Bridging for Math Strength Resources

Standards of Learning Curriculum Framework

Standard of Learning (SOL) 2.2b Count backward by tens from 120.

Student Strengths	Bridging Concepts	Standard of Learning
Students can count forward by tens to 120.	Students can identify 10 more and 10 less than any ten between 10 and 110. Students can describe the pattern when skip counting by tens forward and backward.	Students can count backward by tens from 120.

Understanding the Learning Trajectory

Big Ideas:

- Within the learning trajectory of counting forward and back, this level demonstrates students' ability to count "counting words" (single sequence or skips counts) in either direction starting at any number. Recognizes that decades sequences mirror single-digit sequences (Clements & Sarama, 2019).
- Organizing objects into groups of ten while skip counting backward is more efficient than skip counting backward by ones.
- Skip counting backwards by tens is " ten less" than a number. Skip counting backwards by tens supports place value strategies for subtraction.

Formative Assessment:

- Just in Time Mathematics Quick Check 2.2b PDF
- Just in Time Mathematics Quick Check 2.2b Desmos

Important Assessment Look Fors:

- Student skip counts backward by tens without counting backwards by ones.
- Student determines "10 less" than a number.
- Student uses a number line or hundreds chart to facilitate their skip counting.

Purposeful Questions:

- How is skip counting backwards by ten more efficient than skip counting backwards by one?
- How is skip counting backwards by ten the same as "10 less" than a number?
- How is skip counting backwards by ten similar and different than skip counting forward by ten?

Bridging Activity to Support Standard	Instructional Tips
Routine Which One is Different and Why? Henrico County Public Schools	Have students observe each quadrant and decide which skip counting pattern is different and why? There isn't necessarily a right or wrong. The key idea is to focus on their reasoning. Students can make their own Which One is Different and Why? skip counting sequences and share with the class.
Rich Task Counting Backwards Task Henrico County Public Schools	Anticipate what you think your students will do. Will they count forward or backward? Do they understand that when moving to the left the numbers decrease? What will they skip count by? Do they jump by equal amounts? Monitor students as they solve problems. This can be done independently or in pairs. Think about how you may wish to group students. Reflect on who you may wish to have explain their thinking to the class. Make connections between the ways kids skip counted on the numberline. This may be an opportunity to discuss skip counting as a more efficient way of counting and lead into subtracting by using place value.
Games Race to O Henrico County Public Schools	This game counts down by 10s and requires a spinner with a -10, -20, -30. Students can easily make a spinner using a paperclip and a pencil.

Other Resources:

- VDOE Mathematics Instructional Plans (MIPS)
  - 2.2ab - Guess My Pattern (Word) / PDF Version
- VDOE Word Wall Cards
  - Grade 2 (Word) | (PDF)
- VDOE Instructional Videos for Teachers
  - Developing Early Number Sense (grades K-2)

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)