



Fossil Lab

Name _____

Hour _____

Online lab

www.myscience8.com (geology/labs/fossil lab)

After completing the Fossil Lab, you should ...

1. Understand what a fossil is, how fossils form, and how they are important.
2. Be able to use a Geologic Time Scale chart to determine events from our geologic past.
3. Identify basic index fossils from models or pictures (given examples to choose from).



Station 1

1. _____ 2. _____

Station 2

3. _____ 4. _____

Station 3

5. _____ 6. _____
7. _____

Station 4

8. _____ 9. _____
10. _____

Station 5

11. _____ 12. _____
13. _____

Station 6

Sample	name	period
Sample 7	_____	_____
Sample 8	_____	_____
Sample 9	_____	_____

15. _____

Station 7

16. _____

17. _____

18 A) _____ B) _____

Station 8

19. _____ 20. _____

Station 9

21. _____ 22. _____

23. _____ 24. _____

Station 10

25. _____

26. A) _____ B) _____

Station 11

27. _____ 28. _____

29. _____

Station 12

30. _____ 31. _____

32. _____

Station 13

33. _____ 34. _____

35. _____

Station 14

36. _____ 37. _____

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Station 15

38. fossil A _____ fossil B _____

fossil C _____ fossil D _____

39. _____

40. _____

Station 16.

41. _____ 42. _____

43. _____ 44. _____

45. _____

Station 17.

46. _____ 47. _____

48. _____ 49. _____

Station 18.

50. _____ 51. _____

52. _____ 53. _____

54. _____

Station 19

55. A) _____ B) _____

56. _____

Station 20.

57. _____ 58. _____

59. _____ 60. _____

Station 21

61. _____ 62. _____

63. _____

Station 22

64. _____

65. A) _____ B) _____

Station 23

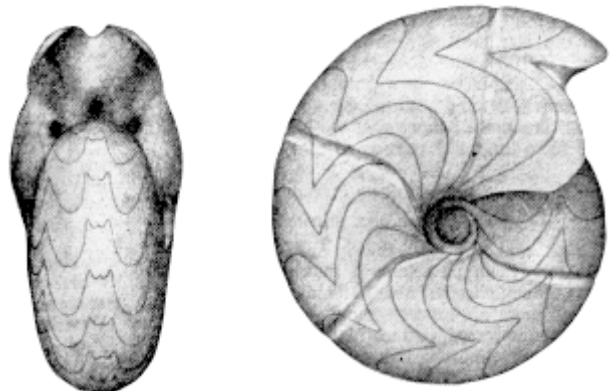
66. _____ 67. _____

68. _____

Station 24

69. _____

70. _____



Station 25. The Ways Fossils Form



Unaltered Hard Parts

Organisms such as _____

Rearrange the steps of formation:

- _____ soft parts decay.
- _____ sediments around organism compact.
- _____ organism is buried in soft sediment.
- _____ hard parts remain unaltered.



Permineralization

Materials such as _____ or _____

Rearrange the steps of formation:

- _____ bone dissolves but minerals remain.
- _____ minerals deposited in pores of bone.
- _____ left over minerals make up the shape of the bone (bone no longer exists).
- _____ a bone (or other porous material) is buried in sediments.
- _____ water comes in contact with the bone.



Replacement

Organisms such as _____

Rearrange the steps of formation:

- _____ minerals take the place of the organism's parts.
- _____ organism is buried in sediments.
- _____ a fossil is formed that is made up entirely of mineral.
- _____ water dissolves some of the hard parts.

Station 25. The Ways Fossils Form (continued)



Mold / Cast

Organisms with _____

Rearrange the steps of formation:

- _____ a hole or mold is left in the sediment.
- _____ the organism is buried in soft sediment.
- _____ the mold gets filled with minerals forming a cast.
- _____ the sediment compacts and hardens.
- _____ water passes through the sediment and completely dissolves the organism.



Carbonization

Organisms such as _____

Rearrange the steps of formation:

- _____ the carbohydrates that make up the plant disperse (leave the plant).
- _____ all that remains is a black film of carbon (a print of the original plant).
- _____ a plant is covered by sediment.



Trace

Fossils left behind by organisms as they _____

Rearrange the steps of formation:

- _____ the sediment hardens into rock before the footprint. _____ can be washed away.
- _____ footprint is left in soft sediment.
- _____ the footprint remains intact even if sediment is deposited on top of it.

Station 26 Prehistoric Life

Burying Bodies - Match these methods of animal burial



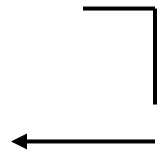
- | | |
|-------------------------------|---|
| _____ Volcanic Ash | A) body is burned up; very unlikely to form into a fossil |
| _____ Lava Flow | B) body is buried quickly and may be washed away to a lake, sea, or ocean |
| _____ Base of Crumbling Cliff | C) animal wandered close enough to erupting volcano to be buried; good chance of forming a fossil |
| _____ Open Exposed Area | D) the body will be partly damaged before it can be fossilized; unlikely to become a good fossil |
| _____ Muddy River Estuary | E) the ideal place to preserve bodies |
| _____ Ocean Floor | F) body is usually destroyed before it can be buried; no fossil will form |

Summary: (fill in the blank)

A plant or animal can be preserved if it becomes buried in an area where _____ are _____. _____ rocks are the best type of rock for fossils to be found in. The rock layers on the bottom are _____ and contain _____ fossils than the layers at the top.

Question: Which three burial methods gives the best chance for fossils to form? _____

Making Fossils - Write the number of the description below inside the button



- Hair, bones and soft body parts are preserved.
- Petrified fossils show the internal structures of bones, teeth, and shells - a great fossil!
- Not buried deep enough to become a fossil.
- Fossil casts formed from molds have lost some detail.
- Buried too deep; destroyed by temperature and pressure.
- Footprints are preserved in sedimentary rock.
- The fossil mold is destroyed by pressure; almost a great fossil!

Skeleton Jigsaws - Read the "How to Play" section

Begin on level 1 and solve all four puzzles (click "help" if needed).

What are the names of the four beasts? _____

If you have time try level two or higher and solve one puzzle. Record details below:

Level	Name of Beast	Time to solve	Hint turned on or off
_____	_____	_____	_____

(hint: don't spend too much time at this station there's a big lab to be finished out there!)

Sea Monster Facts - They're huge, hungry and swimming your way. See creatures from the early oceans. List a few facts you learned.

Sea Monster Adventure Game - Can you survive the seven deadliest seas of all time in this game? Take the plunge!

Note: Only play this game if the rest of your lab is done!

Station 27 Gallery Interactives - Fossils



Be the Artist - name these dinosaurs

Pic 1 _____ Pic 2 _____

Pic 3 _____



Unusual Suspects Part 1: Matching

- | | |
|-----------------------|------------------------|
| _____ stegosaurus | A) sauropodomorph |
| _____ coelophysis | B) coelurosaurids |
| _____ edmontonia | C) theropod carnosaurs |
| _____ parasaurolaphus | D) ankylosaurs |
| _____ pentaceratops | E) ceratopsians |
| _____ baryonyx | F) hadrosaurs |
| _____ apatosaurus | G) stegosaurs |

Part 2: Write the dino name by the radio button (below)

beipiaosaurus



Who's Hip? Match the dino with their hip design

- | | |
|--------------------------|--------------------------------|
| _____ tyrannosaurus rex | A) Ornithischian (bird hipped) |
| _____ stegosaurus | B) Saurischian (lizard hipped) |
| _____ pentaceratops | |
| _____ seismosaurus | |
| _____ pachycephalosaurus | |
| _____ coelophysis | |



Dinos in Time Match the dino with period in which they lived

- | | |
|-----------------------|---------------|
| _____ allosaurus | A) Cretaceous |
| _____ triceratops | B) Jurassic |
| _____ coelophysis | C) Triassic |
| _____ parasaurolaphus | |
| _____ apatosaurus | |



What is a Dinosaur? Part 1: Match

- | | |
|-----------------------|-------------------|
| _____ pteranodon | |
| _____ plesiosaur | A) A Dinosaur |
| _____ archaeoperix | B) Not a dinosaur |
| _____ postosuchus | |
| _____ dimetrodon | |
| _____ allosaurus | |
| _____ parasaurolaphus | |
| _____ iguanadon | |

Part 2: answer the question

Did all dinosaurs have scaly skin? _____

Were all dinosaurs bigger than humans? _____

Were all dinosaurs cold blooded? _____

Did dinosaurs live both on land and in water? _____



Digging in the Dirt

What keeps the plaster from sticking to the fossil bone?



Rethinking Dinosaurs

Describe one similarity between theropod dinosaurs and modern birds.



Climate Past

List one thing you learned.



Eating with Scissors

Watch the animation and play the video. Go tell your teacher one fact. Our Chasmosaurus cannot move his jaw but we are working on it!



Mammal Skulls

Morganucodon and _____ were the earliest known mammals. (you may need hunt for this answer)



Large Invertebrates Match these:

- _____ related to clams and oysters
- _____ related to squid and octopus
- _____ related to modern cuttlefish

- A) Belemnites
- B) Ammonites
- C) Inoceramus

Station 27 (continued)



Marine Reptiles Match these:

- _____ some had very long necks
- _____ fish-like marine reptiles
- _____ largest marine reptile of late Cretaceous

- A) Mososaurs
- B) Plesiosaurs
- C) Ichthyosaurs



Crater Tour

Click on "listen to the expert". What is he talking about?



Winners and Losers - play the game

Which 3 animal families became completely extinct?

Which family was the big winner?

In the last sentence in the video he says we are still waiting for more _____ in order to fully understand dino extinction.



Feathers and Flight

If it flew at all, Deinonychus would have needed a running start. Do any birds today need to run to take off?



Iridium Spike

Iridium in the crust comes from _____ from outer space.



Volcanism and Extinction watch the video

Besides a catastrophic asteroid impact, what else may have contributed to the mass extinction of the dinosaurs?



Declining Diversity watch the video

Good video...write one thing you learned.



Impact Tour

Write one thing you learned.



Lava, Lava, and More Lava

How deep would the lava have been if spread out over the entire Earth?



Teeth, the Oral Toolbox

Identify these types of teeth

- a _____
- b _____
- c _____
- d _____

Mammal Teeth - Hyaenodon



Station 28 (This station is not required, finish it if you have time)



Hotspot Today

Check it out. Tell a friend about it.



Leaf Quiz

How many did you get correct? _____



Leaf Litter

No question



Hair and Fur

No question



Insect Damage

How many did you get correct? _____



History of Milk (skip the video if you want to)

Which animal's milk contains the most fat?

- human lion dolphin goat seal



Climate Simulator

List one thing you learned.



Foot Bones

Put the bones in the foot then play the video. Go tell your teacher one fact and ask him to show you the Chasmosaurus model in the hall.



Tracks

How fast was the Triceratops walking? _____