

# 2023 KML Schools Conference

## Analyzing ACT Data to Improve Instruction

ESSENTIAL QUESTION - How can ACT and PreACT results be used to improve instruction?

*“The goal is to turn data into information, and information into insight.”* – Carly Fiorina, former CEO, Hewlett-Packard

GOAL - In this session we will analyze KMLHS PreACT and ACT data to find areas of strength, gaps and areas in which our students struggle and then identify steps we can take to improve our own instruction.

What would you need to know and be able to do in order to answer the questions on pages 34-37 correctly?

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Are KML students ready?

Figure 1.1. Average Composite Scores: 5 Years of Testing\*

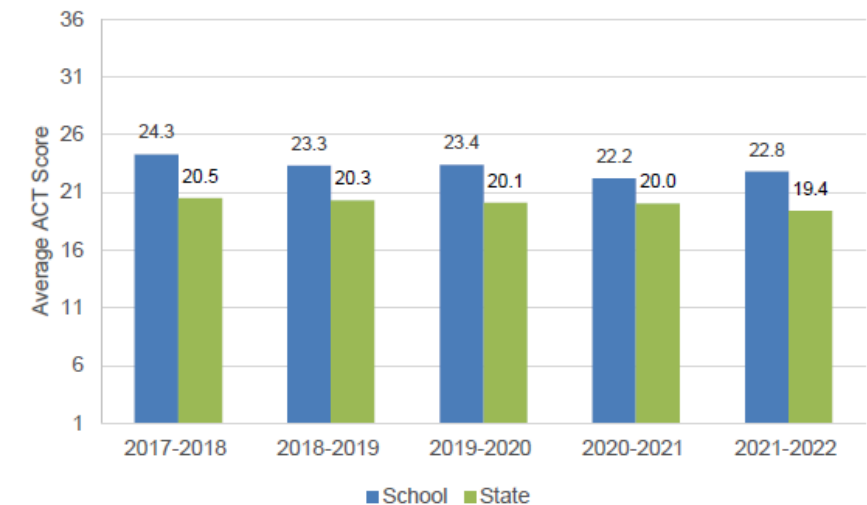


Figure 1.2. Percent Meeting 3 or 4 Benchmarks: 5 Years of Testing\*

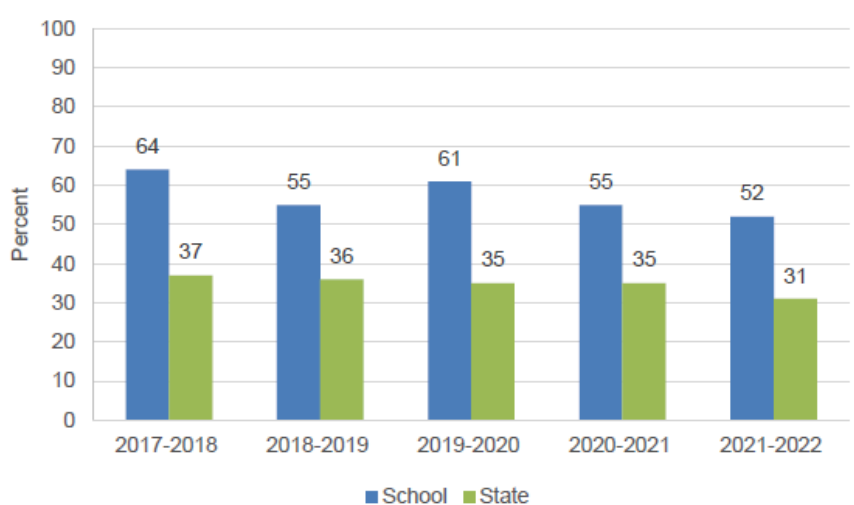


Figure 1.3. Percent Meeting STEM Benchmark: 5 Years of Testing\*

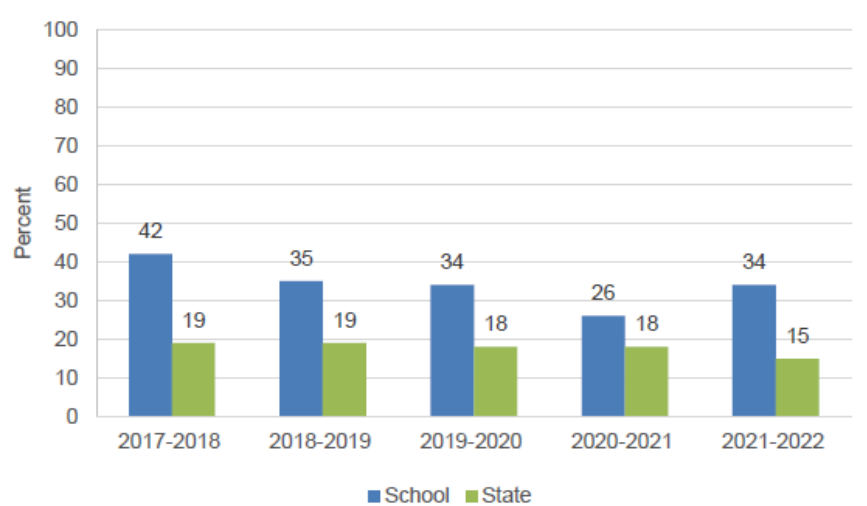
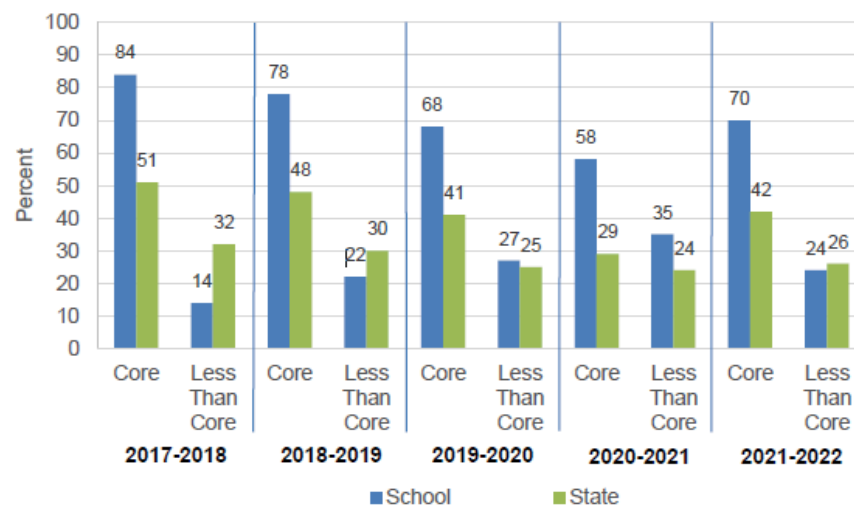


Figure 1.4. Percent Taking A Core Curriculum: 5 Years of Testing\*



**Table 1.1. Five Year Trends—Percent of Students Who Met College Readiness Benchmarks**

| Year | Number of Students |        | Percent Who Met Benchmarks |       |             |       |         |       |         |       |              |       |
|------|--------------------|--------|----------------------------|-------|-------------|-------|---------|-------|---------|-------|--------------|-------|
|      | Tested             |        | English                    |       | Mathematics |       | Reading |       | Science |       | Met All Four |       |
|      | School             | State  | School                     | State | School      | State | School  | State | School  | State | School       | State |
| 2018 | 104                | 68,000 | 85                         | 59    | 63          | 40    | 72      | 42    | 63      | 36    | 52           | 25    |
| 2019 | 95                 | 66,729 | 80                         | 56    | 58          | 39    | 61      | 40    | 55      | 36    | 42           | 24    |
| 2020 | 117                | 65,443 | 82                         | 54    | 56          | 35    | 65      | 41    | 62      | 35    | 44           | 23    |
| 2021 | 121                | 63,819 | 79                         | 55    | 55          | 37    | 60      | 39    | 59      | 36    | 42           | 24    |
| 2022 | 125                | 62,024 | 74                         | 49    | 54          | 31    | 58      | 37    | 51      | 32    | 38           | 20    |

**Table 1.2. Five Year Trends—Average ACT Scores**

| Year | Number of Students |        | Average ACT Scores |       |             |       |         |       |         |       |           |       |
|------|--------------------|--------|--------------------|-------|-------------|-------|---------|-------|---------|-------|-----------|-------|
|      | Tested             |        | English            |       | Mathematics |       | Reading |       | Science |       | Composite |       |
|      | School             | State  | School             | State | School      | State | School  | State | School  | State | School    | State |
| 2018 | 104                | 68,000 | 24.2               | 19.8  | 23.9        | 20.3  | 24.5    | 20.6  | 24.4    | 20.8  | 24.3      | 20.5  |
| 2019 | 95                 | 66,729 | 22.6               | 19.4  | 23.1        | 20.2  | 23.6    | 20.4  | 23.2    | 20.6  | 23.3      | 20.3  |
| 2020 | 117                | 65,443 | 22.8               | 19.1  | 22.7        | 19.9  | 24.4    | 20.5  | 23.3    | 20.3  | 23.4      | 20.1  |
| 2021 | 121                | 63,819 | 21.5               | 18.9  | 22.1        | 19.9  | 22.4    | 20.3  | 22.7    | 20.4  | 22.2      | 20.0  |
| 2022 | 125                | 62,024 | 21.9               | 18.3  | 22.9        | 19.3  | 23.2    | 19.7  | 23.0    | 19.8  | 22.8      | 19.4  |

**Table 1.3. Five Year Trends—Average ACT Scores Nationwide**

| Year | Number of Students |  | Average ACT Scores |             |         |         |           |
|------|--------------------|--|--------------------|-------------|---------|---------|-----------|
|      | Tested             |  | English            | Mathematics | Reading | Science | Composite |
| 2018 | 1,914,817          |  | 20.2               | 20.5        | 21.3    | 20.7    | 20.8      |
| 2019 | 1,782,820          |  | 20.1               | 20.4        | 21.2    | 20.6    | 20.7      |
| 2020 | 1,670,497          |  | 19.9               | 20.2        | 21.2    | 20.6    | 20.6      |
| 2021 | 1,295,349          |  | 19.6               | 19.9        | 20.9    | 20.4    | 20.3      |
| 2022 | 1,349,644          |  | 19.0               | 19.3        | 20.4    | 19.9    | 19.8      |

**Table 1.4. Five Year Trends—Average ACT Scores by Level of Preparation**

| Year | Number of Students Tested |                | Percent <sup>2</sup> |                | Average ACT Scores |                |              |                |              |                |              |                |              |                |
|------|---------------------------|----------------|----------------------|----------------|--------------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|
|      |                           |                |                      |                | English            |                | Mathematics  |                | Reading      |                | Science      |                | Composite    |                |
|      | Core or More <sup>1</sup> | Less than Core | Core or More         | Less than Core | Core or More       | Less than Core | Core or More | Less than Core | Core or More | Less than Core | Core or More | Less than Core | Core or More | Less than Core |
| 2018 | 87                        | 15             | 84                   | 14             | 25.2               | 19.1           | 24.8         | 19.4           | 25.2         | 20.1           | 25.3         | 19.6           | 25.2         | 19.7           |
| 2019 | 74                        | 21             | 78                   | 22             | 23.8               | 18.4           | 24.4         | 18.7           | 25.0         | 18.8           | 24.3         | 19.5           | 24.5         | 18.9           |
| 2020 | 79                        | 32             | 68                   | 27             | 24.2               | 21.0           | 24.3         | 19.9           | 25.9         | 22.3           | 25.0         | 20.3           | 25.0         | 21.0           |
| 2021 | 70                        | 42             | 58                   | 35             | 23.6               | 18.6           | 24.2         | 19.1           | 24.1         | 19.7           | 24.3         | 20.2           | 24.0         | 19.6           |
| 2022 | 88                        | 30             | 70                   | 24             | 23.4               | 19.0           | 23.9         | 21.2           | 24.7         | 20.0           | 23.9         | 21.6           | 24.1         | 20.6           |

<sup>1</sup>"Core or More" results correspond to students taking four or more years of English AND three or more years each of math, social studies, and natural science.

<sup>2</sup>Percent of all students tested. Numbers will not add up to 100% due to student non-response.

**Table 1.5. Five Year Trends—Percent and Average Composite Score by Race/Ethnicity**

| Race/Ethnicity                         | 2018       |            |             | 2019      |            |             | 2020       |            |             | 2021       |            |             | 2022       |            |             |
|----------------------------------------|------------|------------|-------------|-----------|------------|-------------|------------|------------|-------------|------------|------------|-------------|------------|------------|-------------|
|                                        | N          | %          | Avg         | N         | %          | Avg         | N          | %          | Avg         | N          | %          | Avg         | N          | %          | Avg         |
| <b>All Students</b>                    | <b>104</b> | <b>100</b> | <b>24.3</b> | <b>95</b> | <b>100</b> | <b>23.3</b> | <b>117</b> | <b>100</b> | <b>23.4</b> | <b>121</b> | <b>100</b> | <b>22.2</b> | <b>125</b> | <b>100</b> | <b>22.8</b> |
| Black/African American                 | 1          | 1          | 24.0        | 1         | 1          | 16.0        | 0          | 0          | .           | 0          | 0          | .           | 0          | 0          | .           |
| American Indian/Alaska Native          | 0          | 0          | .           | 1         | 1          | 22.0        | 0          | 0          | .           | 0          | 0          | .           | 0          | 0          | .           |
| White                                  | 96         | 92         | 24.4        | 80        | 84         | 23.8        | 105        | 90         | 23.8        | 99         | 82         | 22.4        | 113        | 90         | 23.0        |
| Hispanic/Latino                        | 3          | 3          | 19.3        | 1         | 1          | 17.0        | 1          | 1          | 17.0        | 5          | 4          | 18.6        | 1          | 1          | 21.0        |
| Asian                                  | 0          | 0          | .           | 5         | 5          | 20.0        | 3          | 3          | 18.0        | 4          | 3          | 26.8        | 3          | 2          | 21.3        |
| Native Hawaiian/Other Pacific Islander | 0          | 0          | .           | 0         | 0          | .           | 1          | 1          | 20.0        | 0          | 0          | .           | 0          | 0          | .           |
| Two or more races                      | 1          | 1          | 29.0        | 3         | 3          | 20.3        | 3          | 3          | 24.0        | 2          | 2          | 18.5        | 4          | 3          | 26.3        |
| Prefer not to respond/No response      | 3          | 3          | 24.7        | 4         | 4          | 23.8        | 4          | 3          | 19.3        | 11         | 9          | 21.5        | 4          | 3          | 17.0        |

**Table 1.6. Five Year Trends—Achievement in STEM<sup>1</sup>**

| Year | All Tested Students       |        |                 |       |                                |       | Students Meeting STEM Benchmarks |       |                    |       |
|------|---------------------------|--------|-----------------|-------|--------------------------------|-------|----------------------------------|-------|--------------------|-------|
|      | Number of Students Tested |        | Avg. STEM Score |       | Percent Meeting STEM Benchmark |       | Avg. Mathematics Score           |       | Avg. Science Score |       |
|      | School                    | State  | School          | State | School                         | State | School                           | State | School             | State |
| 2018 | 104                       | 68,000 | 24.4            | 20.8  | 42                             | 19    | 29.3                             | 28.2  | 29.3               | 28.6  |
| 2019 | 95                        | 66,729 | 23.5            | 20.6  | 35                             | 19    | 29.0                             | 28.5  | 27.9               | 28.4  |
| 2020 | 117                       | 65,443 | 23.3            | 20.3  | 34                             | 18    | 28.7                             | 28.5  | 27.9               | 28.9  |
| 2021 | 121                       | 63,819 | 22.6            | 20.4  | 26                             | 18    | 28.9                             | 28.6  | 27.3               | 28.5  |
| 2022 | 125                       | 62,024 | 23.2            | 19.8  | 34                             | 15    | 29.0                             | 28.5  | 28.5               | 28.7  |

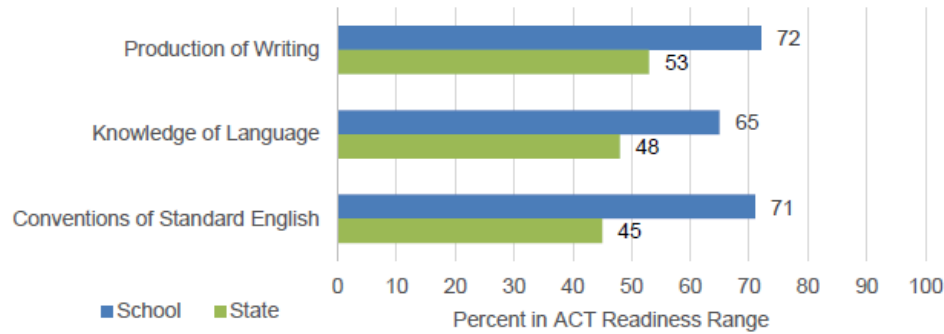
<sup>1</sup>The STEM score describes students' overall proficiency in mathematics and science.

**Table 1.7. Proficiency In Understanding Complex Texts<sup>1</sup>**

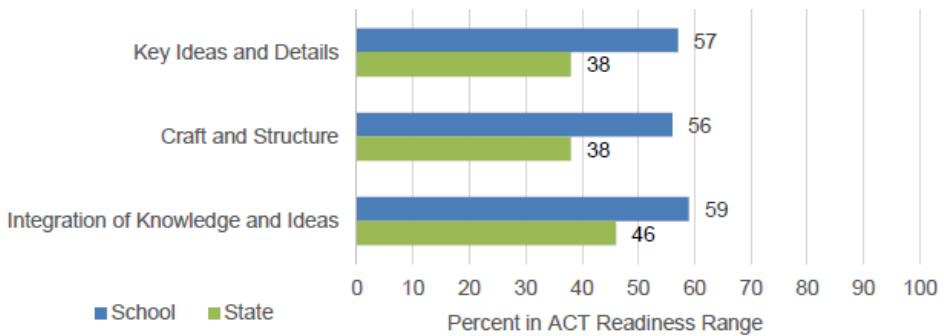
| Year | Text Complexity Proficiency Level |        |         |       |              |       |            |        |         |       |              |       |                  |        |         |       |              |       |
|------|-----------------------------------|--------|---------|-------|--------------|-------|------------|--------|---------|-------|--------------|-------|------------------|--------|---------|-------|--------------|-------|
|      | Below Proficient                  |        |         |       |              |       | Proficient |        |         |       |              |       | Above Proficient |        |         |       |              |       |
|      | N                                 |        | Percent |       | Avg. Reading |       | N          |        | Percent |       | Avg. Reading |       | N                |        | Percent |       | Avg. Reading |       |
|      | School                            | State  | School  | State | School       | State | School     | State  | School  | State | School       | State | School           | State  | School  | State | School       | State |
| 2018 | 37                                | 39,354 | 36      | 58    | 18.1         | 16.3  | 30         | 16,046 | 29      | 24    | 24.8         | 23.7  | 37               | 12,600 | 36      | 19    | 30.5         | 30.4  |
| 2019 | 37                                | 37,908 | 39      | 57    | 17.3         | 16.0  | 28         | 17,527 | 29      | 26    | 24.5         | 23.4  | 30               | 11,294 | 32      | 17    | 30.7         | 30.4  |
| 2020 | 38                                | 37,963 | 32      | 58    | 18.0         | 16.0  | 41         | 15,318 | 35      | 23    | 24.6         | 23.6  | 38               | 12,162 | 32      | 19    | 30.6         | 30.7  |
| 2021 | 45                                | 36,048 | 37      | 56    | 17.3         | 15.7  | 52         | 16,712 | 43      | 26    | 23.4         | 23.2  | 24               | 11,059 | 20      | 17    | 29.5         | 30.8  |
| 2022 | 52                                | 37,482 | 42      | 60    | 17.0         | 15.6  | 30         | 14,976 | 24      | 24    | 24.7         | 23.3  | 43               | 9,566  | 34      | 15    | 29.6         | 30.4  |

<sup>1</sup>The text complexity indicator, beginning in Fall 2015, represents students' progress toward understanding complex written material often encountered in college and careers.

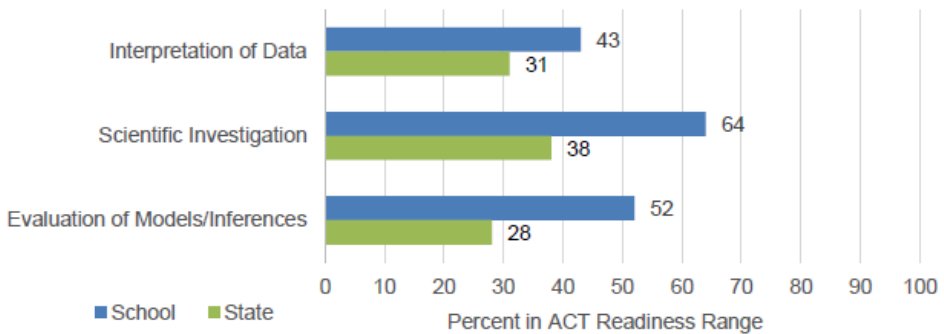
**Figure 2.2. English Reporting Categories**



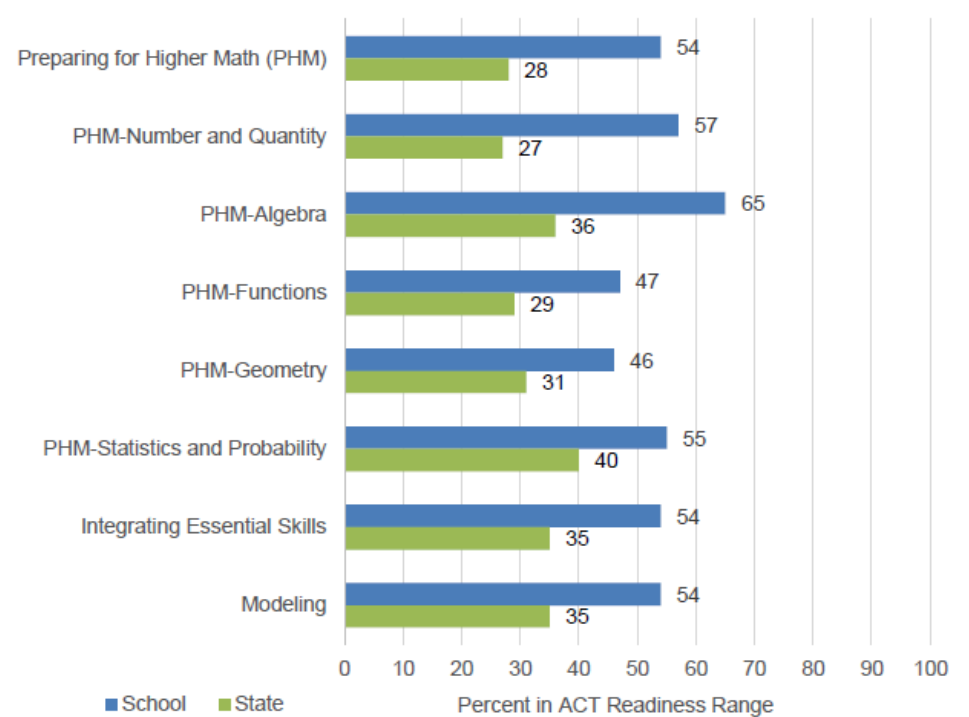
**Figure 2.4. Reading Reporting Categories**



**Figure 2.5. Science Reporting Categories**



**Figure 2.3. Math Reporting Categories**



The charts on this page show the percent of students whose reporting category scores fall within associated ACT Readiness Ranges. ACT Readiness Ranges reflect where a student who has met a particular subject area's ACT College Readiness Benchmark would typically perform within the associated reporting category.

## PreACT 8/9 & PreACT Results

| Group | Admin  | Composite    | Math       |            |       |           |               |                           | Science    |       |           |               |                           | English    |       |           |               |                           | Reading    |       |           |               |                           |
|-------|--------|--------------|------------|------------|-------|-----------|---------------|---------------------------|------------|-------|-----------|---------------|---------------------------|------------|-------|-----------|---------------|---------------------------|------------|-------|-----------|---------------|---------------------------|
|       |        | Valid Number | Mean Score | Mean Score | % Met | % Not Met | % On the Cusp | % In Need of Intervention | Mean Score | % Met | % Not Met | % On the Cusp | % In Need of Intervention | Mean Score | % Met | % Not Met | % On the Cusp | % In Need of Intervention | Mean Score | % Met | % Not Met | % On the Cusp | % In Need of Intervention |
|       |        |              |            |            |       |           |               |                           |            |       |           |               |                           |            |       |           |               |                           |            |       |           |               |                           |
| 9th   | Fall   | 148          | 18.5       | 18.4       | 57    | 43        | 34            | 9                         | 18.7       | 59    | 41        | 15            | 26                        | 16.5       | 81    | 19        | 17            | 2                         | 19.9       | 68    | 32        | 20            | 12                        |
| 9th   | Spring | 145          | 18.1       | 19.8       | 59    | 41        | 16            | 26                        | 17.3       | 36    | 64        | 23            | 41                        | 16.8       | 77    | 23        | 19            | 4                         | 18.2       | 40    | 60        | 24            | 36                        |
| 10th  | Fall   | 123          | 20.5       | 20.4       | 59    | 41        | 18            | 23                        | 20.1       | 55    | 45        | 26            | 19                        | 19.3       | 84    | 16        | 11            | 6                         | 21.9       | 72    | 28        | 10            | 19                        |
| 10th  | Spring | 127          | 20.8       | 21.5       | 62    | 38        | 14            | 24                        | 20.4       | 57    | 43        | 17            | 27                        | 19.5       | 72    | 28        | 16            | 12                        | 21.4       | 54    | 46        | 18            | 28                        |
| 11th  | Spring | 149          | 22.3       | 21.9       |       |           |               |                           | 22.7       |       |           |               |                           | 21.7       |       |           |               |                           | 22.7       |       |           |               |                           |

## PreACT 8/9 & PreACT Results

| Grade 9  | Math 1 | Math 2 | Math $\Delta$ | Science 1 | Science 2 | Science $\Delta$ | English 1 | English 2 | English $\Delta$ | Reading 1 | Reading 2 | Reading $\Delta$ | Composite 1 | Composite 2 | Composite $\Delta$ |
|----------|--------|--------|---------------|-----------|-----------|------------------|-----------|-----------|------------------|-----------|-----------|------------------|-------------|-------------|--------------------|
| MIN      | 11     | 11     | -13           | 8         | 8         | -12              | 8         | 8         | -11              | 4         | 7         | -15              | 9           | 11          | -9                 |
| Q1       | 16     | 15     | -1            | 15        | 13        | -4               | 12        | 13        | -2               | 16        | 13        | -4.25            | 15          | 14          | -2                 |
| Q2       | 17     | 18     | 1             | 19        | 16        | -1               | 15.5      | 16        | 0                | 19        | 16        | -2               | 18          | 17          | 0                  |
| MED      | 17     | 18     | 1             | 19        | 16        | -1               | 15.5      | 16        | 0                | 19        | 16        | -2               | 18          | 17          | 0                  |
| Q3       | 21     | 23     | 3             | 22        | 20        | 1                | 20        | 20        | 2                | 23        | 21        | 1                | 21.25       | 21          | 1                  |
| Q4       | 30     | 35     | 10            | 30        | 35        | 9                | 30        | 35        | 11               | 30        | 35        | 8                | 29          | 34          | 5                  |
| MAX      | 30     | 35     | 10            | 30        | 35        | 9                | 30        | 35        | 11               | 30        | 35        | 8                | 29          | 34          | 5                  |
| AVG      | 18.5   | 19.7   | 1.2           | 18.7      | 17.3      | -1.4             | 16.5      | 16.8      | 0.2              | 19.9      | 18.2      | -1.7             | 18.5        | 18.1        | -0.4               |
|          |        |        |               |           |           |                  |           |           |                  |           |           |                  |             |             |                    |
| Grade 10 | Math 1 | Math 2 | Math $\Delta$ | Science 1 | Science 2 | Science $\Delta$ | English 1 | English 2 | English $\Delta$ | Reading 1 | Reading 2 | Reading $\Delta$ | Composite 1 | Composite 2 | Composite $\Delta$ |
| MIN      | 13     | 10     | -6            | 9         | 10        | -12              | 4         | 7         | -8               | 9         | 10        | -12              | 11          | 11          | -7                 |
| Q1       | 17     | 17     | -1            | 17.25     | 17        | -1               | 15        | 14        | -2               | 17        | 16        | -4               | 17          | 16.25       | -1                 |
| Q2       | 19     | 21     | 1             | 20        | 20        | 0.5              | 19.5      | 20        | 0                | 22        | 20        | 0                | 20          | 20          | 1                  |
| MED      | 19     | 21     | 1             | 20        | 20        | 0.5              | 19.5      | 20        | 0                | 22        | 20        | 0                | 20          | 20          | 1                  |
| Q3       | 24     | 25     | 3             | 23        | 24        | 2                | 23        | 23        | 2                | 27        | 26.5      | 3                | 24          | 25          | 2                  |
| Q4       | 34     | 35     | 9             | 35        | 33        | 10               | 34        | 35        | 8                | 35        | 35        | 13               | 34          | 34          | 6                  |
| MAX      | 34     | 35     | 9             | 35        | 33        | 10               | 34        | 35        | 8                | 35        | 35        | 13               | 34          | 34          | 6                  |
| AVG      | 20.3   | 21.5   | 1.2           | 20.1      | 20.5      | 0.4              | 19.3      | 19.4      | 0.2              | 21.9      | 21.4      | -0.5             | 20.5        | 20.8        | 0.3                |



## PreACT 8/9 & PreACT Results - Math

| Group | Admin  | Composite    |            | Math       |       |           |             |               |                           |  |                              |                           |                   |                 |                 |                 |                          |                              |                 |
|-------|--------|--------------|------------|------------|-------|-----------|-------------|---------------|---------------------------|--|------------------------------|---------------------------|-------------------|-----------------|-----------------|-----------------|--------------------------|------------------------------|-----------------|
|       |        | Valid Number | Mean Score | Mean Score | % Met | % Not Met | % On Target | % On the Cusp | % In Need of Intervention |  | Math                         | Percent Correct           | Percent Correct   | Percent Correct | Percent Correct | Percent Correct | Percent Correct          | Percent Correct              | Percent Correct |
|       |        |              |            |            |       |           |             |               |                           |  |                              |                           |                   |                 |                 |                 |                          |                              |                 |
|       |        |              |            |            |       |           |             |               |                           |  |                              | Preparing for Higher Math | Number & Quantity | Algebra         | Functions       | Geometry        | Statistics & Probability | Integrating Essential Skills | Modeling        |
| 9th   | Fall   | 148          | 18.5       | 18.4       | 57    | 43        | 57          | 34            | 9                         |  | PreACT 8/9 - Gr.9 10.12.22   | 53.13                     | 62.16             | 49.99           | 48.35           | 59.34           | 60.14                    | 62.41                        | 56.84           |
| 9th   | Spring | 145          | 18.1       | 19.8       | 59    | 41        | 59          | 16            | 26                        |  | PreACT Secure Gr. 9 4.19.23  | 47.14                     | 56.41             | 54.41           | 45.3            | 55.42           | 57.28                    | 59.98                        | 49.68           |
| 10th  | Fall   | 123          | 20.5       | 20.4       | 59    | 41        | 59          | 18            | 23                        |  | PreACT - Gr. 10 10.12.22     | 50.26                     | 56.67             | 59.83           | 37.33           | 60.52           | 63.32                    | 64.5                         | 58.43           |
| 10th  | Spring | 127          | 20.8       | 21.5       | 62    | 38        | 62          | 14            | 24                        |  | PreACT Secure Gr. 10 4.19.23 | 53.4                      | 61.07             | 57.91           | 48.38           | 64.07           | 63.64                    | 69.2                         | 56.77           |
| 11th  | Spring | 149          | 22.3       | 21.9       |       |           |             |               |                           |  |                              |                           |                   |                 |                 |                 |                          |                              |                 |

## PreACT 8/9 & PreACT Results - English and Reading

|                                    | Percent Correct       | Percent Correct       | Percent Correct                 | Percent Correct       | Percent Correct     | Percent Correct                    |
|------------------------------------|-----------------------|-----------------------|---------------------------------|-----------------------|---------------------|------------------------------------|
| % Correct                          | Production of Writing | Knowledge of Language | Conventions of Standard English | Key Ideas and Details | Craft and Structure | Integration of Knowledge and Ideas |
| PreACT 8/9<br>Gr.9 10.12.22        | 61.42                 | 48.1                  | 57.53                           | 56.18                 | 57.65               | 70.10                              |
| PreACT<br>Secure Gr. 9<br>4.19.23  | 54.38                 | 52.75                 | 57.75                           | 49.17                 | 47.38               | 63.5                               |
| PreACT Gr. 10<br>10.12.22          | 55.58                 | 57.55                 | 65.47                           | 61.67                 | 64.28               | 70.36                              |
| PreACT<br>Secure Gr. 10<br>4.19.23 | 61.8                  | 62.44                 | 65.54                           | 62.21                 | 57.33               | 70.19                              |
| ACT Gr. 11<br>3.7.23               | 61.42                 | 59.68                 | 59.19                           | 57.63                 | 61.58               | 65.13                              |

## SMART Goal Worksheet

| <b>School:</b>           |                             | <b>Team Name:</b>  |                         | <b>Team Leader:</b>       |  |
|--------------------------|-----------------------------|--------------------|-------------------------|---------------------------|--|
| <b>Team Members:</b>     |                             |                    |                         |                           |  |
| <b>District Goal(s):</b> |                             |                    |                         |                           |  |
| <b>School Goal(s):</b>   |                             |                    |                         |                           |  |
| Team SMART Goal          | Strategies and Action Steps | Who Is Responsible | Target Date or Timeline | Evidence of Effectiveness |  |
|                          |                             |                    |                         |                           |  |
|                          |                             |                    |                         |                           |  |