Fossil Frenzy

1. **DESCRIPTION**: Teams will be assessed on their knowledge of fossils and the fossilization process.

2. **ESSENTIAL STANDARDS ALIGNMEN**: 4.E.2

3. **TEAM OF UP TO**: 2

4. **MAXIMUM TIME**: 60 min.

5. **TEAMS**: Must bring writing instruments. Teams may also bring up to 2 commercially produced field guides and/or 2 1-inch, 3-ring binders with pages in any form, from any source, contained in page protectors. (This means 2 guides, or 2 binders, or a guide and a binder). Teams may also bring up to two hand lenses.

6. **EVENT LEADERS**: Will provide a hands-on event with all necessary items, objects, materials, questions, and response sheets for participants to complete stations.

7. **SAFETY REQUIREMENTS**: None.

8. **IMPOUND**: No

9. **THE COMPETITION**: This event will be run in a station format. Teams will rotate through stations that assess any or all of the following topics:
   a. Identification of fossils on the Official Fossil List from pictures, replicas, actual specimens, descriptions, etc.
   b. Be able to understand and explain conditions required for a plant or an animal to become fossilized and the processes of fossilization.
   c. Be able to distinguish between modes of preservation: petrification, mineral replacement, cast/mold, imprint, encasement in amber/copal, mummification, freezing, entrapment in tar/asphalt.
   d. Distinguish between carnivore, herbivore, and omnivore.
   e. Identify the geologic time period (Triassic, Jurassic, or Cretaceous) the dinosaur is from.
   f. Be able to make inferences about dinosaurs from footprints, teeth, body structures and coprolites. Examples may include, but are not limited to, determining whether a dinosaur was a carnivore or herbivore based on type of teeth, spikes present on a tail were likely used for defense, and bones or other distinguishable parts present in a coprolite indicate the diet of the dinosaur.
   g. Identify the environments: marine, terrestrial, fresh water, etc. for all species listed on the Official Fossil List
   h. Understand the Geologic Time Scale and be able to distinguish between era, period, and epoch and know where the dinosaurs and humans fit in on that time scale.

10. **SCORING**: Points will be awarded for the accuracy of responses. Ties will be broken by the accuracy or quality of answers to pre-selected questions chosen by the event leader.

11. **EVENT RESOURCES**:
    http://www.sciencenc.com/event-help/fossilfrenzy.php
    http://sciencenetlinks.com/lessons/fossils-1-fossils-and-dinosaurs/
    http://www.sheppardsoftware.com/scienceforkids/dinosaurs/index.htm
    http://www.discoveryeducation.com/teachers/free-lesson-plans/discovering-dinosaurs.cfm
    http://nature.nps.gov/geology/nationalfossilday/index.cfm

Fossil Frenzy – Official Fossil List

Students will have to know common names only.

INVERTEBRATES
Corals (branching, colonial)
Trilobites
Crustaceans (shrimp, lobster, crabs, barnacles)
Brachiopods
Bivalves (Clams, mussels, oysters)
Cephalopods (nautiloids, ammonoids, belemnoids)
Echinoids (sea urchins, sand dollars)
Asteroids (sea stars, brittle stars)

VERTEBRATES - Dinosaurs
Acrocanthosaurus
Allosaurus
Ankylosaurus
Apatosaurus
Archaeopteryx
Coelophysis
Deinonychus
Diplodocus
Parasaurolophus
Plateosaurus
Velociraptor
Tyrannosaurus rex
Iguanodon
Stegosaurus
Triceratops

OTHER VERTEBRATES
Sharks (Shark Teeth) and rays
Bony Fish
Ichthyosaurs
Plesiosaurs
Pterosaurs

TRACE FOSSILS
Trails, Borings
Tracks, Trackways
Burrows, Tubes
Nests
Coprolites

OTHER
Amber/Copal
Petrified wood
Stromatolites