

Star Math Spanish— Unified Benchmarks and Cut Scores

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).

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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	677	704	731
	20	694	730	766
	25	702	740	779
	40	725	768	810
	50	740	783	827
	75	784	826	867
	90	819	859	898

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		Fall (September)	Winter (January)	Spring (May)
Grade	Percentile ^b	Unified Scaled Score		
2	10	744	771	798
	20	780	807	835
	25	792	820	848
	40	820	851	882
	50	834	867	900
	75	874	906	938
	90	908	938	968
3	10	795	818	841
	20	829	858	886
	25	843	872	902
	40	874	903	933
	50	894	923	951
	75	933	961	989
	90	962	989	1016
4	10	834	848	862
	20	879	897	916
	25	894	913	931
	40	929	948	968
	50	943	964	985
	75	983	1006	1029
	90	1010	1035	1059
5	10	863	867	872
	20	911	918	926
	25	926	933	940
	40	956	965	975
	50	973	983	994
	75	1012	1027	1041
	90	1046	1062	1078
6	10	868	868	868
	20	918	918	918
	25	930	930	930
	40	958	958	958
	50	978	978	979
	75	1024	1028	1032
	90	1061	1071	1081

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		Fall (September)	Winter (January)	Spring (May)
Grade	Percentile ^b	Unified Scaled Score		
7	10	890	892	894
	20	924	928	932
	25	937	940	943
	40	965	971	977
	50	981	988	994
	75	1032	1041	1050
	90	1072	1084	1097
8	10	896	903	909
	20	935	939	944
	25	948	953	959
	40	979	986	992
	50	994	1003	1011
	75	1045	1054	1063
	90	1091	1101	1111