SCIENCE BY THE SEA®

INSPIRING A SENSE OF WONDER IN THE WORLD AROUND US

LESSON TITLE: *Building a Geologic Time Scale*

BACKGROUND INFORMATION: This lesson guides students to create a geologic timeline on nine pages of paper(8.5"x11"). Students will use math skills to calculate the correct length of the timeline for each geologic period based on the scale: **2.5 centimeters represents 50 million years (5 cm = 100MY).** A geologic time chart is provided to assist students in calculating the length of the timeline needed for each time period. (HINT: The total length of the timeline will be 4600 million years, or 230 cm total.) (This lesson was designed by Miriam Sutton, *Science by the Sea,* and is adapted for middle and high school students.)

NC ESSENTIAL STANDARDS FOR SCIENCE:

- 8.E.2: Understand the history of Earth and its forms based on evidence of change recorded in fossil records and landforms.
- 8.L.4: Understand the evolution of organisms and landforms based on evidence, theories and processes that impact the Earth over time.

MATERIALS:

- Calculations and Notes for the Geologic Timeline Handout
- Ruler
- Calculator
- 9 pages of paper; 8.5"x11" (Templates available in Teacher Materials)
- Teacher Materials (9 Pages of Geologic Time Measurements, 9 Pages of Geologic Time Labels, 9 Pages of Geologic Timeline Illustrations Sample)

PROCEDURES:

DAY 1: Students should use the following steps with the "Calculations and Notes for the Geologic Timeline Handout":

- STEP 1: Complete column 3. Determine the length of each time period in years based on the scale provided.
- STEP 2: Use this number to make your centimeter calculations and record these in column 4.
- STEP 3: Use the calculations in column 4 to measure and draw your timeline on each page of your 9-page scale.

DAYS 2 - 3: Students will use their calculations from the "Calculations and Notes for the Geologic Timeline Handout" to complete the geologic divisions along the 9-page timeline. Orient each page in landscape layout, rather then portrait layout. (See samples shown in Teacher Materials.)

DAYS 4+: Students will use the 9-page timeline to organize illustrations and notes recording the significant impacts (life and land) occurring throughout Earth's geologic history.

EVALUATION: Timelines can be scored based on the accuracy of the illustrations and notes created on each page of the timeline.

Miriam Sutton, M.A., NBCT – Science Education & Communication - Beaufort, North Carolina