



THE OHIO STATE UNIVERSITY

Mathematics Teaching Institute

Day Four— Exploring Measurement and Geometry

Mathematics Teaching Institute, July 27-31, 2015

Sponsored by **Ohio** | Department
of Education



Through the Eyes of Mathematicians – Making Mathematical Modeling Accessible to Students

With special guests, Dr. Bart Snapp and
Dr. Jim Fowler, The Ohio State University
Department of Mathematics



Break

See you in 10 minutes



Developing measurement concepts

Non-metric countries



Measurement activities:

Measurement Poems

“One inch tall” from *Where the Sidewalk
End* by Shel Silverstein



Measurement activities:

The Great Estimations Contest

Frames of reference for standard units

Great Estimations by Bruce Goldstone

Greater Estimations by Bruce Goldstone

Relationships and Convergences

Found in:

1. CCSS for Mathematics (practices)
- 2a. CCSS for ELA & Literacy (student capacity)
- 2b. ELPD Framework (ELA “practices”)
3. NGSS (science and engineering practices)

Notes:

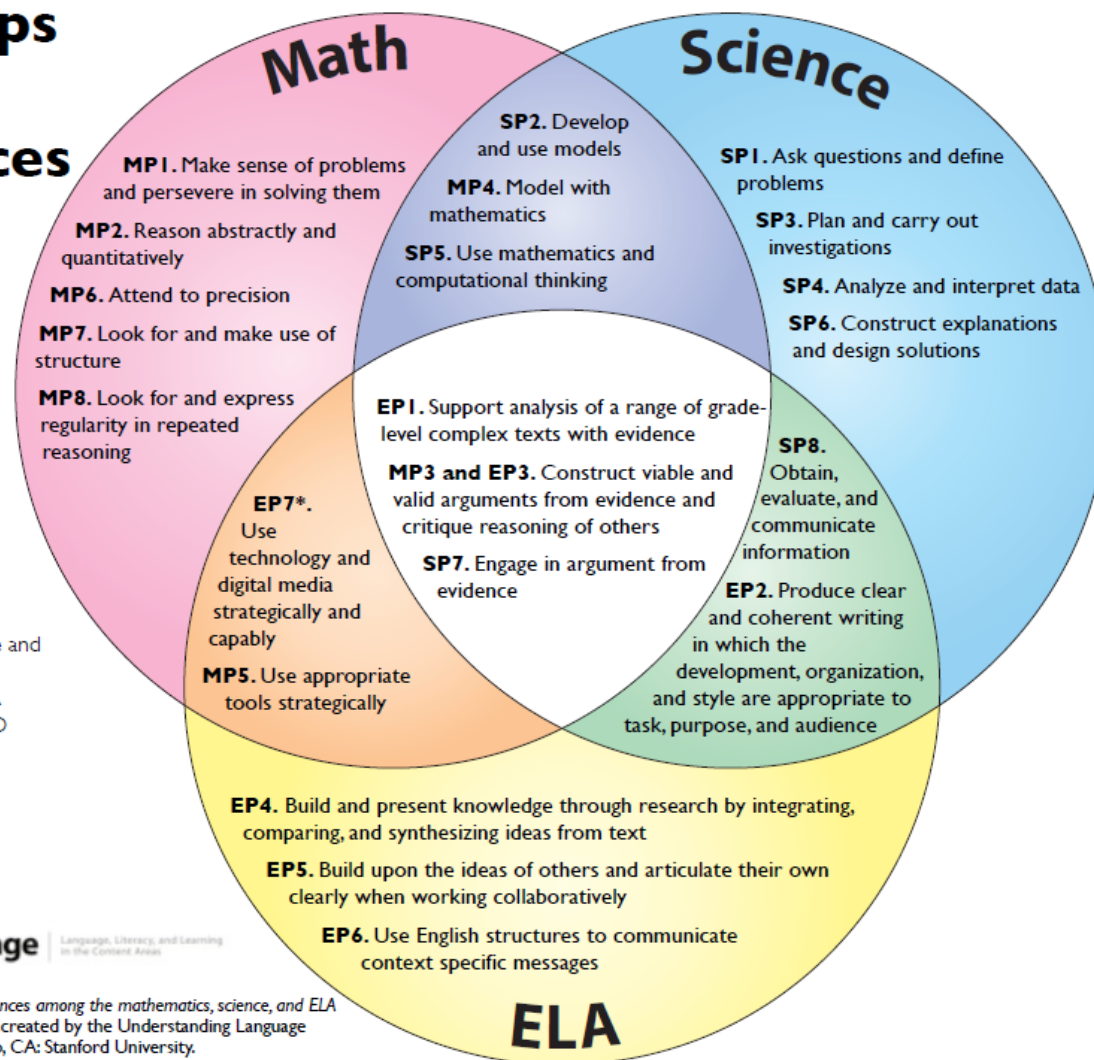
1. MP1–MP8 represent CCSS Mathematical Practices (p. 6–8).
2. SP1–SP8 represent NGSS Science and Engineering Practices.
3. EP1–EP6 represent CCSS for ELA “Practices” as defined by the ELPD Framework (p. 11).
4. EP7* represents CCSS for ELA student “capacity” (p. 7).

Stanford
GRADUATE SCHOOL OF
EDUCATION

Understanding Language | Language, Literacy, and Learning
in the Content Areas

Suggested citation:

Cheuk, T. (2013). *Relationships and convergences among the mathematics, science, and ELA practices*. Refined version of diagram created by the Understanding Language Initiative for ELP Standards. Palo Alto, CA: Stanford University.





Lunch

We will return at 12:45



Measurement activities:

Geometry & Measurement Discovery Hunt

A device to take pictures (cell phone, iPad, etc.)



Geometry/Measurement Activity:

Venn Diagrams and Geometric Thinking

Rectangles, Squares, and Rhombi



Three Circle Venn Diagram Example



Problem Posing Part II – Mathematics is EVERYWHERE!

Identify variables and influential factors

I notice/I wonder/What If

Generating Mathematical Tasks



How many pennies are needed to equal your height, the height of the school , the tallest building in the world, the summit of Mount Everest?



Your Turn!

Start with the picture your group will be given

- Identify the potential for mathematics in the picture

- I notice/I wonder/What if...

- What information regarding this picture could you search and learn about using additional resources (Internet, books, etc.)?

- What mathematical content could your picture portray?



Your Turn!

- What mathematical tasks can you generate from this picture?
- Work with a partner and begin constructing a plan to find a solution to one of your more challenging tasks.
- Identify the mathematical practices that students might engage with as a result of the tasks you designed
- Gallery walk of pictures and tasks at the end of the day



Daily Feedback Form

Homework Read: Tales, tasks, tools and talk
(McKenry & Foley, 2012)