**Title:** Draw it, Make it, Write it, and Build it

**Grade level:** 2

**Content strand:** Place Value

**Mathematical Practice:** Students will reason abstractly and quantitatively.  Students will use appropriate tools strategically. Students will use strategies such as TPT, CRA, cooperative learning and STEM.

**Math Standards-**

CC.2.1.2.B.1 Use place value concepts to represent amounts of tens and ones and to compare three digit numbers.

CC.2.1.2.B.2 Use place value concepts to read, write, and skip count to 1000.

AL.1.2.B1 Participate in a variety of challenging experiences.

AL.1.2.C1 Engage in cooperative, purposeful, and interactive play experiences that enhance learning.

AL.2.2.B1 Complete multi-step tasks with independence.

AL.2.2.E1 Employ new and familiar strategies to recall information for a purpose.

**Stem Standards:**

[1.NBT.B.2](https://www.teacherspayteachers.com/Browse/Core-Standard/1.NBT.B.2), [1.NBT.B.2a](https://www.teacherspayteachers.com/Browse/Core-Standard/1.NBT.B.2a), [1.NBT.B.2b](https://www.teacherspayteachers.com/Browse/Core-Standard/1.NBT.B.2b), [1.NBT.B.2c](https://www.teacherspayteachers.com/Browse/Core-Standard/1.NBT.B.2c), [2.NBT.A.1](https://www.teacherspayteachers.com/Browse/Core-Standard/2.NBT.A.1), [2.NBT.A.1a](https://www.teacherspayteachers.com/Browse/Core-Standard/2.NBT.A.1a), [2.NBT.A.1b](https://www.teacherspayteachers.com/Browse/Core-Standard/2.NBT.A.1b), [2.NBT.A.3](https://www.teacherspayteachers.com/Browse/Core-Standard/2.NBT.A.3)

**Vocabulary:**

* Place value- The value given to a digit by its place in a number
* Digit- a symbol used to write numbers: 0,1,2,3,4,5,6,7,8,9
* Ones- the numbers in range from 0-9
* Tens-the numbers in range of 10-99
* Hundreds-the numbers in range from 100-999
* Expanded form- the representation of a number as a sum that shows the value of each digit. Sometimes called expanded notation.
* Written form- the representation of a number in number words

**Objectives:**

* Students will use manipulatives and pictures to represent and identify the place values of three digit numbers.
* Students will determine the value of a set of base ten blocks.
* Students will write 3 digit numbers in standard form, expanded form, and word form.
* Students will design and build with base ten blocks

**Lesson Essential Question:**

How can we represent and compare numbers?

**Duration:** 90 minutes

**Materials:**

* Individual whiteboards and markers
* Laminated Recording papers (see below) and vis vis markers
* Base ten blocks: hundreds, tens and ones
* STEM build cards and recording paper and pencil

**Suggested Instructional Strategies:**

* CRA- concrete/ representational/ abstract
* TPT- total participation technique of combining quick write/ picture notes/ pass the paper
* STEM build cards for guided experimenting/learning
* Developing Math Concepts Through Manipulatives
* Guiding Understanding through Teacher Talk
* Students Talking to Students-The Role of Cooperative Learning
* Growth Mindset in Mathematics

**Instructional Procedures:**

BEFORE:

Whole group place value guided review: Teacher will post a 3 digit number: 234. Call up volunteers to write each part until the number is answered/represented in standard form, expanded form, word form, and picture form. While volunteers come to the board, all others *write* the same answers (Quick writes/ Picture notes) at their seats on their whiteboards. Students will then *draw* the value using a box for hundreds, lines for tens, and dots for ones on whiteboards and share with tablemates. For fun, challenge students to draw one incorrect and see if a tablemate can catch it!! Remember, mistakes build synapses! Repeat activity for another number: 678.

DURING:

In teams of 3, students create a 3 digit number in 3 parts: Concrete form: making it with base ten blocks; Representational form: draw it; and Abstract form: write it in standard form, expanded form, and word form. Groups will complete “Pass the paper” activity by sharing and passing laminated recording papers around the table as they complete each part. Student 1 will announce the 3 digit number he/she is going to make and then create a 3 digit number with base ten blocks. Student 2 will start drawing the 3 digit number using the representational shapes of boxes, sticks, and dots. Student 3 will complete the abstract recording of the standard, expanded and written forms.

Repeat activity 2 more times so each member of the team gets to complete each part of the activity. Ask each team to perform 1 round for the teacher as a formative assessment.

AFTER:

Students will BUILD with base ten blocks. Using build cards, students will choose different BUILD cards and attempt to build the objects on the card. After trying several constructions, the student will choose 1 card for drawing and recording. They will draw the object that they built on the recording paper. Then, they will write how many hundreds, tens, and ones they used. Lastly, they will write the number in expanded form and written form on their paper.

**Formative Assessment:**

Teacher observation during teamwork activity, “Pass the paper.”

**Summative Assessments:**

1. Collect the recording paper for accuracy with sketch of the BUILD IT card the student made with base ten blocks showing the number they made represented in standard, word and expanded form for 5 completion/ accuracy points.

2. Teacher passes out the same worksheet used for abstract form for each student to complete with the given number: 765 and students must complete on own for 5 completion/ accuracy points.

**Team Names: \_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_,**

**Step 1: Make it!! Name \_\_\_\_\_\_\_\_\_\_\_\_**

**Step 2: Draw it: Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Standard Form: \_\_\_ \_\_\_ \_\_\_

**Step 3: Write it Name \_\_\_\_\_\_\_\_\_\_\_\_\_**

Standard Form: \_\_\_ \_\_\_ \_\_\_

Place Value: \_\_\_\_\_ hundreds \_\_\_\_tens \_\_\_\_ ones

Expanded Form: \_\_\_\_\_+\_\_\_\_\_+\_\_\_\_\_=\_\_\_\_\_

Word Form:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Assessment: Name \_\_\_\_\_\_\_\_\_\_\_\_\_

(Teacher will tell you a number)

Standard Form: \_\_\_ \_\_\_ \_\_\_

Place Value: \_\_\_\_\_ hundreds \_\_\_\_tens \_\_\_\_ ones

Expanded Form: \_\_\_\_\_+\_\_\_\_\_+\_\_\_\_\_=\_\_\_\_\_

Word Form:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Draw it ☺

/5 points

**Place Value STEM lesson: BUILD IT cards and recording paper**

I only bought 1 license for me to use these BUILD IT cards, but not to share. So, these are screenshots of the cards for students to build with the base ten blocks. Below is the recording paper for them to draw/sketch what base blocks they used and record the “value” of their building in expanded and word form.









