**Geologic Time Scale**

Directions: *Use the Geologic Time Scale Calendar to answer the worksheet questions and fill in dates on your year calendar. Write in only the events I have listed on the board as well as your birthday.*

1. Approximately how old is the earth (i.e. how vast is the geologic time scale estimated to be)?

|  |
| --- |
|  |

1. When geologic time is compressed to the scale of a calendar year, 1 second equals about how many years?

|  |  |  |
| --- | --- | --- |
| Years in a | Show Your Work! | Answer |
| second |  |  |
| minute |  |  |
| hour |  |  |
| day |  |  |
| month (30 days) |  |  |
| year |  |  |

1. How many “calendar days” were there in between the time when the planet first formed to the time when life first originated?

|  |
| --- |
|  |

How many actual years?

|  |  |
| --- | --- |
| Show Your Work! | Answer |
|  |  |

1. Put the following events in the correct order from oldest to youngest: stromatolites, first multicellular organisms, first bacteria, origin of life, first eukaryotes, Earth forms

|  |  |  |
| --- | --- | --- |
| Order | Event | Millions of Years Before Present |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |

1. On the dot chart that shows the eras, each dot, letter, or number represents how many years?

|  |
| --- |
|  |

1. Put the following organisms in the correct order in which they appeared in the fossil record from oldest to youngest including their time line in millions of years ago: monkeys, fish, rabbits, first dinosaurs, horses, flowering plants, insects, first bird, grasses

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |
| 505 mya |  |  |  |  |  |  |  |  |

1. Put the following eras in order from oldest to youngest: Cenozoic, Paleozoic, Precambrian, Mesazoic

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

Which groups of organisms appear to dominate these eras?

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

Looking at the calendar chart, how does it appear that the major boundaries in time (eras and systems) are being marked or divided up?

|  |
| --- |
|  |

1. What date and time on the compressed calendar geologic time scale did modern man appear?

|  |  |  |  |
| --- | --- | --- | --- |
| Date: |  | Time: |  |

How many minutes has man existed?

|  |
| --- |
|  |

How many years does that equal?

|  |  |
| --- | --- |
| Show Your Work! | Answer |
|  |  |

1. Based on the “dot scale” of geologic time, which era was the longest?

|  |
| --- |
|  |

Which was the shortest?

|  |
| --- |
|  |

1. On the calendar data sheet, 65 mya marks the end of the Cretaceous period and beginning of the Tertiary period. Which organisms disappear at this boundary? Which organisms seem to flourish after this boundary? Propose an explanation for this trend.

|  |  |  |
| --- | --- | --- |
| Organisms that Disappear | Organisms that Flourish | Explanation |
|  |  |  |

1. Use the dot chart: In the “events” column, each event has a letter or number code that can be found in the chart. Fill in the following chart:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Event | #/Letter | Era | Period (System) | Epoch (Series) |
| Amphibians |  |  |  |  |
| Bacteria |  |  |  |  |
| Fish |  |  |  |  |
| Mammals |  |  |  |  |
| Monkeys |  |  |  |  |
| Cells w/nucleus |  |  |  |  |
| Reptiles |  |  |  |  |
| Earth formed |  |  |  |  |
| T-Rex |  |  |  |  |
| Dog & Cats |  |  |  |  |
| Life originates |  |  |  |  |
| Flowering Plants |  |  |  |  |

1. Now that you have been introduced to the history of life you may be surprised by what you have learned. Discuss some of the things that surprise you from what you learned while working with the time scale activity and explain why you were surprised

|  |
| --- |
|  |