2005 WKCE-CRT Cut Scores

After reviewing different options for interpolating and extrapolating the cut scores for the WKCE-CRT assessments in Reading and Mathematics, the Wisconsin Department of Public Instruction (DPI) has opted to use a method of linear interpolation, as based on impact data.

To find cut scores for Grades 3, 5, 6, and 7, the impact data for Grades 4 and 8 were first calculated. The *impact data*, or the percentage of students classified in each achievement level, were found. The cut scores for Grades 4, 8, and 10 were derived from a no-growth model, which preserved the existing Grades 4, 8, and 10 cut scores. Linear interpolation was then used to find the desired impact data for Grades 5, 6, and 7, as based on the previously calculated impact data for Grades 4 and 8. Linear extrapolation was used to find the desired impact data for Grade 3 by extending the trend. The cut scores which most closely gave the desired impact data were then found, as described below.

There exists no one preferred method by which to identify cut scores using impact data, as previously described. Rather, the method used represents a policy decision by DPI, and is consistently applied to all cut scores. To find cut scores for a given grade and content area, the desired percent of students in an achievement level was first found through either linear interpolation or extrapolation. For each achievement level, if a cut score existed which yielded exactly this impact data, the cut score was adopted. If no cut score gave exactly this percentage, then the highest cut score which yielded the desired or greater percentage was found.

For example, assume that 30.0% of students should be classified as *Proficient* or above in a sample grade and content area. If a cut score classified exactly 30.0% of students as *Proficient* or above, then it was adopted. However, if exactly 30.0% was not possible because of slight variations in the scoring table, then the lowest cut score which yielded at least 30.0% was adopted. This method ensures that the percent of students classified as *Proficient* and above will not decline simply as an artifact of the interpolation process.

The WKCE-CRT assessments for Reading and Mathematics are on a vertical scale, and it is important that the cut scores for a given achievement level rise from grade to grade. To promote this type of *vertical moderation*, the cut score for *Advanced* in Grade 10 Reading was raised from 538 to 555, and the cut score for *Basic* in Grade 3 was lowered from 396 to 394.

Table 1 shows the cut scores for Grades 3 – 8 and 10 Reading, along with the impact data associated with these cut scores. Table 2 shows the cut scores and associated impact data for Grades 3 – 8 and 10 Mathematics. Tables 3, 4, and 5 present the cut scores and associated impact data for Grade 4, 8, and 10 Language Arts, Social Studies, and Science. CTB recognizes that the adoption of cut scores is an important policy decision, and that DPI has the final authority in the establishment of achievement standards for the WKCE-CRT.

Figures 1 through 10 present the cut scores and percentages for all performance levels based on impact data across all grades.

Table 1. Cut scores and associated impact data for WKCE-CRT Reading.

Grade	Score Range				Impact Data				
	Minimal	Basic	Proficient	Advanced	Minimal	Basic	Proficient	Advanced	Proficient +Advanced
3	270-393	394-429	430-465	466-640	3.9%	13.8%	38.9%	43.4%	*82.3%*
4	280-395	396-439	440-488	489-650	4.5%	12.1%	40.4%	43.0%	*83.4%*
5	290-400	401-443	444-496	497-690	4.8%	11.3%	40.8%	43.0%	*83.4%*
6	300-417	418-456	457-513	514-730	5.2%	10.4%	41.4%	42.9%	*84.3%*
7	310-433	434-466	467-522	523-780	5.4%	9.8%	42.0%	42.8%	*84.8%*
8	330-444	445-479	480-538	539-790	5.6%	8.8%	43.4%	42.3%	*85.7%*
10	350-455	456-502	503-554	555-820	9.2%	14.1%	33.0%	43.6%	*76.6%*

Table 2. Cut scores and associated impact data for WKCE-CRT Mathematics.

Grade	Score Range				Impact Data				
	Minimal	Basic	Proficient	Advanced	Minimal	Basic	Proficient	Advanced	Proficient +Advanced
3	220-391	392-406	407-451	452-630	17.5%	9.5%	40.1%	32.9%	*73.0%*
4	240-420	421-437	438-483	484-650	16.3%	10.4%	40.9%	32.5%	*73.3%*
5	270-444	445-462	463-504	505-680	15.1%	11.6%	42.6%	30.7%	*74.0%*
6	310-463	464-484	485-531	532-700	13.9%	12.3%	44.9%	28.9%	*74.5%*
7	330-479	480-503	504-554	555-710	12.7%	12.7%	47.0%	27.6%	*74.6%*
8	350-482	483-512	513-572	573-730	11.6%	13.4%	49.5%	25.5%	*75.0%*
10	410-515	516-540	541-594	595-750	14.2%	12.7%	46.7%	26.4%	*73.1%*

Table 3. Cut scores and associated impact data for WKCE-CRT Language Arts.

Grade	Score Range				Impact Data				
	Minimal	Basic	Proficient	Advanced	Minimal	Basic	Proficient	Advanced	Proficient +Advanced
4	140-251	252-276	277-307	308-420	4.3%	14.8%	44.5%	36.4%	*80.9%*
8	250-357	358-384	385-417	418-520	11.5%	22.3%	39.9%	26.3%	*66.2%*
10	290-392	393-427	428-483	484-630	8.6%	19.0%	53.0%	19.4%	*72.4%*

Table 4. Cut scores and associated impact data for WKCE-CRT Social Studies.

Grade	Score Range				Impact Data				
	Minimal	Basic	Proficient	Advanced	Minimal	Basic	Proficient	Advanced	Proficient +Advanced
4	170-241	242-262	263-287	288-400	1.8%	5.2%	28.5%	64.6%	*93.1%*
8	230-333	334-363	364-402	403-530	3.9%	11.2%	40.0%	44.9%	*84.9%*
10	240-407	408-419	420-454	455-620	16.9%	6.8%	30.7%	45.6%	*76.3%*

Table 5. Cut scores and associated impact data for WKCE-CRT Science.

Grade	Score Range				Impact Data				
	Minimal	Basic	Proficient	Advanced	Minimal	Basic	Proficient	Advanced	Proficient +Advanced
4	170-248	249-278	279-319	320-440	4.8%	15.7%	57.6%	21.9%	*79.5%*
8	230-348	349-374	375-418	419-560	8.9%	15.7%	46.8%	28.6%	*75.4%*
10	240-410	411-428	429-465	466-610	16.6%	10.6%	35.5%	37.2%	*72.8%*

Figure 1 Cut Scores for Reading

Reading, Cut Scores By Performance Level, Based on Impact Data
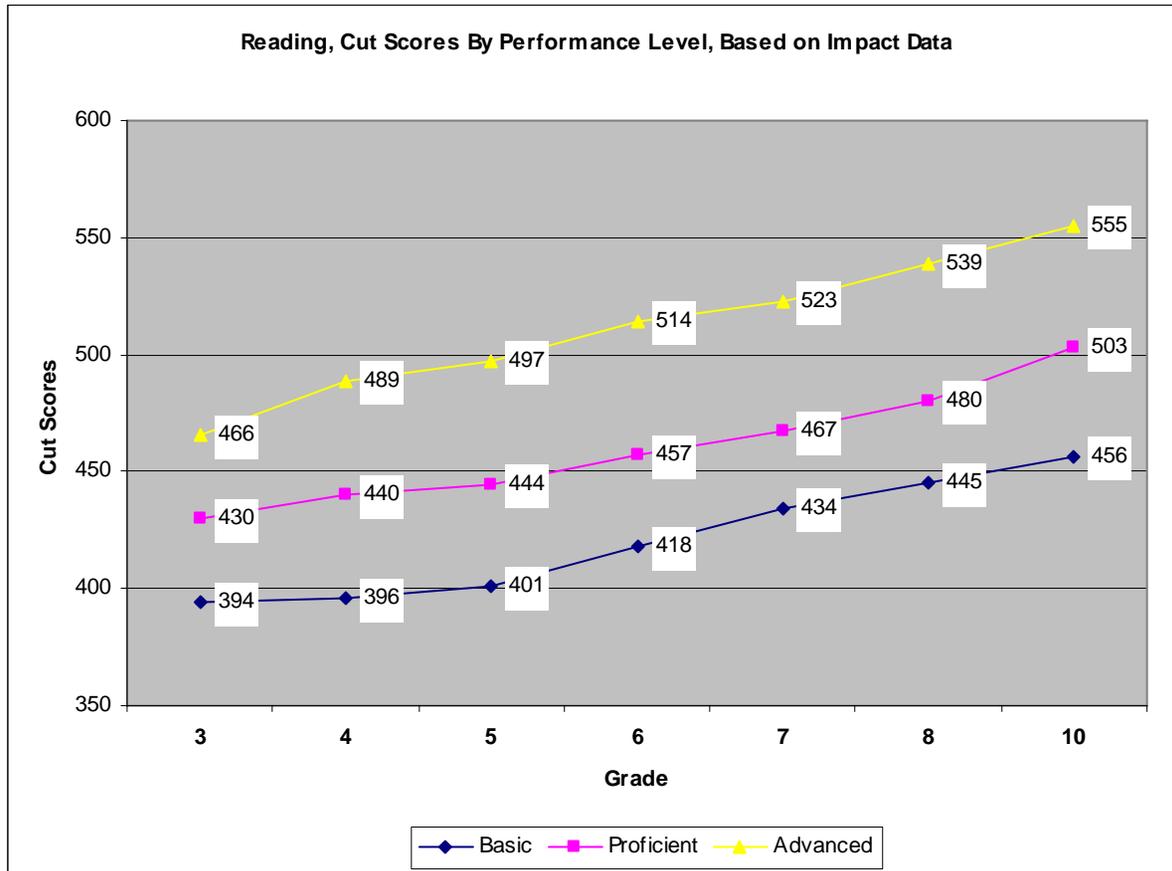
Figure 2 Cut Scores for Mathematics

Mathematics, Cut Scores by Performance Level, Based on Impact Data
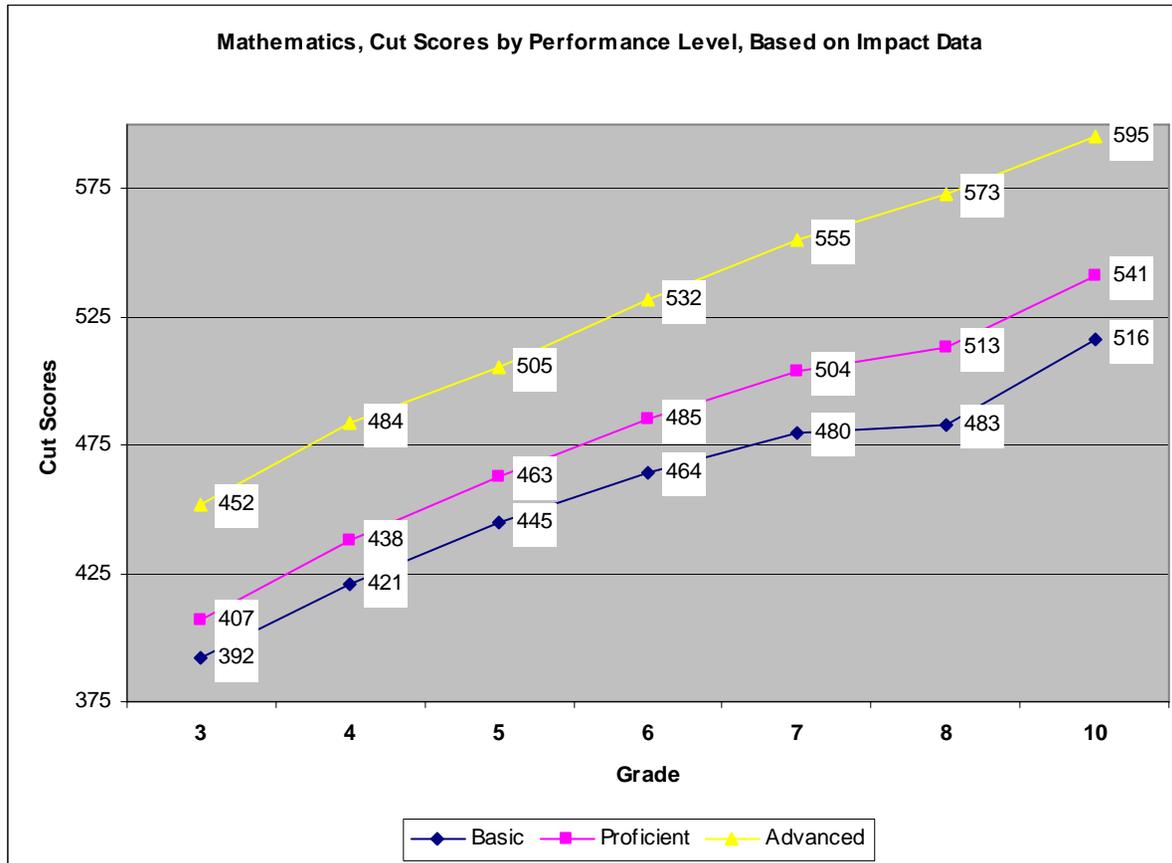
Figure 3 Cut Scores for Language Arts

Language Arts, Cut Scores by Performance Level, Based on Impact Data

Basic — Proficient — Advanced
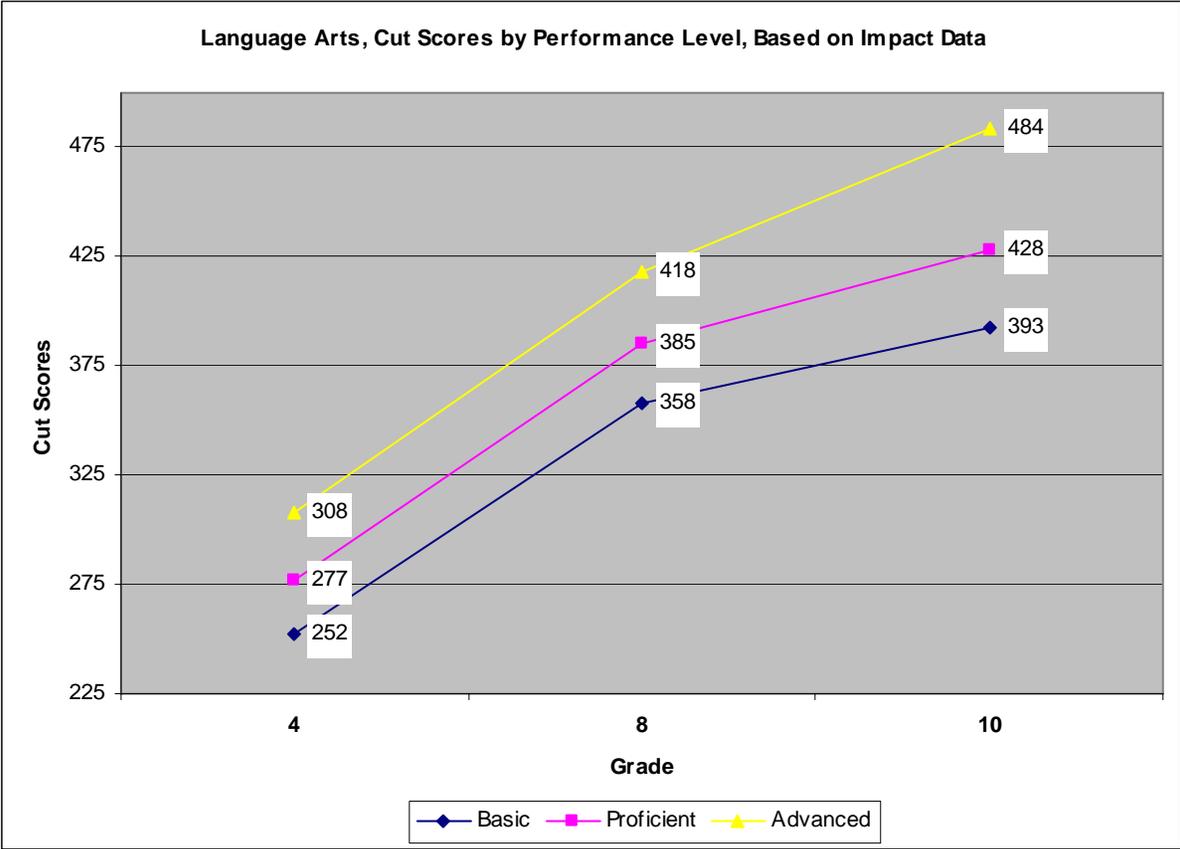
Figure 4 Cut Scores for Social Studies

Social Studies, Cut Scores by Performance Level, Based on Impact Data
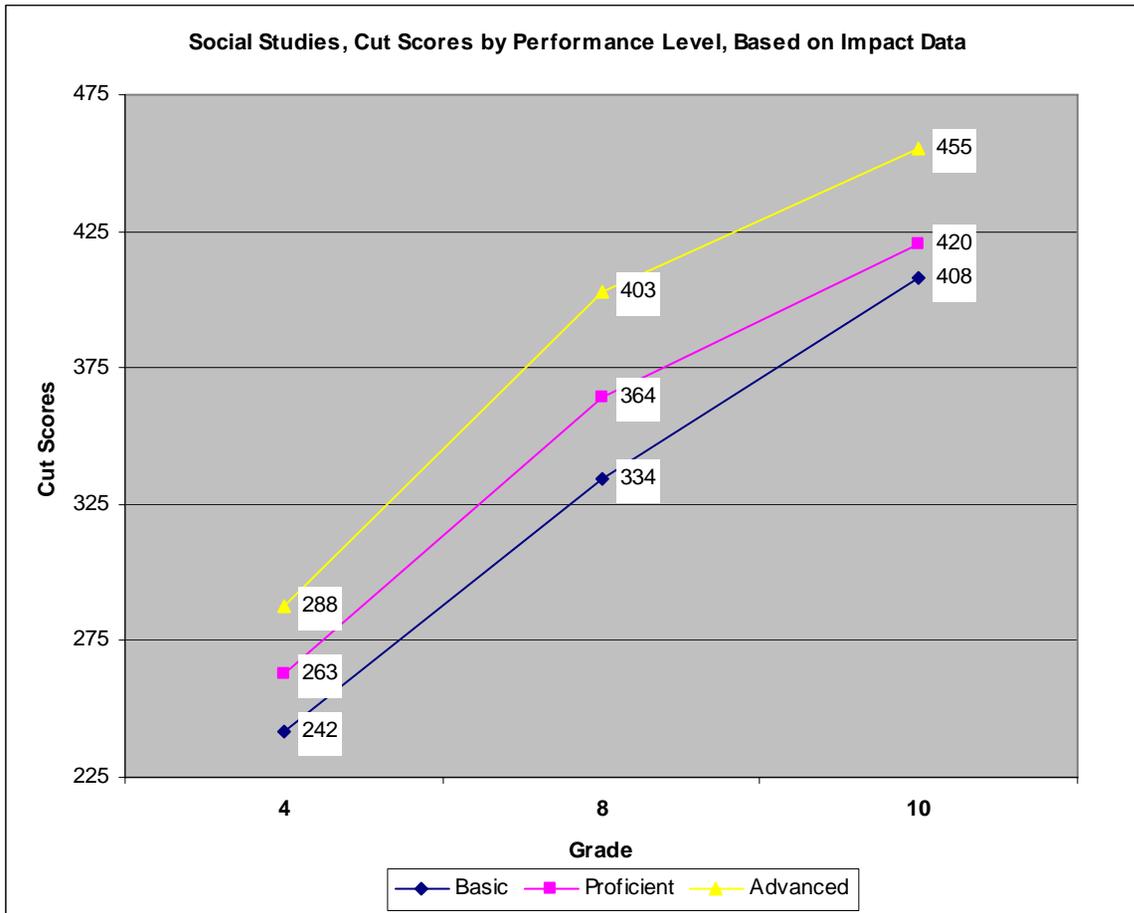
Figure 5 Cut Scores for Science

Science, Cut Scores by Performance Level, Based on Impact Data

Data points:
- Grade 4: Basic 249, Proficient 279, Advanced 320
- Grade 8: Basic 349, Proficient 375, Advanced 419
- Grade 10: Basic 411, Proficient 429, Advanced 466

Y-axis: Cut Scores (225, 275, 325, 375, 425, 475)
X-axis: Grade (4, 8, 10)

Legend: Basic, Proficient, Advanced
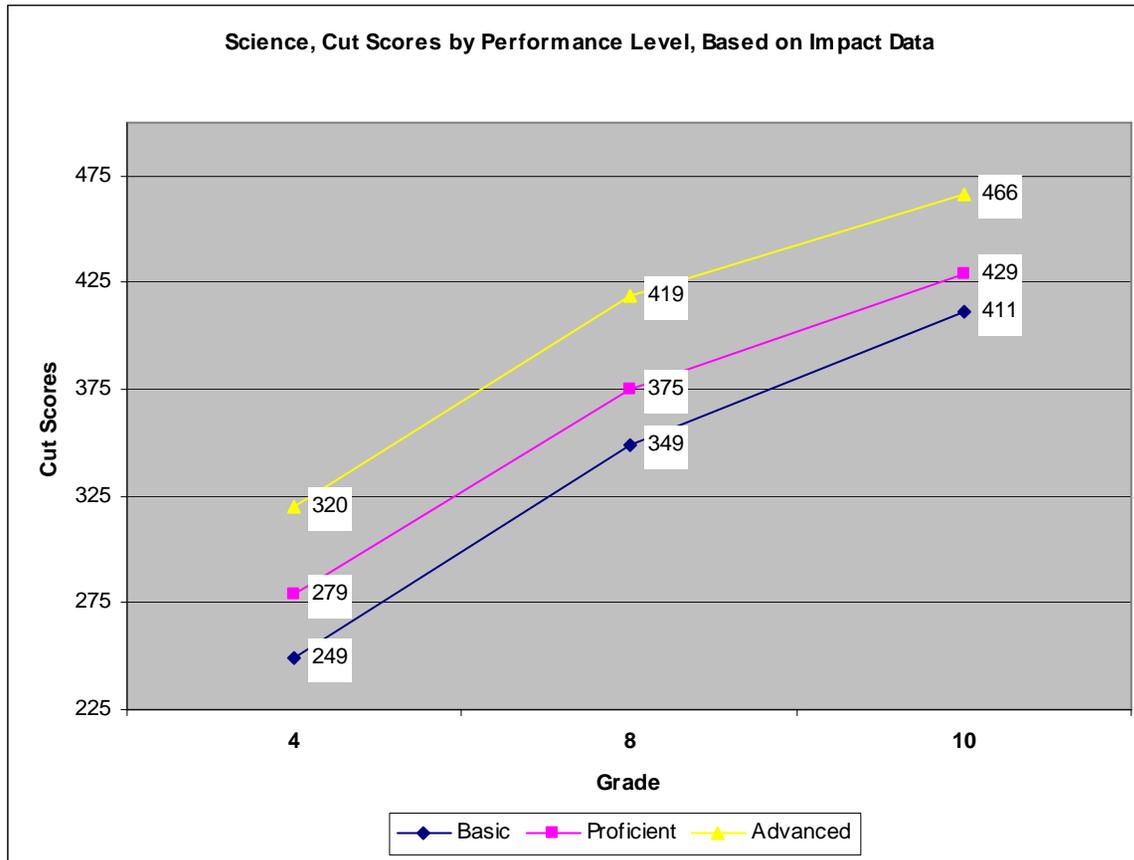
Figure 6 Percent of Students for Reading

Reading, Percent of Students by Achievement Level, Based on Impact Data
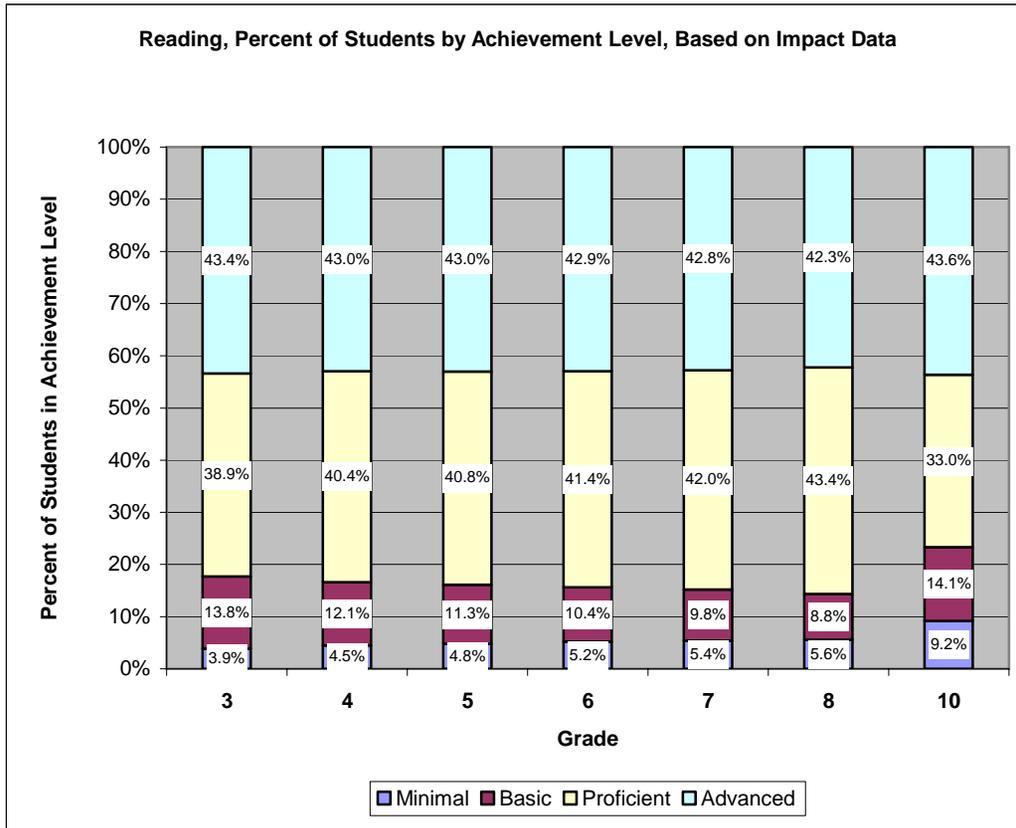
Figure 7 Percent of Students for Mathematics

Mathematics, Percent of Students by Achievement Level, Based on Impact Data

Grade	Minimal	Basic	Proficient	Advanced
3	17.5%	9.5%	40.1%	32.9%
4	16.3%	10.4%	40.9%	32.5%
5	15.1%	11.6%	42.6%	30.7%
6	13.9%	12.3%	44.9%	28.9%
7	12.7%	12.7%	47.0%	27.6%
8	11.6%	13.4%	49.5%	25.5%
10	14.2%	12.7%	46.7%	26.4%
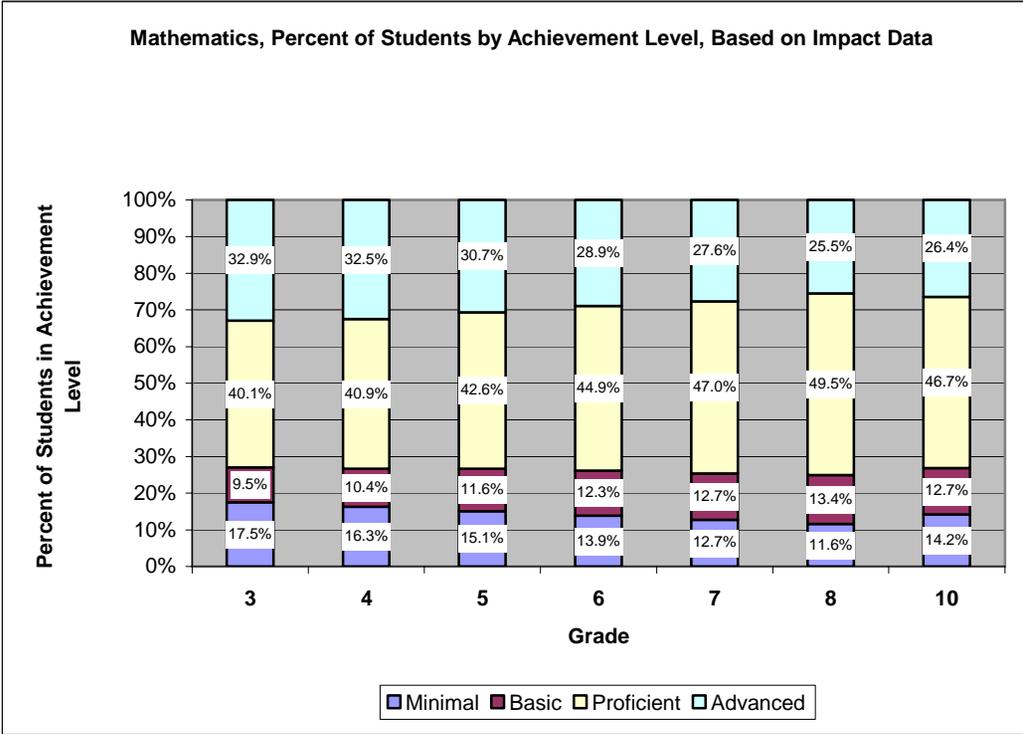
Figure 8 Percent of Students for Language Arts

Language Arts, Percent of Students by Achievement Level, Based on Impact Data
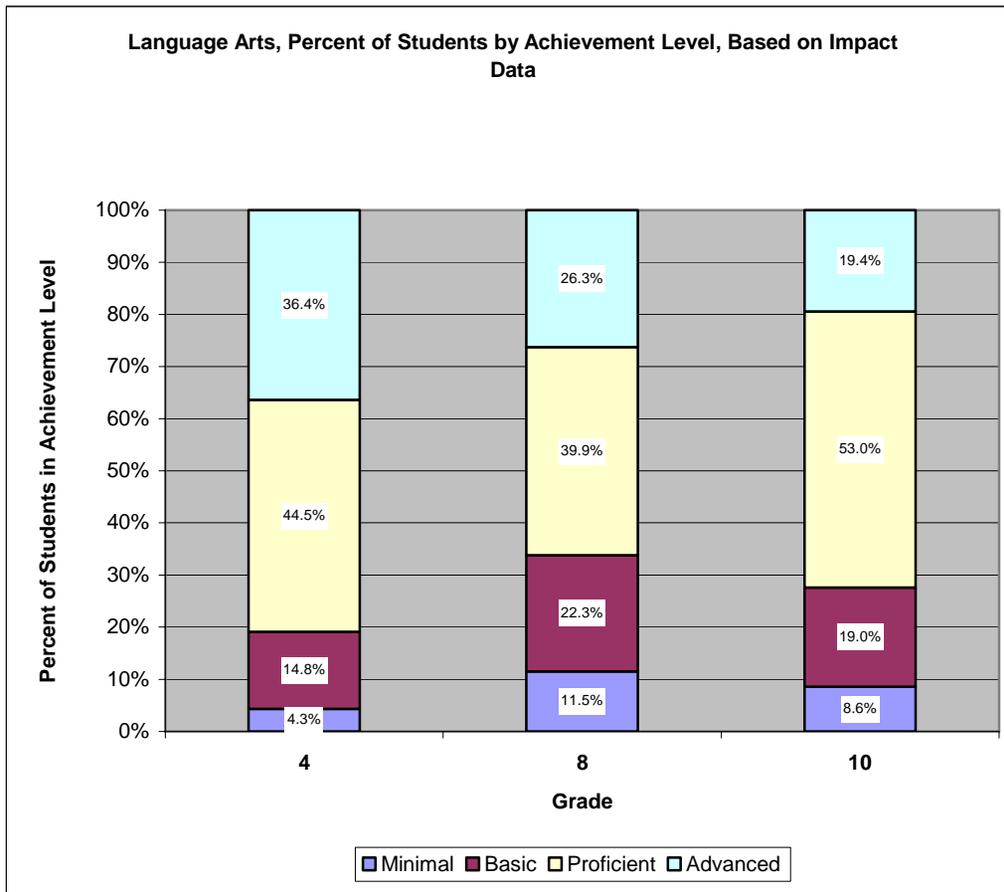
Figure 9 Percent of Students for Social Studies

Social Studies, Percent of Students by Achievement Level, Based on Impact Data

Grade 4: Advanced 64.6%, Proficient 28.5%, Basic 5.2%, Minimal 1.8%

Grade 8: Advanced 44.9%, Proficient 40.0%, Basic 11.2%, Minimal 3.9%

Grade 10: Advanced 45.6%, Proficient 30.7%, Basic 6.8%, Minimal 16.9%

Y-axis: Percent of Students in Achievement Level
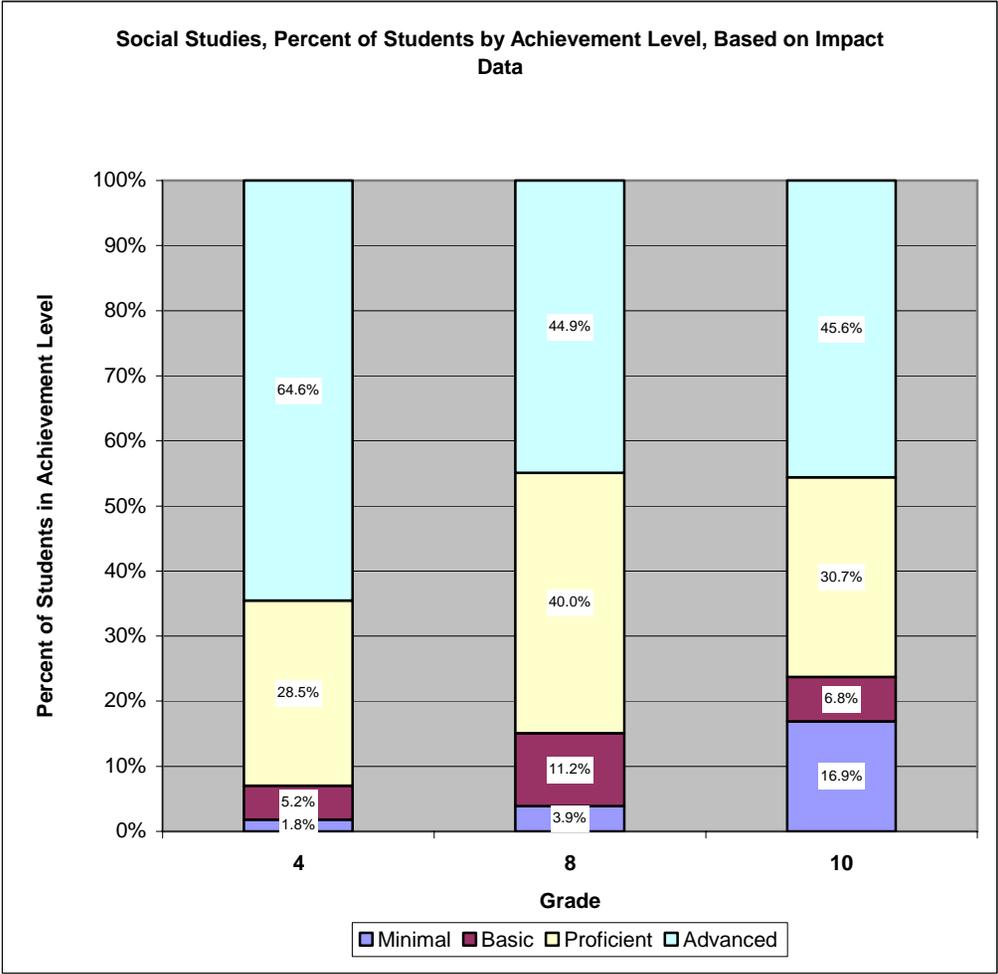
X-axis: Grade

Legend: Minimal, Basic, Proficient, Advanced

Figure 10 Percent of Students for Science

Science, Percent of Students by Achievement Level, Based on Impact Data