* Names: Van Dyke, J., Parker-Davis, P.
* Kit: SEPUP Issue Oriented Science / Evolution
* Title: Here Today, Gone Tomorrow?
* Unit #89
* Grade Level: 8
* Hook: What are the trade-offs in deciding whether to save an endangered species and / or re-creating an extinct one? Students previous unit covered Ecology and introduced species research and classification. Lesson 90 Figuring out Fossils will connect with Lesson 89.
* Hypothesis / Hypotheses:

Using research and evidence, students decide whether humans should intervene in the preventing the extinction of Asian elephants.

* Students also decide, using evidence, whether wooly mammoths (an extinct species) should be cloned & if so, which remaining elephant species should be used.

Necessary prior knowledge / experience:

Students should understand that Asian Elephants did not evolve from Mammoths, they existed at the same time.

Adaptations to the procedures:

The students should record their arguments against and for extinction / preservation and cloning of species in the journals, not in the handouts.

The white boards are perfect to “stand and defend” your position on the issue(s).

Lesson extensions / addendums:

To incorporate mathematics standards, students could graph the impending extinction of Asian elephants.

The “Species Fact Sheet” (attached) is a very good resource for students to use to support their position.

Reflections:

With our adaptations, the lesson incorporates mathematics standards alongside science literacy.

This lesson is also a very good illustration of how Guided Inquiry can occur without experimentation.

Timing:

Summer Session 1 hr. / School year 45min

Other materials needed:

Meter stick / white board / marker/ notebooks

* Names: Van Dyke, J., Parker-Davis, P.
* Kit: SEPUP Issue Oriented Science / Evolution
* Title: Figuring Out Fossils
* Unit #90
* Grade Level: 8
* Hook: Have you ever seen a fossil? What can fossils tell you about organisms that lived in the past?
* Hypothesis / Hypotheses:
* Students will draw, diagram & infer (hypothesize) characteristics of eight organisms based on their fossils.

e.g. “What do the teeth fossils of this organism infer about its diet?”

Necessary prior knowledge / experience:

Student should have some prior knowledge about fossils. (#89)

Adaptations/Additions to the procedures:

The students should record their findings in journals & whiteboards in lieu of the handouts.

The white boards are good to help students learn how to “stand and defend” position on issue(s).

Lesson extensions / addendums:

To incorporate mathematics standards, students should create a graph of a geologic time scale.

* The following is an extension to the lesson:

Students were given photos of an archaeopteryx with open-ended questions regarding the appearance and behavior of the organism.

* After drawing your fossils in your notebook, what might you infer about the fossil depicted above?
* What details about the appearance and behavior of this organism do you think would be easiest to determine? Why?
* What details about the appearance and behavior of this organism do you think would be hardest to determine? Why?

Reflections:

With our adaptations, the lesson incorporates mathematics standards concurrent with science literacy.

This lesson is also a very good illustration of how Guided Inquiry can occur with experimentation.

* 8.7.8

Apply strategies and results from simpler problems to solve more complex problems. Example: In the first example, write the first five numbers in base 2 notation and look for a pattern.

Timing:

Summer 1 hr. / School year 45 min.

Other materials needed:

* Notebooks, white boards