

One definition of a benchmark is “a standard or point of reference against which things may be compared or assessed...a criterion.” In educational assessment, benchmarks may be one or more standards used to group students as to degree of achievement and to identify some as being in need of special treatment. One example of a benchmark is a standard for “proficiency” in a subject being taught. A common criterion for proficiency is attainment of a test score that is at or above a target percentile rank in a reference group of students; the 40th percentile is widely used as a critical point for proficiency.

Other benchmarks may be used to identify students who fall short of the proficiency benchmark and to identify those for whom instructional intervention may be needed to help them towards the proficiency benchmark. In many educational programs, students performing below the 25th percentile may be identified as needing intervention; in some cases, those performing below the 10th percentile are considered to merit urgent intervention.

To this point, the 10th, 25th, and 40th percentile ranks have been identified as widely used criteria for placing students in a progression from needing urgent intervention to achieving target levels of proficiency. How do we know when a student is below, at, or above each of these benchmarks? The answer is “cut scores”—the actual scores on norm-referenced educational tests that distinguish each of the percentile-based reference levels. The distinction between percentile-defined benchmarks and cut scores is important because student performance generally improves as a result of the amount of effective instruction the student receives. As a result, the score that corresponds to a given percentile benchmark will generally be lower at the start of the school year and higher with each successive month, quarter, or semester; that is, cut scores for a given percentile rank can be expected to increase over the course of the school year.

The 10th, 25th, and 40th percentile ranks are the default benchmarks for some applications of Star assessments (Star users are free to substitute different percentile benchmarks and to specify additional benchmarks). The table below lists, for each school grade, a number of benchmarks in addition to the 10th, 25th and 40th as a convenience to the user. For each grade and percentile benchmark, it lists the cut score—the lowest scaled score corresponding to the percentile—for each of three different months of the standard 10-month school year: the first, fifth, and ninth months (fall, winter, and spring).

Star Math Spanish Unified Benchmarks and Cut Scores^a

a. The Star Math Spanish benchmarks are based on user norms—while the Renaissance user base is large and distributed, this is not equivalent to a national norming sample. The user should take this into consideration in interpreting results.
b. Below 10 - Urgent Intervention; Below 25 - Intervention; At/Above 40 - Benchmark.

Grade	Percentile ^b	Fall (September)	Winter (January)	Spring (May)
		Unified Scaled Score		
1	10	726	738	750
	20	758	770	782
	25	767	780	792
	40	784	800	817
	50	793	812	830
	75	817	844	870
	90	841	872	902

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		Fall (September)	Winter (January)	Spring (May)
Grade	Percentile ^b	Unified Scaled Score		
2	10	784	796	808
	20	803	820	837
	25	811	830	849
	40	829	854	880
	50	841	869	896
	75	880	908	936
	90	912	939	966
3	10	814	832	851
	20	840	864	887
	25	851	875	900
	40	878	904	931
	50	896	922	947
	75	934	961	988
	90	965	991	1018
4	10	845	858	870
	20	883	897	912
	25	897	912	927
	40	928	945	962
	50	944	962	981
	75	985	1005	1024
	90	1014	1038	1063
5	10	861	871	880
	20	908	917	927
	25	923	932	942
	40	954	964	975
	50	973	983	994
	75	1017	1028	1040
	90	1047	1068	1089
6	10	830	834	838
	20	868	873	878
	25	881	886	891
	40	915	921	927
	50	936	944	952
	75	998	1002	1007
	90	1043	1044	1046

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		Fall (September)	Winter (January)	Spring (May)
Grade	Percentile ^b	Unified Scaled Score		
7	10	833	836	839
	20	865	874	883
	25	878	886	895
	40	909	919	930
	50	930	941	952
	75	986	998	1009
	90	1034	1042	1049
8	10	848	850	852
	20	885	889	894
	25	895	903	910
	40	930	941	952
	50	948	960	973
	75	1013	1020	1028
	90	1051	1056	1060