

2011 Colorado Science Olympiad  
FOSSILS

Team Name: \_\_\_\_\_

Team #: \_\_\_\_\_

Names of students: \_\_\_\_\_

**KEY**

Proper names should be capitalized (no loss of points; tie-breaker)

Spelling counts; ½ credit if name is misspelled.

total points possible: 191

**Directions:** Make sure you record what is being asked for. Answer the multiple choice questions by placing the letter of the correct choice in the space provided. Some stations require you to fill in your answers in the space provided. Be careful, spelling counts, and you must write legibly. Please print. [\*\* indicates tie-breaker question]

**STATION 1**

8 points total

- 1.   H
- 2.   A
- 3.   C
- 4.   E
- 5.   B
- 6.   G
- 7.   D
- 8.   F

**STATION 2**

10 points total

- 9. A)   Triceratops
- B)   Archimedes
- C)   Nummulites
- D)   Halysites
- 10. Age order:   D- Halysites  ,   B- Archimedes  ,   A – Triceratops  ,   C- Nummulites   (4 pts)
- \*\*11.   C   zooids
- 12.   A   corallites

**STATION 3**

10 points total

- 13.   C
- 14.   B
- 15.   D
- 16.   B
- 17. A)   disconformity
- B)   nonconformity
- C)   angular unconformity
- \*\*18. A)   Middle Cambrian or Cambrian
- B)   shale layers are same age/Cambrian
- C)   rock layers have been overturned

possible points this page---58

**STATION 4**

12 points total

- 19.A)   Porifera
- B)   Hemichordata
- C)   Echinodermata
- D)   Chordata
- E)   Cnidaria
- F)   Protozoa
- 20.   C
- \*\*21.   E
- 22. A)   E / jellyfish
- B)   A / Hydnoceras
- C)   F/ fusulinids
- D)   E/ jellyfish

**STATION 5**

18 points total

- 23.   Cnidaria; Tabulata or Tabulate (2 pts)
- 24.   tabulae or tabula
- 25.   reef/marine
- 26.   colonial
- 27.   Porifera, *Astraeospongia* (2 pts)
- 28.   solitary
- 29.   spicules
- 30.   B or calcareous
- 31.   Scleractinian or Scleractinia
- 32.   Triassic or Mid-Triassic
- 33.   *Septastrea*
- 34.   Inarticulata or Inarticulate
- 35.   Articulata or Articulate
- 36.   muscles
- 37.   hinge line
- \*\*38.   lophophore

## STATION 6

15 pts possible

\*\*39.

- A) Genus- Bothriolepis  
B) Genus- Rafinesquina  
C) Class- Bivalvia or Bivalve  
D) Informal name- Honeycomb Coral (1/2 pt just coral)  
E) Phylum- Arthropoda or Arthropod  
F) Genus- Equus  
G) Genus- Metasequoia  
H) Phylum- Chordata  
I) Order- Saurischian or Saurischia ½ for lizard-hipped  
J) Genus- Worthenia  
K) Genus- Exogyra

40. Give the age of the specimens as indicated.

- Specimen A) Era- Paleozoic  
Specimen B) Period- Mid.-Upper Ordovician or Ordovician  
Specimen H) Era- Mesozoic  
Specimen K) Period- Cretaceous

## STATION 7

9 pts possible

41. pygidium (pygidium for full credit, tail is ½ credit)  
42. Arthropoda or Arthropod  
43. crinoid stem  
44. Bryozoa or Bryozoan  
45. B) through the valves  
46. cephalon (cephalon for full credit, head is ½ credit)  
47. glabella  
48. Paleozoic  
49. marine/sea/ocean

## STATION 8

15 pts possible

50. shale  
51. B  
52. compression/impression; carbonization/imprint/cast & mold  
53. sandstone  
54. carbonization (or distillation)  
55. Calamites  
56. Annularia; C) Leaves  
57. C  
58. amber; fossilized tree resin (not sap); actual  
remains (insect inclusions) or preserved in amber 3 pts  
59. D  
\*\*60. D-2 (Annularia) & E (Lycopodiophyta) 2 pts

## STATION 9

10 pts possible

61. anchored /attached animal (crinoid) to the sea floor  
62. filter feeder  
63. Gastropoda or Gastropod; Platyceras (2 pts)  
64. lived in association with crinoid & ate its feces  
65. A  
66. Specimen D: Echinoidea or Echinoid  
Specimen E: Blastoidea or Blastoid  
Specimen F: Asteroidea or Asteroid  
67. C

## STATION 10

15 pts possible

68. C (Nautilus)  
69. A (Baculites), F (Dactyloceras), & I (ammonite) 3  
70. F (Dactyloceras) & I (ammonite) 2  
71. C (Nautilus) and D (Orthoceras) 2  
72. H  
73. E and H 2 pts  
\*\*74. Dactyloceras  
75. G (Belemnitella)  
76. Belemnitella  
77. B

## STATION 11

13 pts possible

78. theropod; sharp, pointed tooth from carnivore,  
for tearing/slashing flesh 2 pts  
79. A Quetzalcoatlus; Late Cretaceous  
80. A) 120 cm  
B) walking  
C) 60 cm  
D) running  
E) trace fossil or ichnofossil  
81. C or Connecticut  
82. vertebra  
83. Ornithischia (1/2 if bird-hipped); Parasaurolophus 2 pts  
84. H

**STATION 12**

22 pts possible

- 85. \_\_\_ kingdom, phylum, class, order, family, genus, species\_7 pts
- 86. \_\_\_ half-life \_\_\_\_\_
- 87. \_\_\_ Conservation Lagerstätte \_\_\_\_\_
- 88. \_\_\_ sessile \_\_\_\_\_
- 89. \_\_\_ pedicle \_\_\_\_\_
- 90. \_\_\_ gymnosperm \_\_\_\_\_
- 91. \_\_\_ benthic \_\_\_\_\_
- 92. \_\_\_ strata \_\_\_\_\_
- 93. \_\_\_ aragonite \_\_\_\_\_
- 94. \_\_\_ fossil \_\_\_\_\_
- 95. \_\_\_ pelagic \_\_\_\_\_
- 96. \_\_\_ chelicerae \_\_\_\_\_
- 97. \_\_\_ thorax \_\_\_\_\_
- 98. \_\_\_ paleontology \_\_\_\_\_
- 99. \_\_\_ lacustrine \_\_\_\_\_
- 100. \_\_\_ matrix \_\_\_\_\_

**STATION 14**

16 pts possible

- 112. \_\_\_ Permian \_\_\_\_\_
- 113. \_\_\_ B \_\_\_\_\_
- 114. \_ K-T Extinction or Cretaceous Extinction\_
- 115. \_\_\_ volcanism and asteroid impact (2pts) \_\_\_\_\_
- 116. \_\_\_ C \_\_\_\_\_
- 117. \_\_\_ Mammalia or Mammals \_\_\_\_\_
- 118. \_\_\_ D \_\_\_\_\_
- \*\*119. \_\_\_ C \_\_\_\_\_
  
- 120. \_\_\_ A \_\_\_\_\_
- 121. \_\_\_ B \_\_\_\_\_
- 122. \_\_\_ E \_\_\_\_\_
- 123. \_\_\_ D \_\_\_\_\_
- 124. \_\_\_ D \_\_\_\_\_
- 125. \_\_\_ Plantae or Plants \_\_\_\_\_  
       \_\_\_ B \_\_\_\_\_

**STATION 13**

18 pts possible

- 101. \_\_\_ Phylum/Arthropods or phylum Arthropoda/Kingdom \_\_\_\_\_
- 102. \_\_\_ D \_\_\_\_\_
- 103. \_\_\_ Crustacea \_\_\_\_\_
- 104. \_\_\_ B \_\_\_\_\_
- 105. \_\_\_ *Elrathia* \_\_\_\_\_
- 106. \_\_\_ Pennsylvania \_\_\_\_\_
- 107. \_\_\_ self-defense or protection \_\_\_\_\_
- 108. \_\_\_ cephalon \_\_\_\_\_
- 109. \_\_\_ calcite \_\_\_\_\_
- 110. \_\_\_ Devonian \_\_\_\_\_
  
- 111. T (true) or F (false)
  - \_\_\_ T
  - \_\_\_ F
  - \_\_\_ F
  - \_\_\_ T
  - \_\_\_ T
  - \_\_\_ F
  - \_\_\_ F
  - \_\_\_ T