MATHEMATICS

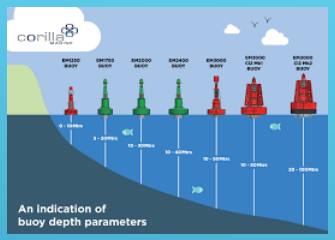
KINDERGARTEN – GRADE 8

Dr. Christopher Macaluso

Executive Director

WHAT ARE POWER STANDARDS?

- A blueprint to access grade level standards emphasizing depth over breadth



- They are not the full curriculum – teachers must continue to use Next Generation Learning Standards and standards aligned materials (i.e., Eureka Math, eMathInstruction) to plan instruction
- Designed to support data-informed teaching and learning to adjust pacing and provide tiered supports (MTSS)
  - MAP
  - K-8 Diagnostic Assessments in DataMate
- DataMate Assessments are for students “Entering grade 2” and assess understanding of Grade 1 standards – therefore teachers must consult Power Standards documents for their current grade and the prior grade level

ORGANIZATION

- Conceptual Understanding, or broad concepts for the grade level (the big picture)
  - Key Ideas – support the conceptual understanding
    - Required Skills – what students should know and be able to do to succeed in the next grade level

Conceptual Understanding: Number and Operations in Base Ten
Key Idea: Understand place value
Required Skills: a. Understand and use hundreds, tens and ones b. Count to 1,000 using 1s, 5s, 10s and 100s c. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form d. Compare three-digit numbers using <, =, and >

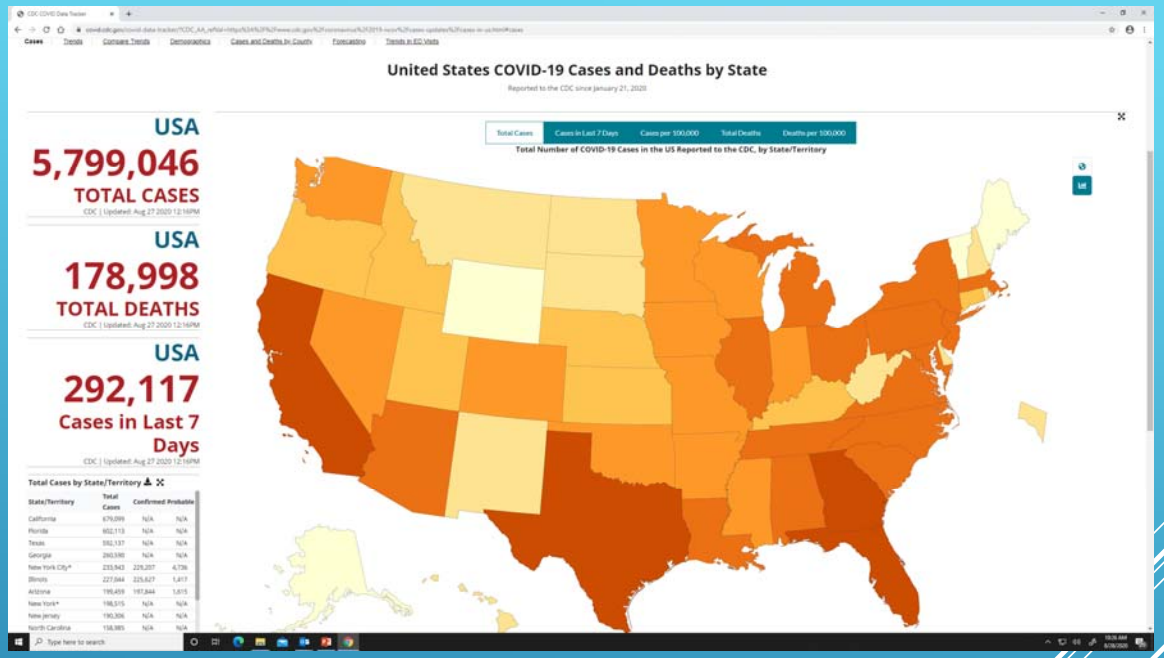
Grade 2 Power Standards Excerpt

ENHANCING REMOTE INSTRUCTION AND PROJECT BASED LEARNING

- Consider Grade 4 – Benchmark Advance Unit 1 Government in Action
  - Essential Question: How can government influence the way we live?
- Now consider Culturally Responsive Teaching and the Brain/Ready for Rigor Framework
  - Information Processing: Provide Authentic opportunities to process content
- New York just experienced government influencing the way we live. How?
  - Businesses closed for months
  - Face coverings required
  - Travel restrictions

HOW DOES THIS APPLY TO THE POWER STANDARDS

- During “Independent Work Time for project-based assignments” on Wednesday afternoon, have students research:
  - The weekly COVID infection counts for New York
  - The weekly COVID infection counts for Yonkers
- Have students provide their findings as a formative assessment and discuss the data during synchronous instruction – which data are reliable based on the “source”



Source: https://covid.cdc.gov/covid-data-tracker/?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fcases-updates%2Fcases-in-us.html#cases

Now consider the grade 4 Power Standards

Conceptual Understanding: Number and Operations in Base Ten

Key Idea: Generalize place value understanding for multi-digit whole numbers

Required Skills:

a. Look at a multi-digit number and determine that the digit to the left is 10 times greater than a given digit
b. Use place value to help multiply or divide numbers
c. Read and write multi-digit whole numbers using base-ten numbers, number names, and expanded form
d. Round whole numbers to the nearest 10, 100, 1000

EXTENDED PROJECT SUPPORTING STANDARDS BASED INSTRUCTION

Suggested weekly instructional tasks to support completion of the ongoing project-based assignment:

- Represent the number of infections using base-ten numbers, number names, and expanded for,
- Round the number of infections for each week to the nearest 10, 100, 1000
- Use the rounded number of infections for week one and compare them to week 2. Continue the process for week 3, week 4…
- Select 3 comparisons (e.g., Week 1 and Week 4, Week 1 and Week 7, Week 1 and Week 10) for both New York and Yonkers. Which number is greater. How do you know? Use your understanding of place value to make the comparisons and be sure to use 10 more, 10 less, etc. Explain in writing.

- This project could reasonably extend for 3-4 weeks
- Notice the Required Skills “a”, “c”, and “d” are all taught – **with relevance** using this extended project and the interim tasks

Conceptual Understanding: Number and Operations in Base Ten
Key Idea: Generalize place value understanding for multi-digit whole numbers
Required Skills: a. Look at a multi-digit number and determine that the digit to the left is 10 times greater than a given digit b. Use place value to help multiply or divide numbers c. Read and write multi-digit whole numbers using base-ten numbers, number names, and expanded form d. Round whole numbers to the nearest 10, 100, 1000

- After completing the project, ask students to refer back to the Benchmark Essential Question: How can government influence the way we live? Recall the ways government in NY influenced the way we lived during the pandemic. Ask students to write at least two paragraphs that answer the Essential Question while utilizing the data and comparisons studied in this project.

ADDRESSING DEPTH

KEEP IN MIND

- The readiness to go deeper with Culturally Responsive and Sustaining teaching and learning
  - Have students begin to think about the influence of government in their place of origin – what are the COVID infection counts in Chicago, the Dominican Republic, Jordan, Puerto Rico…
  - What was the government's response to COVID? Did it help? How do you know?
  - After comparing infection counts in NY and the student's place of origin, what would you suggest to the local government to create a better world?*

* Adapted from Transforming our Public Schools: A Guide to Culturally Responsive-Sustaining Education

AND OPPORTUNITIES FOR VERTICAL ALIGNMENT

- Consider Grade 6 – Benchmark Advance Unit 1 Beyond Democracy
  - Essential Question: Why might societies form different types of government?
    - Guiding Question: What is the role of government?
  - Now consider COVID infection **rates** instead of counts for **different countries** being studied in the Benchmark Unit
  - Engage in a similar process developing a project-based assignment aligned to the Grade 6 mathematics Power Standards. In the design, the required skills below will likely be addressed

Conceptual Understanding: Ratios and Proportional Relationships
Key Idea: Understand ratio concepts and use ratio reasoning to solve problems
Required Skills:
a. Understand ratios and the language used to describe two amounts
b. Understand how to find a rate when given a specific ratio (e.g., We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger)
c. Solve word problems related to ratios in order to figure out the rate
d. Create tables of equivalent ratios, find missing values in the tables, plot those values on a coordinate plane, and use the tables to compare ratios
e. Solve unit rate problems
f. Find a percent of a quantity as a rate per 100 and solve problems involving finding the whole if given a part and the percent
g. Convert units of measurement

Grade 6 Power Standards Excerpt

YOUR TURN

- In your assigned grade-level groups:
  - Use the suggested Benchmark pacing documents to identify opportunities for integrating standards aligned math content (use the Power Standards for your grade level to assist). Remember to look at the Benchmark Theme and Essential Question.
  - Consult the Power Standards for the previous grade level. What Required skills may need to be included in instruction to support completion of the project(e.g., in the 4th grade example we discussed, what 3rd grade required skills are needed to scaffold instruction)?
  - Craft a 3-4 week extended project-based assignment that can support learning the standards in a remote setting. Remember to identify the interim tasks.
  - What additional practice from Eureka and eMathInstruction can be used to support practice with these required skills (e.g., practicing the discrete skill or rounding a number outside of a context)?