Bridging for Math Strength Resources

Standards of Learning Curriculum Framework

Standard of Learning (SOL) 2.11 Read temperature to the nearest 10 degrees.

Student Strengths	Bridging Concepts	Standard of Learning
Students can compare the temperature of two items (hotter, colder).	Students can read number lines with increments of 10 (horizontal and vertical). Students can round to the nearest ten.	Students can read temperature to the nearest 10 degrees.

Understanding the Learning Trajectory

Big Ideas:

- Measurement is the process of assigning a number to a magnitude of some attribute shared by some class of objects, such as length, relative to a unit (Common Core Progression Document)
- Measurement tools measure attributes of objects according to a specific unit (ruler, inches; thermometer, Fahrenheit)
- A measurement tool is chosen based upon the attribute being measured and the appropriate unit of measure.

Formative Assessment:

- VDOE Just in time Quick Check SOL 2.11 PDF / Desmos

Important Assessment Look Fors:

- Students can color the thermometer to the appropriate number.
- Students can read a thermometer to the nearest ten when the temperature is not on a ten.
- Students can read a thermometer in vertical and circular.

Purposeful Questions:

- How is a thermometer similar to a number line?

- How do you know if something is hot or cold? How does a thermometer help you?

Bridging Activity to Support Standard	Instructional Tips
Routine **Daily Temperature Routine** **Interactive Online Thermometer** **Number Lines**	As part of a **daily routine** for a period of time (week, month, school year) , measure the outside temperature. Record the outside temperature on a chart. As students engage in taking turns reading the thermometer and recording the temperature, they will develop an understanding of what temperature is and how it connects to real-life situations. Reading a thermometer is basically reading a vertical or circular number line. Routines need to support student understanding of reading a number line in increments of 10. Consider switching number lines from horizontal to vertical and circular to mirror the look of thermometers.
Rich Tasks **Hot or Cold?**	Students benefit from hands-on experiences in measuring temperature with thermometers. Prepare 6 different cups of water that range from hot to cold. Be careful not to let any of the cups of water be too hot. All water should be able to touch. Have groups/pairs of students take turns measuring with the thermometers. Students color in the thermometer showing the temperature they saw.
Games **Thermometer Match**	Consider using sentence frames as students find a match.

Other Resources:

- VDOE Mathematics Instructional Plans (MIPS)
  - 2.11 - A Fine Day For … (Word) / PDF Version
- VDOE Word Wall Cards: Grade 2 (Word) | (PDF)

Learning Trajectory Resources:

Charles, R. (2005). Big ideas and understandings as the foundation for elementary and middle school mathematics. *Journal of Mathematics Education Leadership*, *7*(3), NCSM.

Clements, D. H., & Sarama, J. (2019). Learning and teaching with learning trajectories [LT]2. Marsico Institute, Morgridge College of Education, University of Denver. https://www.learningtrajectories.org/

Common Core Standards Writing Team. (2019). Progressions for the Common Core State Standards for Mathematics. Tucson, AZ: Institute for Mathematics and Education, University of Arizona.

Richardson, K. (2012). How Children Learn Number Concepts: A Guide to Critical Learning Phases. Bellingham: Math Perspectives Teacher Development Center.

Van De Walle, J., Karp, K. S., & Bay-Williams, J. M. (2018). *Elementary and Middle School Mathematics: Teaching Developmentally.* (10th edition) New York: Pearson (2019:9780134802084)

VDOE Curriculum Framework for All Grades - Standard of Learning Curriculum Framework (SOL)