

8th Grade Integrated Science Standard 3, Objective 3

Title: Sequencing Time

Objective:

- Students will place events in sequence and assign relative times to each event.
- Students will gain an understanding of relative and numerical time.
- Students will gain an understanding of Relative Dating.
- Students will become familiar with the methods used by scientists to develop the Geologic Time Scale.

Materials:

- Student worksheet
- Geologic Time Scale

Background Knowledge:

- Telling the history of the Earth requires placing events in sequence so that reference can be given to the relative and/or numerical time at which each event occurred.
- This helps to make sense out of the enormous expanse of time that has elapsed since the origin of the Earth.

Procedure:

1. Have the students look at the events listed on their worksheet entitled Events in Your Life. Have them arrange these events in order, by placing the number 1 in front of the event that occurred first in their life, a number 2 for the second, etc.
2. Then have them fill out Your Personal Time Line
3. Have them continue to fill out their student worksheet.
4. These activities provide a good introduction to the Geologic Time Scale which has been arranged (and developed) in a similar manner.
5. Have the students compare their Personal Time Line to the actual Geologic Time Scale to note similarities and differences.
6. Have the students draw a comparison to the correlation of rock layers and the fossils they contain to a relative time scale.
7. Introduce the importance of index fossils.

SEQUENCING TIME

Name _____

1. Look at the events below entitled Events in Your Life. Arrange these events in order, by placing the number 1 in front of the event that occurred first in your life, a number 2 for the second, etc.

EVENTS IN YOUR LIFE	
_____	when you started second grade
_____	when you were born
_____	when you started kindergarten
_____	when you learned to ride a bike
_____	when you learned to walk
_____	when you learned to read
_____	when you lost your first tooth
_____	today's date

2. On the following chart entitled Your Personal Time Line, write these events in order in the third column, Sequential Time; but you need to write them so that the most recent event is at the top of the list and the event that occurred first is at the bottom of the list. You do not need to write out the whole event. For example: "When you learned to walk" could be written simply as "Learned to Walk".

YOUR PERSONAL TIME LINE

Time Interval	Numerical Time	Sequential Time

3. Your completed list is now similar to what a geologist might refer to as a Sequential Time Line.

4. You can use your own sequential time line to describe events in your life. For instance, I learned to ride my bike after I learned to walk but before I started second grade. Scientists call this Relative Age.
5. Return to your time line. In the middle column entitled, Numerical Time, place a zero by today's date. Then think of the number of years ago each event happened. Write these numbers in the column in front of each event. If you can't remember exactly, try to guess and round off to the nearest whole year. These numbers are the numerical ages of the event and make up a numerical time line.
6. Now you can use both the sequential and the numerical information to describe events in your life. Using both of these, describe below one of these events. An example might be: I started Kindergarten four years ago, after I learned to walk but before I lost my first tooth.

7. Now divide the events into two time intervals. Draw a horizontal line above the last event that happened before you started Kindergarten. Now every event above the line took place after you started Kindergarten and every event below the line took place before you started Kindergarten. In the first column entitled Time Interval, write the word **Preschoolian** below the line and the word **Schoolian** above the line. This chart now resembles a complete time line for the events in your life. They are in proper sequence. They have been given a date in time. And they have been grouped into two major event groups.
8. Now describe a single event using the information in all three columns. An example: I started Kindergarten at the beginning of Schoolian time, four years ago....
9. Compare your Personal Time Line to the actual Geologic Time Scale.
 - A. What are the similarities?

 - B. What are the differences?
10. Is there a comparison to rock layers and the fossils they contain to this relative time scale? Explain.