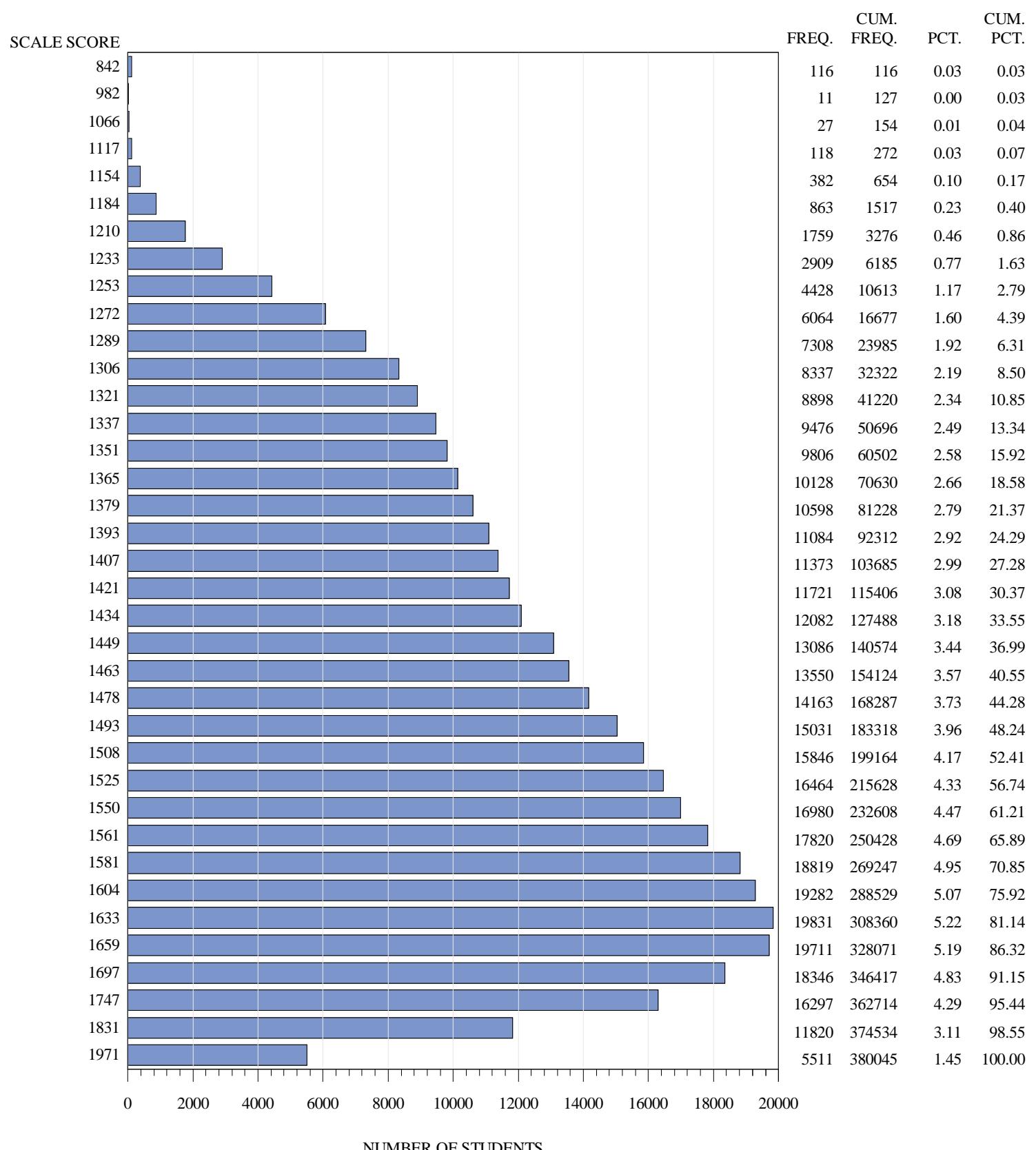
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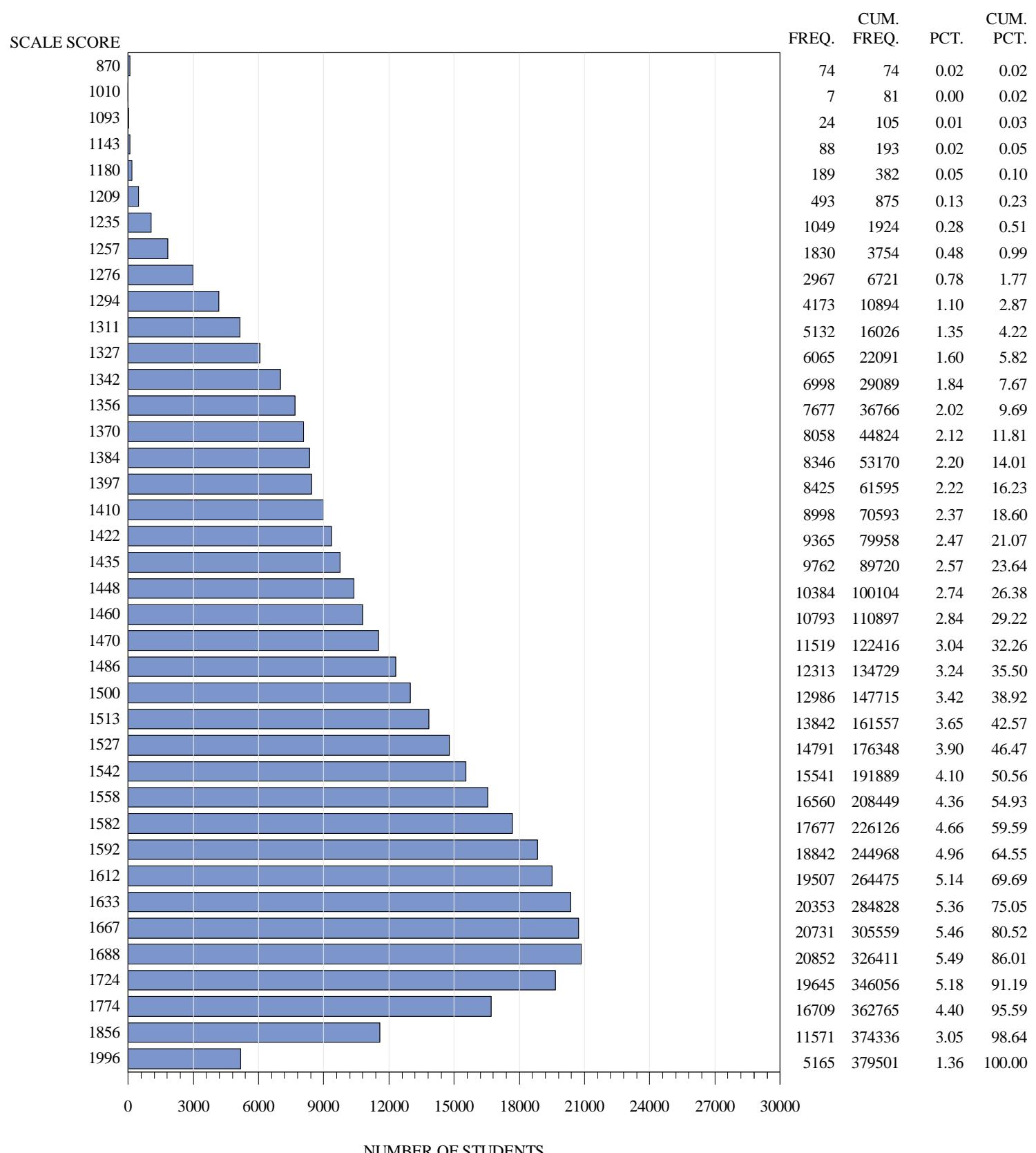
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STAAR ENGLISH SPRING 2017
GRADE 4 READING
ALL STUDENTS^a**



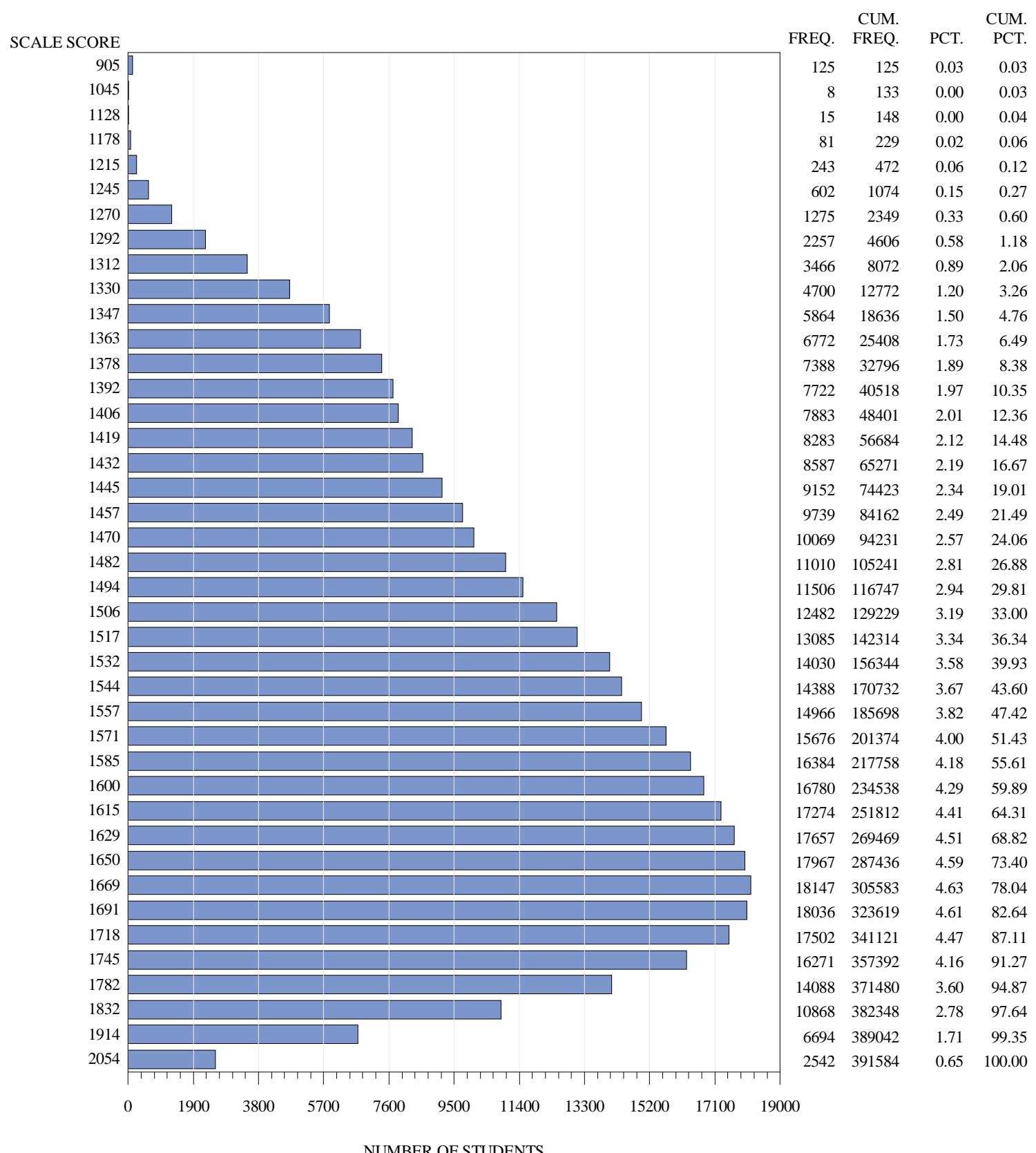
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GRADE 5 READING
ALL STUDENTS^a**



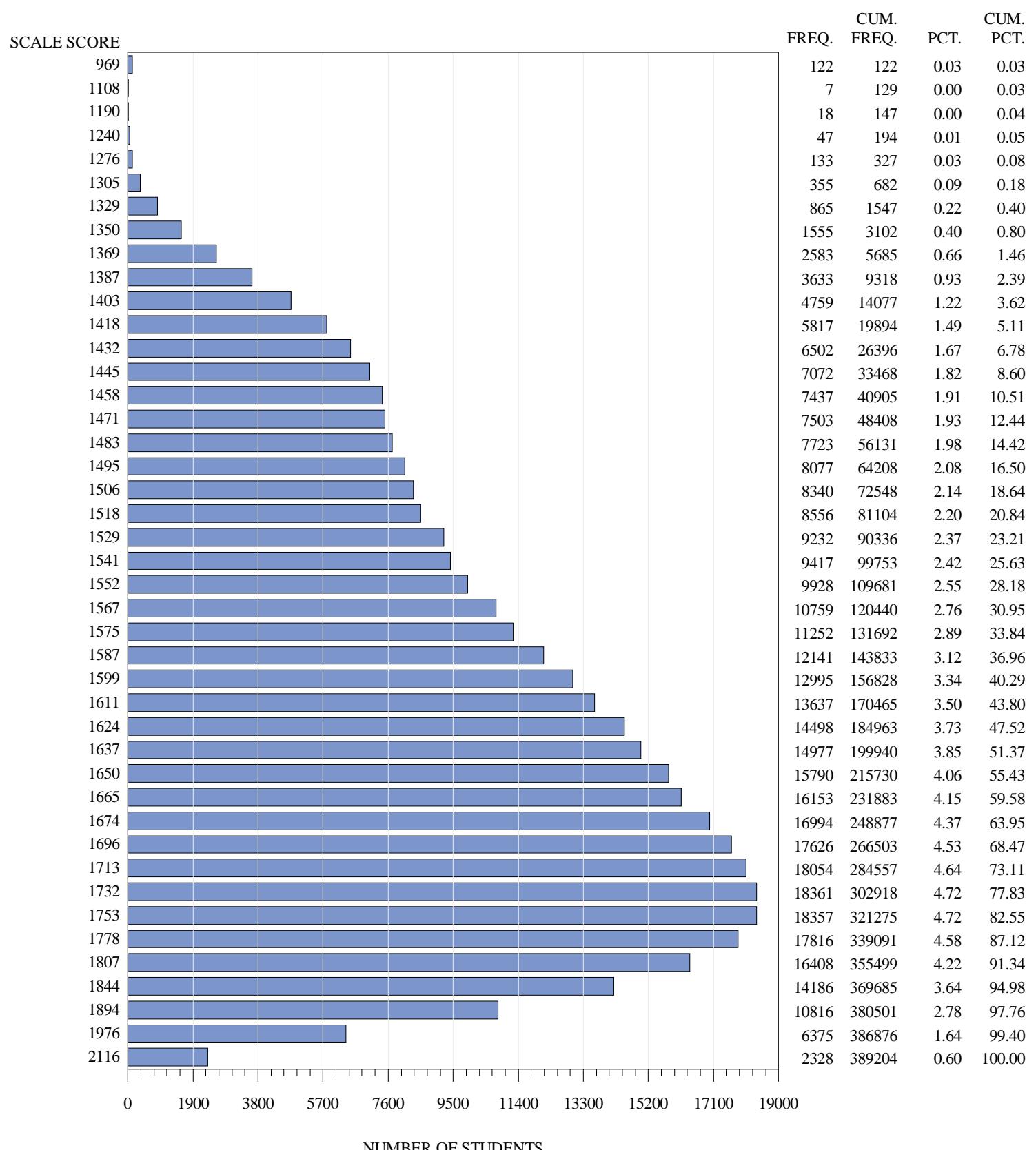
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GRADE 6 READING
ALL STUDENTS^a**



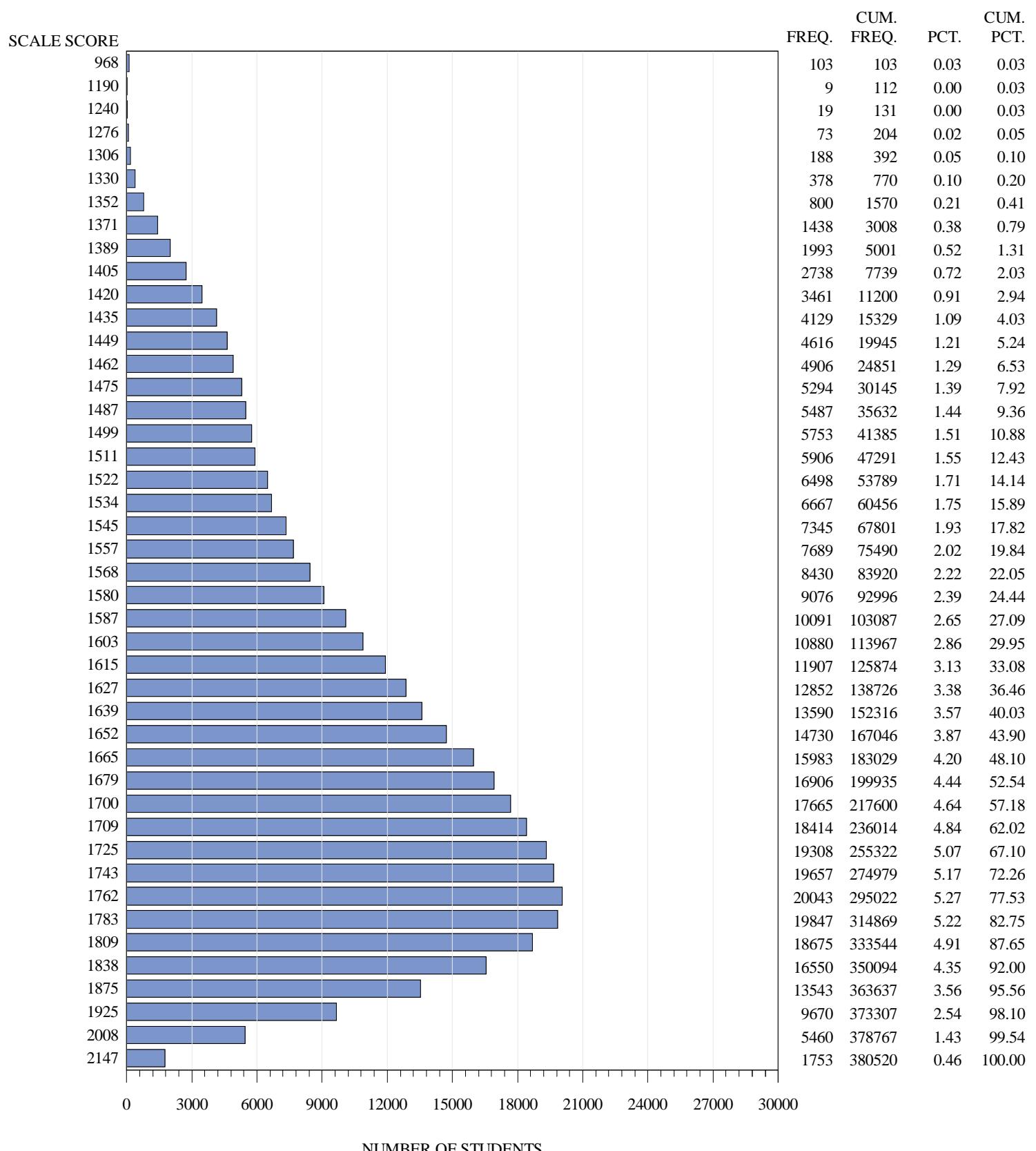
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STAAR ENGLISH SPRING 2017
GRADE 7 READING
ALL STUDENTS^a**



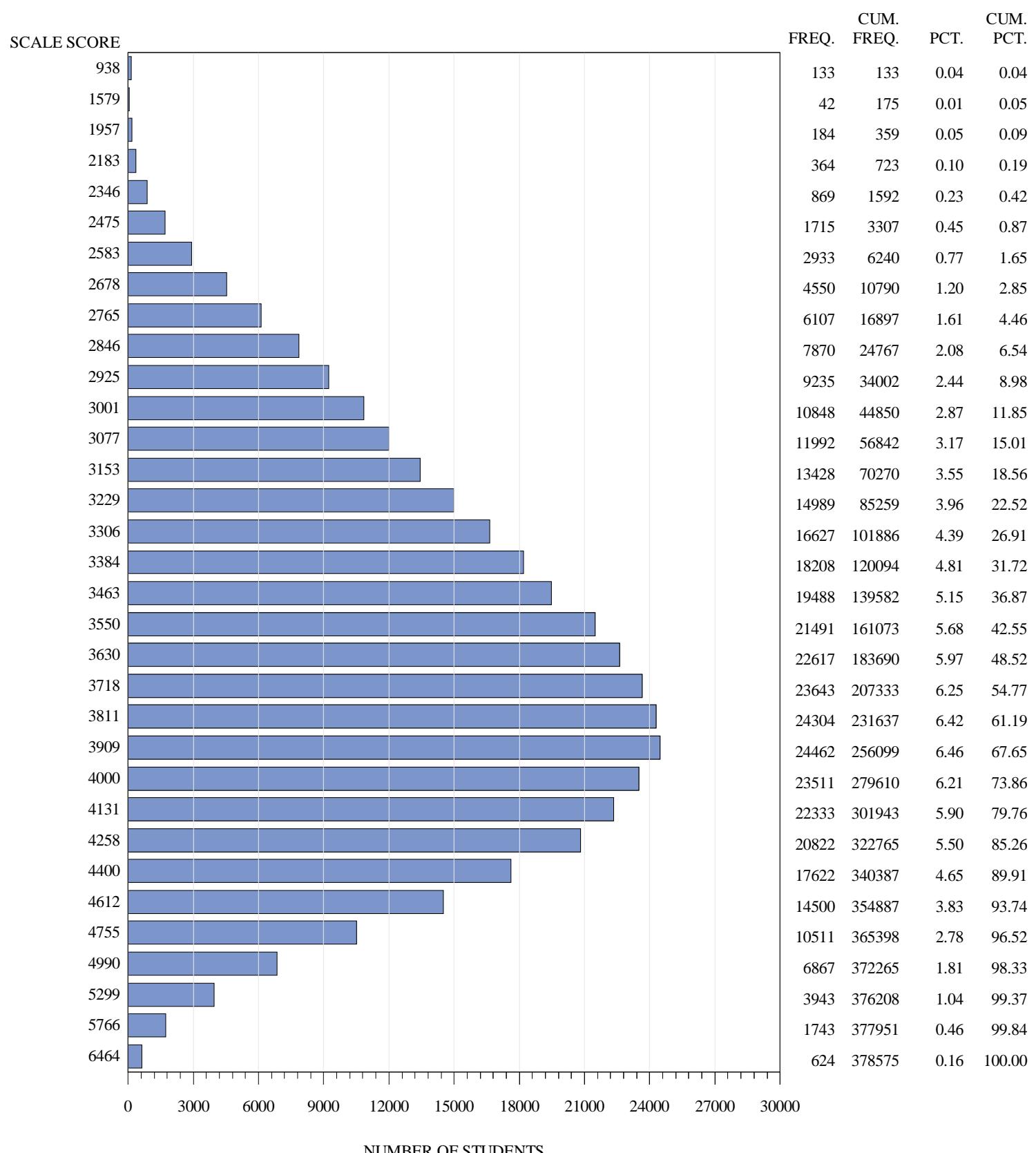
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GRADE 8 READING
ALL STUDENTS^a**



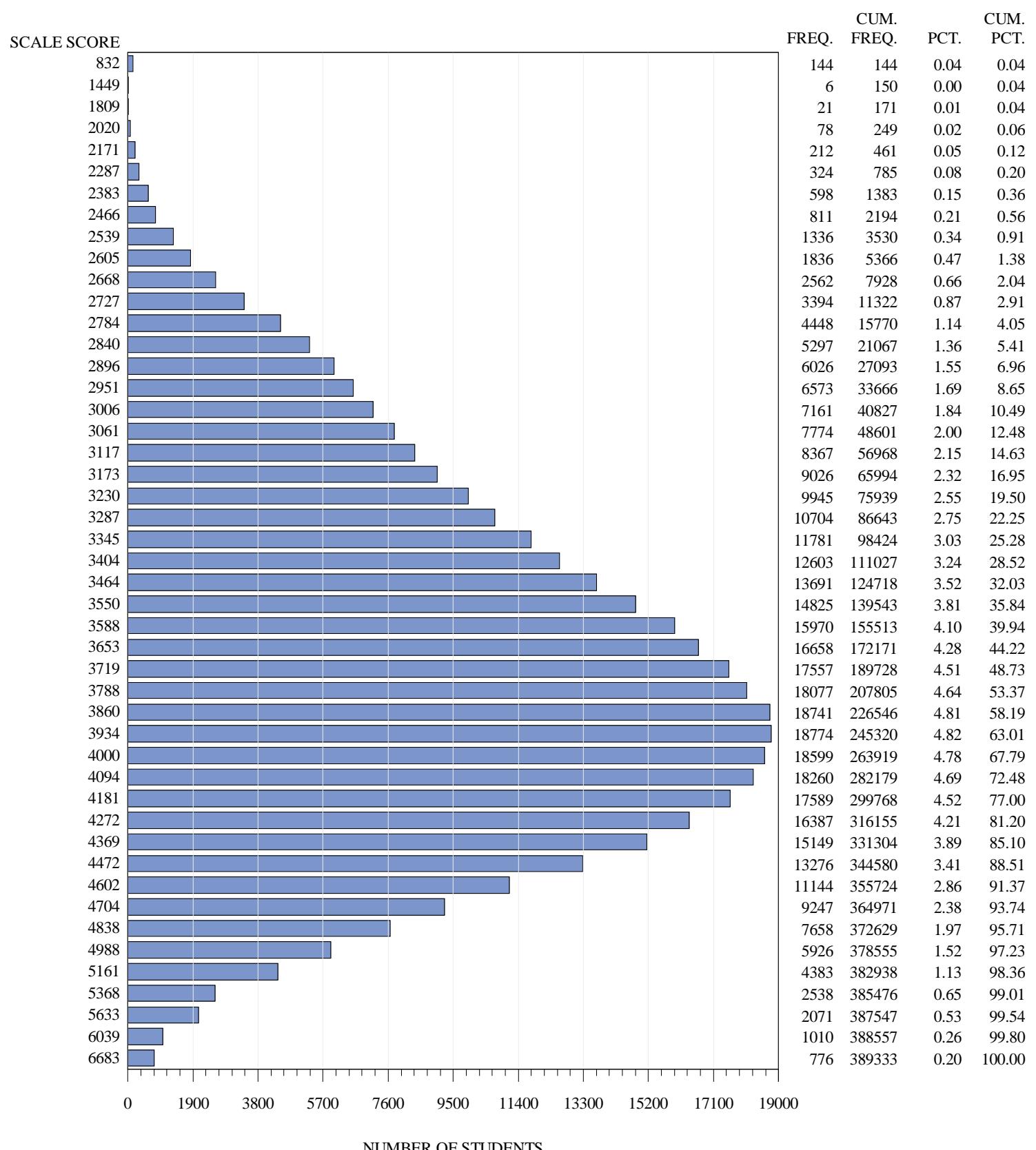
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GRADE 4 WRITING
ALL STUDENTS^a**



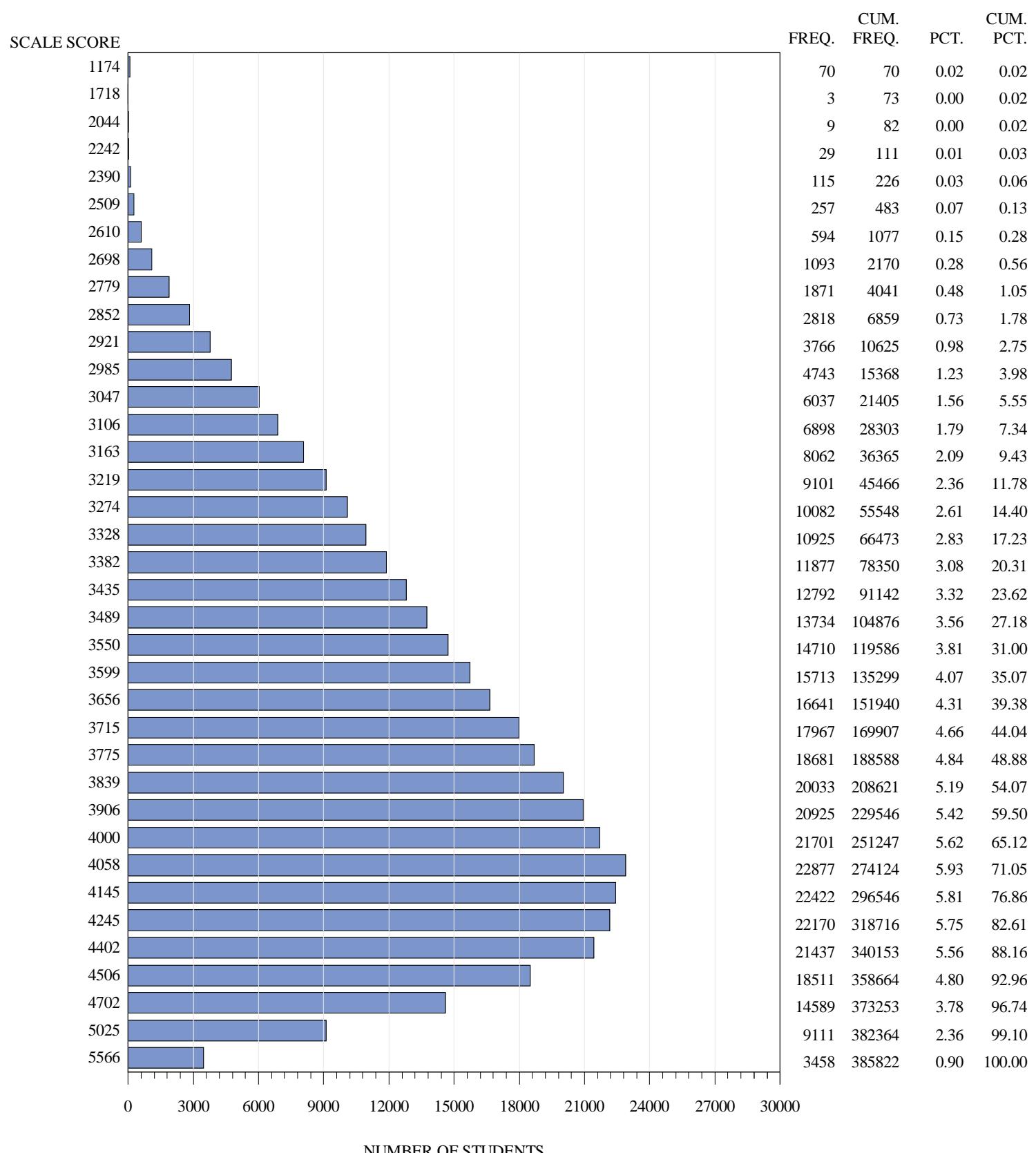
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STAAR ENGLISH SPRING 2017
GRADE 7 WRITING
ALL STUDENTS^a**



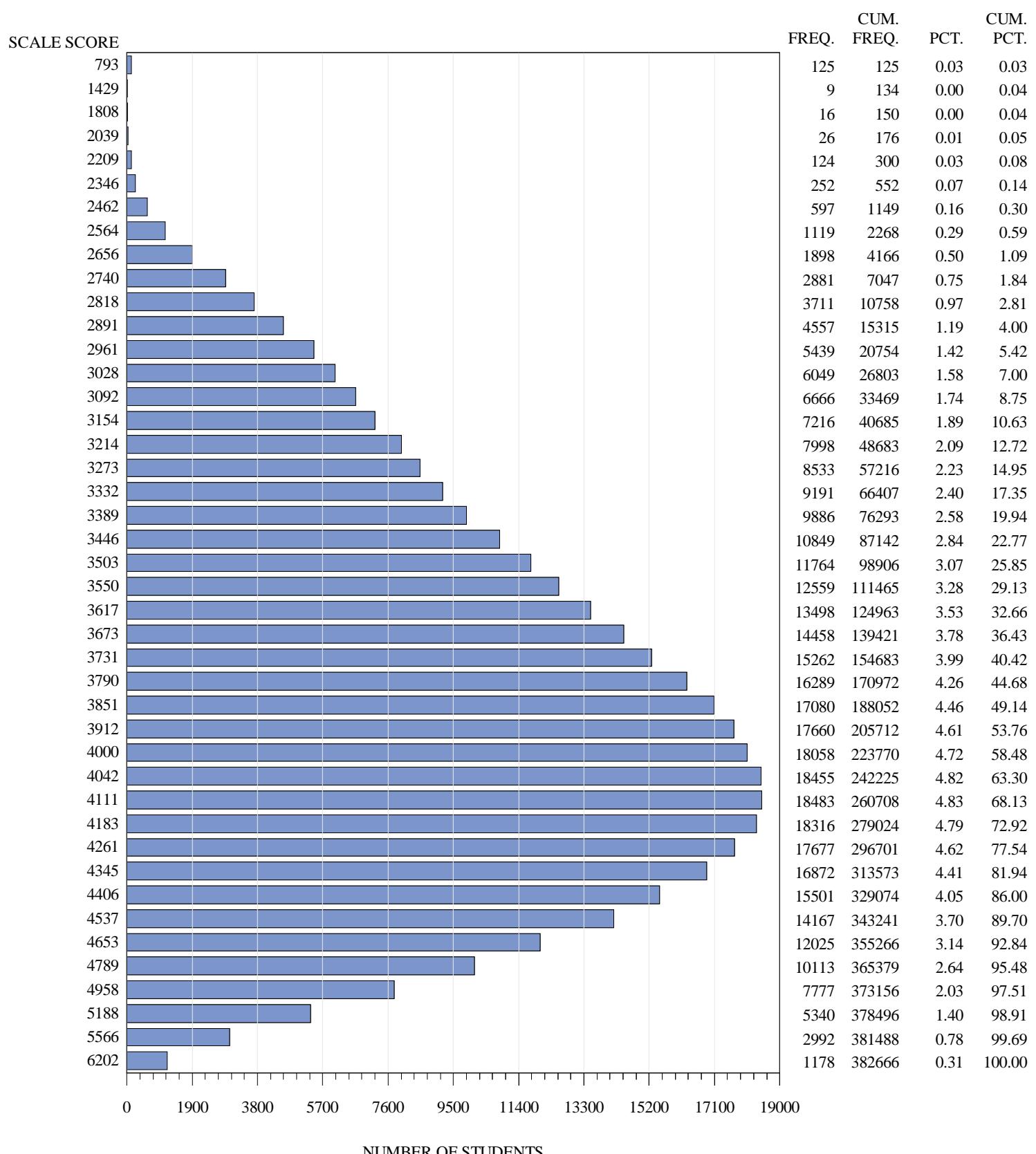
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GRADE 5 SCIENCE
ALL STUDENTS^a**



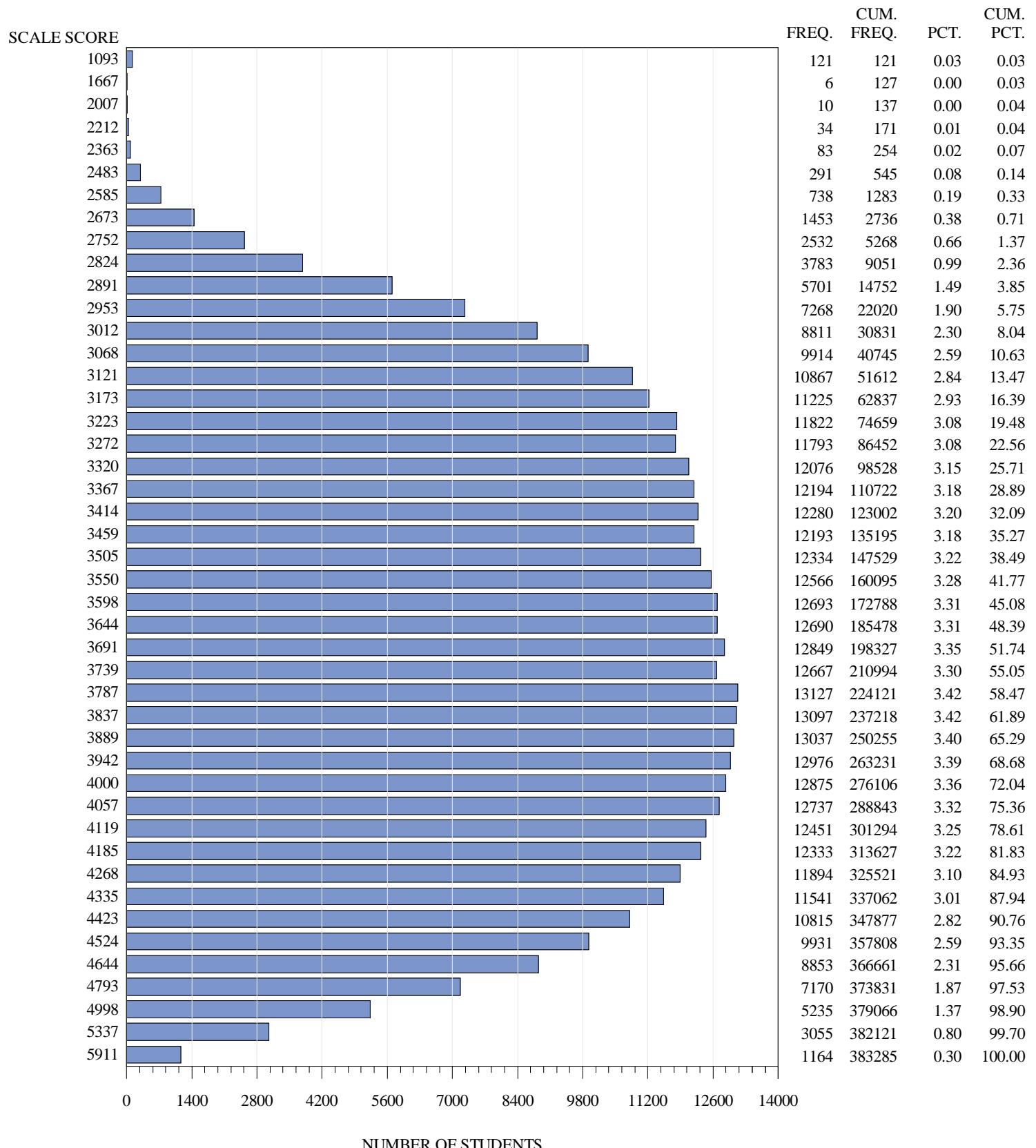
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GRADE 8 SCIENCE
ALL STUDENTS^a**



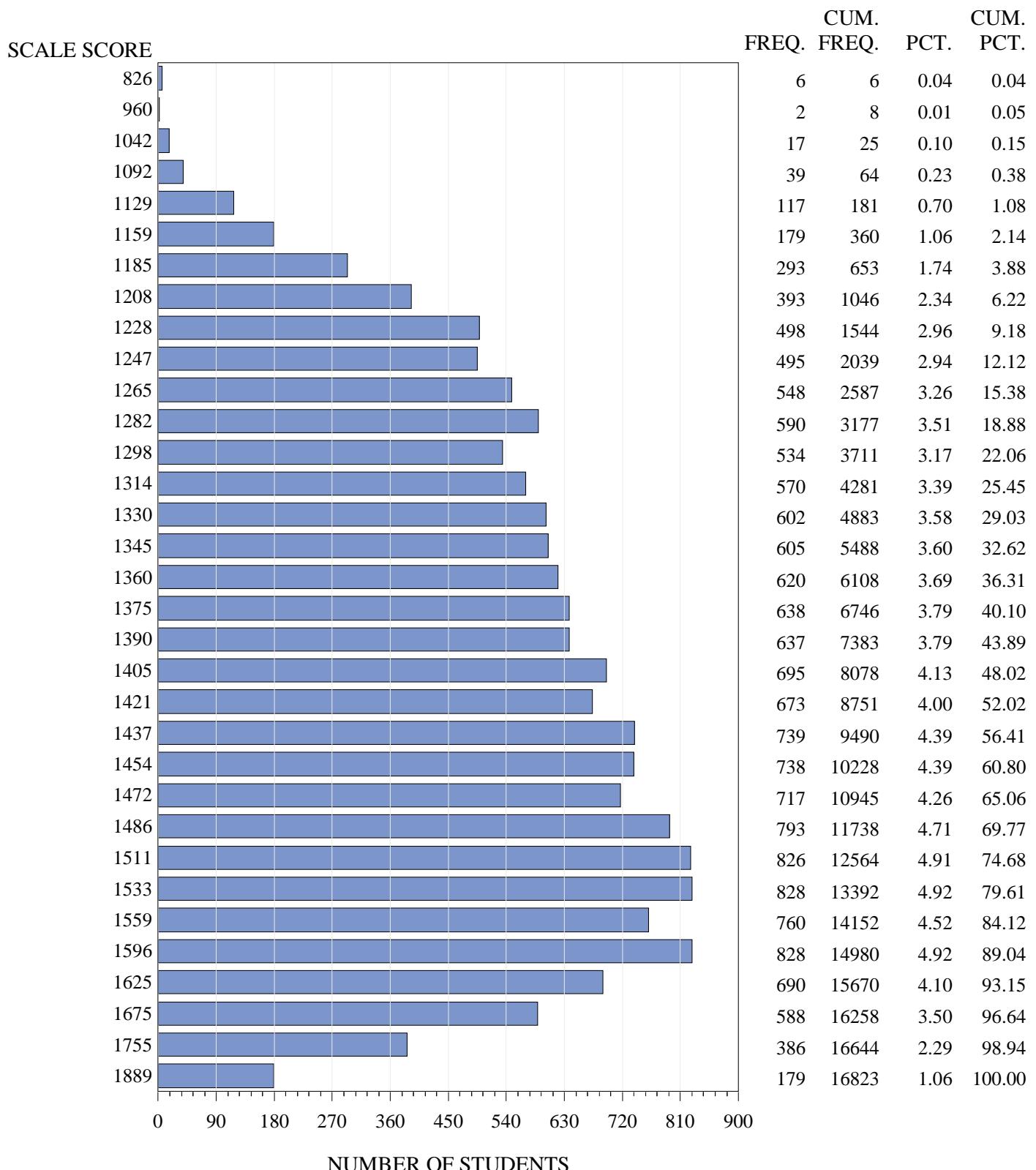
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STAAR ENGLISH SPRING 2017
GRADE 8 SOCIAL STUDIES
ALL STUDENTS^a**

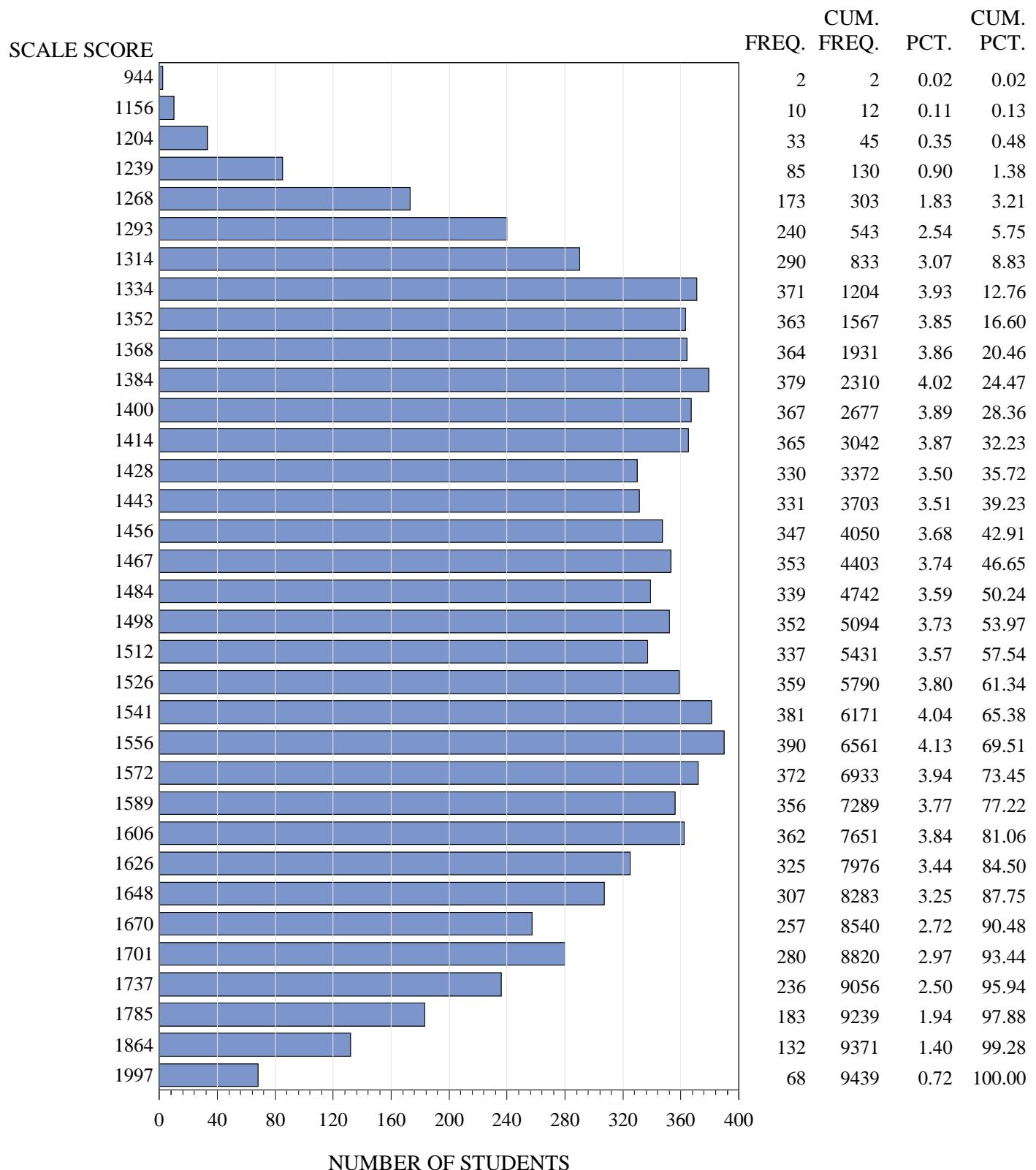


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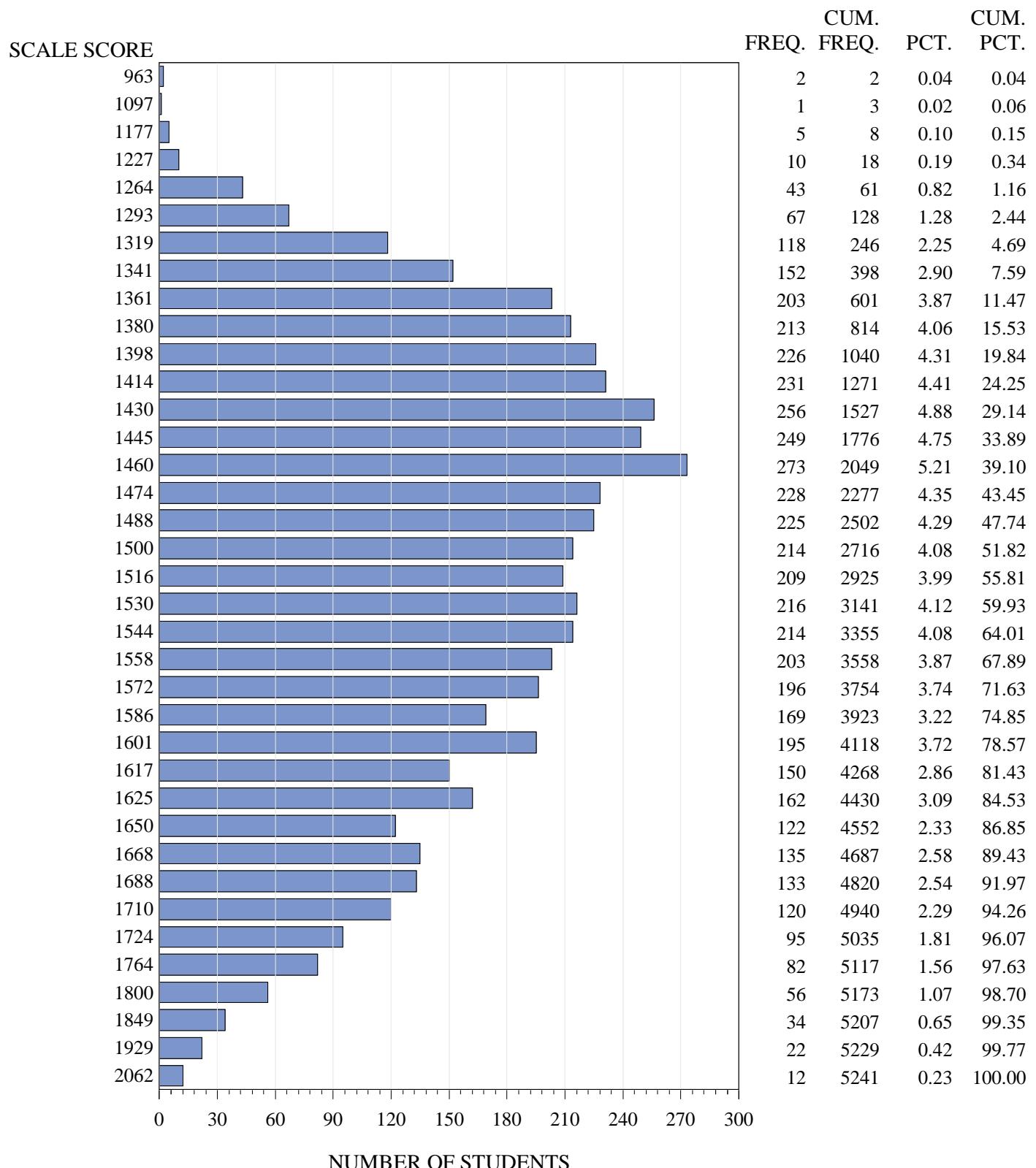
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STAAR SPANISH SPRING 2017
GRADE 3 MATH
ALL STUDENTS



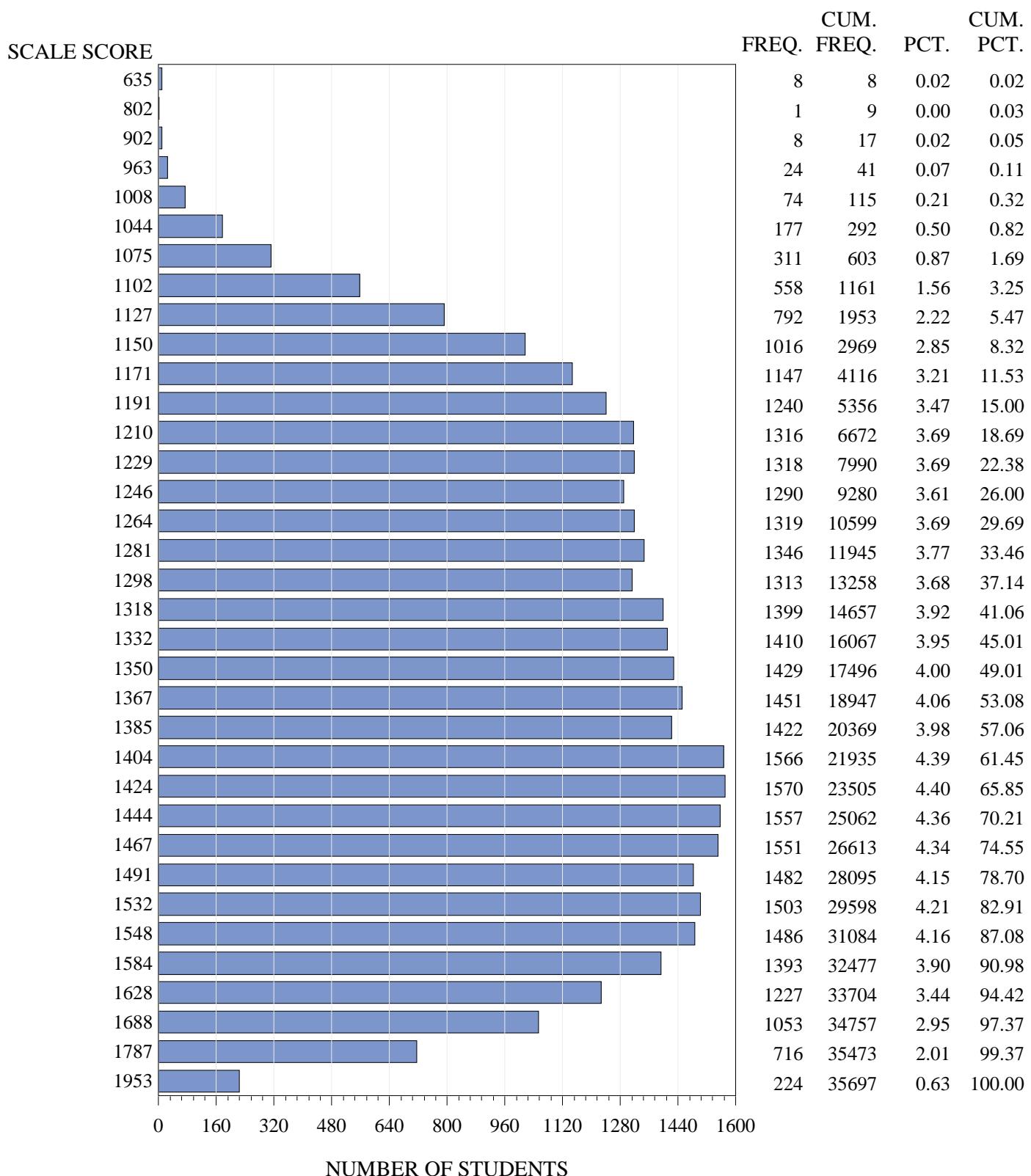
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GRADE 4 MATH
ALL STUDENTS



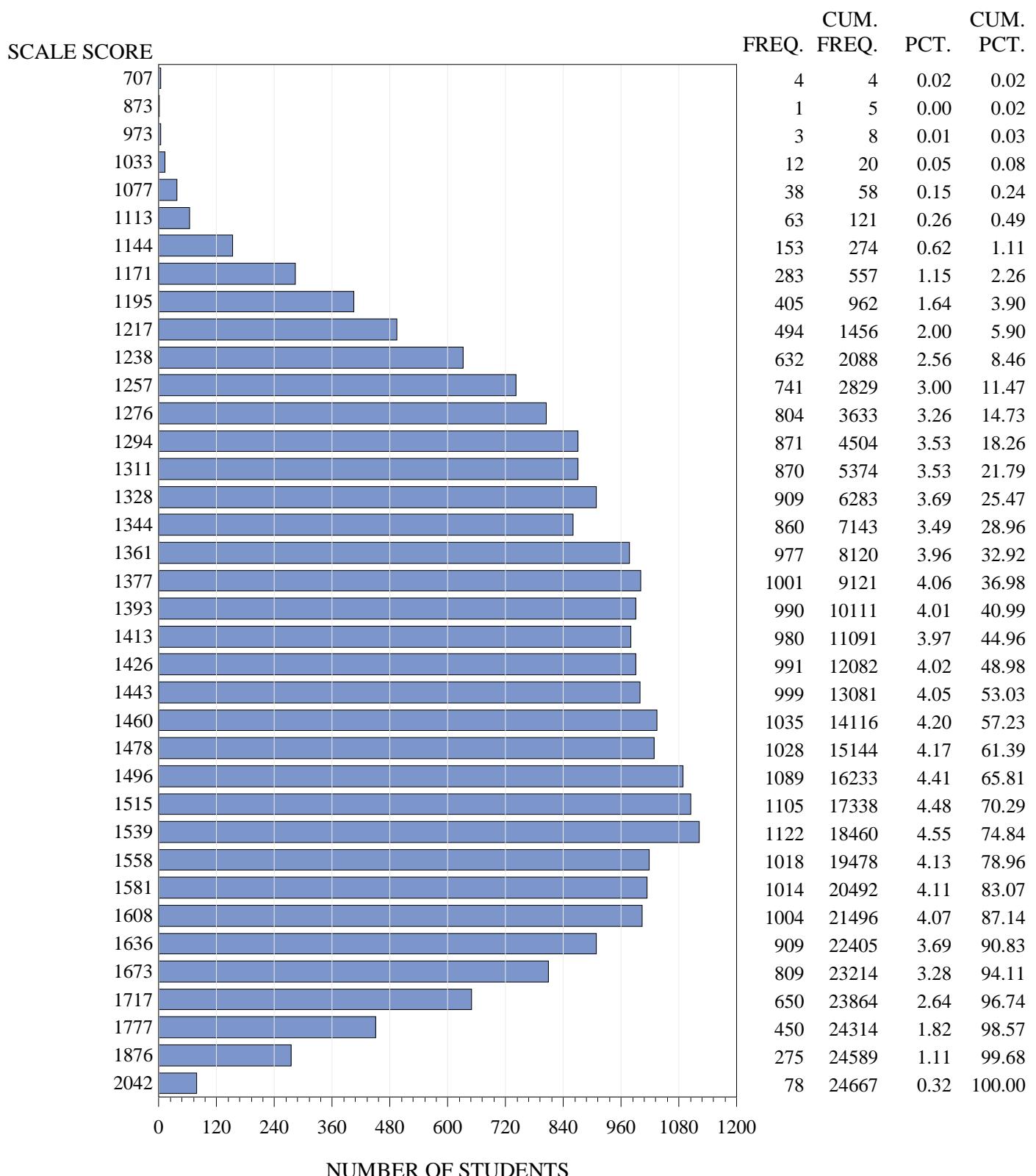
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GRADE 5 MATH
ALL STUDENTS



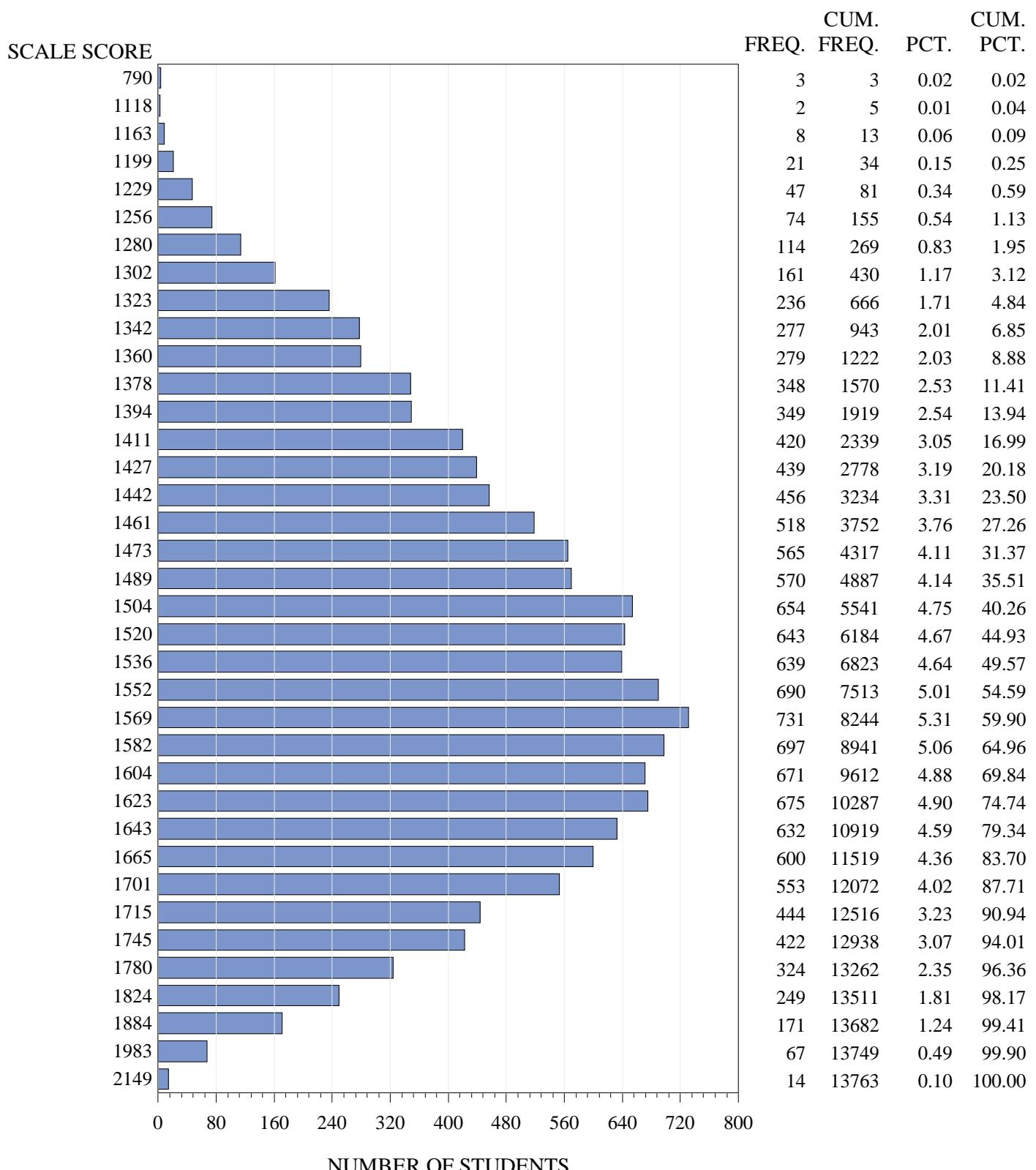
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STAAR SPANISH SPRING 2017
GRADE 3 READING
ALL STUDENTS



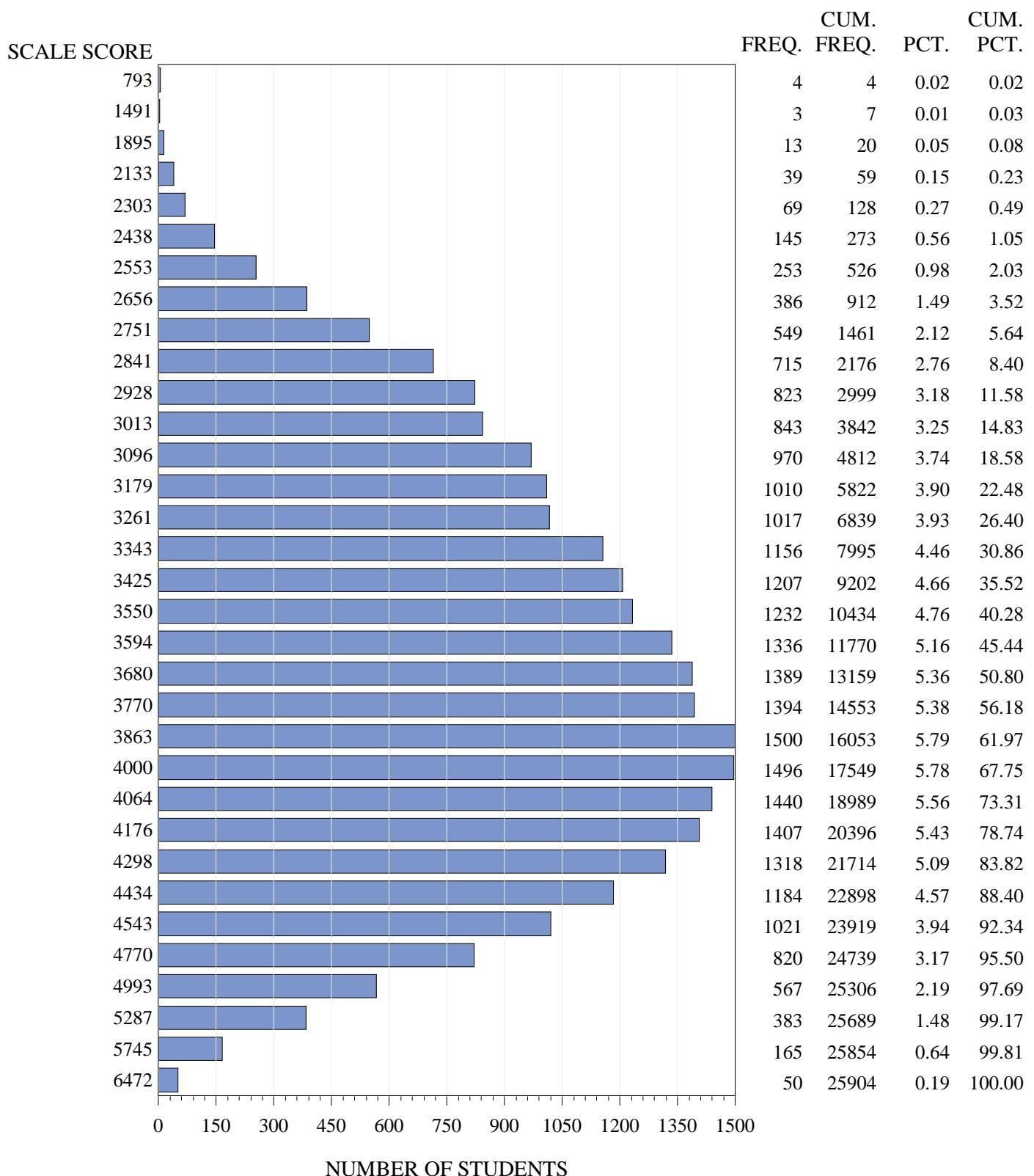
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GRADE 4 READING
ALL STUDENTS



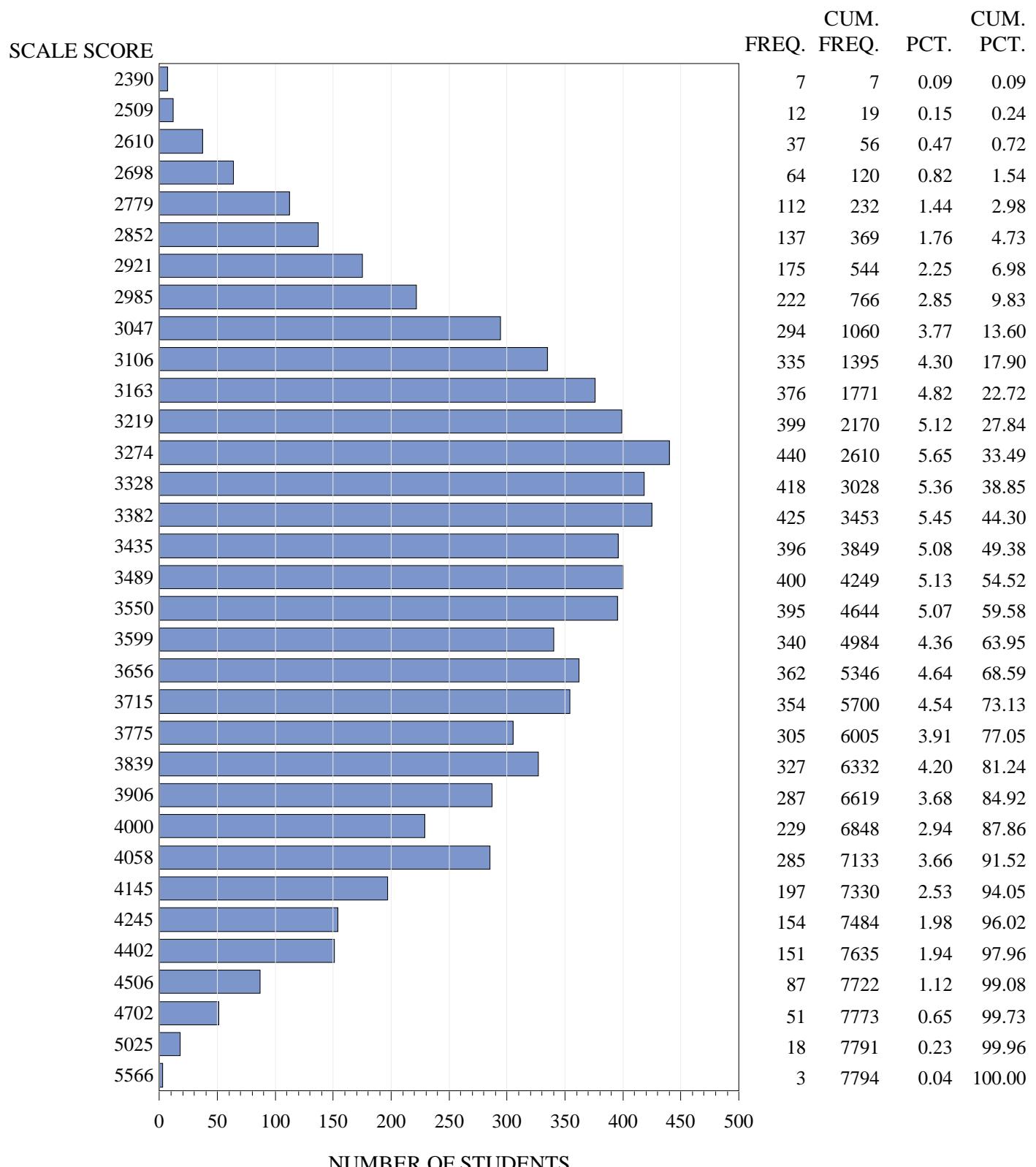
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STAAR SPANISH SPRING 2017
GRADE 5 READING
ALL STUDENTS



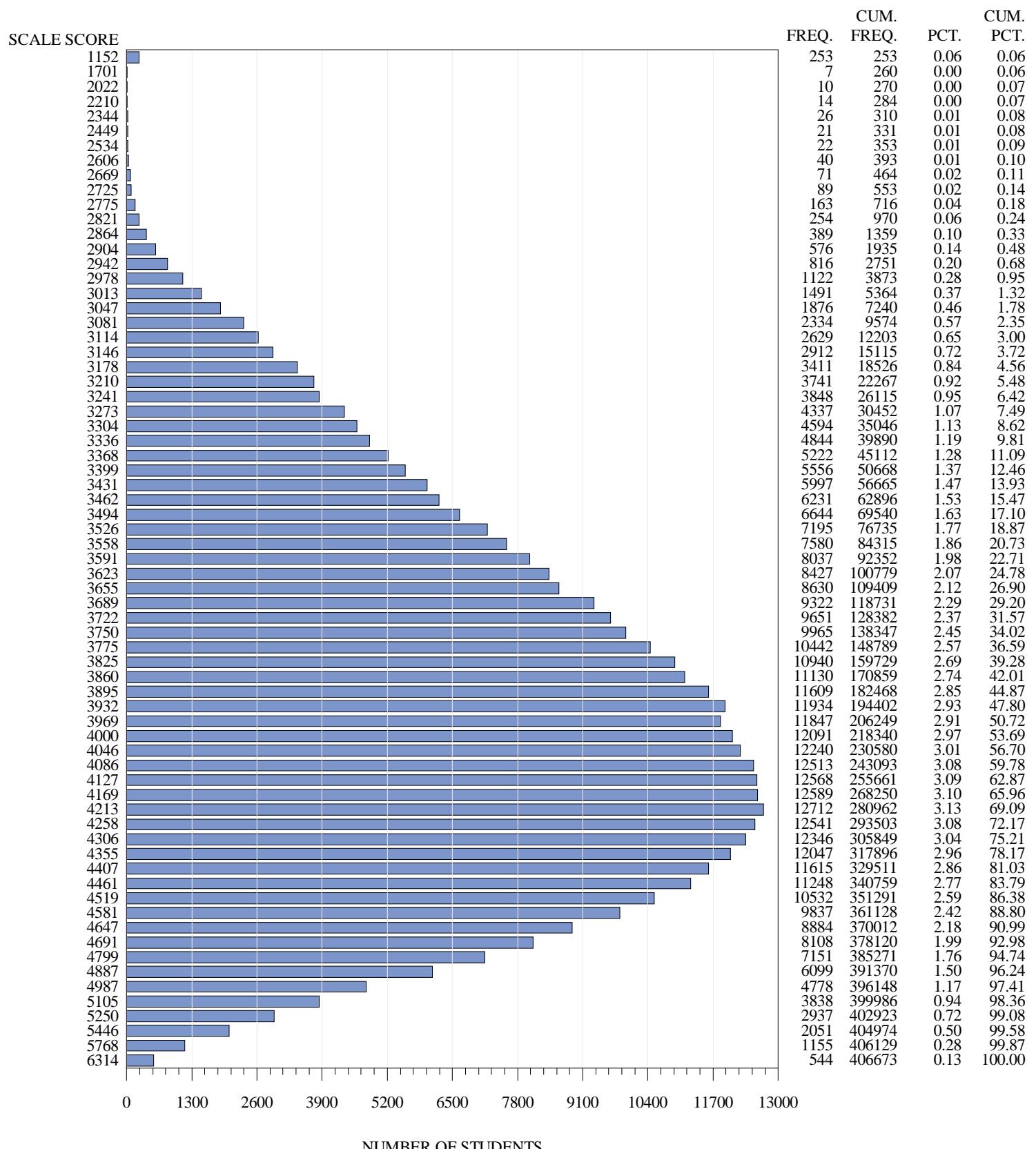
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GRADE 4 WRITING
ALL STUDENTS



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GRADE 5 SCIENCE
ALL STUDENTS

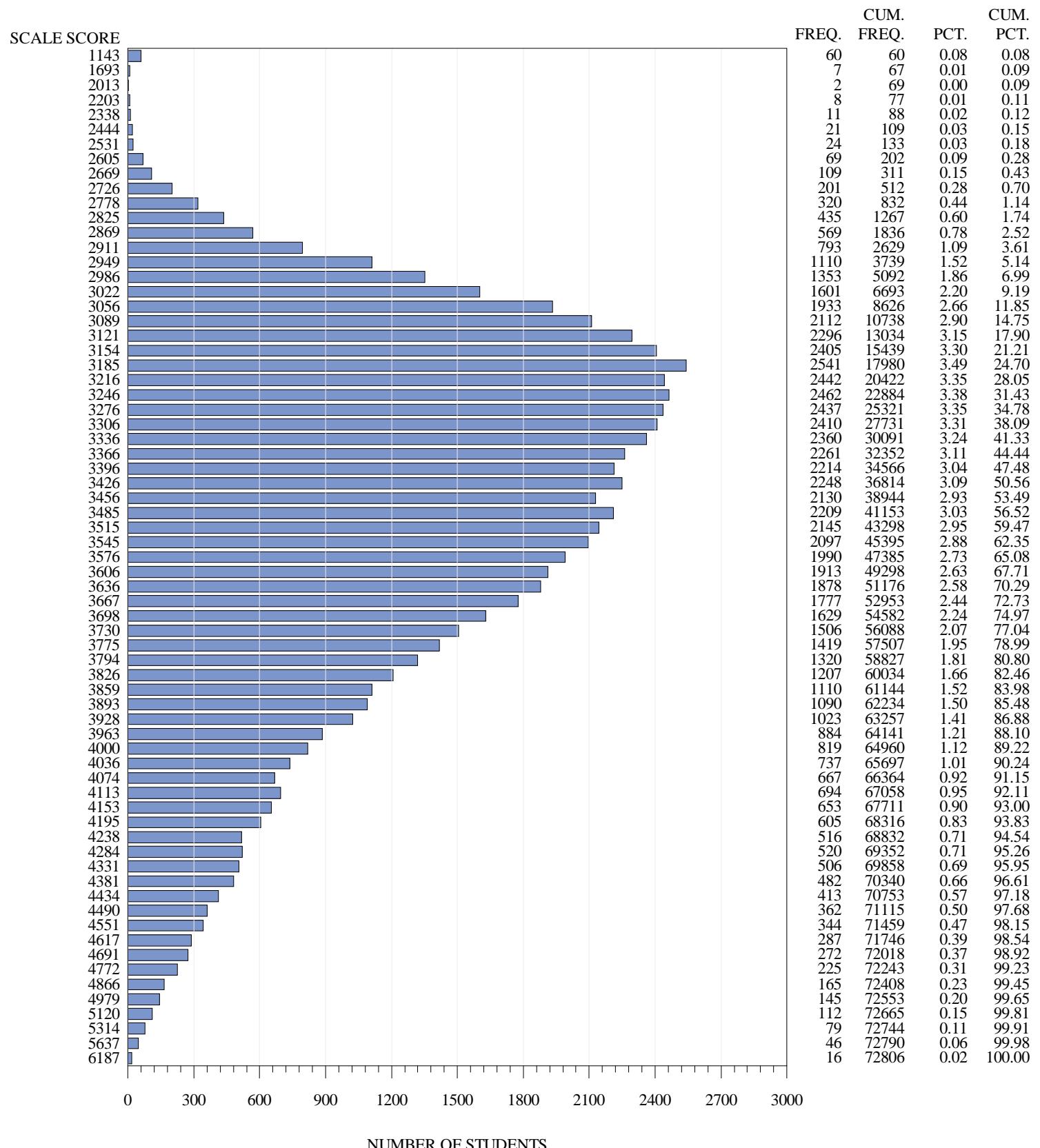


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ENGLISH I
PAPER STUDENTS^a**

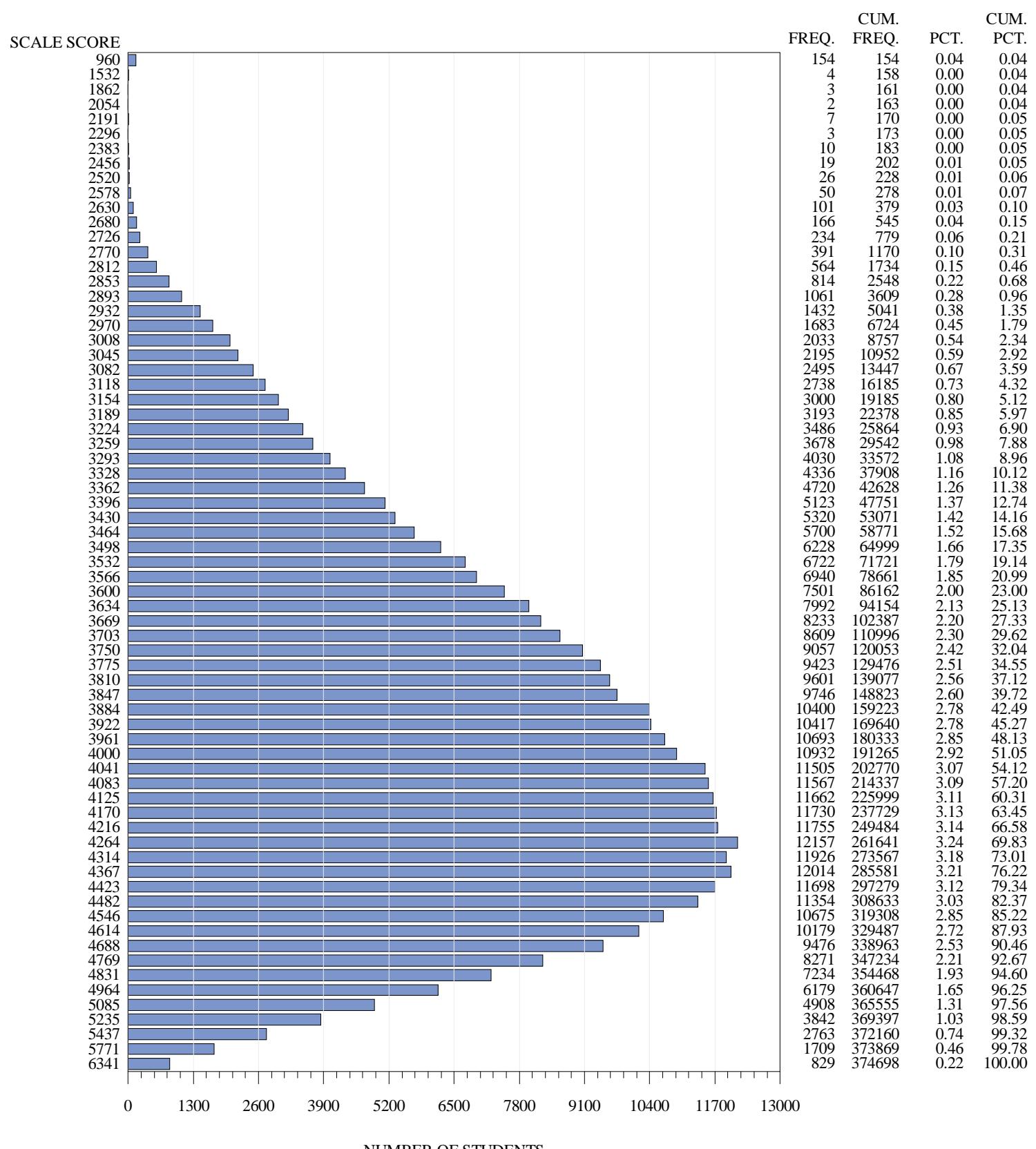


^aStudents who took the braille or the paper STAAR with Embedded Supports version of the test are not included in the frequency distribution tables.

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STAAR EOC SPRING 2017
ENGLISH I
ONLINE STUDENTS

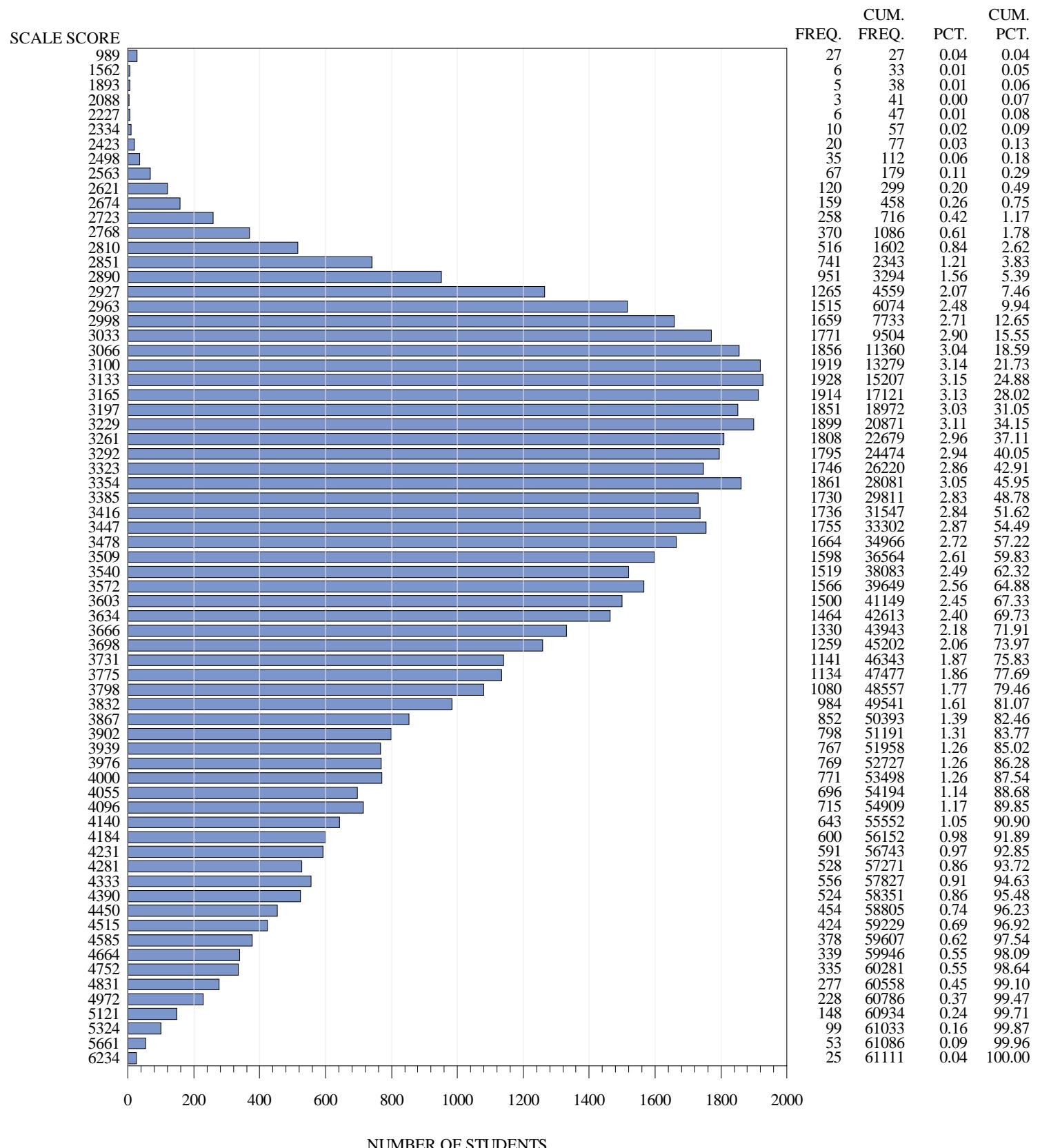


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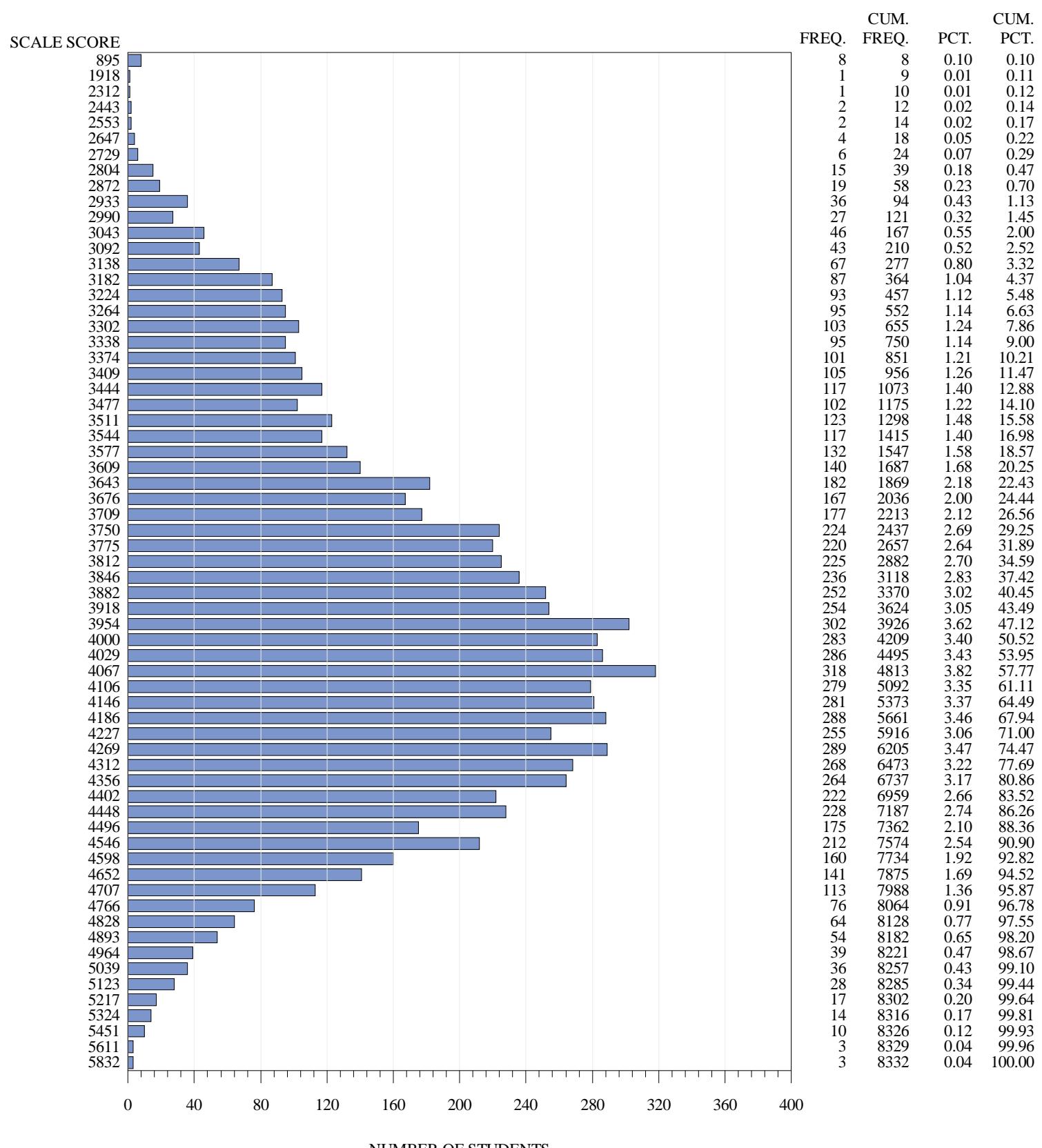


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STAAR EOC SPRING 2017
ENGLISH II
ONLINE STUDENTS

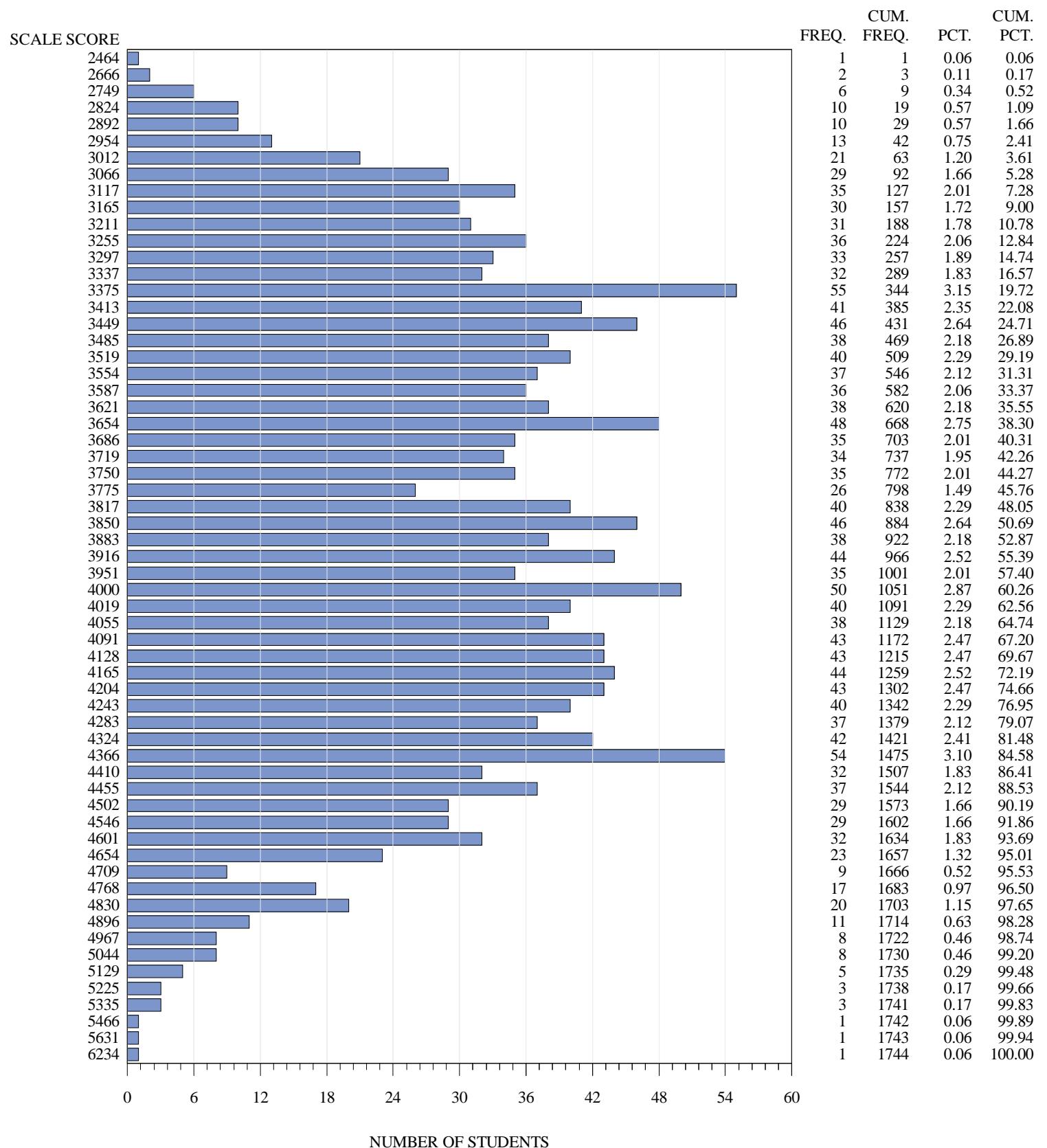


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ENGLISH III
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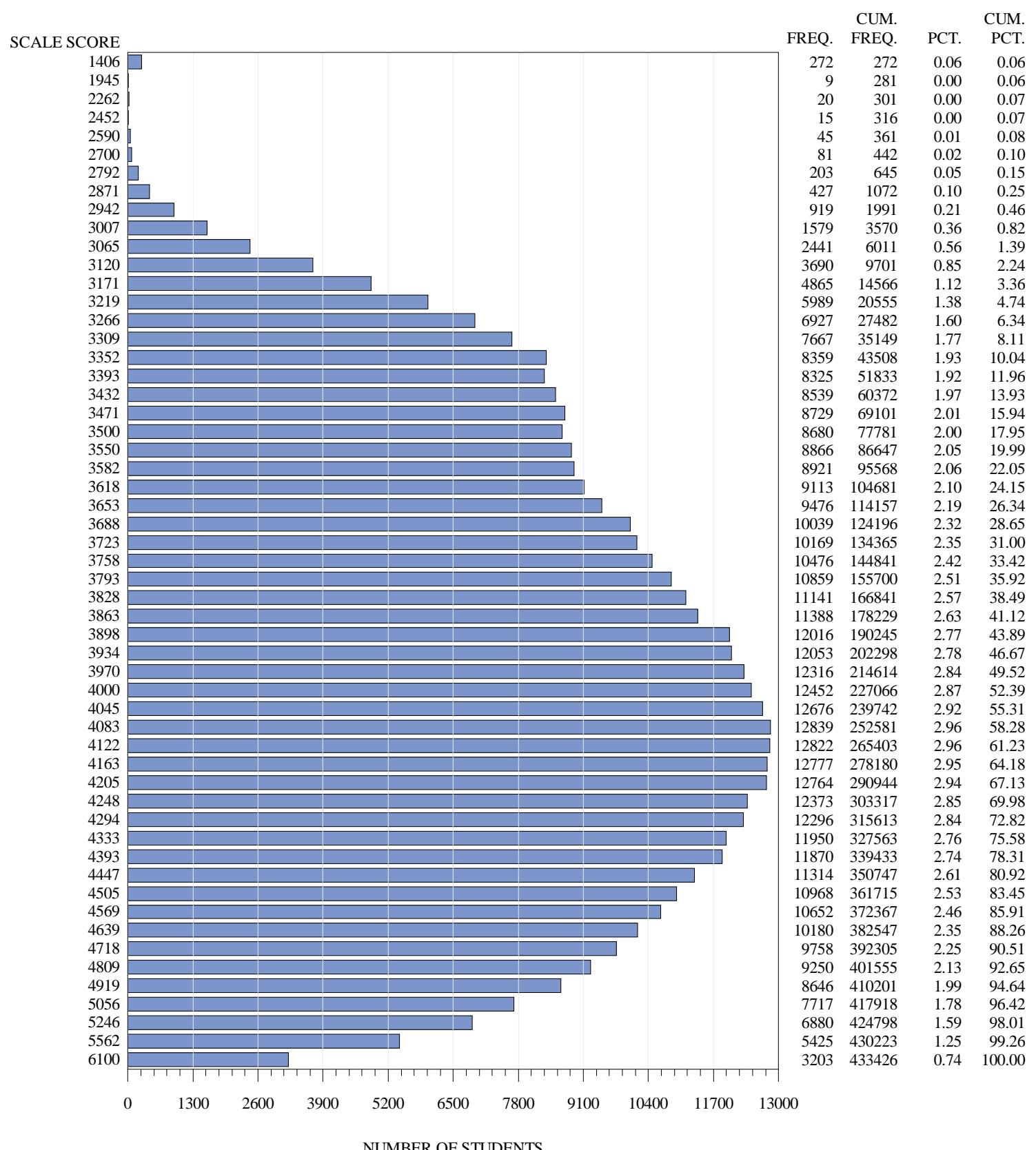


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STAAR EOC SPRING 2017
ENGLISH III
ONLINE STUDENTS

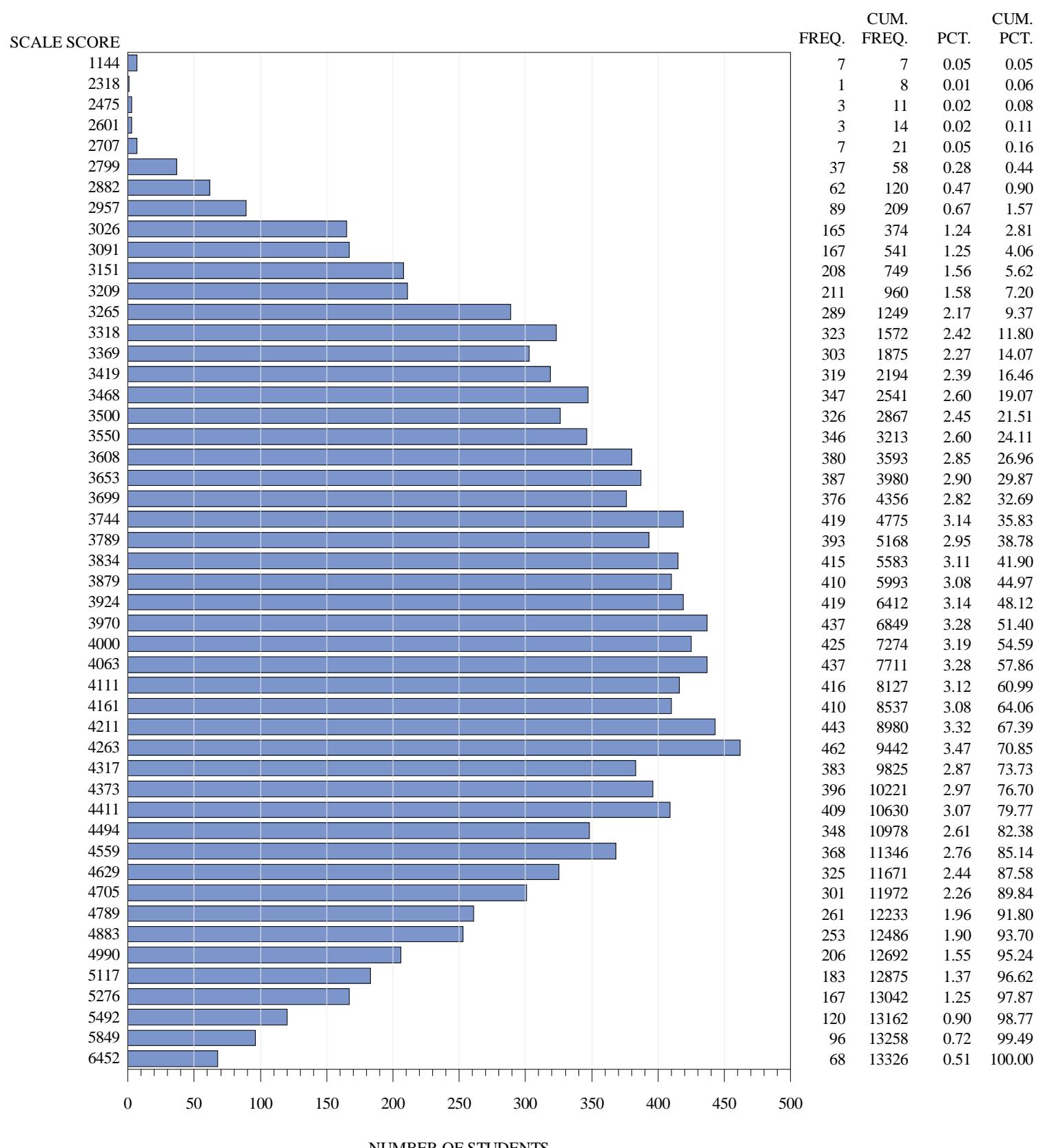


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STAAR EOC SPRING 2017
ALGEBRA I
ALL STUDENTS^a**



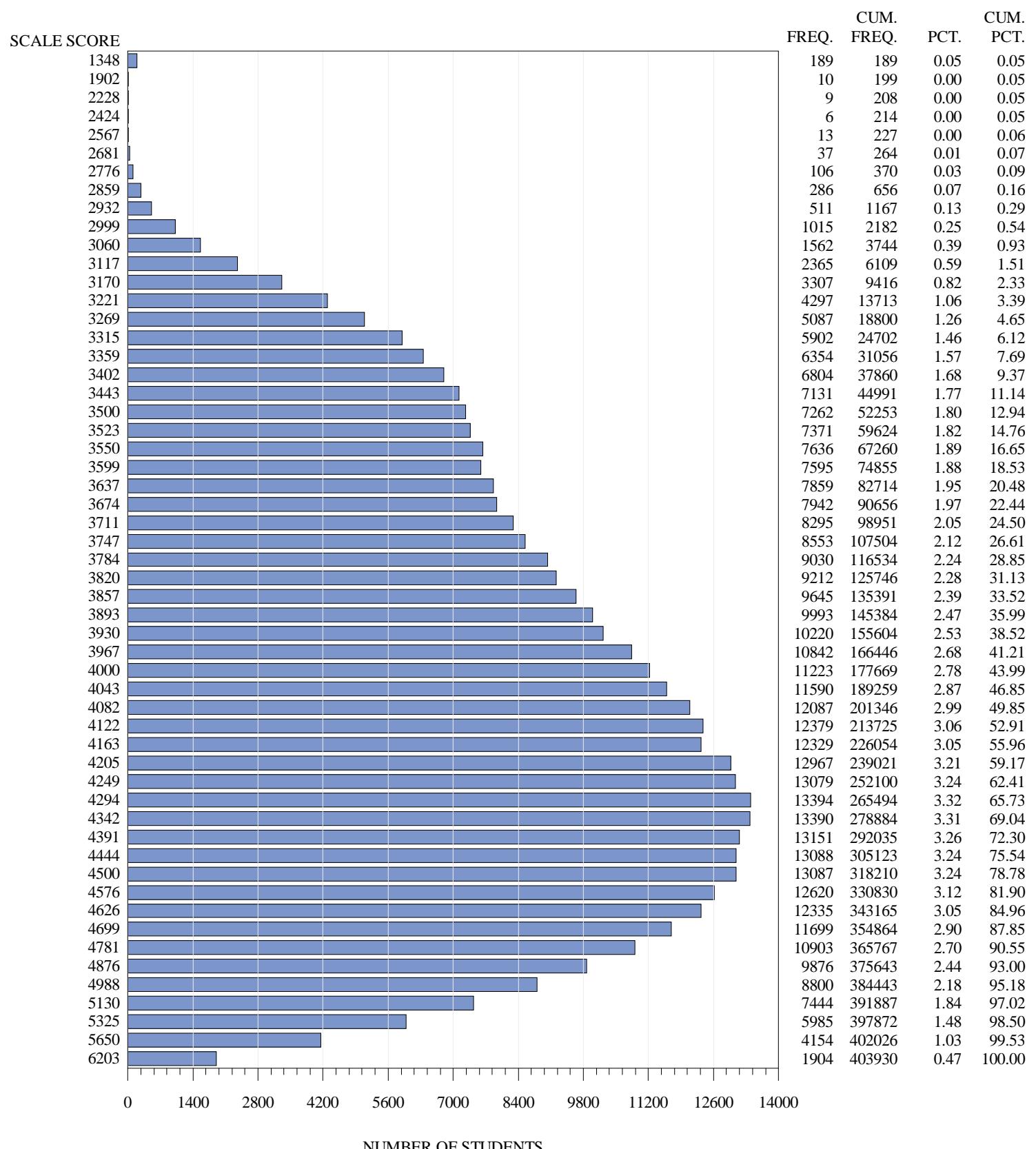
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STAAR EOC SPRING 2017
ALGEBRA II
ALL STUDENTS^a**



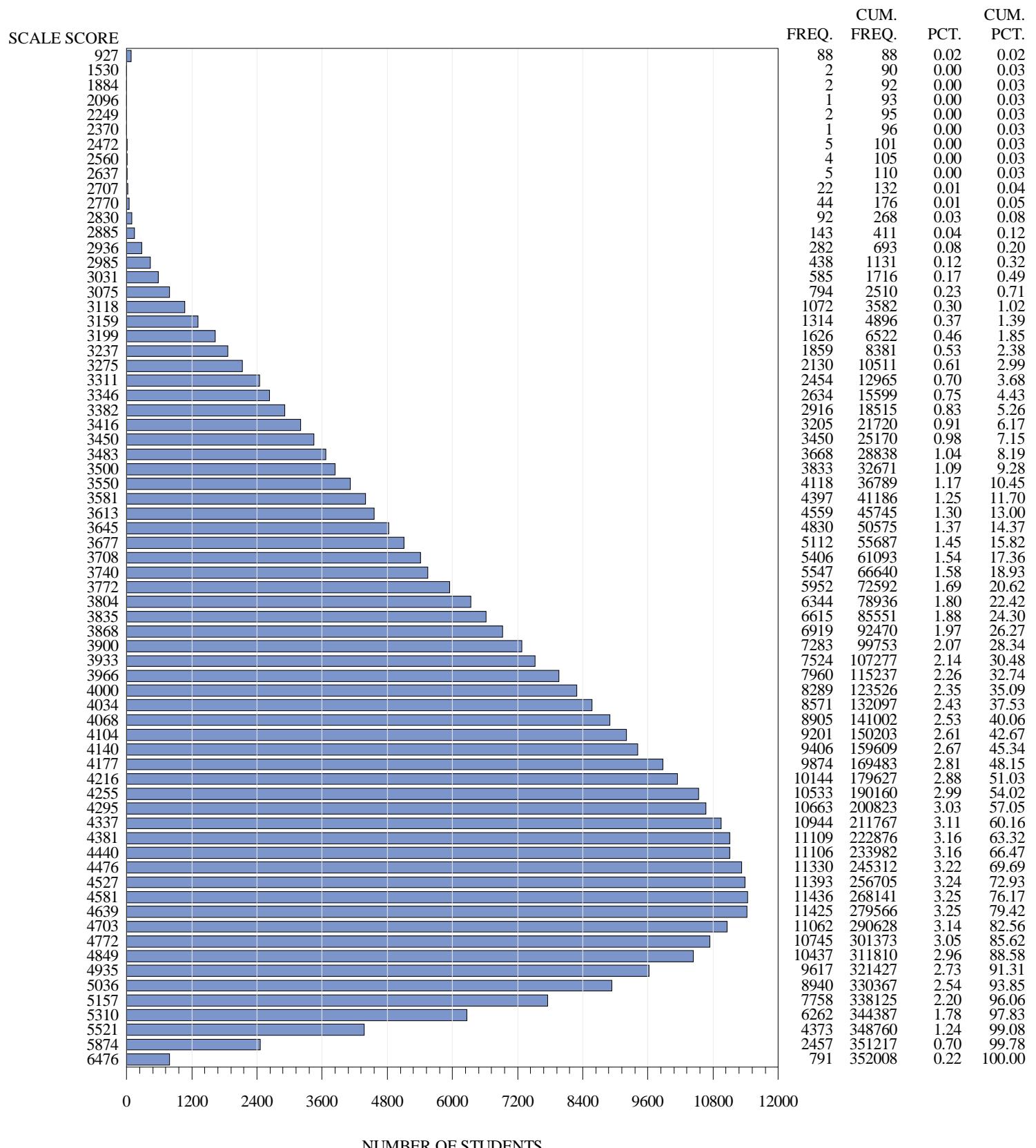
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**FREQUENCY DISTRIBUTION – SCALE SCORES
STAAR EOC SPRING 2017
BIOLOGY
ALL STUDENTS^a**



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STAAR EOC SPRING 2017
U.S. HISTORY
ALL STUDENTS^a**



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