**GC A3 Relative Dating**

Script

Instructions: Advance the PowerPoint slides at every new paragraph and anywhere you see “/”

[2] The Geologic Column—Relative Age

[3] Scientists study all kinds of things.

[4] In the process of scientific inquiry scientists do two things: / First they collect data, /

and then they interpret data.

[5] Data are facts, or pieces of information, that we gather by observing, measuring, or analyzing something.

[6] We can observe the color of flowers.

[7] We can find the weight of a kitten, or an elephant / and measure the circumference or height of a tree.

[8] We can count a crocodile’s teeth / or the legs on a centipede.

[9] All these pieces of information are facts—or data.

[10] The ideas scientists come up with to explain the data are called interpretations.

[11] The rocks in the geologic column are a source of lots of interesting data..

[12] For example, the color and shape of rocks are facts—/ things that can be observed by anyone who looks at the rocks. / These facts are data. / Measurements of things—like the size of a pebble or the depth of a rock layer are data also.

[13] As scientists analyze the data from the geologic column, they look for explanations for why rocks are a certain color or shape or how they came to be layered or folded? / These are called interpretations.

[14] As scientists look at the sequence of layers in the geologic column, one thing they draw conclusions about is the relative age of the layers.

[15] To understand relative age, look at the floor in this picture. Which do you think was laid down first? The carpet or the hard wood floor? You couldn’t very well put down carpet and THEN put a hard wood floor underneath, so we know the hard wood had to be laid down first. Then, sometime later, the carpet was laid down on top.

[16] We could say that the hard wood is “older” and by that we mean that it was laid down earlier. It has been in place longer.

[17] We could say the carpet is “younger” and by that we mean that it was laid down later. It has not been in place as long.

[18] But can we tell how *much* time there was between when the wood was laid down and when the carpet was laid down on top of it? Just by looking at it, we cannot tell whether the wood floor was put in on Monday and the carpet laid the following Wednesday / or whether the floor was there for 20 years before the room was carpeted.

[19] Now let’s look at the rock layers. Which layer is older? / This one? / Or this one?

[20] The lower one is “older.” Remember that just means it was laid down sooner than the ones higher up. We can’t tell by looking exactly how much time went by between the time the older one was laid down and the younger one was laid down.

[21] Just like with the real rock layers, we can tell the relative age of the intervals in our chart.

[22] The interval on the bottom is the oldest and the one on top is the newest, or youngest. Let’s practice…

[23] Is the Mesozoic or the Precambrian older?

[24] The Precambrian is older because it’s on the bottom.

[25] Is the Cenozoic or the Paleozoic older?

[26] The Paleozoic is older because it’s lower.

[27] Which is younger (more recent) the Mesozoic or the Paleozoic?

[28] The Mesozoic is younger because it’s higher.

[29] The idea that older layers are below the younger layers is reflected in the names of these strata.

[30] To understand what the names mean, think about the letters in the word “zoo”

[31] Notice the letters “zo” (as in zoo) in each of these names, and because zoos are where animals live, think “animal life.” But in this case we aren’t talking about living animals. / We are talking about the fossilized remains of animals that used to be alive.

[32] “Paleo” means old, / and when you see “zoic” …think animal life.

[33] So Paleozoic means “old animal life”

[34] “Meso” means middle, / and zoic means “animal life.”

[35] So Mesozoic means “middle animal life”

[36] “Ceno” means recent, / and zoic means animal life.

[37] So Cenozoic means “recent animal life”

[38] The prefixes at the beginning of the names mean old, middle, and recent

[39] The rest of each word means animal life

[40] The names of these intervals reflect the idea that the lower layers (and the fossils in them) are older than the ones above.

[41] In other words, they reflect the idea of “relative age.”

[42] Remember, though, that we can’t tell just by looking how *much* older or younger the layers are.

[43] What about the Precambrian and the Phanerozoic?

[44] Since we hardly find any fossils at all in the Precambrian, there’s nothing about animal life in the name.

[45] Phanerozoic means visible animal life, / which makes sense because we find SO many different fossils in these layers.

[46] Let’s summarize: We can’t tell just by looking how long the different layers have been there, but certain clues that we’ll be learning more about, indicate that it probably didn’t take long at all for the layers to be laid down.

[47] And unless the layers have been disturbed, we know that younger layers are always on top of older ones.