The 2001 Base Academic Performance Index (API): Integrating the California Standards Test for English-Language Arts into the API

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2001 Base Academic Performance Index (API): Integrating the Results from the California Standards Test in English-Language Arts (CST ELA) into the API

On September 5, 2001, the State Board of Education approved a methodology for integrating the results from the California Standards Test in English-Language Arts (CST ELA) into the 2001 Base Academic Performance Index (API), which the California Department of Education will release in January 2002. This paper:

- Explores the legal and policy background for the incorporation of results from the CST ELA into the API and describes the guiding principle of continuity
- Reviews step-by-step the methodology for incorporating the CST ELA results into the API
- Concludes with graphic illustrations of how to calculate the 2001 Base API

Background

Legal Requirements

The Public Schools Accountability Act (PSAA) of 1999 (Ch. 3 of the Statutes of 1999) requires the inclusion of results from the standards-based component of the Standardized Testing and Reporting (STAR) examination in the API [Education Code, Section 52052(a)(3)]. This becomes possible only when the State Board of Education (SBE) defines performance levels for the standards-based tests. This has already occurred for the CST ELA beginning with the administration of the spring 2001 test.

Standards-Based Tests and the API

The present API methodology of aggregating individual norm-referenced results into five performance bands will easily accommodate standards-based reporting conventions. This is not an accident. The API was originally designed with precisely this eventuality in mind.

2001 Base API. The results of the CST ELA are reported at the school level in terms of the percentage of pupils scoring at certain performance levels. Following the terminology of the National Assessment of Educational Progress (NAEP), these levels were initially considered by the SBE to be *below basic, basic, proficient, and advanced*. After further review, the State Board decided that the *below basic* performance level should be further subdivided into two: *below basic* and *far below basic*. This subdivision results in five performance levels, making the API more sensitive to gains by low achievers on the CST ELA. It establishes a precedent for the future as other standards-based tests are incorporated into the API.

2002 Base API. It is anticipated that the 2002 results from the performance based writing test in grades 4 and 7 as well as the 2002 standards-based results in mathematics will be integrated into the 2002 Base API. The results from the writing test will be used along with results from the CST ELA to determine an individual student's ELA performance level. Therefore, it will not be necessary to introduce the writing test into the API as a separate component. Along with writing

and mathematics, it is also possible that results of the science and history/social science tests may be available for incorporation into the API in 2002.

2003 Base API. In 2003 the exact configuration of STAR may change with the possible introduction of a new norm-referenced test.

Guiding Principle: Continuity

In approving a methodology, the SBE accorded an overriding importance to the principle of continuity. The present system of APIs and targets has now been in place for almost two years. It has created a culture along with a set of expectations on the part of local educational agencies (LEAs) as to what constitutes significant growth and a high level of performance. Therefore, features of the present API system should be preserved to the greatest extent possible. In particular, the present API scale of 200 to 1000 and the performance target of 800 will be maintained.[1] The performance level weighting factors for the new CST ELA indicator will be equivalent to those used for the Stanford 9 results. Finally, a Scale Calibration Factor (SCF) will ensure that the **statewide average** 2001 Base APIs for elementary, middle, and high schools will equal the **statewide average** 2001 Growth APIs by school type.

Steps in Calculating the 2001 Base API

Step #1: Apply the Performance Level Weighting Factors

In order to incorporate results from the CST ELA into the API, it is necessary to calculate a summary number for these results. Following the existing methodology for summarizing norm-referenced results, this number will be derived by first multiplying the percentage of students scoring at each performance level by a weighting factor and then summing the results of these calculations into a single number. This number represents a summary score for the CST ELA ("indicator score"). The system of weighting factors for summarizing the CST ELA results will be the same as for summarizing norm-referenced results (1000-875-700-500-200).

California Standards Test			English Language Arts	
A		B	C	D
Performance Levels		Weighting Factors	Percent of Pupils in Each Level	Weighted Score in Each Level (B x C)
5	Advanced	1000	9%	90.00
4	Proficient	875	22%	192.50
3	Basic	700	33%	231.00
2	Below Basic	500	22%	110.00
1	Far Below Basic	200	14%	28.00

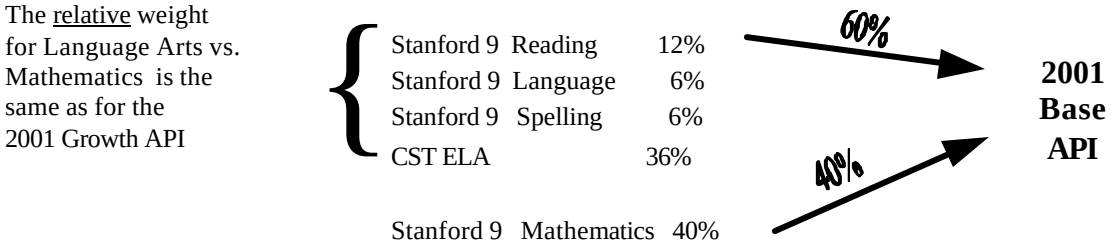
a Indicator Score	a x b = c	651.50
b Indicator Weight		36%
c Total Weighted Score for Indicator		234.54

[1] With the adoption of the Scale Calibration Factor (see page 3), it is theoretically possible for a school to have an API in excess of 1000. However, it is likely that all of the attained scores on the 2001 Base API will fall between 200 and 1000.

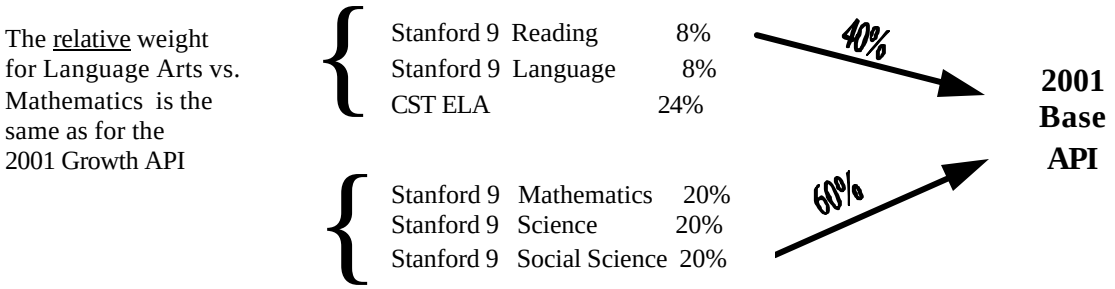
Step #2: Integrate the CST ELA Indicator Score into the API

Content area weights. Once an indicator score for the CST ELA is calculated, it is then integrated into indicator scores for the norm-referenced tests (NRTs) in order to arrive at an API. According to the methodology adopted by the SBE, the current division of the API into content areas will be maintained. The CST ELA indicator score will therefore constitute a portion of the English language arts component of the API, which currently is 60% of the API in grades 2-8 (reading, language, and spelling) and 40% in grades 9-11 (reading and language). The charts below graphically summarize the resulting methods for test results for grades 2-8 and 9-11:

Elementary and Middle Schools, Grades 2-8



High Schools, Grades 9-11



NRT and CST weights. **Within** the English language arts content area, the SBE has approved a weight of 60% CST results to 40% NRT results. This ratio will be applied fully in the base 2001 Base API, **not** phased in as some have proposed. The following tables summarize the specific proportion that each content area will constitute and illustrate the proportional split of CST to NRT types of results for grades 2-8 and 9-11:

Elementary and Middle Schools, Grades 2-8

Content Area	*% of API*
Math NRT	40%
ELA NRT	24%
Reading (12%)	
Language (6%)	
Spelling (6%)	
CST ELA	**36%**

High Schools, Grades 9-11

Content Area	*% of API*
Math NRT	20%
ELA NRT	16%
Reading (8%)	
Language (8%)	
CST ELA	**24%**
Science	20%
Social Science	20%

Step #3: Application of the Scale Calibration Factor (SCF)

It is probable that the statewide average indicator score of a new API component will not coincide with the existing statewide average API. Therefore, the integration of new components into the API will likely cause unintentional fluctuations between the same year's statewide average Growth and Base APIs. This type of fluctuation is counterintuitive, since both the Growth and Base API reflect performance by exactly the same students at exactly the same time.

In order to eliminate these fluctuations and thereby to enhance the interpretability of the API, the SBE has approved the application of a neutral introduction factor, henceforth referred to as the Scale Calibration Factor (SCF), in the calculation of the Base API. The SCF is an additive constant. It may be either a positive or negative number, depending upon the impact of new components of the API. The 2001 Base API will mark the first use of the SCF.

Simply put, the SCF is the difference between statewide average 2000-2001 Growth API and the initial statewide average 2001 Base API by school type as derived from Steps #1 and 2 above. The appropriate SCF will be added to or subtracted from each school's initial 2001 Base API in order to arrive at the school's final 2001 Base API.

Charts Illustrating How to Calculate the 2001 Base API

The following summary charts (pages 5, 6, and 7) illustrate how to calculate the 2001 Base API, including the application of SCFs, for three grade span types (2-6, 7-8, and 9-11). As noted, the exact value of the SCFs will be determined only after the generation of the final 2000-2001 API Growth File in December 2001 and the preliminary 2001 API Base File in January 2002.

CHART 1

How to Calculate the 2001 Base API for an Elementary School (grades 2-6)

California Standards Test			English Language Arts	
A		B	C	D
Performance Levels		Weighting Factors	Percent of Pupils in Each Level	Weighted Score in Each Level (B x C)
5	Advanced	1000	9%	90.00
4	Proficient	875	22%	192.50
3	Basic	700	33%	231.00
2	Below Basic	500	22%	110.00
1	Far Below Basic	200	14%	28.00

a Indicator Score	a	651.50
b Indicator Weight	x	36%
c Total Weighted Score for Indicator	b = c	234.54

+

	ELA	Math
Content area weights NRT	24%	40%
Content area weights ST	36%	
Portion of API	60%	40%

Stanford 9			Reading		Language		Spelling		Mathematics	
A		B	C	D	E	F	G	H	K	L
Performance Bands		Weighting Factors	Percent of Pupils in Each Band	Weighted Score in Each Band (B x C)	Percent of Pupils in Each Band	Weighted Score in Each Band (B x E)	Percent of Pupils in Each Band	Weighted Score in Each Band (B x G)	Percent of Pupils in Each Band	Weighted Score in Each Band (B x K)
5	80-99th NPR	1000	13%	130.00	17%	170.00	12%	120.00	19%	190.00
4	60-79th NPR	875	20%	175.00	20%	175.00	19%	166.25	30%	262.50
3	40-59th NPR	700	29%	203.00	30%	210.00	32%	224.00	22%	154.00
2	20-39th NPR	500	20%	100.00	19%	95.00	24%	120.00	16%	80.00
1	1-19th NPR	200	18%	36.00	14%	28.00	13%	26.00	13%	26.00

a Indicator Score	a	644.00		678.00		656.25		712.50		Scale Calibration Factor*		2001 API Base
b Indicator Weight	x	12%		6%		6%		40%				
c Total Weighted Score for Indicator	b = c	77.28	+	40.68	+	39.38	+	285.00	+	1.64	=	679

***This Scale Calibration Factor (SCF) is for illustrative purposes only. The exact value of the SCF will be available only after the generation of the final 2000-2001 API Growth data file in December 2001 and the preliminary 2001 API Base data file in January 2002.**

CHART 2

How to Calculate the 2001 Base API for a Middle School (grades 7-8)

California Standards Test			English Language Arts	
A		B	C	D
Performance Levels		Weighting Factors	Percent of Pupils in Each Level	Weighted Score in Each Level (B x C)
5	Advanced	1000	9%	90.00
4	Proficient	875	23%	201.25
3	Basic	700	34%	238.00
2	Below Basic	500	20%	100.00
1	Far Below Basic	200	14%	28.00

a Indicator Score	a x b = c	657.25
b Indicator Weight		36%
c Total Weighted Score for Indicator		236.61 +

	ELA	Math
Content area weights NRT	24%	40%
Content area weights ST	36%	
Portion of API	60%	40%

Stanford 9			Reading		Language		Spelling		Mathematics	
A		B	C	D	E	F	G	H	K	L
Performance Bands		Weighting Factors	Percent of Pupils in Each Band	Weighted Score in Each Band (B x C)	Percent of Pupils in Each Band	Weighted Score in Each Band (B x E)	Percent of Pupils in Each Band	Weighted Score in Each Band (B x G)	Percent of Pupils in Each Band	Weighted Score in Each Band (B x K)
5	80-99th NPR	1000	6%	60.00	17%	170.00	11%	110.00	16%	160.00
4	60-79th NPR	875	26%	227.50	23%	201.25	23%	201.25	25%	218.75
3	40-59th NPR	700	33%	231.00	28%	196.00	24%	168.00	22%	154.00
2	20-39th NPR	500	20%	100.00	19%	95.00	20%	100.00	21%	105.00
1	1-19th NPR	200	15%	30.00	13%	26.00	22%	44.00	16%	32.00

a Indicator Score	a x b = c	648.50		688.25		623.25		669.75	Scale Calibration Factor*	2001 API Base
b Indicator Weight		12%		6%		6%		40%		
c Total Weighted Score for Indicator		77.82	+	41.30	+	37.40	+	267.90	+ -1.22	= 660

*** This Scale Calibration Factor (SCF) is for illustrative purposes only. The exact value of the SCF will be available only after the generation of the final 2000-2001 API Growth data file in December 2001 and the preliminary 2001 API Base data file in January 2002.**

CHART 3

How to Calculate the 2001 Base API for a High School (grades 9-11)

California Standards Test		English Language Arts	
A	B	C	D
Performance Levels	Weighting Factors	Percent of Pupils in Each Level	Weighted Score in Each Level (B x C)
5 Advanced	1000	9%	90.00
4 Proficient	875	20%	175.00
3 Basic	700	32%	224.00
2 Below Basic	500	23%	115.00
1 Far Below Basic	200	16%	32.00

a Indicator Score	a	636.00
b Indicator Weight	x b	24%
c Total Weighted Score for Indicator	= c	152.64

+

	ELA	Math	Sci	Soc Sci
Content area weights NRT	16%	20%	20%	20%
Content area weights ST	24%			
Portion of API	40%	20%	20%	20%

Stanford 9		Reading		Language		Mathematics		Science		Social Science	
A	B	C	D	E	F	G	H	I	J	K	L
Performance Bands	Weighting Factors	Percent of Pupils in Each Band	Weighted Score in Each Band (B x C)	Percent of Pupils in Each Band	Weighted Score in Each Band (B x E)	Percent of Pupils in Each Band	Weighted Score in Each Band (B x G)	Percent of Pupils in Each Band	Weighted Score in Each Band (B x I)	Percent of Pupils in Each Band	Weighted Score in Each Band (B x K)
5 80-99th NPR	1000	9%	90.00	12%	120.00	21%	210.00	14%	140.00	11%	110.00
4 60-79th NPR	875	17%	148.75	26%	227.50	21%	183.75	22%	192.50	24%	210.00
3 40-59th NPR	700	23%	161.00	23%	161.00	20%	140.00	22%	154.00	28%	196.00
2 20-39th NPR	500	23%	115.00	22%	110.00	19%	95.00	21%	105.00	19%	95.00
1 1-19th NPR	200	28%	56.00	17%	34.00	19%	38.00	21%	42.00	18%	36.00

a Indicator Score	a	570.75		652.50		666.75		633.50		647.00		Scale Calibration Factor*		2001 API Base
b Indicator Weight	x b	8%		8%		20%		20%		20%				
c Total Weighted Score for Indicator	= c	45.66	+	52.20	+	133.35	+	126.70	+	129.40	+	-3.90	=	636

*** This Scale Calibration Factor (SCF) is for illustrative purposes only. The exact value of the SCF will be available only after the generation of the final 2000-2001 API Growth data file in December 2001 and the preliminary 2001 API Base data file in January 2002.**