Deepening Your Knowledge of the T.E.K.S. ...and then some!

-Elizabeth Kelley
A LITTLE BIT ABOUT ME...
Today, through the lens of backwards design, you will apply the basic steps to deconstructing the T.E.K.S. & developing a story map that progressively builds rigor based on the Levels of Blooms.
BACKWARD DESIGN

Identify desired results

Big ideas & skills

Determine Acceptable Evidence

Culminating Assessment Task

Plan Learning Experiences & Instruction

Learning Events
“Lesson planning is at the heart of being an effective teacher. It is a creative process that allows us to synthesize our understanding of second language acquisition & language teaching pedagogy with our knowledge of our learners, the curriculum, & the teaching context. It is a time when we envision the learning we want to occur & analyze how all the pieces of the learning experience should fit together to make that vision a classroom reality.”
“Our own content knowledge affects how we interpret the content goals we are expected to reach with our students. It affects the way we hear & respond to our students & their questions. It affects our ability to explain clearly & to ask deeper level questions. It affects our ability to approach an idea flexibly with our students & to help them make connections. It affects our ability to push each student at that special moment when he or she is ready or curious. And it affects our ability to make those moments happen more often for our students.”
# Materials:

**What you’ll need:**
- Electronic Device with internet access
- Writing tool
- Possibly variety of colored pens

**Handouts you should have:**
- Critical thinking skills
- Examples to assess mastery at each level
- Wheel of Instructional Objectives
- TEK breakdown protocol (2)
- Story Map (2)
- Key Verbs/Example Learning Objective
Matter and energy. The student knows matter has physical properties that can be used for classification. The student is expected to:

(A) compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability;

(B) calculate density to identify an unknown substance; and

(C) test the physical properties of minerals, including hardness, color, luster, and streak.
(6.6A) **compare** metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability;
Determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is either a missing factor or product;
(5.7D) retell, paraphrase or summarize texts in ways that maintain meaning and logical order;
**TEK BREAKDOWN PROTOCOL**

1. Identify standard 5 write out in expanded form
2. Identify 5 locate the 5 sub-sections in order
3. Place sub-sections within the graphic organizer
   a. Verb(s)
   b. Context: the how
   c. Transition word(s)
   d. Content: the what
   e. Essential vocabulary

1. **TEK:** B.6.b| Compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity or malleability.

A. Verb(s):

   Compare

B. Context:

   Metals, nonmetals, and metalloids

C. Transition word(s):

   Using

D. Content:

   Physical properties such as luster, conductivity or malleability.

E. Essential vocabulary:

   Metals
   Nonmetals
   Metalloids
   Similar/compare
   Different/contrast
   Physical properties
   Luster
   Conductivity
   Malleability
   Brittle
   Dull
   Semi-conductor
...It's Your Turn
Alright, let's take this to the next level!
Bloom's Taxonomy is a powerful tool to help develop learning objectives because it explains the process of learning:

Before you can understand a concept, you must remember it.

To apply a concept you must first understand it.

In order to evaluate a process, you must have analyzed it.

To create an accurate conclusion, you must have completed a thorough evaluation.
STEPS TOWARDS WRITING EFFECTIVE LEARNING OBJECTIVES:

Make sure there is 1 measurable verb in each objective.

Each objective needs 1 verb. Either a student can master the objective, or they fail to master it. If an objective has 2 verbs (say, define & apply), what happens if a student can define, but not apply? Are they demonstrating mastery?

Ensure that the verbs in the course level objective are at least at the highest Bloom’s Taxonomy as the highest lesson level objectives that support it. (Because we can’t verify they can evaluate if our lessons only taught them (& assessed) to define.)

Strive to keep all your learning objectives measurable, clear & concise.
<table>
<thead>
<tr>
<th><strong>Key Verbs</strong></th>
<th><strong>Example Learning Objective</strong></th>
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<tr>
<td><strong>CREATE</strong></td>
<td>By the end of this lesson, the student will be able to design an original homework problem dealing with the principle of conservation of energy.</td>
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<td>design, formulate, build, invent, create, compose, generate, derive, modify, develop</td>
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<td><strong>EVALUATE</strong></td>
<td>By the end of this lesson, the student will be able to determine whether using conservation of energy or conservation of momentum would be more appropriate for solving a dynamics problem.</td>
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<td>choose, support, relate, determine, defend, judge, grade, compare, contrast, argue, justify, support, convince, select, evaluate</td>
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<td><strong>ANALYZE</strong></td>
<td>By the end of this lesson, the student will be able to differentiate between potential and kinetic energy.</td>
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<td>classify, break down, categorize, analyze, diagram, illustrate, criticize, simplify, associate</td>
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<tr>
<td><strong>APPLY</strong></td>
<td>By the end of this lesson, the student will be able to calculate the kinetic energy of a projectile.</td>
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<td>calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, perform, present</td>
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<td><strong>UNDERSTAND</strong></td>
<td>By the end of this lesson, the student will be able to describe Newton’s three laws of motion to in her/his own words</td>
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<td>describe, explain, paraphrase, restate, give original examples of, summarize, contrast, interpret, discuss</td>
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<tr>
<td><strong>REMEMBER</strong></td>
<td>By the end of this lesson, the student will be able to recite Newton’s three laws of motion.</td>
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<td>list, recite, outline, define, name, match, quote, recall, identify, label, recognize</td>
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MOVING TO THE HIGHER ORDER OF THINKING

Below is an example of moving from the lower levels of the taxonomy to the higher levels as you teach a topic. Each level is built on the preceding lower level. As you move higher, each level becomes more challenging.

**Remembering:** List different types of fruit

**Understanding:** Explain why they are classified as fruits

**Applying:** Diagram the parts of your favorite fruit

**Analyzing:** Compare each fruit finding the characteristics that make it different from the others

**Evaluating:** Determine and justify which fruits are the healthiest

**Creating:** Create a drink using three fruits that would be considered extremely healthiest
Write in the primary TEKS that you are writing the learning objectives for.
Write in the verb that you are assessing for mastery.
What level does your verb fall under with Bloom's taxonomy?
Your number of days of instruction will be determined approximately by the level of Bloom’s your verb falls under.
Write in the days of the week that you’re covering this TEKS.
Develop your objectives using Blooms hierarchy to build rigor.
STORY MAP EXAMPLE

TEKS: 6.6A  VERB: Compare  BLOOMS LEVEL: ANALYSIS  DAYS OF INSTRUCTION: 4-5

Monday, 10/8  Tuesday, 10/9  Wednesday, 10/10  Thursday, 10/11  Friday, 10/12

- Identify metals, nonmetals, & metalloids using physical properties such as luster, conductivity or malleability.
- Describe metals, nonmetals, & metalloids using physical properties such as luster, conductivity or malleability.
- Give an example of metals, nonmetals, & metalloids using evidence based on their physical properties, such as luster, conductivity or malleability.
- Classify metals, nonmetals, & metalloids using physical properties such as luster, conductivity or malleability.
- Compare metals, nonmetals & metalloids using physical properties such as luster, conductivity or malleability.
...It's Your Turn
Thank you so much for all you do, and thank you for being here today!