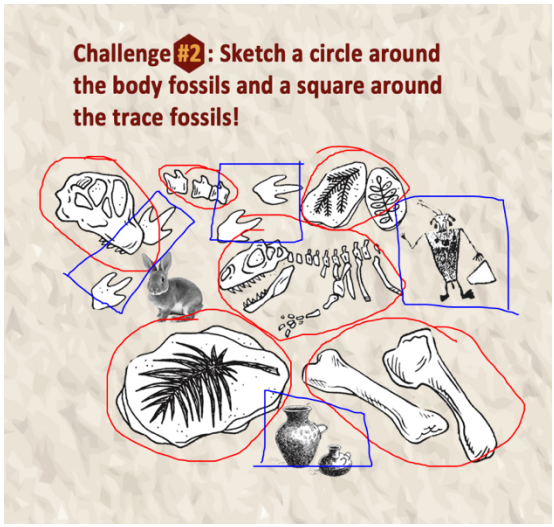
Wyoming Junior Paleontologist MDL Kit Answer Key

<u>Challenge #1: Can you recite the important parts of "D-I-G" from memory? Give it a try!</u>
D = Defend
I = Investigate
G= Grow

Challenge #2: Body vs. Trace Fossil
Sketch a red circle around the body fossils and a blue square around the trace fossils, including those that might be traces of human life (even though that's part of archeology)!



Challenge #3: Fossilization Types
Use the Paint Tool and match the different fossils with their fossilization type, answers are based on those given in the previous slide show.

<u>Where are 5 places you might be able to find fossils? Can be a type of environment (desert, mountains, forest?), or even a place, like Wyoming!</u>

Desert, Mountains, Colorado, Dirt, Montana, Wyoming, Arica, Rivers, Beaches, Ocean, Caves, Backyard, Museums…anything really

Do you think that geology and paleontology are related to each other? Can a paleontologist be a Geologist? Why or Why not?

They are absolutely related! Most fossils are actually rocks and are surrounded in rocks, so to understand fossils you also have to understand rocks.

Challenge #4: Excavation Tools

We're getting ready to go on a dig! Help us pick out and circle 5 things we will need.

What looks different about it? Was Wyoming partially underwater?

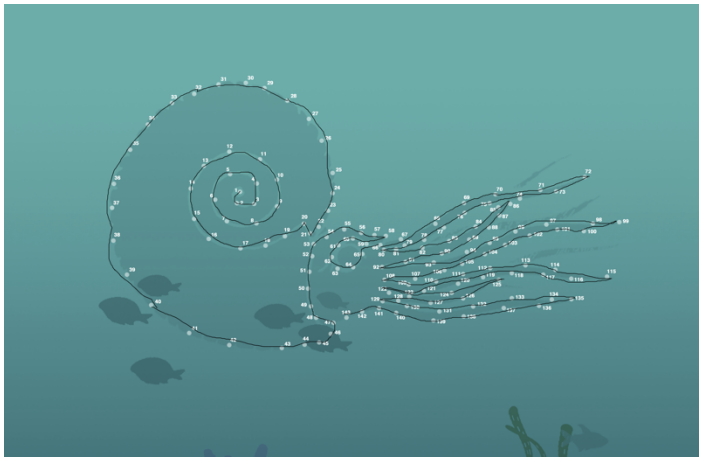
The shape of the continent is quite a bit different (missing California), plus the ocean extends halfway through and partially covered Wyoming. This shows that Wyoming was under water.

Can you name another vertebrate animal that is alive today?

Anything with a backbone: cat, dog, horse, bird, chicken, lizard, snake, fish, deer, frog. NOT DINOSAURS (Unless they say birds, those are avian dinosaurs).

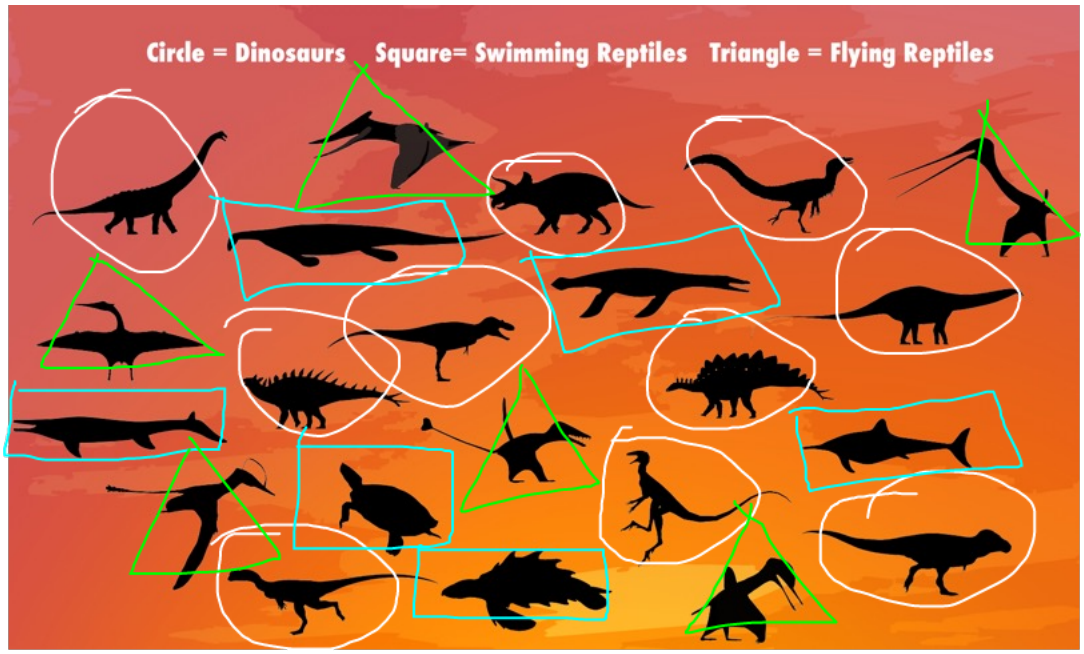
Challenge #5: Who lived in the Paleozoic?

Connect the dots by counting up to reveal an ammonite, a relative of a modern day squid or octopus that was common in the Paleozoic!



Challenge #6: Dinosaur vs. Reptile

These are shapes of dinosaurs or reptiles that lived in the Mesozoic Era. Based on their shape, circle in white animals that you think are dinosaurs, draw a blue square around swimming reptiles, and draw a green triangle around those you think are flying reptiles. Use the shape of the body to give you clues. Does it have wings? Swimming paddles? Walk on two feet?



<u>Why do you think scientists named this era "Recent Life?"</u>

Because Cenozoic is the most recent era.

<u>The state of Minnesota is outlined in blue. Was it under a glacier?</u>

Yes, the entire state of Minnesota was under a glacier.

<u>What about Wyoming outlined in red, were there glaciers in Wyoming during the Pleistocene? If so, did they cover the entire state?</u>

Yes, there were glaciers in Wyoming during the Pleistocene, but they only cover the mountains in Wyoming, not the entire state.

Challenge #7: Help the Columbian Mammoth

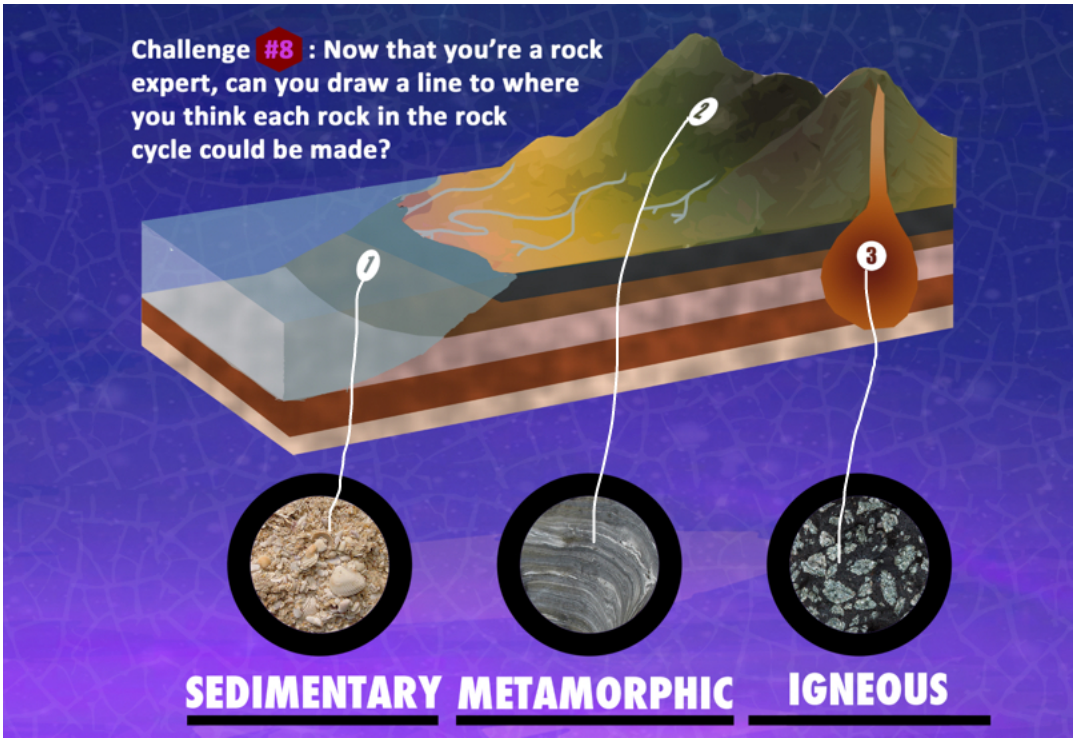
Help Nip the Columbian Mammoth, one of our fossils at the UW Geological Museum from the Cenozoic, by 1. drawing in his missing tusks, and 2. by helping him find his way through the maze?

<u>Of the three rock types, what type of rock do you think fossils are most commonly found in? Would it be igneous, metamorphic, or sedimentary?</u>

Fossils are almost only found in sedimentary rocks. Dinosaurs don't live where igneous rocks are formed (inside volcanoes), or if they did walk near a molten volcano, there's a good chance the lava would dissolve the bones/remains. Metamorphic rocks form deep in the earth and even if a fossil was to travel deep, the metamorphic process would likely obliterate any trace of the fossil. Sedimentary rocks form in water from depositing grains, which is exactly what is needed to bury and preserve a fossil. Thus, fossils almost always form in sedimentary rocks.

Challenge #8: The Rock Cycle

Now that you're a rock expert, can you draw a line to where you think each rock in the rock cycle would be made?



Sedimentary rocks often form in the ocean where rivers deliver sediment, the sediment drops to the seafloor and layers of sediment build up, become mineralized "glued together" and become a rock.

Metamorphic rocks often form inside mountain ranges.

Igneous rocks form in lava chambers or molten rock deep in the crust.