



Bridging for Math Strength Resources

[Standards of Learning Curriculum Framework](#)

Standard of Learning (SOL) 3.1a Read, write, and identify the place and value of each digit in a six-digit whole number, with and without models



Student Strengths	Bridging Concepts	Standard of Learning
Students can read, write, and identify the place and value of each digit in a three-digit numeral with and without models.	Students understand the base-ten number system (i.e., the value of each place is 10 times the value of the digit to the right). Students have an understanding that the value of the digit is determined by its place in the number.	Students can read, write, represent, and identify the place and value of each digit in a six-digit numeral with and without models.

Understanding the Learning Trajectory

Big Ideas:

- The structure of numbers is based on unitizing amounts into groups of ones, tens, and hundreds, etc and these groups can be reorganized so that numbers can be represented in multiple ways. For example 2,560 can be 2 thousands, 5 hundreds, 6 tens, OR 25 hundreds and 6 tens.
- Place value refers to the value of each digit and depends on the position of the digit in the number.
- Numbers are arranged in periods and the places in those periods repeat.

Formative Assessment:

- [Just in Time Mathematics Quick Check # 3.1a PDF](#)
- [Just in Time Mathematics Quick Check # 3.1a Desmos](#)

Important Assessment Look Fors:

- Student successfully identifies multiple ways to identify a given number.
- Student uses values and various representations to create a given number.
- Student uses place holders (0) when applicable and uses the comma in the appropriate location.
- Student differentiates between the value and place of a digit.

Purposeful Questions:

- Explain why you wrote that number in the way you did?
- How did you determine the digit in the *(ones, tens, hundreds, etc.)* place? What is the value of the digit in the *(ones, tens, hundreds, etc.)* place?
- Read that number out loud. Does that match what is in the question?
- How could you represent this number in a different way?

Bridging Activity to Support Standard	Instructional Tips										
Routine Would You Rather	Use Would You Rather Have Option A or Option B which can be altered with various numbers and place values. For example: <table border="1" data-bbox="521 552 1281 760"> <thead> <tr> <th data-bbox="521 552 899 604">A</th><th data-bbox="899 552 1281 604">B</th></tr> </thead> <tbody> <tr> <td data-bbox="521 604 899 638">3 Hundred Thousands</td><td data-bbox="899 604 1281 638">34 Ten Thousands</td></tr> <tr> <td data-bbox="521 638 899 672">45 Thousands</td><td data-bbox="899 638 1281 672">53 Hundreds</td></tr> <tr> <td data-bbox="521 672 899 705">3 Hundreds</td><td data-bbox="899 672 1281 705">1 Ten</td></tr> <tr> <td data-bbox="521 705 899 739">12 Ones</td><td data-bbox="899 705 1281 739">5 Ones</td></tr> </tbody> </table>	A	B	3 Hundred Thousands	34 Ten Thousands	45 Thousands	53 Hundreds	3 Hundreds	1 Ten	12 Ones	5 Ones
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Rich Task MARS Tasks Grade 3 (scoe.org) (page 10)	Questions could be opened further by giving students different number cards and/or allowing them to choose their own cards. Can also be adapted to meet grade level requirements with 6 digits.										
Games/Tech Desmos 3.1a Polygraph: Place Value Desmos 3.1a Polygraph: Place Value Models Desmos 3.1a Place Value Match-Up Desmos 3.1a Place Value Match-Up	. These Custom Polygraphs are designed to spark vocabulary-rich conversations about place value relationships. Key vocabulary that may appear in student questions includes: digit, value, place value, ones, tens, hundreds, thousands, and ten-thousands. This activity will engage students in representing numbers up to 9,999 in multiple ways, according to place value with and without modes. This activity was created to address SOL 3.1aSa Represent numbers up to 9,999 in multiple ways, according to place value with and without modes.										
Other Resources: • Mystery Number Riddles • VDOE Mathematics Instructional Plans (MIPS): ◦ 3.1a Place Value (Word) / (PDF) ◦ 3.1a Place Value Games (Word) / (PDF) ◦ 3.1 abc Place Value Mat Activities (Word) / (PDF) • VDOE Co-Teaching Mathematics Instruction Plans (MIPS): ◦ 3.1a Place Value A Co-Teaching Lesson Plan (Word) / (PDF) • VDOE Word Wall Cards: Grade 3 (Word) / (PDF) ◦ Place Value Position • VDOE Rich Mathematical Tasks: Packing Pencils ◦ 3.1a Packing Pencils Task Template (Word) / (PDF) ◦ 3.1a Packing Pencils Student Version of Task (Word) / (PDF) ◦ 3.1a Packing Pencils Anchor Papers (Word) / (PDF) ◦ 3.1a Packing Pencils Anchor Papers and Scoring Rationale (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 \(SOL\)](#)