

# 2010 Fossils B/C Regional Event Event Leader Instructions

## Overview:

This is a station test. Teams will rotate around the stations until they have completed the test.

## Materials:

- 1 good quality COLOR copy of the stations (pages 2-26)
- Enough copies of the response sheet for each team (pages 27-28)
- Copies of the answer key to grade with (pages 29-30)

## Teams are allowed to bring:

- Something to write with
- 1 magnifying glass
- 1 published field guide (can be tabbed and written on)
- 1 3-ring binder (any size) containing any information from any source, as long as it is attached to the rings.

## To run the event:

Set up the room to accommodate a rotation. Put the station pages on the desks upside down so teams do not start working before the testing time begins. If there are more than 25 teams (since there are only 25 stations) add blank rest stations throughout the rotation to accommodate the rest of the teams. As teams enter the room, check their materials and confiscate anything not allowed. When all teams have entered the room, pass out the answer sheets and have them fill in their school and names. Tell them they will have \_\_\_\_\_ minutes\*\* at each station, and begin.

**\*\*For B division I recommend 2 minutes per station, if the time period allows.**

**\*\*For C division I recommend 1.5 minutes per station.**

## Scoring:

High score wins.

### Questions are worth 1 point each

1<sup>st</sup> Tiebreaker is Station 15, whichever team gets more correct wins.

2<sup>nd</sup> tiebreaker is Station 17, whichever team gets more correct wins.

3<sup>rd</sup> tiebreaker is whichever team misses a question first loses the tie.

If you have any actual specimens, place them out along with the pictures at the station!

# Station 1

## Ferns



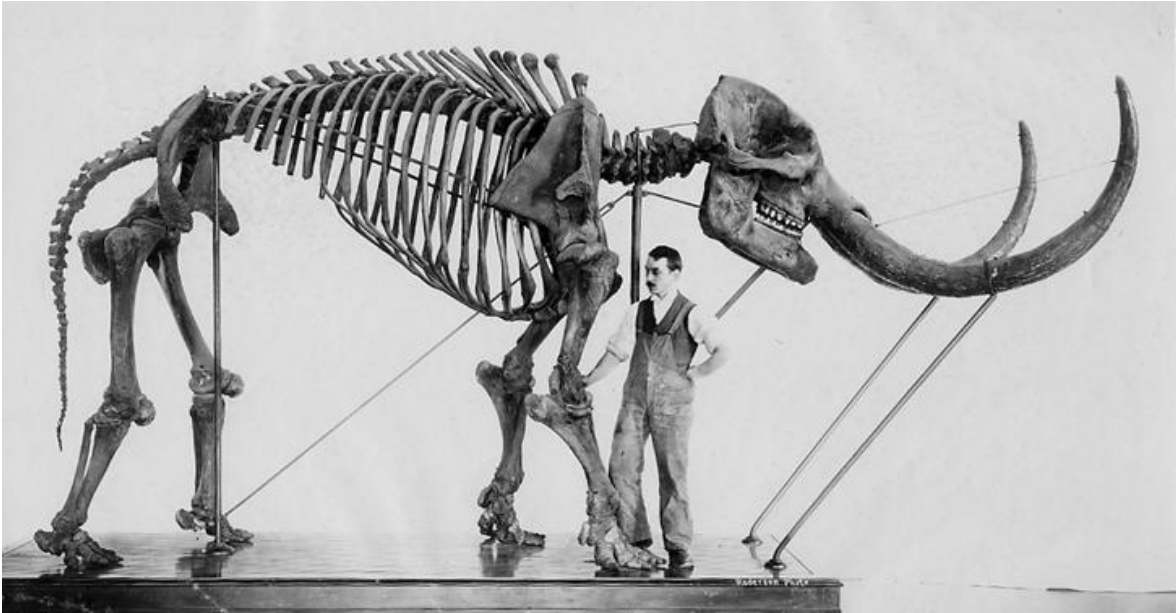
1. What is the common name?
2. What is the white substance on the surface of the rock?
  - a. calcium
  - b. pyrophyllite
  - c. salt residue
  - d. bones
3. Which of the following does this class NOT have:
  - a. Seeds and flowers
  - b. Roots and spores
  - c. Stems and leaves
  - d. None of the above

# Station 2



4. Name the class:
5. What is the open area inside the shell called?
  - a. Periostracum
  - b. Abdomen
  - c. Mantle
  - d. Coprolite
6. True or False: Some species in this class can swim.

# Station 3



7. Name the Class:
8. Name the Genus:
9. What is the common name?
10. This genus most likely fed by:
  - a. Grazing in fields
  - b. Hunting small animals
  - c. Scavenging already dead carcasses
  - d. Eating leaves and greenery off tree tops

# Station 4



11. This fossil is most closely related to a:

- a. Squid
- b. Jellyfish
- c. Snake
- d. Snail

12. The term cephalopod means:

- a. Head and pouch
- b. Tentacle and horn
- c. Tentacle and foot
- d. Head and foot

True or false:

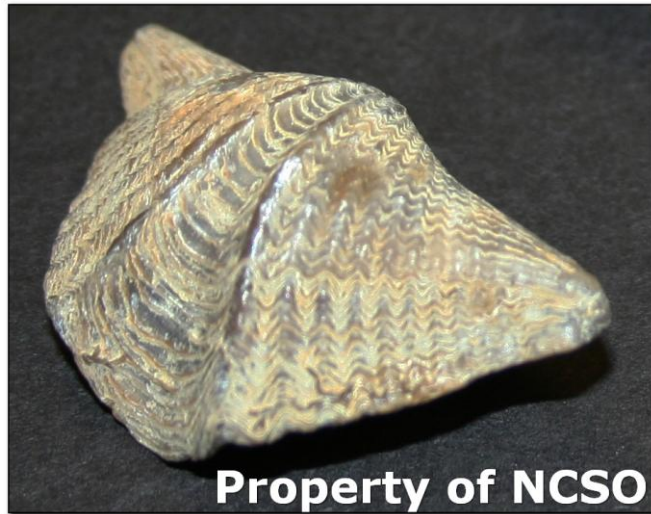
13. Cephalopods are bilaterally symmetrical

14. Nautiloids first appeared in the Precambrian era

15. Nautiloid shells can be straight or curved

16. Orthoceras are only found in Morocco

# Station 5



17. Name the Phylum:
18. What kind of symmetry does this phylum have?
  - a. radial
  - b. bilateral
  - c. concentric
  - d. None
19. True or False: This phylum lives ONLY in the sea.
20. True or False: These are vertebrates.
21. True or False: These actively hunt their prey

# Station 6



22. Name the genus:
23. Some species have a 'trapdoor' they can pull shut. This is called:
24. Which of the following does NOT describe this genus?
  - a. High, stepped spire
  - b. Convex, knobbed base
  - c. Is a living fossil
  - d. Widespread in North America

# Station 7

## Match the word to the description

- |                       |  |
|-----------------------|--|
| 25. carbonization     | a. occurs when organic material is replaced with carbon through a process involving heat and pressure.   |
| 26. trace remains     | b. occurs when empty spaces within the organism fill with mineral rich groundwater                       |
| 27. actual remains    | c. occurs when organic material is turned into stone from exposure to silica                             |
| 28. Permineralization | d. trackways, burrows, eggs, nests, and other evidence of an organism without the organism being present |
| 29. petrification     | e. a fossilized specimen   |



# Station 8



30. What is the genus:
31. The type of growth forms shown is:
  - a. Branching
  - b. Massive
  - c. Fenestrate
  - d. Encrusting
32. This phylum is typically a colonial species. What is the individual within the colony called?
  - a. Zooid
  - b. Larvae
  - c. Sfgs
  - d. sfgjsf
33. Are these vertebrates or invertebrates?

# Station 9



34. This is a
- Reptile
  - Dinosaur- Saurischian
  - Dinosaur- Ornithischian
  - Mammal

35. Name the genus:

*True or False:*

36. This genus is lizard hipped
37. This genus lived during the Triassic period
38. This genus is a quadruped
39. This genus is a carnivore
40. This genus lays eggs

# Station 10

Trace Fossils: *Fill in the blank*

Geological records of biological activity are known as \_\_\_\_41\_\_\_\_. There are several different kinds. \_\_\_\_42\_\_\_\_ are organic material produced by the organism, such as feces. A hole or tunnel dug into the ground to create a space suitable for habitation, temporary refuge, or as a byproduct of locomotion is called a \_\_\_\_43\_\_\_\_. When the organism moves about, it may leave surface traces of creeping and crawling called \_\_\_\_44\_\_\_\_. Another kind is the erosion of hard ocean substrates by living organisms, called \_\_\_\_45\_\_\_\_, such as when carnivorous snails drill holes into the shells of other snails.

Word Bank:

- A. Borings
- B. Burrows
- C. Coprolites
- D. Trace fossils
- E. Tracks/Trackways

# Station 11



46. This species is vertebrate or invertebrate?
47. This organism is commonly referred to as:
48. These can breathe through:
  - a. Lungs
  - b. Gills
  - c. Skin
  - d. Intestines
  - e. all of the above

# Station 12



49. What is the common name for this fossil?

*True or False:*

50. These live in colonies

51. The mouth is an opening on the bottom

52. This class has tube feet

53. Moves very rapidly to hunt prey

54. This order lays eggs

# Station 13



55. The fossils shown here are:
- Sponges
  - Horned coral
  - Colonial Coral
  - Petrified tree branches
56. The structure is referred to as:
- honeycomb
  - Ball and Chain
  - Fan-shaped
  - Spherical
57. This class is part of the same phylum as:
- Algae
  - Jellyfish
  - Crinoid Stems
  - Graboids

# Station 14



*Amber and petrified wood*

58. Both of these fossils come from:
59. Which one requires heat and pressure to form?
60. Which one requires a lack of oxygen to form?

*True or False*

61. Amber sometimes contains animal and plant remnants
62. It is possible to tell how old a tree was when it was fossilized
63. Amber is only formed from the sap of a tree
64. Wood takes tens of thousands of years to petrify

# Station 15

*Back to the basics!*

65. What is the study of fossils called?
66. What is a living fossil?
- Any fossil that was once alive
  - A fossil who still has relatives in existence
  - A fossil that still contains organic or biological material
  - A fossil that still has live specimens today

*Put the following classification system in order:*

Kingdom, \_\_\_\_67\_\_\_\_, \_\_\_\_68\_\_\_\_, \_\_\_\_69\_\_\_\_, \_\_\_\_70\_\_\_\_, \_\_\_\_71\_\_\_\_, Species

A. Class

C. Phylum

E. Order

B. Family

D. Genus

72. Fossils are most commonly found in what type of rock?
- Igneous
  - Metamorphic
  - Sedimentary
  - Mountains
73. When geologic time periods are sub-divided, what do the terms Lower, Middle, and Upper refer to?
- The relative position of rock strata they are contained in
  - The frame of time they occur in
  - The relative size (height) of the fossils contained within each division
  - How evolved the species are



# Station 16



74. Name the Class:
75. Name the Genus:
76. Which is not one of the 3 basic body sections?
- Head (and Head Shield)
  - Thorax
  - Abdomen
  - Tail
77. True or False: This class is the first arthropod to appear in the fossil record
78. True or False: This class is named after it's cannibalistic feeding habits

# Station 17

Fill in the periods for each era, oldest to newest

Era	Paleozoic						Mesozoic			Cenozoic		
	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.
Period												

Word Bank:

Miocene  
Paleogene  
Devonian  
Triassic  
Ordovician  
Neoproterozoic

Cretaceous  
Carboniferous  
Cambrian  
Neogene  
Quaternary  
Silurian

Proterozoic  
Permian  
Jurassic  
Aeolian

# Station 18



Phylum Porifera

91. How does this phylum eat?

- a. Mouth opening
- b. They filter particles out of the water
- c. Tentacles draw food into an external stomach
- d. Active transport

True or False:

92. This phylum contains no true tissue

93. Spicules are a part of the internal skeleton

94. Porifera is an extinct phylum

95. Some sponges can grow up to 15 feet in diameter

96. Sponges are extremely mobile, using a water jet for propulsion

# Station 19



*For most bipedal dinosaurs, hip height = 4 x foot length.*

97. How long was the leg (i.e. hip height) of the dinosaur that made this print?

*Measure the print in centimeters and record your answer in meters, using two decimal places.*

98. Was this dinosaur a theropod or a sauropod?

# Station 20



Bird- archaeopteryx

99. What is the era for this mammal?

- a. Paleozoic
- b. Triassic
- c. Mesozoic
- d. Cenozoic

*True or False:*

100. Archaeopteryx is the earliest known bird

101. This species is currently only found in Antarctica

# Station 21



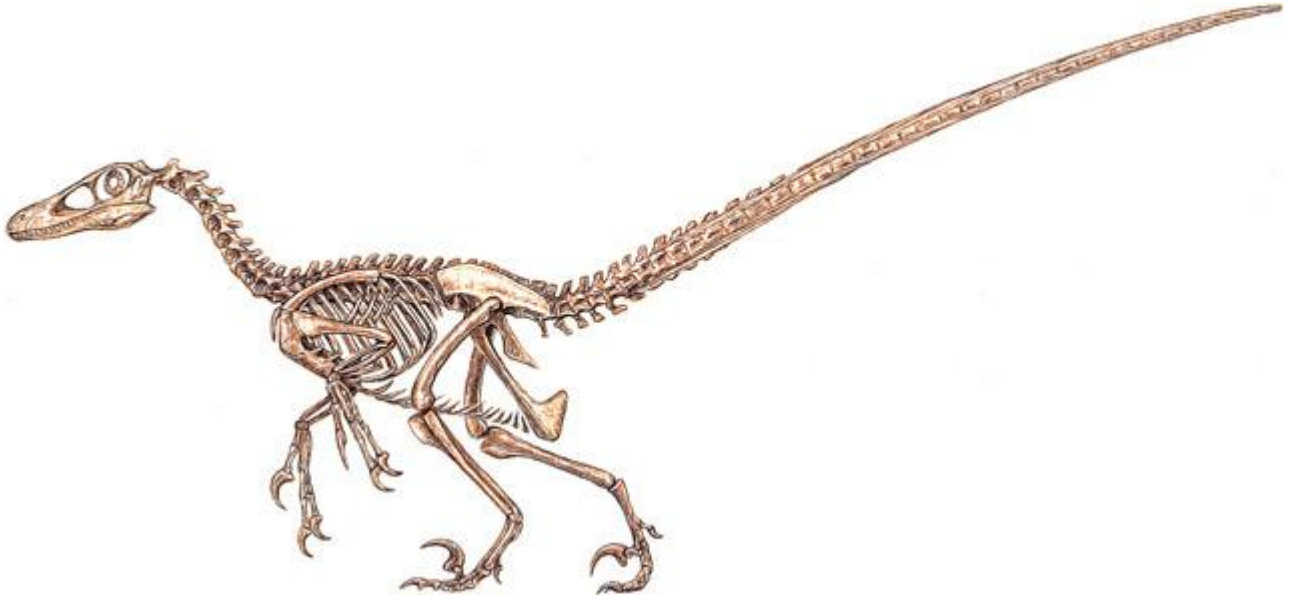
102. Name the Phylum:
103. Name the Class:
104. What is the common name?
105. The chambers of the shell are called:
  - a. barnacles
  - b. siphuncle
  - c. calyxes
  - d. camerae

# Station 22



106. Name the phylum:
107. Name the class:
108. What is this particular shape?
  - a. Stem
  - b. Column
  - c. Calyx
  - d. Pillar

# Station 23



This dinosaur is probably best known for appearing in Jurassic Park.

109. What is the Genus?
110. Is this dinosaur a theropod or a sauropod?
111. This genus is thought to hunt for prey using what?
  - a. Sharp claws
  - b. Prominent fangs
  - c. Hits with tail
  - d. Live bait



# Station 24



112. Insecta is a class contained in what phylum:
113. How many sections does an insect body have?
114. How many legs do insects have?
115. True or False: Insects have an internal skeleton.
116. True or False: Insects ALL have antennae

# Station 25



117. These teeth came from what kind of fish:
118. This fish has a skeleton made entirely of:
119. This fish lives mostly in salt water or fresh water?
120. True or False: All species in this genus are carnivores

# 2010 Fossils Exam- Answer Sheet

School: \_\_\_\_\_ V, JV1, JV2, JV3

Names: \_\_\_\_\_

## Station 1:

1. \_\_\_\_\_
2. A B C D
3. A B C D

## Station 2:

4. \_\_\_\_\_
5. A B C D
6. True or False

## Station 3:

7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. A B C D

## Station 4:

11. A B C D
12. A B C D
13. True or False
14. True or False
15. True or False
16. True or False

## Station 5:

17. \_\_\_\_\_
18. A B C D
19. True or False
20. True or False
21. True or False

## Station 6:

22. \_\_\_\_\_
23. \_\_\_\_\_
24. A B C D

## Station 7:

25. A B C D E
26. A B C D E
27. A B C D E
28. A B C D E
29. A B C D E

## Station 8:

30. \_\_\_\_\_
31. A B C D
32. A B C D
33. \_\_\_\_\_

## Station 9:

34. A B C D
35. \_\_\_\_\_
36. True or False
37. True or False
38. True or False
39. True or False
40. True or False

## Station 10:

41. A B C D E
42. A B C D E
43. A B C D E
44. A B C D E
45. A B C D E

## Station 11:

46. \_\_\_\_\_
47. \_\_\_\_\_
48. A B C D E

## Station 12:

49. \_\_\_\_\_
50. True or False
51. True or False
52. True or False
53. True or False
54. True or False

## Station 13:

55. A B C D
56. A B C D
57. A B C D

**Station 14:**

- 58. \_\_\_\_\_
- 59. \_\_\_\_\_
- 60. \_\_\_\_\_
- 61. True or False
- 62. True or False
- 63. True or False
- 64. True or False

**Station 15:**

- 65. \_\_\_\_\_
- 66. A B C D
- 67. A B C D E
- 68. A B C D E
- 69. A B C D E
- 70. A B C D E
- 71. A B C D E
- 72. A B C D
- 73. A B C D

**Station 16:**

- 74. \_\_\_\_\_
- 75. \_\_\_\_\_
- 76. A B C D
- 77. True or False
- 78. True or False

**Station 17:**

- 79. \_\_\_\_\_
- 80. \_\_\_\_\_
- 81. \_\_\_\_\_
- 82. \_\_\_\_\_
- 83. \_\_\_\_\_
- 84. \_\_\_\_\_
- 85. \_\_\_\_\_
- 86. \_\_\_\_\_
- 87. \_\_\_\_\_
- 88. \_\_\_\_\_
- 89. \_\_\_\_\_
- 90. \_\_\_\_\_

**Station 18:**

- 91. A B C D
- 92. True or False
- 93. True or False
- 94. True or False
- 95. True or False
- 96. True or False

**Station 19:**

- 97. \_\_\_\_\_
- 98. \_\_\_\_\_

**Station 20:**

- 99. A B C D
- 100. True or False
- 101. True or False

**Station 21:**

- 102. \_\_\_\_\_
- 103. \_\_\_\_\_
- 104. \_\_\_\_\_
- 105. A B C D

**Station 22:**

- 106. \_\_\_\_\_
- 107. \_\_\_\_\_
- 108. A B C D

**Station 23:**

- 109. \_\_\_\_\_
- 110. \_\_\_\_\_
- 111. A B C D

**Station 24:**

- 112. \_\_\_\_\_
- 113. \_\_\_\_\_
- 114. \_\_\_\_\_
- 115. True or False
- 116. True or False

**Station 25:**

- 117. \_\_\_\_\_
- 118. \_\_\_\_\_
- 119. \_\_\_\_\_
- 120. True or False

## 2010 Fossils Exam- Answer Sheet

School: \_\_\_\_\_ **ANSWER KEY - DO NOT COPY WITH TEST!!!** \_\_\_\_\_

Names: \_\_\_\_\_

### Station 1:

1. Ferns
2. A B C D
3. A B C D

### Station 2:

4. Bivalvia (NOT bivalves)
5. A B C D
6. True or False

### Station 3:

7. Mammalian (NOT mammals)
8. Mammut
9. Mastodon
10. A B C D

### Station 4:

11. A B C D
12. A B C D
13. True or False
14. True or False
15. True or False
16. True or False

### Station 5:

17. Brachiopoda (NOT Brachiopod)
18. A B C D
19. True or False
20. True or False
21. True or False

### Station 6:

22. Worthenia
23. Operculum
24. A B C D

### Station 7:

25. A B C D E
26. A B C D E
27. A B C D E
28. A B C D E
29. A B C D E

### Station 8:

30. Archimedes
31. A B C D
32. A B C D
33. Invertebrates

### Station 9:

34. A B C D
35. Triceratops
36. True or False
37. True or False
38. True or False
39. True or False
40. True or False

### Station 10:

41. A B C D E
42. A B C D E
43. A B C D E
44. A B C D E
45. A B C D E

### Station 11:

46. Vertebrate
47. Bony Fish
48. A B C D E

### Station 12:

49. Sea Urchin
50. True or False
51. True or False
52. True or False
53. True or False
54. True or False

### Station 13:

55. A B C D
56. A B C D
57. A B C D

**Station 14:**

- 58. Trees
- 59. Amber
- 60. Petrified Wood
- 61. True or False
- 62. True or False
- 63. True or False
- 64. True or False

**Station 15:**

- 65. Paleontology
- 66. A B C D
- 67. A B C D E
- 68. A B C D E
- 69. A B C D E
- 70. A B C D E
- 71. A B C D E
- 72. A B C D
- 73. A B C D

**Station 16:**

- 74. Trilobita (NOT trilobite)
- 75. Elrathia
- 76. A B C D
- 77. True or False
- 78. True or False

**Station 17:**

- 79. Cambrian
- 80. Ordovician
- 81. Silurian
- 82. Devonian
- 83. Carboniferous
- 84. Permian
- 85. Triassic
- 86. Jurassic
- 87. Cretaceous
- 88. Paleogene
- 89. Neogene
- 90. Quaternary

**Station 18:**

- 91. A B C D
- 92. True or False
- 93. True or False
- 94. True or False
- 95. True or False
- 96. True or False

**Station 19:**

- 97. 0.60 meters
- 98. Theropod

**Station 20:**

- 99. A B C D
- 100. True or False
- 101. True or False

**Station 21:**

- 102. Mollusca (NOT Mollusc)
- 103. Cephalopoda (NOT Cephalopod)
- 104. Ammonite or Ammonoid
- 105. A B C D

**Station 22:**

- 106. Echinodermata (NOT Echinoderm)
- 107. Crinoid
- 108. A B C D

**Station 23:**

- 109. Velociraptor
- 110. Theropod
- 111. A B C D

**Station 24:**

- 112. Arthropoda (NOT Arthropod)
- 113. 3
- 114. 6
- 115. True or False
- 116. True or False

**Station 25:**

- 117. Sharks
- 118. Cartilage
- 119. Salt
- 120. True or False