

**SREB**

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# **Getting More Students to Meet Standards:**

## **Research-based Practices That Work**

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# High- and Low-implementation Sites Have Comparative Students

	High Sites	Low Sites
African-American	20%	21%
White	66	65
Other minorities	14	14

# Students Meeting Performance Goals

	High	Low	All Schools	Goal
Reading	66%	48%	53%	85%
Mathematics	68	51	55	85
Science	57	42	45	85

# Mean Achievement Scores at High- and Low-implementation Sites

	High	Low	Goals
Reading	287	272	279
Mathematics	306	293	297
Science	300	285	299

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# **Why are the scores at the high-implementation schools better?**

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# **Key Practice #1**

**Increase students' access to academic studies that teach college-preparatory content to all students.**

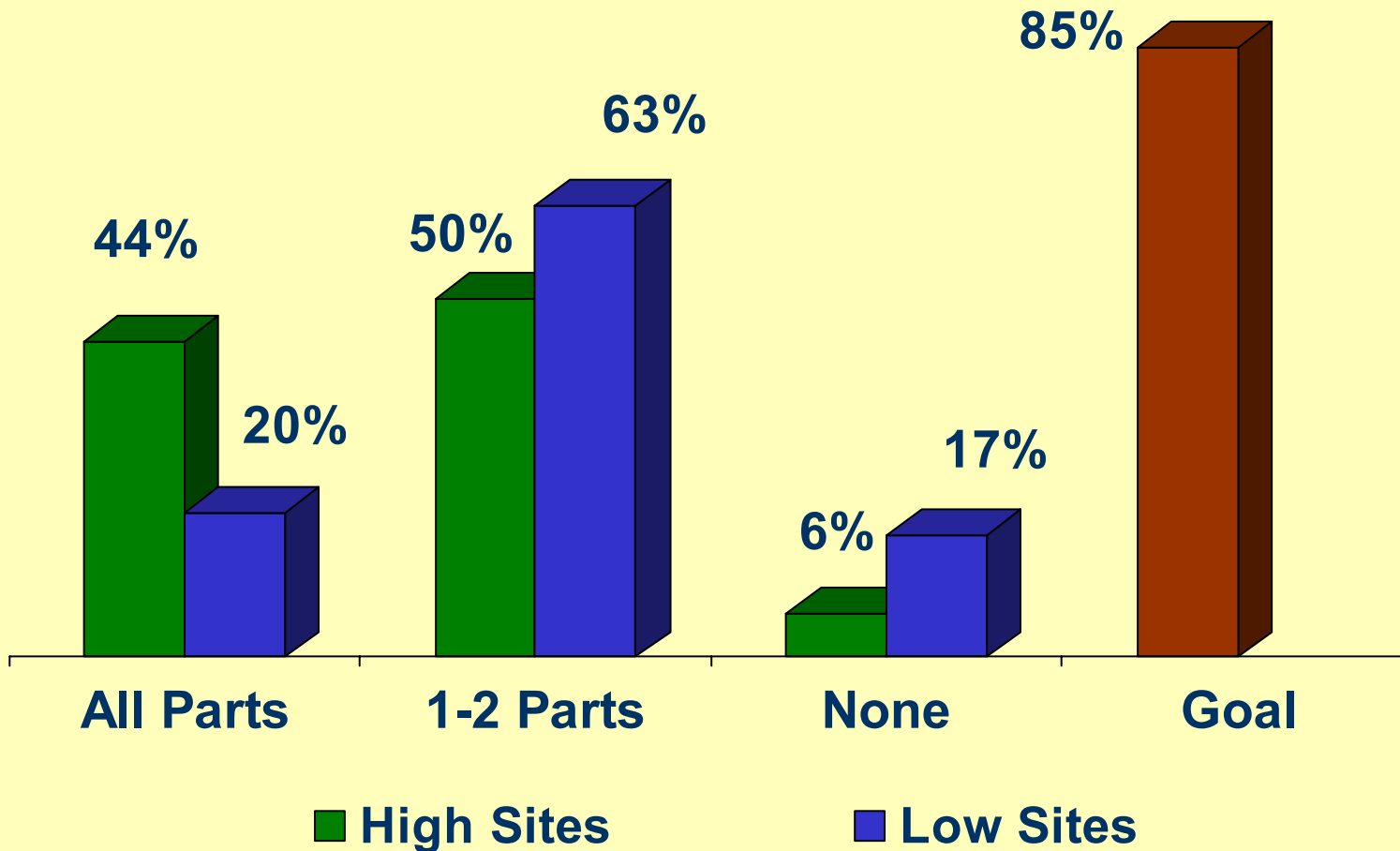
# Recommended Academic Core for All Students

- Four credits in college-prep/honors English
- Four mathematics credits – Algebra I, geometry, Algebra II and above
- Three science credits at the college-prep level; four credits with a block schedule
- Three years of social studies
- Mathematics in the senior year

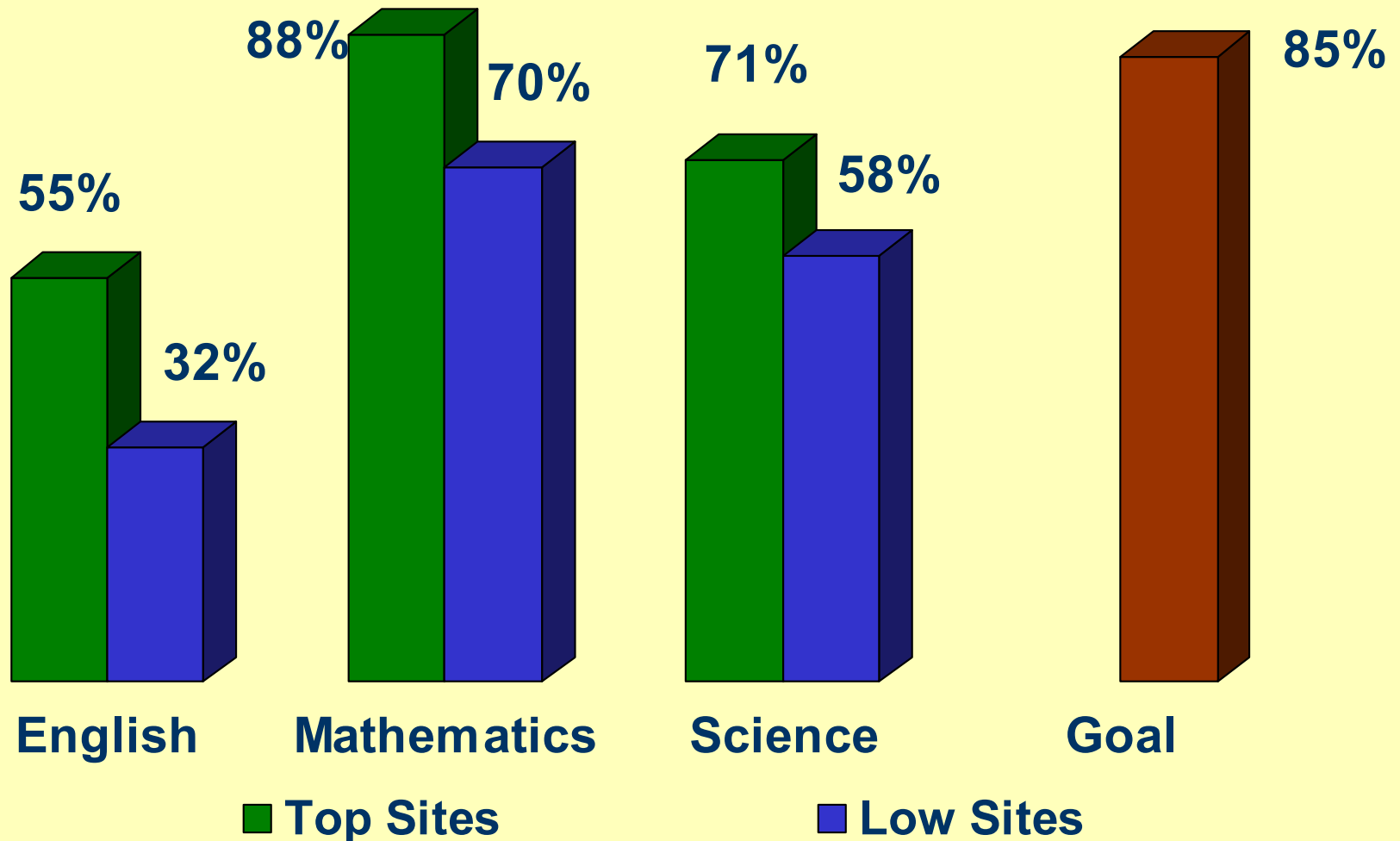
# Recommended Concentrations

- **Mathematics and science concentration** – four credits in each field, with at least one at the Advanced Placement level
- **Humanities concentration** – four credits each in college-prep-level language arts and social studies, with at least one at the Advanced Placement level and four additional credits from foreign language, fine arts, journalism, debate, etc.
- **Career/technical concentration** – four credits in a planned sequence of courses within a broad career field – pre-engineering, health/medical science, etc.

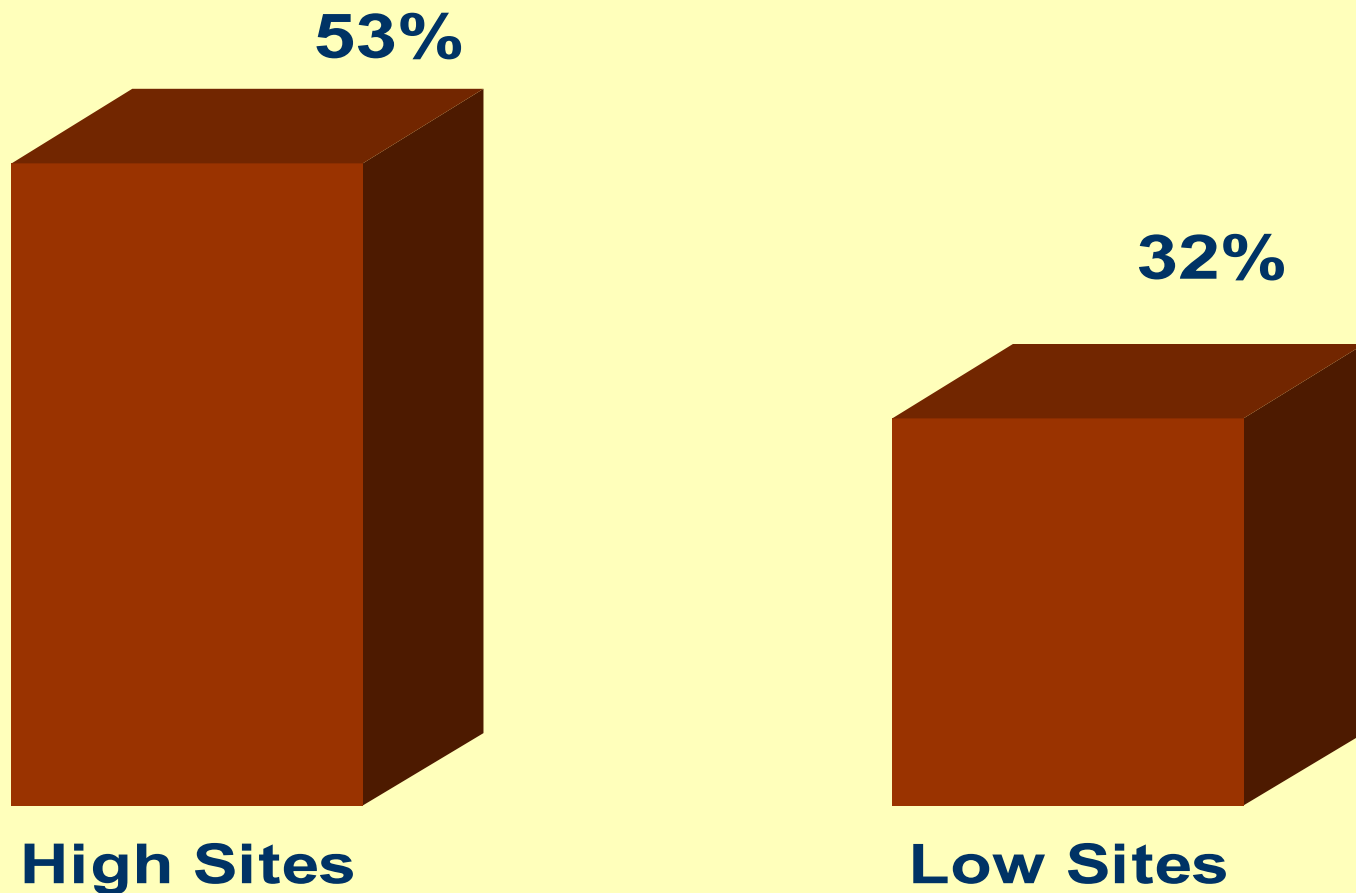
# Recommended Curriculum: High- and Low-implementation Sites



# Comparison of High- and Low-implementation Sites by Recommended Curriculum Areas



# Completing Four Mathematics Credits — Algebra I and Higher at High- and Low- implementation Sites



# Achievement Gains from 2000 to 2002 by Type of Schedule

Type of schedule and credits required	Achievement Points Gained		
	Reading	Math	Science
Traditional schedule (20-23 credits)	5	0	4
Block schedule (20-23 credits)	6	0	2
Block schedule (24-30 credits)	2	-1	1
Block schedule – 4 math, 4 science (24-30 credits)	6	3	11

## **Key Practices #2 and #3**

**Increase access to challenging career/technical studies with a major emphasis on using high-level mathematics, science, language arts and problem-solving skills, and provide access to work-based and school-based learning planned cooperatively by educators and employers.**

# Learning Experiences in Career/Technical Studies

<b>Specific Practices</b>	<b>High Sites</b>	<b>Low Sites</b>
<b>Complete 4 or more technical courses.</b>	<b>92%</b>	<b>79%</b>
<b>Use computer to complete assignments weekly.</b>	<b>68</b>	<b>53</b>
<b>Talk with persons from chosen field.</b>	<b>75</b>	<b>63</b>

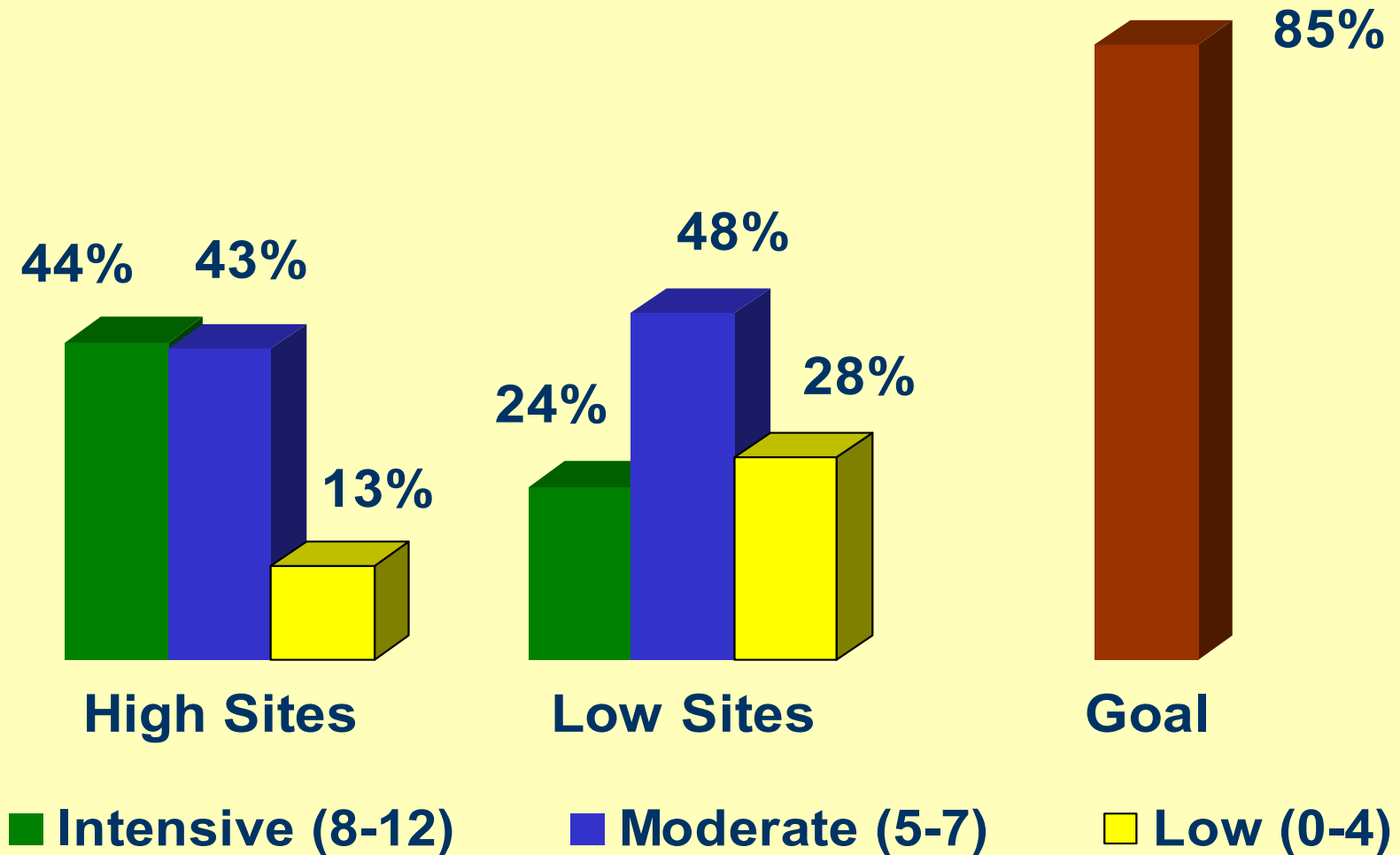
# Learning Experiences in Career/Technical Studies

<b>Specific Practices</b>	<b>High Sites</b>	<b>Low Sites</b>
<b>Use mathematics.</b>	<b>27%</b>	<b>20%</b>
<b>Read technical materials.</b>	<b>32</b>	<b>23</b>
<b>Read related articles.</b>	<b>59</b>	<b>44</b>
<b>Do research to plan a project.</b>	<b>86</b>	<b>74</b>

# Learning Experiences in Career/Technical Studies

<b>Specific Practices</b>	<b>High Sites</b>	<b>Low Sites</b>
<b>Mathematics-related homework</b>	<b>16%</b>	<b>10%</b>
<b>Senior project</b>	<b>67</b>	<b>55</b>
<b>End-of-course exams</b>	<b>77</b>	<b>70</b>
<b>Outside reading</b>	<b>44</b>	<b>38</b>

# Quality Technical Studies at High- and Low-implementation Sites



# Number of Career/Technical Courses Taken at High- and Low- implementation Sites

Number of Courses	High	Low
3 or less	11%	30%
4 to 5	28	28
6 or more	61	42

# Comparison of Work-based Learning Experiences at High- and Low-implementation Sites

<b>Specific Work-site Learning Practices</b>	<b>High</b>	<b>Low</b>
<b>Observed veteran workers.</b>	<b>55%</b>	<b>52%</b>
<b>Mentor gave job instruction.</b>	<b>83</b>	<b>76*</b>
<b>Mentor encouraged good work habits.</b>	<b>72</b>	<b>61*</b>
<b>Mentor encouraged good customer relation skills.</b>	<b>74</b>	<b>62*</b>

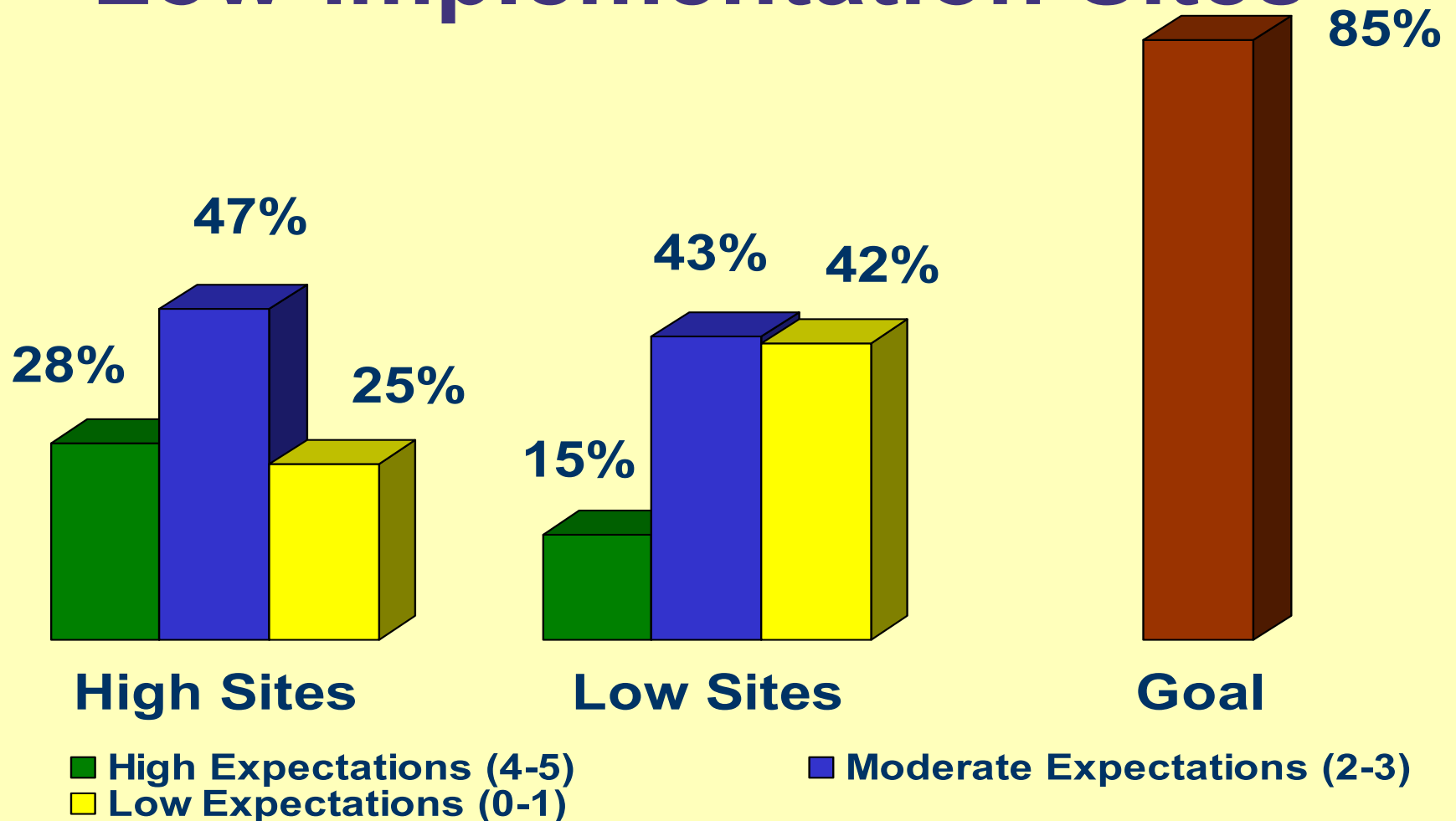
# **Key Practice #4**

**Set high  
expectations and  
get students to  
meet them.**

# High Expectation Practices at High- and Low-implementation Sites

<b>Specific Practices</b>	<b>High</b>	<b>Low</b>
<b>State amount and quality of work for an “A” or a “B”</b>	<b>56%</b>	<b>42%</b>
<b>Teachers’ availability for extra help</b>	<b>66</b>	<b>55</b>
<b>One or more hours of homework daily</b>	<b>31</b>	<b>20</b>
<b>Revise written work</b>	<b>48</b>	<b>34</b>
<b>Work hard to meet high standards</b>	<b>54</b>	<b>43</b>

# Expectations at High- and Low-implementation Sites



# Key Practice #5

**Students actively engaged – getting every student involved in rigorous and challenging learning**

- **Engage students in using:**
  - **literacy for learning,**
  - **numeracy for learning and**
  - **science for learning.**

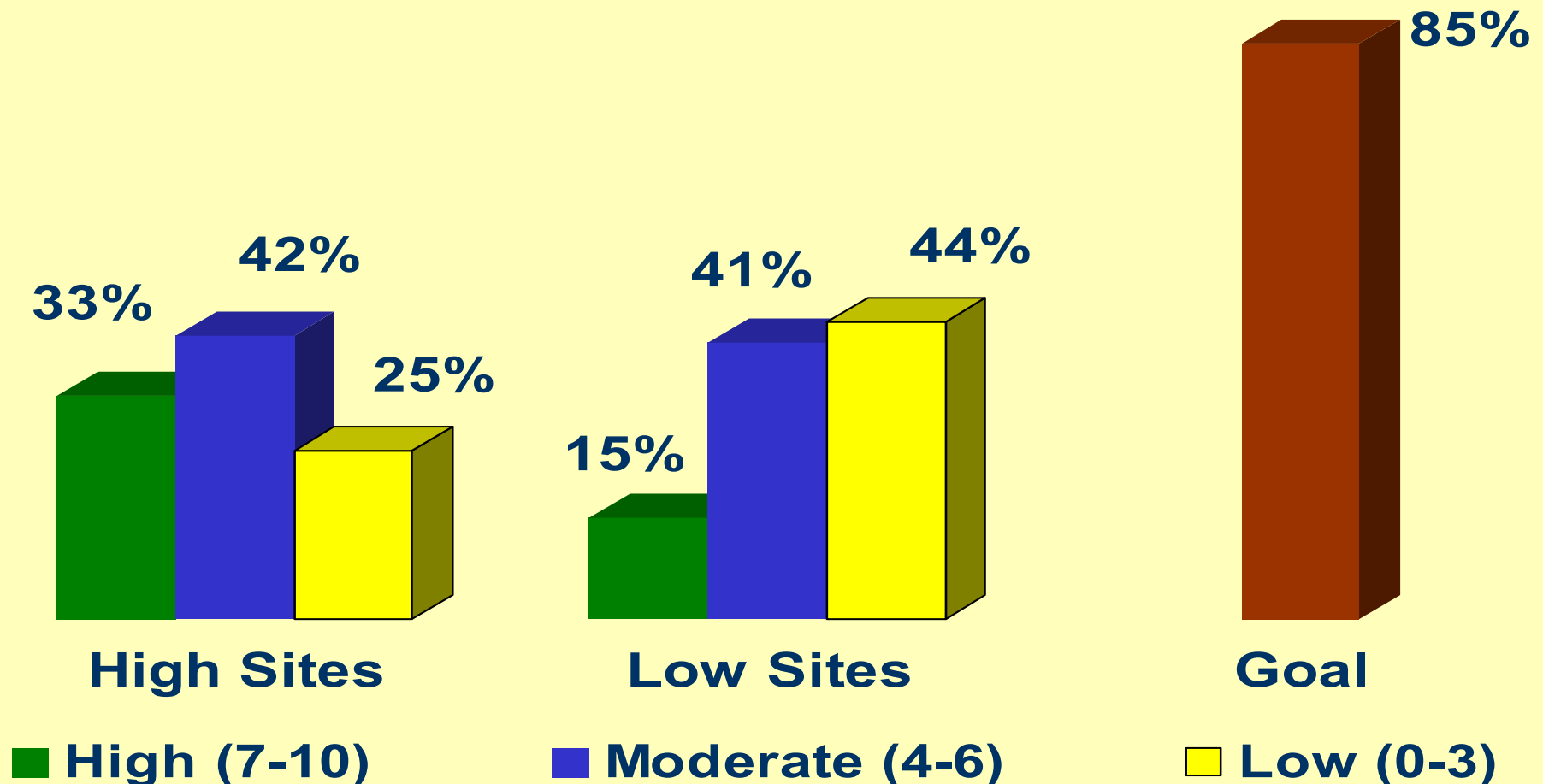
# Literacy Experiences at High- and Low-implementation Sites

Literacy practices	High	Low
Revise written work for quality (often)	48%	34%
Write in-depth explanations (frequently)	66	53
Complete short writings in English (monthly)	77	66
in science (monthly)	39	27
in social studies (monthly)	48	35

# Specific Literacy Experiences at High- and Low-implementation Sites

Literacy practices	High	Low
Use word processor (weekly)	61%	45%
Discuss topics with other students	63	56
Read books outside of class (monthly)	40	25
Read technical materials in class (monthly)	64	49
Read outside of school (two hours weekly)	24	20

# Literacy Across the Curriculum at High- and Low-implementation Sites



# Specific Numeracy Experiences at High- and Low-implementation Sites

<b>Numeracy Practices</b>	<b>High</b>	<b>Low</b>
<b>4 courses, Algebra I and higher</b>	<b>55%</b>	<b>36%</b>
<b>Mathematics the senior year</b>	<b>73</b>	<b>62</b>
<b>4 or more mathematics courses</b>	<b>71</b>	<b>52</b>

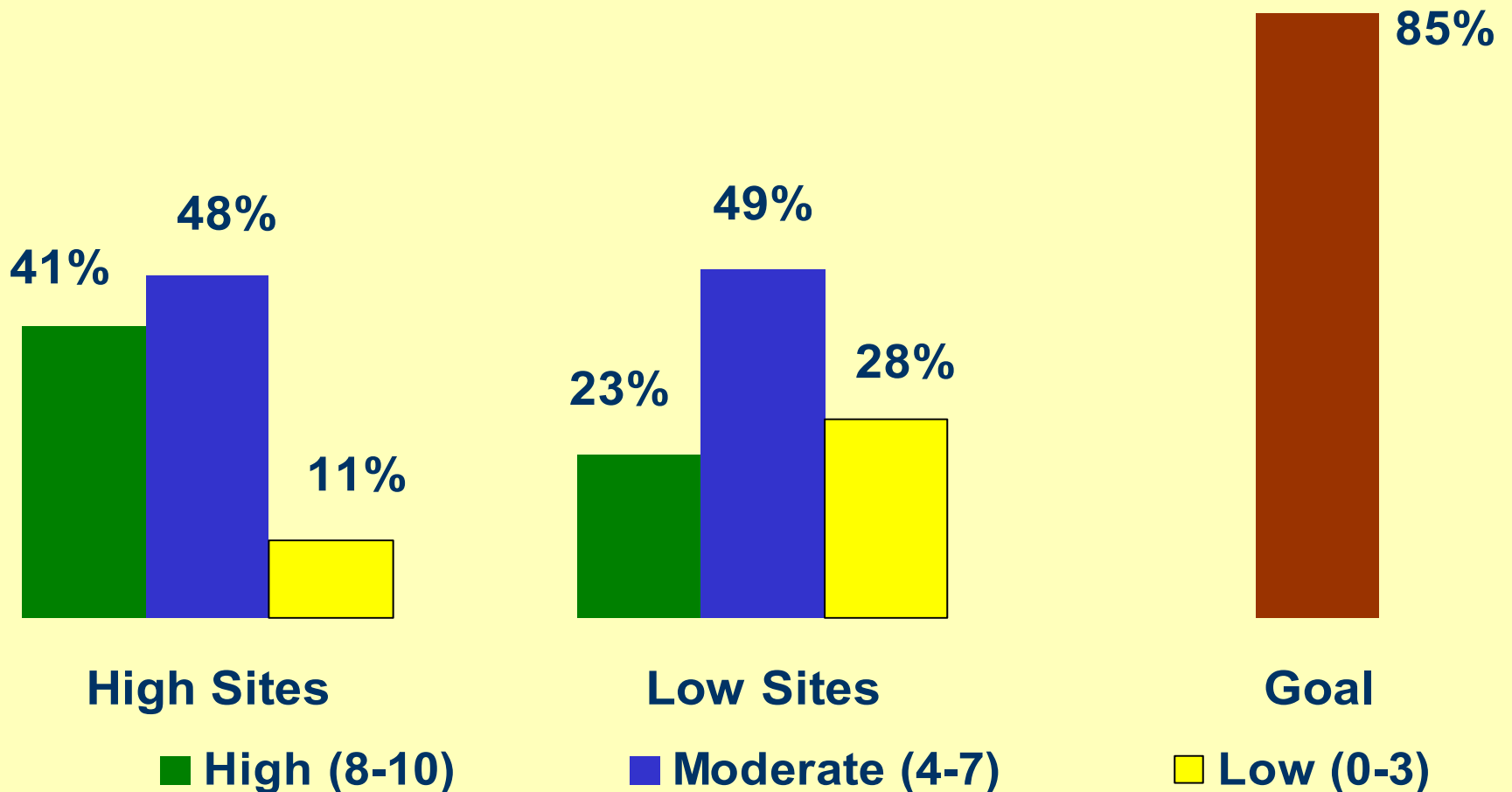
# Numeracy Experiences at High- and Low-implementation Sites

<b>Numeracy Practices</b>	<b>High</b>	<b>Low</b>
<b>Teachers link mathematics to real-life problems</b>	<b>75%</b>	<b>66%</b>
<b>Work-related mathematics problems</b>	<b>35</b>	<b>29</b>
<b>Use of mathematics in career/technical assignments</b>	<b>57</b>	<b>46</b>
<b>Solve problems outside textbook</b>	<b>71</b>	<b>55</b>

# Numeracy Experiences at High- and Low-implementation Sites

<b>Numeracy Practices</b>	<b>High</b>	<b>Low</b>
<b>Orally explain processes.</b>	<b>34%</b>	<b>24%</b>
<b>Work with others on assignments.</b>	<b>51</b>	<b>41</b>
<b>Groups brainstorm to solve problems.</b>	<b>60</b>	<b>47</b>
<b>Solve open-ended problems.</b>	<b>71</b>	<b>58</b>
<b>Use graphing calculator.</b>	<b>78</b>	<b>62</b>

# Numeracy Across the Curriculum at High- and Low-implementation Sites



# Science Experiences at High- and Low-implementation Sites

<b>Science Practices</b>	<b>High</b>	<b>Low</b>
<b>Completed at least three – CP physical science, CP biology, Biology II, anatomy, CP Chemistry, physics</b>	<b>35%</b>	<b>23%</b>
<b>Took science the senior year</b>	<b>67</b>	<b>45</b>
<b>Science teachers often show how scientific concepts are used in real-life situations</b>	<b>39</b>	<b>28</b>
<b>Used science equipment to do activities in a lab</b>	<b>41</b>	<b>26</b>

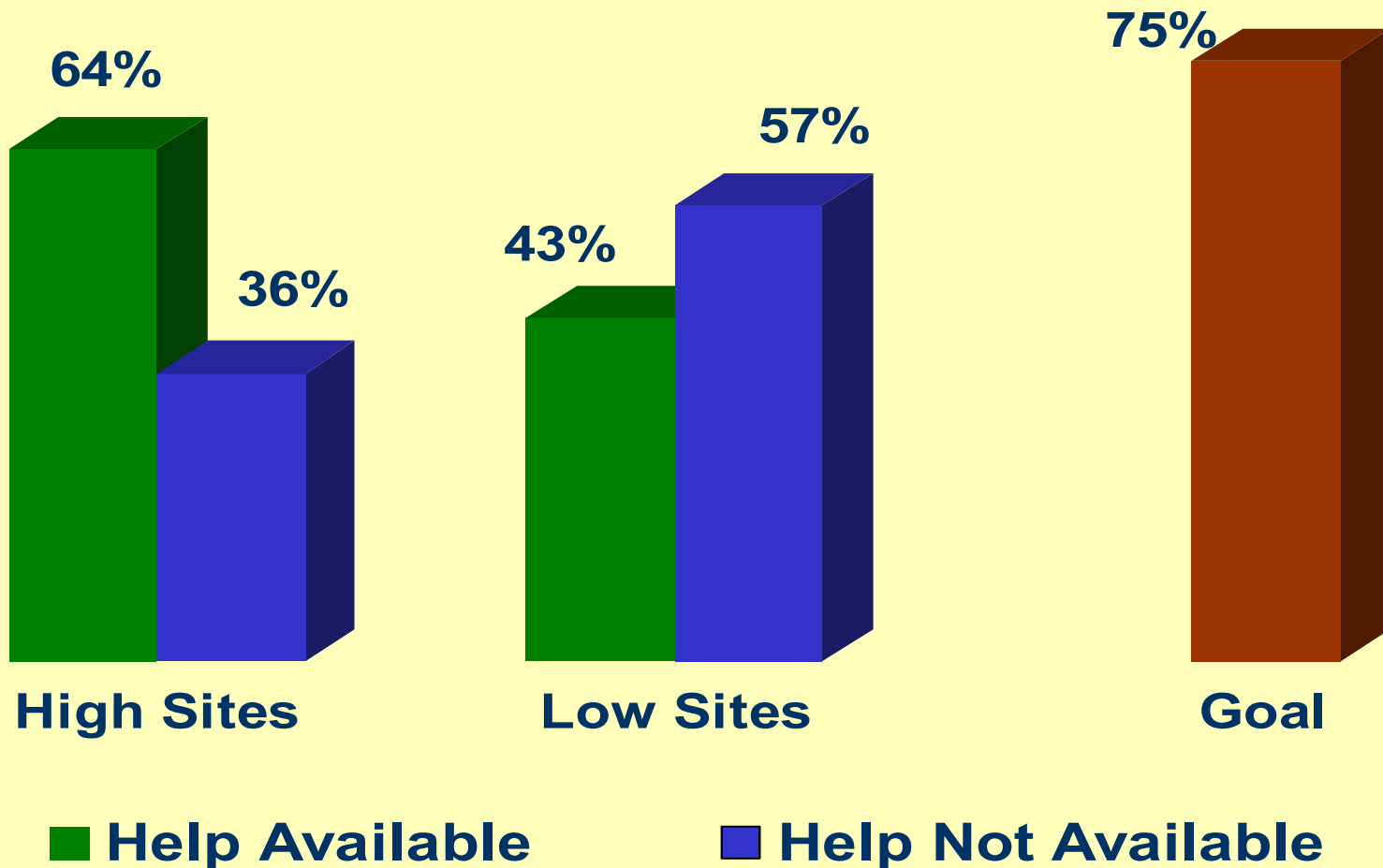
# Science Experiences at High- and Low-implementation Sites

<b>Science Practices</b>	<b>High</b>	<b>Low</b>
<b>Read an assigned book (other than text book) or article dealing with science at least monthly</b>	<b>44%</b>	<b>35%</b>
<b>Used science equipment to do science activity in the classroom at least monthly</b>	<b>77</b>	<b>60</b>
<b>Worked with one or more students in classroom on science at least monthly</b>	<b>74</b>	<b>57</b>
<b>Prepared a written report on science project at least monthly</b>	<b>53</b>	<b>41</b>

# **Key Practice #6**

**Provide a structured system of extra help to assist students in meeting higher standards.**

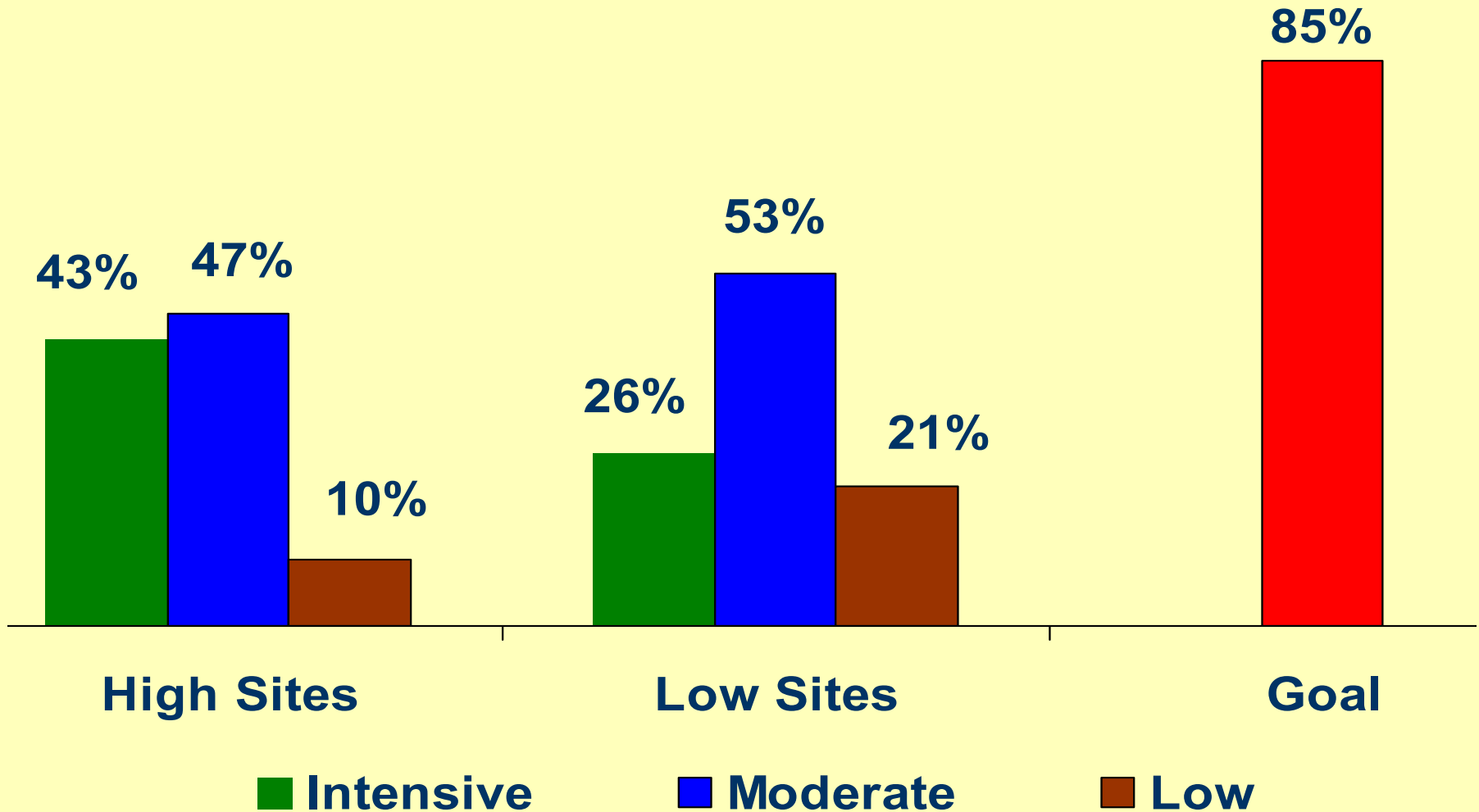
# Percentage of Students Receiving Extra Help at High- and Low-implementation Sites



# **Key Practice #7**

**Involve students and parents in a guidance and advisement system designed to ensure that students complete an accelerated academic program of study and a major.**

# Guidance Experiences at High- and Low-implementation Schools



# Guidance Practices at High- and Low-implementation Sites

<b>Guidance Practices</b>	<b>High</b>	<b>Low</b>
<b>Encouraged to take more math more science</b>	<b>18%</b> <b>15</b>	<b>12%</b> <b>9</b>
<b>Planned program by end of grade 9</b>	<b>59</b>	<b>52</b>
<b>Talked with parents about high school plans</b>	<b>81</b>	<b>73</b>

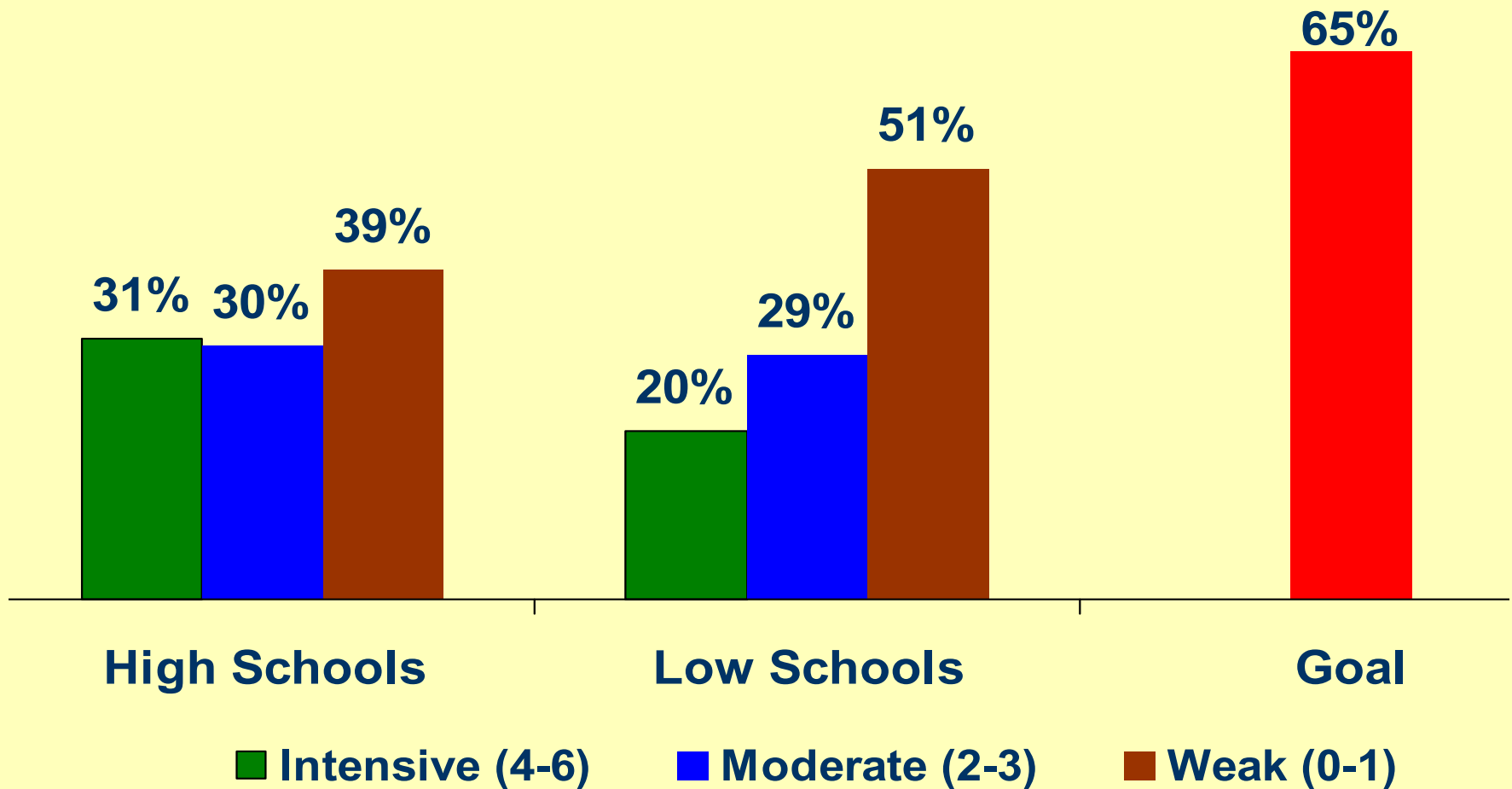
# Guidance Practices at High- and Low-implementation Sites

<b>Guidance Practices</b>	<b>High</b>	<b>Low</b>
<b>Talked with teachers about plans after high school</b>	<b>90%</b>	<b>80%</b>
<b>Annual parent-teacher-student conferences</b>	<b>36</b>	<b>30</b>
<b>Annual meeting to review program of study</b>	<b>72</b>	<b>51</b>

## **Key Practice #8**

**Use student assessment and program evaluation data to improve curriculum, instruction, school climate, organization and management to advance student learning.**

# Continuous Improvement Experiences at High- and Low-implementation Schools



# Leadership Practices at High- and Low-implementation Sites

<b>Continuous Improvement Practices</b>	<b>High</b>	<b>Low</b>
<b>Goals are clear.</b>	<b>48%</b>	<b>36%*</b>
<b>Teachers maintain a demanding and supportive environment.</b>	<b>42</b>	<b>32*</b>
<b>Principals meet with teachers to examine student work.</b>	<b>39</b>	<b>29*</b>

# Leadership Practices at High- and Low-implementation Sites

<b>Continuous Improvement Practices</b>	<b>High</b>	<b>Low</b>
<b>Teachers continue to learn and seek out new ideas.</b>	<b>49%</b>	<b>39%*</b>
<b>Teachers/administrators work as a team.</b>	<b>39</b>	<b>31*</b>
<b>Teachers use data to evaluate school and classroom practices.</b>	<b>29</b>	<b>19*</b>

# Major Drivers for Improving Student Achievement

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- **Rigorous academic core**
- **High quality  
career/technical courses**
- **Reasoning for learning  
content**
- **Challenging assignments**

# Major Drivers for Improving Student Achievement

## Consensus on what it means to:

- Teach to high standards
- Teach well
- Make students independent learners
- Create a climate of continuous improvement
- Provide extra help

# Major Drivers for Improving Student Achievement

**A mentor to assist each student to:**

- **Explore and set postsecondary school goals**
- **Develop a program of student work**
- **Make sure students receive needed extra help**

# Major Drivers for Improving Student Achievement

## Transition:

- Middle grades – high school
- High School – postsecondary
- Use the senior year to get ready as a jump start

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# Higher Achieving Schools Deeply Implement the Key Practices.

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