Unit 1a-Understand Place Value

Content Area: **Math**
Course(s): **Math 5**
Time Period: **Marking Period 1**
Length: **MP1 Topic 1 1-1 to 1-7**
Status: **Published**

Essential Questions

- How are whole numbers and decimals written, compared, and ordered?

Big Ideas

- **Exponents and Expanded Form:** Students learn to use exponents to write powers of 10. Students will write multi-digit whole numbers in expanded form with exponents.
- **Place-Value Relationships in Whole Numbers and Decimals:** Students will see that for whole numbers, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. Students will understand that this relationship applies to decimals, as well. Students will discover that writing decimals in expanded form is an extension of writing whole numbers in expanded form.
- **Compare and Round Decimals:** Students use their knowledge about decimal place value to compare decimals and to round decimals. Due to the structure of the base-ten system, these skills with decimals are very similar to the same skills that were taught in previous grades.

CSDT Technology Integration

8.2.5.ED.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.

Activity:

1) Post an assignment in Google Classroom where students watch a Khan Academy Decimal Place Value video to introduce the topic. Afterwards, students will complete a short Google Classroom assignment to reflect on the video.

2) Students will work independently in the IXL program to answer questions about addition and subtraction. The specific skills in IXL related to this standard are G3 - G16 and A1 - A5. The program will track students progress and mastery of these skills.

Cross-Curricular Integration

Integration Area: Science

5-LS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Activity:

Students will view data that describes what happens to the ecosystem when grasshoppers overpopulate. Students will use the data to find patterns with exponents and powers of 10. (Math and Science Activity 1-1)

Diversity Integration

Objective: Students will be able to compare and order populations of various countries.

Description of Activity:

Students will be able to pick 5 countries of their choice and determine their population. Students will compare the populations of the different countries and order them from greatest to least. Students will share their findings with the class.

Enduring Understandings

Number and Operations in Base Ten

5.NBT.A.1[M] Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

5.NBT.A.2 [M] Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

5.NBT.A.3 [M] Read, write, and compare decimals to thousandths.

5.NBT.A.3a [M] Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 x 100 + 4 x 10 + 7 x 1 + 3 x (1/10) + 9 x (1/100) + 2 x (1/1000).

5.NBT.A.3b [M] Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

5.NBT.A.4 [M] Use place value understanding to round decimals to any place.

Mathematical Practices Focus

7. Look for and make use of structure.