

wec01's SSSS Fossils Test 2019

Team Name: _____ Team Number: _____

Team Members: _____, _____

This test consists of 18 stations with a total of 200 points. Each answer is worth one point except where specified otherwise. You are only given 2 ½ minutes with the specimens at each station, however you can work on any station's questions at any time.

Scoring	
Station 1: _____ / 10	Station 10: _____ / 12
Station 2: _____ / 10	Station 11: _____ / 9
Station 3: _____ / 11	Station 12: _____ / 11
Station 4: _____ / 10	Station 13: _____ / 10
Station 5: _____ / 10	Station 14: _____ / 10
Station 6: _____ / 9	Station 15: _____ / 12
Station 7: _____ / 9	Station 16: _____ / 9
Station 8: _____ / 10	Station 17: _____ / 10
Station 9: _____ / 9	Station 18: _____ / 29
Total: _____ / 200	

Station 1: Dinosaurs

1. Identify the genus of specimen A	
2. Identify the genus of specimen B	
3. Identify the genus of specimen C	
4. Which specimen(s) (A, B, or C) are Saurischians?	
5. Which two specimens (A, B, or C) lived at the same time?	
6. Identify the genus of specimen D	
7. Identify the genus of specimen E	
8. Which specimen (D or E) is commonly found in Ghost Ranch, New Mexico?	
9. Which specimen (A, B, C, D, or E) would specimen F have been found on?	
10. What is specimen F commonly called?	

Station 2: Arthropods

1. Identify the genus of specimen A	
2. Identify the genus of specimen B	
3. Identify the genus of specimen C	
4. Which specimen (A, B, or C) appeared first?	
5. Which specimen (A, B, or C) was likely predatory?	
6. Which specimen (A, B, or C) had genal spines longer than its body?	
7. Identify the class of specimen D	
8. Which period is known for especially large specimens of this class (specimen D)?	
9. Identify the order of specimen E	
10. What is the name of the circled feature on specimen E?	

Station 3: Echinoderms

1. Identify the class of specimen A and B	
2. Which specimen (A or B) is regular?	
3. Which specimen (A or B) burrowed?	
4. Identify the class of specimen C	
5. Which genus of gastropod is often found fossilized with specimens of specimen C?	
6. Identify the class of specimen D	
7. Which specimen (A/B or C) is specimen D more closely related to?	
8. During which mass extinction did specimen D go extinct?	
9. Identify the class of specimen E	
10. What is the common name of specimen E?	
11. Which fossil specimen (A, B, C, or D) is sometimes called St Cuthbert's Beads?	

Station 4: Mollusks

1. Identify the genus of specimen A	
2. What type of suture (goniatitic, ceratitic, or ammonitic) does specimen A have?	
3. Identify the genus of specimen B	
4. What mineral is specimen B composed of?	
5. Identify the genus of specimen C	
6. What body part do modern members of this genus keep wrapped over their shells?	
7. Identify the genus of specimen D	
8. Identify the genus of specimen E	
9. Which specimen (A, B, C, D, or E) is known as a steinkern?	
10. Which specimen (A, B, C, D, or E) is specimen F a section of?	

Station 5: Sponges, Corals, and Bryozoans

1. Identify the genus of specimen A	
2. What mineral are the spicules of specimen A composed of?	
3. Identify the genus of specimen B	
4. What mineral are the spicules of specimen A composed of?	
5. Identify the genus of specimen C	
6. What feature in specimen C is rarely found preserved?	
7. Identify the genus of the coral in specimen D	
8. What type of coral is in specimen D (rugose, tabulate, or scleractinian)?	
9. What is the coral in specimen D encrusting?	
10. What period is specimen E from?	

Station 6: Foraminifera

1. Which epoch was specimen A most common in?	
2. Which mass extinction did specimen B go extinct during?	
3. What part of foraminifera is readily fossilized?	
4. Isotopes of which two elements are often examined in Foraminifera for paleoclimatology and paleoceanography?	
5. What are three aspects of foraminifera make them good index fossils?	<ol style="list-style-type: none"> 1. 2. 3.
6. What type of stone are foraminifera common in?	
7. What is the chemical formula of the mineral these fossils are composed of?	

Station 7: Cartilaginous Fish

1. Which specimen (A, B, C, or D) represents Batoidea?	
2. Which specimen (A, B, C, or D) represents <i>Carcharodon</i> ?	
3. Which specimen (A, B, C, or D) represents <i>C. megalodon</i> ?	
4. Which specimen (A, B, C, or D) represents <i>Carcharocles</i> but not <i>C. megalodon</i> ?	
5. True or False: <i>C. megalodon</i> is an ancestor of the great white shark	
6. What species under the genus <i>Carcharodon</i> is believed to be a transitional species between modern great whites and their ancestors?	
7. Mako sharks have long, pointed teeth. What does this suggest about their diet?	
8. Great whites have short serrated teeth. What does this suggest about their diet?	
9. Specimen E has red-orange sediments on it. What substance does this suggest the presence of?	

Station 8: Bony and Armored Fish

1. Identify the order of specimen A	
2. Identify the class of specimen B	
3. Which Lagerstätte is specimen B found in?	
4. Which specimen (A or B) is more closely related to amphibians?	
5. Identify the genus of specimen C	
6. What was the diet of specimen C?	
7. Identify the genus of specimen D	
8. What was the diet of specimen D?	
9. What period is often called 'The Age of Fishes'?	
10. During which mass extinction did armored fish go extinct?	

Station 9: Reptiles and Amphibians

1. Identify the family of specimen A and B	
2. What do specimen A's teeth suggest about its diet?	
3. What are two similarities between the skulls of specimen A/B and those of snakes?	1. 2.
4. Identify the genus of specimen C	
5. Identify the genus of specimen E	
6. Identify the genus of specimen F	
7. Order specimens C, D, E, and F based on the transition from fish to tetrapod	
8. During what period did the transition from fish to tetrapod happen?	

Station 10: Synapsids

1. Identify the genus of specimen A	
2. What advantage did specimen A have over temnospondyls in the arid late Permian?	
3. What are two possible functions for specimen A's sail?	1. 2.
4. Identify the genus of specimen B	
5. Which mass extinction did specimen B survive?	
6. What are three adaptations that helped specimen B survive this extinction?	1. 2. 3.
7. What period was specimen B predominant during?	
8. Which specimen (A or B) is a therapsid?	
9. Which specimen is more closely related to mammals?	

Station 11: Mammals

1. Identify the genus of specimen A	
2. Identify the genus of specimen B	
3. Identify the genus of specimen C	
4. Which specimen(s) are artiodactyls?	
5. Which specimen(s) are perissodactyls?	
6. At the end of which epoch did specimen A go extinct in North America?	
7. The ingestion of what two substances are thought to have led to the development of hypsodont teeth in New World mammals?	1. 2.
8. What vestigial structure(s) on specimen C suggests terrestrial heritage?	

Station 12: Megafauna

1. Identify the genus of specimen A	
2. Identify the genus of specimen B	
3. Which specimen (A or B) is more closely related to modern elephants?	
4. Name a species of specimen A which exhibits insular dwarfism	
5. On which continent did the Woolly Mammoth (<i>M. primigenius</i>) originate?	
6. What are the two leading hypotheses for the cause of the extinction of the megafauna?	1. 2.
7. Identify the genus of specimen C	
8. Which Lagerstätte is specimen C commonly found in?	
9. What is a predator trap? How does it work? (2 pt)	

Station 13: Plants

1. Identify the genus of specimen A	
2. Which supercontinent does specimen A provide evidence of?	
3. Identify the genus of specimen B	
4. Identify the genus of specimen C	
5. During which period was specimen C predominant?	
6. Identify the genus of specimen D	
7. Which Lagerstätte is specimen D commonly found in?	
8. Identify the genus of specimen E	
9. In which country is specimen E still found in the wild?	
10. Which specimen is considered a Lazarus taxon?	

Station 14: Trace Fossils

1. Identify the <u>class</u> of specimen A	
2. What created the hole in specimen A?	
3. Identify the class of organism that created specimen B	
4. What type of rock is specimen B?	
5. Identify the order of organism that created specimen C	
6. How many limbs was the organism that created specimen C walking on?	
7. Specimen D was created by a small theropod assigned to the ichnogenus <i>Minisauripus</i> . What is an ichnogenus?	
8. The footprint on specimen D is 1 inch long. Approximately how long was the leg of the dinosaur that left it?	
9. What left the circular imprint circled on specimen D?	
10. Was specimen E created by an Ornithischian or Saurischian?	

Station 15: Extinctions

1. Which mass extinction is labeled A?	
2. Which mass extinction is labeled B?	
3. Which mass extinction is labeled C?	
4. Which mass extinction is labeled D?	
5. Which mass extinction is labeled E?	
6. Which mass extinction is depicted in pictured A?	
7. Which mass extinction is depicted in pictured B?	
8. During which mass extinction did trilobites go extinct?	
9. During which mass extinction did non-avian dinosaurs go extinct?	
10. Which mass extinction led to the rise of mammals?	
11. Which mass extinction led to the rise of dinosaurs?	
12. Which mass extinction is called 'The Great Dying'?	

Station 16: Geologic Timeline

1. Which period is depicted in is picture A?	
2. Which period is depicted in is picture B?	
3. Which period is depicted in is picture C?	
4. During what period did the Carnian Pluvial Event happen?	
5. How many million years ago did the Cambrian period start?	
6. How many million years ago was the Permian extinction?	
7. During what period was the Paleocene-Eocene Thermal Maximum?	
8. During which mass extinction did trilobites go extinct?	
9. On which boundary (between periods) did the Hangenberg event occur?	

Station 17: Ecology

1. The Mesozoic Marine Revolution involved the appearance of many shell-crushing predators. What are two such orders of marine predators?	1. 2.
2. What event involved the appearance of nearly all animal phyla?	
3. What is the process through which organisms rapidly fill newly empty niches after an extinction?	
4. Ichthyosaurs diversified to fill many different niches. What are three different feeding methods/habits that different Ichthyosaurs may have used?	1. 2. 3.
5. What class of animals fills a similar niche to and possibly outcompeted brachiopods?	
6. What genus of large predator moved from South America to North America during the Great American Interchange where it went extinct partly due to competition?	
7. What behavior did trilobites employ similarly to many modern isopods to defend against predators?	

Station 18: Identification (note: there are 29 specimens at this station)

1. Identify the genus of specimen A	
2. Identify the genus of specimen B	
3. Identify the genus of specimen C	
4. Identify the genus of specimen D	
5. Identify the genus of specimen E	
6. Identify the genus of specimen F	
7. Identify the genus of specimen G	
8. Identify the genus of specimen H	
9. Identify the genus of specimen I	

10. Identify the genus of specimen J	
11. Identify the genus of specimen K	
12. Identify the genus of specimen L	
13. Identify the genus of specimen M	
14. Identify the genus of specimen N	
15. Identify the genus of specimen O	
16. Identify the genus of specimen P	
17. Identify the genus of specimen Q	
18. Identify the genus of specimen R	
19. Identify the genus of specimen S	
20. Identify the genus of specimen T	
21. Identify the genus of specimen U	
22. Identify the class of specimen V	
23. Identify the class of specimen W	
24. Identify the class of specimen X	
25. Identify the class of specimen Y	
26. Identify the genus of specimen Z	
27. Which body part (of a bird) is specimen AA from?	
28. Which body part (of a shark) is specimen AB from?	
29. Which hip bone (from a dinosaur) is specimen AC?	