

REGENTS EARTH SCIENCE
Earth History Intro: Modeling Time

Name: _____

Period: _____

In your everyday life you use many different units of time--seconds, minutes, weeks and years. These units are too short, however, for thinking about changes of the earth and changes in things that live on the earth. In studying the earth sciences you must consider thousands, millions, and billions of years. These are difficult time intervals to understand. You have experience with how long a second or a minute is, but none with the length of a century. In this investigation you start by estimating familiar units of time and then develop a model for larger units.

Materials

- Timer

Procedures

1. Observe the clock on the screen. Close your eyes when you are told to do so. When I say, "start," try to estimate ten seconds. When you think ten seconds have gone by, open your eyes and look at the clock. Record the actual time in column A of Table 1.

Table 1.

Trial	A Ten Seconds	B One Minute	C Ten Seconds, Counting	D One Minute Counting
1.				
2.				
3.				

- 2. Repeat the estimating process twice and record the actual times in column A.
- 3. Using the same procedure, try to estimate an interval of one minute. Do this three times and enter the results in column B of your table.
- 4. Watch the timer. Count seconds to yourself, saying "alligator one, alligator two," and so forth. Try to establish a rhythm. Do not count out loud or make any movements that might disturb those around you. At the end of the practice interval try again to estimate ten seconds.
- 5. This time count to yourself. Do this three times, entering your results in column.
- 6. Try to estimate a minute. Use silent counting to help you. Make three trials and enter your results in column D.

Interpretations

- 1. What is the longest time interval you can estimate with confidence in your accuracy? The shortest?

- 2. Why is there a difference between estimating shorter time periods versus longer time periods?

- 3. What did the distractions represent in relation to earth history? _____

