

**Pell Institute Fact Sheet**  
**Updated: 3/18/2011**

**MATHEMATICS AND SCIENCE TEST GAPS**

Background/History

Data is reported as percentages based on proficiency in the subject (see above the table for further description). Low-income on this data sheet means students who qualify for the National School Lunch Program.<sup>1</sup> Both math and science data are from 2009 National Center for Education Statistics assessments.

Mathematics Facts and Figures<sup>2</sup>

BB: Below Basic

AB: At Basic

AP: At Proficient

AA: At Advanced

	4 <sup>th</sup> Grade			
SES differences	BB	AB	AP	AA
Low income	30	49	20	1
Not low income	9	37	44	10

	8 <sup>th</sup> Grade			
	BB	AB	AP	AA
	43	40	15	2
	17	38	33	12

	12 <sup>th</sup> Grade			
	BB	AB	AP	AA
	55	34	10	0
	28	40	28	3

	4 <sup>th</sup> Grade			
Gender differences	BB	AB	AP	AA
Male	18	41	34	7
Female	18	44	32	5

	8 <sup>th</sup> Grade			
	BB	AB	AP	AA
	27	38	27	9
	28	40	25	7

	12 <sup>th</sup> Grade			
	BB	AB	AP	AA
	35	37	25	4
	37	39	22	2

	4 <sup>th</sup> Grade			
Racial Differences	BB	AB	AP	AA
Native American	34	45	19	2
Asian/ Pacific Islander	8	31	43	17
Black	36	48	15	1
Hispanic	29	49	20	1
White	9	40	42	8

	8 <sup>th</sup> Grade			
	BB	AB	AP	AA
	44	38	15	3
	15	31	34	20
	50	37	11	1
	43	40	15	2
	17	40	33	11

	12 <sup>th</sup> Grade			
	BB	AB	AP	AA
	44	45	11	0
	16	32	41	10
	63	30	6	0
	55	34	11	0
	25	42	30	3

	4 <sup>th</sup> Grade			
	BB	AB	AP	AA
<b>All Students</b>	<b>18</b>	<b>43</b>	<b>33</b>	<b>6</b>

	8 <sup>th</sup> Grade			
	BB	AB	AP	AA
<b>All Students</b>	<b>27</b>	<b>39</b>	<b>26</b>	<b>8</b>

	12 <sup>th</sup> Grade			
	BB	AB	AP	AA
<b>All Students</b>	<b>36</b>	<b>38</b>	<b>23</b>	<b>3</b>

Discussion

Overall, the percentage of students at proficient or advanced mathematics levels declined from 4<sup>th</sup> to 12<sup>th</sup> grade, with a higher percentage of students scoring below basic in 12<sup>th</sup> grade than in 4<sup>th</sup> and 8<sup>th</sup> grade. The percentage of students at the basic math level hovered around 40% for all three grades. Higher income students outperformed their low income peers in all three grades, with more than double the percentage of students at proficient and advanced levels. Females and males were similarly distributed across all levels in all grades, with males just slightly outperforming females. In regards to racial differences, Asian students performed the best, followed closely by White students. Native American, Black, and Hispanic students were much further behind in all three grade levels, with more than 80% scoring below basic or at basic math levels for all three grades. Clear gaps in math test scores can be seen in income and racial differences.

### Science Facts and Figures<sup>3</sup>

BB: Below Basic

AB: At Basic

AP: At Proficient

AA: At Advanced

	4 <sup>th</sup> Grade			
SES differences	BB	AB	AP	AA
Low income	44	40	16	0
Not low income	14	38	47	1

	8 <sup>th</sup> Grade			
SES differences	BB	AB	AP	AA
Low income	57	30	13	0
Not low income	24	36	38	2

	12 <sup>th</sup> Grade			
SES differences	BB	AB	AP	AA
Low income	61	31	8	0
Not low income	32	42	24	2

	4 <sup>th</sup> Grade			
Gender differences	BB	AB	AP	AA
Male	27	38	34	1
Female	28	40	32	1

	8 <sup>th</sup> Grade			
Gender differences	BB	AB	AP	AA
Male	35	32	32	2
Female	38	35	26	1

	12 <sup>th</sup> Grade			
Gender differences	BB	AB	AP	AA
Male	37	39	22	2
Female	42	40	17	1

	4 <sup>th</sup> Grade			
Racial Differences	BB	AB	AP	AA
Native American	43	39	17	0
Asian/ Pacific Islander	19	36	43	2
Black	53	36	11	0
Hispanic	47	39	14	0
White	13	39	46	1

	8 <sup>th</sup> Grade			
Racial Differences	BB	AB	AP	AA
Native American	52	31	17	0
Asian/ Pacific Islander	27	33	37	3
Black	67	25	8	0
Hispanic	57	30	12	0
White	22	36	39	2

	12 <sup>th</sup> Grade			
Racial Differences	BB	AB	AP	AA
Native American	47	40	13	0
Asian/ Pacific Islander	27	36	32	4
Black	71	25	4	0
Hispanic	58	33	8	0
White	28	45	25	2

	4 <sup>th</sup> Grade			
	BB	AB	AP	AA
All Students	28	39	33	1

	8 <sup>th</sup> Grade			
	BB	AB	AP	AA
All Students	37	33	29	2

	12 <sup>th</sup> Grade			
	BB	AB	AP	AA
All Students	40	39	19	1

### Discussion

Overall, the percentage of students scoring below basic science levels increased across grade levels while the percentage at the proficient level decreased and percentages at basic science levels stayed relatively stable. Socioeconomically, low income students had dramatically higher percentages of students at or below basic science level, especially in 4<sup>th</sup> grade. Furthermore, less than one percent of students scored at the advanced science level in all three grades. In terms of gender, percentages were fairly evenly distributed between males and females, with males just slightly outperforming females in each grade. Asian and White students tested significantly higher than their Native American, Black, and Hispanic peers. 0 percent of students from the latter group scored at the advanced science level in each of the three grades. The percentage of students testing at the basic level in 4<sup>th</sup> grade is fairly even across all races, but Asian and White students are also concentrated at the proficient level while their Native American, Black, and Hispanic peers are mostly scoring below the basic level.

### References & Resources

1 - Provides free or reduced-price lunch to students from families with incomes at or below 130 percent of the poverty level (for free lunch) and between 130 and 185 percent of the poverty level (for reduced-price lunch).

2 - U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990 and 2009 Mathematics Assessments.

3 - U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Science Assessment.