Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_\_\_\_\_\_\_\_

**How Do You Stack Up**

**Task 1: Absolute Age Flip Chart**

1. Define absolute age in your own words.

2. Describe radioactive decay.

3. How much Carbon-14 is left after it experiences two half-life?

4. All living things have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in their molecules.

5. How can you determine how old a dead thing is?

6. How old is the campfire’s wood?

**Task 2**  **How Do You Stack Up**

**Directions:**

According to the principle of superposition, in undisturbed sequences of sedimentary rock, the oldest layers are on the bottom. Geologists use this principle to determine the relative age of the rocks in a small area.

In this activity, you will model what geologist do by drawing sections of different rock outcrops. Then you will create a part of the geologic column, showing the geologic history of the area that contains all the outcrops.

**Materials:**

-Metric ruler -Pencil - Colored pencils or crayons

-Paper -Scissors - Tape/glue

**Procedure:** (Check off each step as you complete them)

\_\_1. Number your outcrops on the back so when you cut them out you will know which outcrop they belong in

\_\_2. Use colored pencils to shade the different layers of each outcrop.

\_\_3. Cut out the boxes shown on the last page of your lab..

\_\_4. Pay close attention to the contact between layers - straight or wavy.

* Straight lines represent bedding planes (shows the different layers of rock), where deposition was continuous.
* Wavy lines represent unconformities, where rock layers are missing. The top of each outcrop is incomplete, so it should be a jagged line. (Assume that the bottom of the lowest layer is a bedding plane)

\_\_5. Cut out each outcrop and cut out at all the unconformities (wavy lines).

\_\_6. Note the symbols representing fossils in the layers of your outcrops. Pay attention to the variety of fossil shapes and the layers that they are in.

\_\_7. Lay the individual outcrops next to each other on your desk or table.

\_\_8. You will now make a geologic column that represents all four outcrops. It will show rock types and fossils for all the known layers in the area. To do this keep each outcrop in order and align the matching rock layers.

\_\_9. Tape or glue your geologic column on the back of your comprehension questions.

1. On your geologic column identify and label the following

\_\_\_The oldest rock layer \_\_\_The youngest rock layer

\_\_\_All the unconformities \_\_\_Index fossil(s)

\_\_\_Number the rock layers

**Comprehension Questions: Answer the following questions using complete sentences with a restate.**

1. Define the following words

-Fossil

-Index fossil

-Relative age

-Absolute age

-Radiocarbon dating (379)

2. How many layers are in the geologic column you modeled?

3. Which is the oldest layer in your column? Which rock layer is the youngest? Describe these layers in terms of rock types and fossils they contain.

4. Which fossils are index fossils?

5. Why would you consider the fossils mentioned in question four index fossils?

6. List/draw the fossils in your column from oldest to youngest.

7. Look at the unconformity in Outcrop 2. Which rock layers are partially or completely missing? Explain how you know this.