Virginia Science Olympiad Regional Competition Fossils Team # _____

Station #1

Look at the cross section. List the geologic sequence in order from Oldest to Youngest.

_____oldest

_____

_____

_____

_____

_____

_____

_____

_____youngest

Define the following:

Law of Crosscutting_____

_____

Law of Superposition_____

_____

Law of Original Horizontality_____

_____

Station #2

Solve the following half-life problems.

1. A radioactive material has a half-life of 7 years. If you began with 48kg of it, how much would still be radioactive after 35 years? _____
2. How many years would it take 1kg of U-235 to decay to 1/32th if its half-life is 4.5 billion years? _____
3. If $1/8^{th}$ is still radioactive after 72 years have gone by, what is the half-life of the substance? _____

Station #3

Define fossil_____

_____

Look at the samples and determine if they are fossils or not. Put a check if they fit the description of a fossil.

_____a.

_____b.

_____c.

_____d.

_____e.

Station #4

Match the organism/description with the period in which it was common.

_____a. _____e.

_____b. _____f.

_____c. _____g.

_____d. _____h.

Station #5

Give the common name of each fossil and determine the type of fossilization.

Name	Type of fossilization
a. _____	_____
b. _____	_____
c. _____	_____
d. _____	_____
e. _____	_____

Station # 6

What are the criteria for an index fossil?_____

_____

Identify the following index fossils

a._____

b. _____

Station # 7

Identify the specimens as a cast, mold or actual remains.

a._____

b. _____

c._____

d. _____

e. _____

Station # 8

Identify the following sedimentary rocks and identify the environment in which they form.

a._____

b. _____

c. _____

Station # 9

Identify the following fossil from the Precambrian._____

This photo was taken in Glacier National Park in Montana. What is the significance of finding this life form here? _____

_____

Station #10

Identify the fossil names represented by the plastic models and say whether it was from a land or water organism.

Name Land or water

a._____

b. _____

c. _____

d. _____

Station #11

These organisms changed over time and could be identified by a certain feature. Give the genus name for each of the specimens.

a._____

b. _____

c._____

d._____

Station #12

Identify the fossil and give the era in which it was dominant.

Name	Era
a. _____	_____
b. _____	_____
c. _____	_____

Station # 13

Look at the picture of each dinosaur, give its name, order and period in which it thrived.

Name	Order	Period
a		
b.		
c.		

Station #14

Identify the location of the following "big fossil finds" and the type of fossils found there.

If it is in the United States, name the state and if it is in another country, just give the country name.

a. Morrison formation _____

b. Burgess Shale _____

c. Green River _____

d. Petrified Forest _____

e. Rancho La Brea _____

f. Liaoning _____

g. Messil Pit _____

h. Solnhofen _____

Station #15

Look at the pictures of the fossils and tell what type of environment in which they lived.

a. _____

b. _____

c. _____

d. _____

Station # 16

Look at this picture. There have been instances where this animal was preserved with skin and fur intact. What type of preservation method usually occurred in order for this to happen?

_____

Station # 17

Put the following organism in order in which they occurred from oldest (1st) to youngest (5th)

_____birds

_____ jellyfish

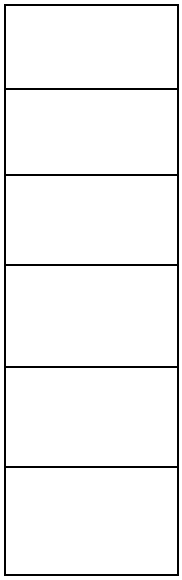
_____mammals

_____jawless fish

_____flowering trees

Station # 18

Look at the stratigraphic sequences. Using the symbols draw the sequence in which they occurred.



Station # 19

At the end of which <u>period</u> did the following extinctions occur?

a. Dinosaurs _____

b. Brachiopods _____

c. Wooly mammoth _____

d. 95% of all species _____

e. Trilobites _____

Station # 20

During which period did the following land changes occur?

a. Africa and North America came together to form the Appalachians _____

b. Most of the US was covered in warm shallow seas _____

c. Formation of Pangaea _____

d. Glaciers covered much of North America and Europe _____

Station # 21

Identify the types of fossilization in the following pictures.

a._____

b. _____

c. _____

Station #22

Identify the unconformity shown in each diagram.

a._____

b. _____

c. _____

Station #23

What period comes after each of these?

a. Devonian _____

b. Jurassic _____

c. Cambrian _____

d. Tertiary _____

Station # 24

Identify the mode of life for the following:

a. Cephalopoda _____

b. Arthropoda _____

c. Bryozoa _____

d. Trilobita _____

Station # 25

What are the three body segments of a trilobite?

_____

_____

_____

Station # 26

Match the scientist to their contribution.

a. Nicholaus Steno _____uniformitarianism

b. James Hutton _____catastrophism and special creations

c. Charles Lyell _____superposition and original horizontality

d. George Cuvier _____1st mapped strata based on fossil content

e. William Smith _____earth is dynamic and changing

Station # 27

Identify the common minerals that made up the skeletons of each type of organism.

Choose from silica, calcite, aragonite or calcium phosphate

a. Vertebrates _____

b. Diatoms _____

c. Brachiopods _____

d. Echinoderms _____

Station # 28

For the common fossils identify the characteristic feature of each.

a. Trilobite _____

b. Gastropod _____

c. Ammonoid _____

d. Blastoid _____

e. Belemites _____

Station # 29

For each era give the general type of organisms that dominated during that time.

Precambrian _____

Paleozoic _____

Mesozoic _____

Cenozoic _____

Station # 30

Put the following in order from oldest to youngest

_____youngest

_____

_____

_____

_____

_____

_____

_____

_____

_____oldest