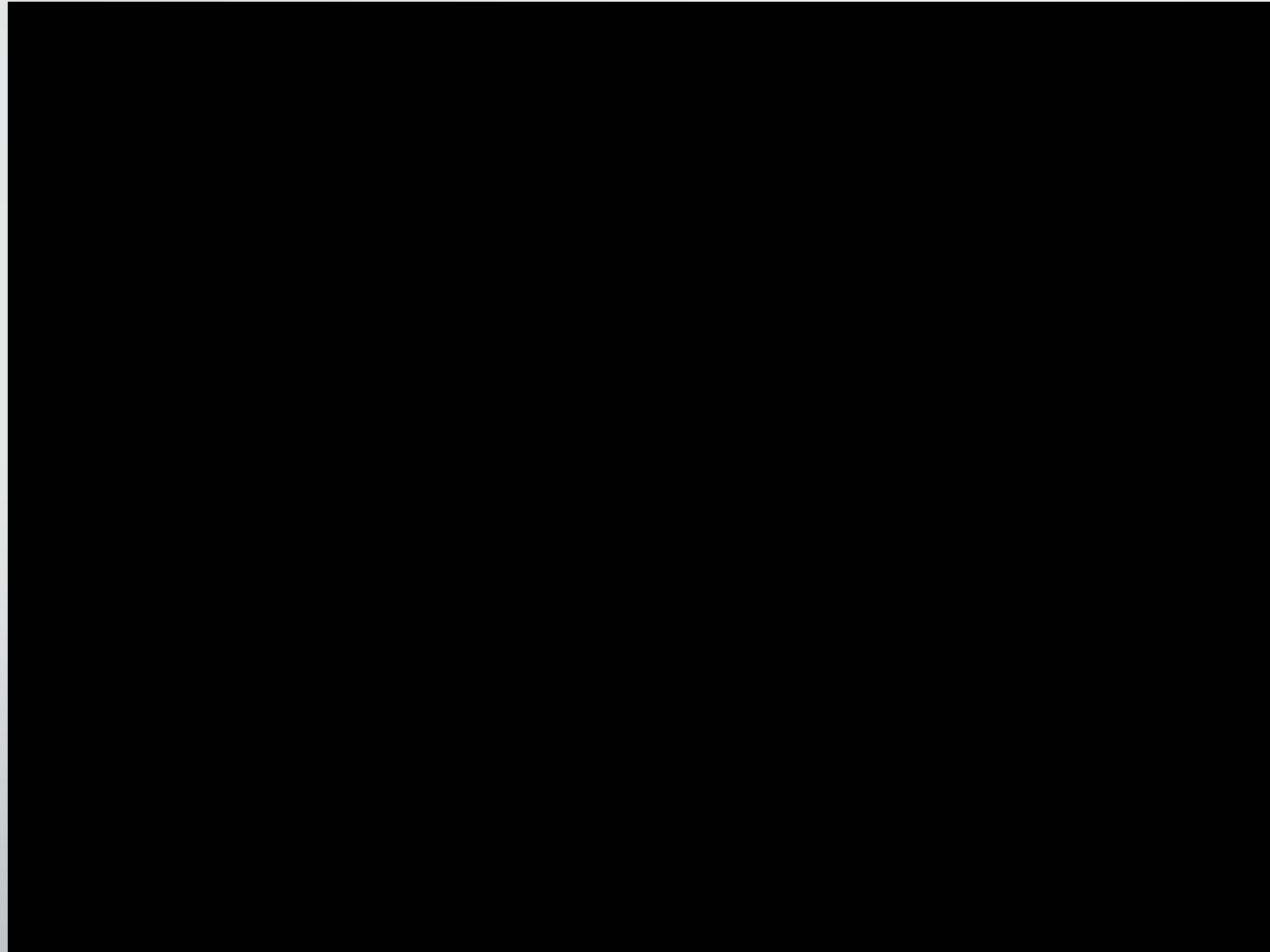
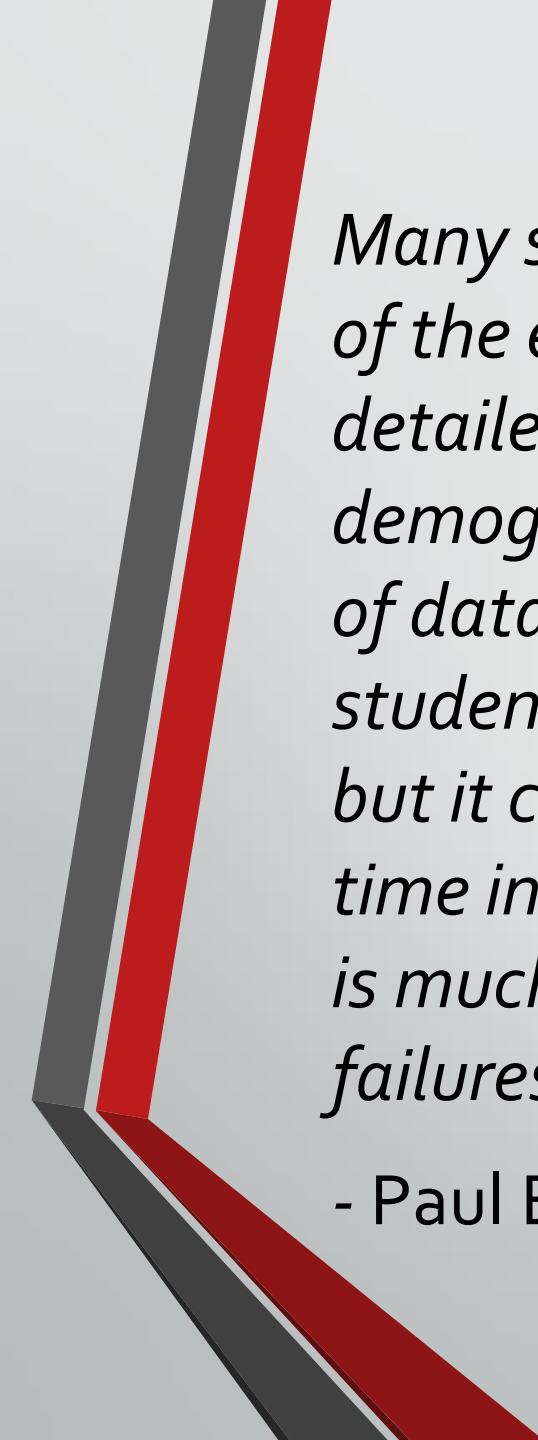




Data Analysis that Drives Curriculum Development and Instructional Strategies

Lesson: Use Diagnostics





Many schools invest a great of time in creating elaborate analyses of the end-of-year assessment. Such reports are often exhaustively detailed, breaking down student results by every conceivable demographic or academic attribute. Yet despite the huge amount of data it generates, analysis of these test is of little use to the students who took them. Indeed, it may show what went wrong, but it comes too late to make a difference. Rather than pouring time into figuring out what students failed to learn at year's end, it is much more effective to focus on interim assessments and avoid failures altogether.

- Paul Bambrick-Santoyo, Driven by data (2010)

Formative and Summative Assessments

Formative

- On-going, during the year
- Immediate feedback
- Specific direction
- CAN change end-of-year outcome
- Examples: classwork, homework, quizzes



Summative

- End of year
- Delayed feedback
- General direction
- Can't change end-of-year outcome
- Examples: Student Report Card, Chapter tests, standardized tests



Test Administration: Validity & Reliability

- What is the process to ensure that the test is aligned to the curriculum?
- Do all students participate in the test?
- What is the process to make accommodations for students with an IEP/504/ELL?
- Is the test administered according to the test coordinators manual?
- **Summative assessment *should* reflect formative assessments**



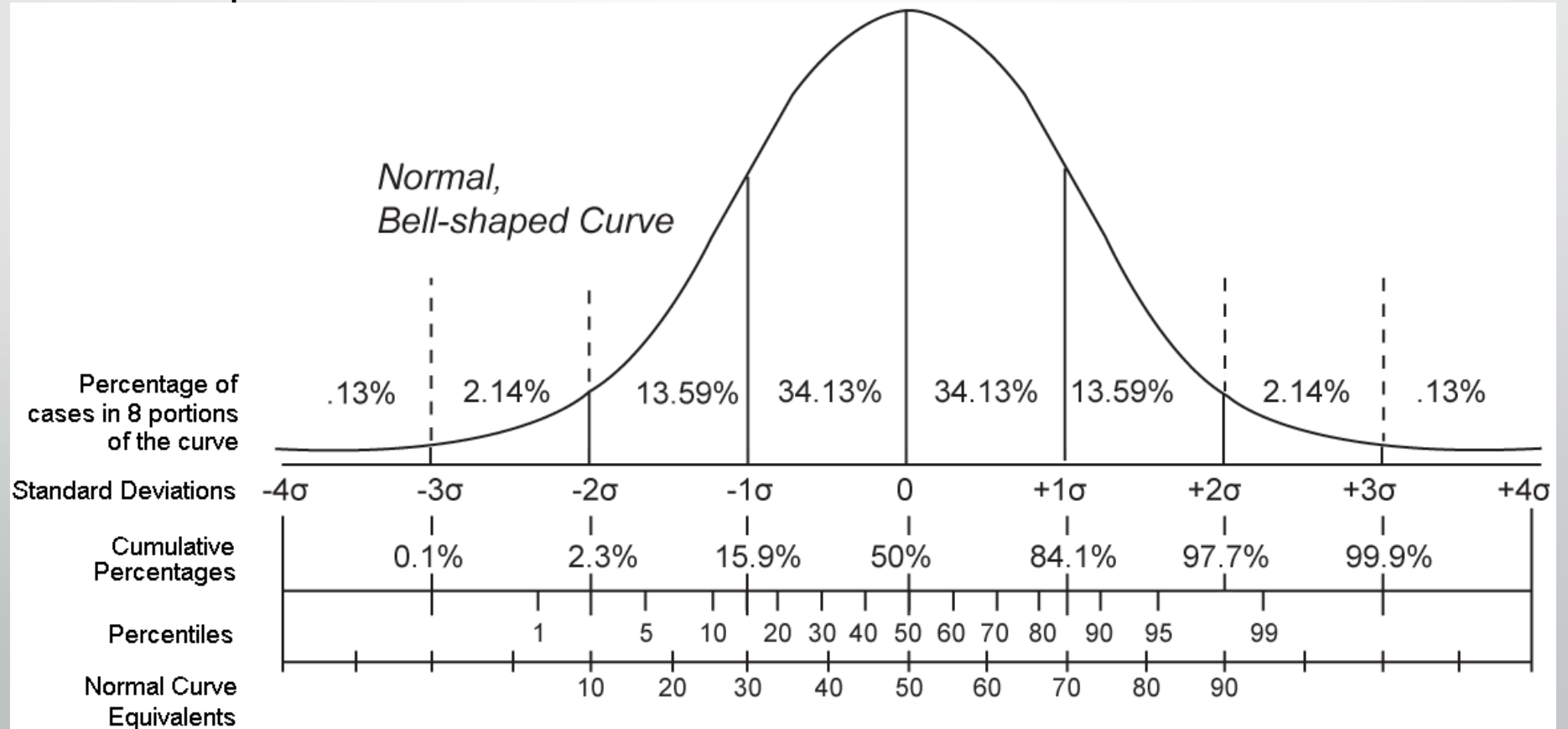
Types of Analysis

- Status Analysis: percent performing at or above grade-level
- Impact Analysis: impact teacher has on different groups of students
- Growth Analysis: academic growth with cohort of students



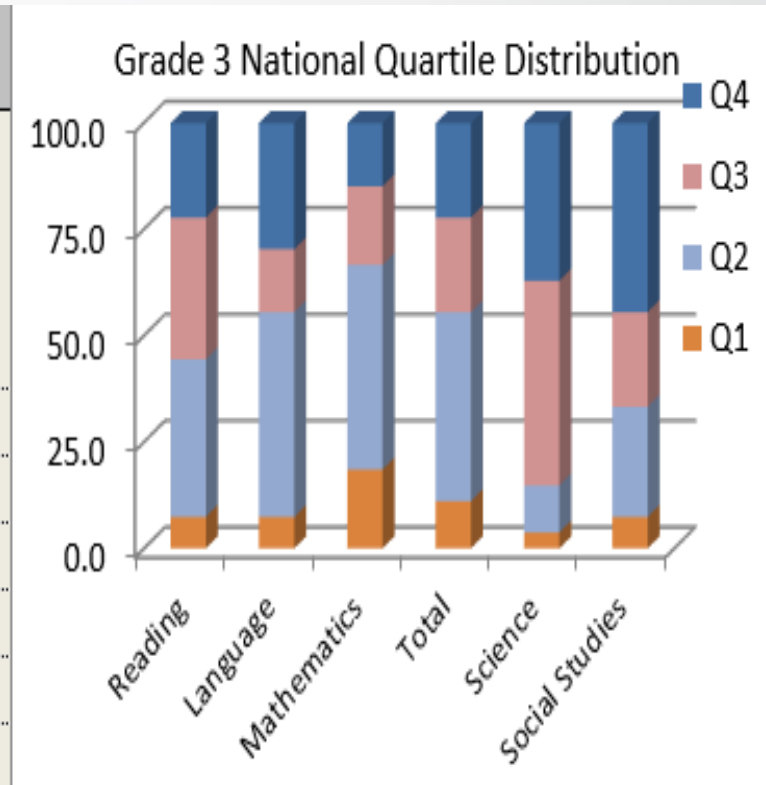
TerraNova Data Analysis Template

- Data Points: NP of the Mean NCE vs Mean NCE
- National Percentile
- Normal Curve Equivalent



- Mean Anticipated NCE
- Quartiles

| Grade 3 | | | | | | | | | |
|-----------------------|----------|----------------------|----------|-------------|------------------------|------|------|------|--------------------------------|
| | Mean NCE | Mean Anticipated NCE | DIFF NCE | NP Mean NCE | % in National Quartile | | | | % Students Above National Mean |
| | | | | | Q1 | Q2 | Q3 | Q4 | |
| <i>Reading</i> | 55.7 | 56.8 | -1.1 | 61 | 7.4 | 37.0 | 33.3 | 22.2 | 55.5 |
| <i>Language</i> | 55.9 | 56.8 | -0.9 | 61 | 7.4 | 48.1 | 14.8 | 29.6 | 44.4 |
| <i>Mathematics</i> | 48 | 56 | -8 | 46 | 18.5 | 48.1 | 18.5 | 14.8 | 33.3 |
| Total | 53.6 | 57.1 | -3.5 | 57 | 11.1 | 44.4 | 22.2 | 22.2 | 44.4 |
| <i>Science</i> | 61 | 56.7 | 4.3 | 70 | 3.7 | 11.1 | 48.1 | 37.0 | 85.1 |
| <i>Social Studies</i> | 62 | 58 | 4 | 72 | 7.4 | 25.9 | 22.2 | 44.4 | 66.6 |



Explore Test

- Profile Summary Report

EXPLORE[®]



**2013-2014
Profile Summary Report**

**Code: 00287131
SAINT RENE GOUPIL SCHOOL
CHICAGO, IL**

**School Report - Grade 8
ARCHDIOCESE OF CHICAGO**

Explore Test Frequencies & National Averages

- Table 1a
- Columns:
 - Explore score range
 - Freq
 - CP*
 - Local & Nat'l

TABLE 1a: How do th

| EXPLORE score | English | |
|------------------|---------------|--------------|
| | Local Freq | Nat'l CP* |
| 25 | 3 | 100 |
| 24 | 1 | 75 |
| 23 | 0 | 67 |
| 22 | 1 | 67 |
| 21 | 0 | 58 |
| 20 | 1 | 58 |
| 19 | 0 | 50 |
| 18 | 3 | 50 |
| 17 | 0 | 25 |
| 16 | 1 | 25 |
| 15 | 1 | 17 |
| 14 | 1 | 8 |
| 13 | 0 | 1 |
| 12 | 0 | 1 |
| 11 | 0 | 1 |
| 10 | 0 | 1 |
| 9 | 0 | 1 |
| 8 | 0 | 1 |
| 7 | 0 | 1 |
| 6 | 0 | 1 |
| 5 | 0 | 1 |
| 4 | 0 | 1 |
| 3 | 0 | 1 |
| 2 | 0 | 1 |
| 1 | 0 | 1 |
| Mean | 20.0 | 14.7 |
| S.D. | 4.1 | 4.2 |

Explore Test Quartiles & Score Ranges

| Local percentage of students in national quartiles | | | | | | | | | | | |
|--|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|-------------------|
| National quartile | % of local | Score range | % of local | Score range | % of local | Score range | % of local | Score range | % of local | Score range | National quartile |
| 75-100% | 75 | 17-25 | 75 | 17-25 | 83 | 17-25 | 83 | 18-25 | 75 | 18-25 | 75-100% |
| 50-74% | 25 | 14-16 | 0 | 16-16 | 0 | 14-16 | 17 | 17-17 | 25 | 15-17 | 50-74% |
| 25-49% | 0 | 12-13 | 25 | 14-15 | 17 | 12-13 | 0 | 15-16 | 0 | 13-14 | 25-49% |
| 1-24% | 0 | 1-11 | 0 | 1-13 | 0 | 1-11 | 0 | 1-14 | 0 | 1-12 | 1-24% |

- $Q_1 = 1-24\%$
- $Q_2 = 25-49\%$
- $Q_3 = 50-74\%$
- $Q_4 = 75-100\%$
- Score Ranges vary by test

Student Performance on Different Psychometric Summative Assessments

- Cohort Quartile performance on TerraNova to quartile performance on Explore

Diagnostic Questions:

- 1.** Top performing subject test: What is the top performing subject test and what is the quartile distribution on the TerraNova in grade 7? Is student performance consistent on the Explore test? Is there a growth? Is there regression?

Grade 7

| | Mean NCE | Mean Anticipated NCE | DIFF NCE | NP Mean NCE | % in National Quartile | | | | % Students Above National Mean |
|-----------------------|----------|----------------------|----------|-------------|------------------------|------|------|------|--------------------------------|
| | | | | | Q1 | Q2 | Q3 | Q4 | |
| <i>Reading</i> | 67.9 | 66.9 | 1 | 80 | 0.0 | 0.0 | 52.6 | 47.4 | 100.0 |
| <i>Language</i> | 75 | 65.7 | 9 | 88 | 0.0 | 0.0 | 15.8 | 84.2 | 100.0 |
| <i>Mathematics</i> | 69.7 | 65.1 | 4.6 | 83 | 0.0 | 10.5 | 21.1 | 68.4 | 89.5 |
| Total | 74.5 | 67.9 | 6.6 | 88 | 0.0 | 0.0 | 26.3 | 73.7 | 100.0 |
| <i>Science</i> | 64.1 | 66.4 | -2.3 | 75 | 5.3 | 15.8 | 31.6 | 47.4 | 79.0 |
| <i>Social Studies</i> | 69.5 | 65.9 | 3.6 | 82 | 0.0 | 5.3 | 26.3 | 68.4 | 94.7 |

| Mean | 18.7 | 14.7 | 17.1 | 15.5 | 18.2 | 14.6 | 18.9 | 16.6 | 18.4 | 15.5 | Mean |
|--|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|-------------------|
| S.D. | 3.6 | 4.2 | 2.5 | 3.5 | 3.5 | 3.9 | 2.3 | 3.3 | 2.5 | 3.3 | S.D. |
| Local percentage of students in national quartiles | | | | | | | | | | | |
| National quartile | % of local | Score range | % of local | Score range | % of local | Score range | % of local | Score range | % of local | Score range | National quartile |
| 75-100% | 65 | 17-25 | 59 | 17-25 | 65 | 17-25 | 76 | 18-25 | 71 | 18-25 | 75-100% |
| 50-74% | 29 | 14-16 | 6 | 16-16 | 24 | 14-16 | 12 | 17-17 | 24 | 15-17 | 50-74% |
| 25-49% | 6 | 12-13 | 29 | 14-15 | 12 | 12-13 | 6 | 15-16 | 6 | 13-14 | 25-49% |
| 1-24% | 0 | 1-11 | 6 | 1-13 | 0 | 1-11 | 6 | 1-14 | 0 | 1-12 | 1-24% |

Student Performance on Different Psychometric Summative Assessments

- Cohort Quartile performance on TerraNova to quartile performance on Explore

Diagnostic Questions:

2. Least performing subject test: What is the least performing subject test and what is the quartile distribution on the TerraNova in grade 7? Is student performance consistent on the Explore test? Is there a growth? Is there regression?

Grade 7

| | Mean NCE | Mean Anticipated NCE | DIFF NCE | NP Mean NCE | % in National Quartile | | | | % Students Above National Mean |
|-----------------------|----------|----------------------|----------|-------------|------------------------|------|------|------|--------------------------------|
| | | | | | Q1 | Q2 | Q3 | Q4 | |
| <i>Reading</i> | 67.9 | 66.9 | 1 | 80 | 0.0 | 0.0 | 52.6 | 47.4 | 100.0 |
| <i>Language</i> | 75 | 65.7 | 9 | 88 | 0.0 | 0.0 | 15.8 | 84.2 | 100.0 |
| <i>Mathematics</i> | 69.7 | 65.1 | 4.6 | 83 | 0.0 | 10.5 | 21.1 | 68.4 | 89.5 |
| Total | 74.5 | 67.9 | 6.6 | 88 | 0.0 | 0.0 | 26.3 | 73.7 | 100.0 |
| <i>Science</i> | 64.1 | 66.4 | -2.3 | 75 | 5.3 | 15.8 | 31.6 | 47.4 | 79.0 |
| <i>Social Studies</i> | 69.5 | 65.9 | 3.6 | 82 | 0.0 | 5.3 | 26.3 | 68.4 | 94.7 |

| Mean | 18.7 | 14.7 | 17.1 | 15.5 | 18.2 | 14.6 | 18.9 | 16.6 | 18.4 | 15.5 | Mean |
|--|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|-------------------|
| S.D. | 3.6 | 4.2 | 2.5 | 3.5 | 3.5 | 3.9 | 2.3 | 3.3 | 2.5 | 3.3 | S.D. |
| Local percentage of students in national quartiles | | | | | | | | | | | |
| National quartile | % of local | Score range | % of local | Score range | % of local | Score range | % of local | Score range | % of local | Score range | National quartile |
| 75-100% | 65 | 17-25 | 59 | 17-25 | 65 | 17-25 | 76 | 18-25 | 71 | 18-25 | 75-100% |
| 50-74% | 29 | 14-16 | 6 | 16-16 | 24 | 14-16 | 12 | 17-17 | 24 | 15-17 | 50-74% |
| 25-49% | 6 | 12-13 | 29 | 14-15 | 12 | 12-13 | 6 | 15-16 | 6 | 13-14 | 25-49% |
| 1-24% | 0 | 1-11 | 6 | 1-13 | 0 | 1-11 | 6 | 1-14 | 0 | 1-12 | 1-24% |

Are there Achievement Gaps in Sub-Groups?

- School's demographics shape the subgroups
- Types of sub-groups: ethnicity, gender, Title 1, English Language Learners, transfer-in
- Identify at least one sub-group but no more than three



Drill into the roster

- Identify students by quartile
- Identify learning objectives for the quartiles
- Differentiate instruction to move students from one quartile to the next
- Use online resources: [TerraNova](#) and [Explore](#)



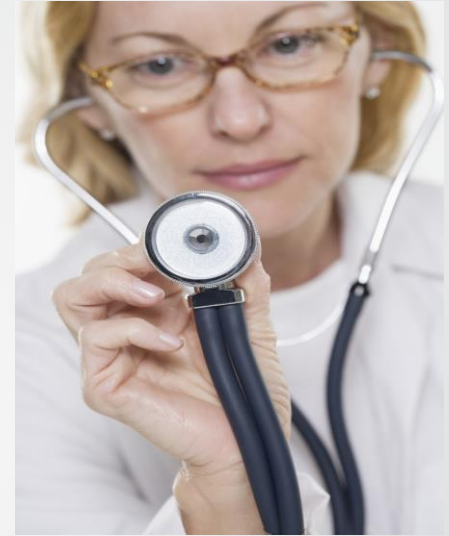
Activity

- Answer the Diagnostic Questions

Diagnostic Questions

Areas of Notable Achievement

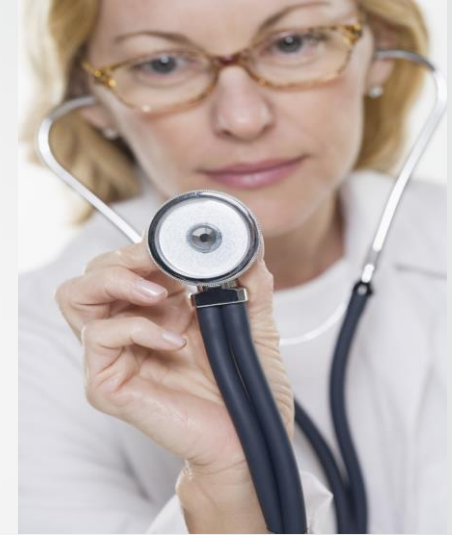
1. Which area(s) are above the expected levels of performance?
2. Describe the area(s) that show a positive trend in performance.
3. Which area(s) indicate the overall highest performance?
4. Which subgroup(s) show a trend toward increasing performance?
5. Between which subgroups is the achievement gap closing?
6. Which of the above reported findings are consistent with findings from other data sources?



Diagnostic Questions

Areas in Need of Improvement

1. Which area(s) are below the expected levels of performance?
2. Describe the area(s) that show a negative trend in performance.
3. Which area(s) indicate the overall lowest performance?
4. Which subgroup(s) show a trend toward decreasing performance?
5. Between which subgroups is the achievement gap becoming greater?
6. Which of the above reported findings are consistent with findings from other data sources?



Your Questions



I Appreciate Our Time Together!

감사합니다 Natick
Danke Ευχαριστίες Dalu
Thank You Köszönöm
Tack Obrigado
Grazie Dank Gracías
Спасибо Seé
Merci ありがとう
谢谢