Dinosaur Encyclopedia: Unit Conversion

Ideal Unit: Measurement & Unit Conversion	**Time Range**: 3-5 Days	**Supplies**: Rulers, Pencil & Paper

Topics of Focus:

- Converting Metric to Customary Units
- Converting Customary to Metric Units

Driving Question *"How is unit conversion used in publishing dinosaur books?"*

Culminating Experience Create a dinosaur encyclopedia to go with a consistent set of units.

Common Core Alignment:

4.MD.A.1	Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.
4.MD.A.2	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
5.MD.A.1	Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

Procedures:

A) In "What's My Weight Again?", students will use known weights and change the units to another within the same measurement system.

B) In "Long and the Short of It", students will be given fossil information and will convert it to another measurement. In some cases they must determine which dinosaur it belongs to.

C) In "Bone Wars", students will have a discovery adventure! This could be done in a few ways. In any event, the dinosaur bones will need to be cut out in advance. You can laminate them for repeated use. I suggest to divide students into small groups of 4-5. You can either "hide" the bones and have the students go around the room to "excavate" them or you can simply give each student group 6 random bones. The goal is that a group will collect 6 bones of the same dinosaur. You can have students trade bones, steal bones, buy bones, whatever you are comfortable with. There are 8 dinosaurs included, but you do not need to use all of them for the activity to work. When students collect the bones of their dinosaur, they can verify with you that they have all six pieces by measuring them. They are labeled with letters, numbers or symbols and a key is provided.

D) In "Dinosaur Encyclopedia", students will convert between customary and metric units to prepare a dinosaur encyclopedia for publication. For each dinosaur, they must create a labeled page of information for it. There are six dinosaurs provided, but you do not necessarily need to use all of them. This can be done in small groups or individually.

* Aspects of the project can be completed independently. The entire project does not need to be completed to have a great learning experience, though it is suggested because it will best scaffold the skills and context.

What's My Weight Again?

Name _____ Date _____

When paleontologists learn about dinosaurs, one of the facts they try to determine is how heavy the dinosaur was. Paleontologists from all over the world use this information for research and in books. Often they need to convert the weights into different units. Help the paleontologists convert the weights of these dinosaurs into different units.

Average Weight of Actual Dinosaurs

	Known Weight	Weight that is needed
Allosaurus	2,300,000 g	kg
Ankylosaurus	208,000 oz	lbs
Apatosaurus	48,000 lbs	tons
Coelophysis	45 kg	mg
Microraptor	2 lbs	oz
Spinosaurus	20,000 kg	MT
Stegosaurus	3,100 kg	g
Triceratops	416,000 oz	lbs
Tyrannosaurus Rex	9 tons	lbs
Utahraptor	10 MT	kg

Follow-Up Do you find it easier to convert within metric units or customary units? Explain why.