

**Section 1 – Earth’s surface undergoes gradual and sudden changes**

- Scientists estimate the age of the Earth to be about 4.6 billion years old, using evidence and theories. Then they construct a model of what the Earth is composed of. A model is based on what is ...
 - known
 - inferred**
 - observed
 - proven
- The core of the Earth is made up of two layers. The inner core, which is made up of nickel and iron reaching temperatures of **7000°C**, because of the pressure of the other layers on this inner core, it is ...
 - molten
 - liquid
 - solid**
 - crystal
- Which of the following foods would you use to model what the Earth is made of ...
 - pear
 - apple
 - peach**
 - banana
- It is likely that San Diego would be able to get early warnings of possible earthquakes in the area because of this attraction ...
 - San Diego Zoo**
 - San Diego Emergency Center
 - San Diego Observatory
 - Pacific Climatology Center
- The source of an earthquake can be determined by recording the interval time between the p waves and s waves. The first place that rocks break below the surface in an earthquake is called the ...
 - focus**
 - fault line
 - epicenter
 - shadow zone
- In 1935 Charles Richter developed a scale that helped geologists understand about the strength or magnitude (intensity) of an earthquake. The scale he developed starts at 0 and each increase of 1 indicates an increase of 10 times the amount of ...
 - damage
 - seismic waves
 - ground motion**
 - fault movement
- Volcanoes erupt when they become active. Until an eruption occurs, volcanoes are described as ...
 - stagnant
 - dormant**
 - extinct
 - plugged
- One of the most dangerous side effects of an erupting volcano is a ...
 - hurricane
 - tornado
 - earthquake
 - tsunami**

9. A device that geologists use to measure minute changes in the angle of the ground's slope is called a ...
- A. **seismograph**
 - B. **seismogram**
 - C. **surveyor's level**
 - D. **magmascope**
10. Not very many volcanologists use this special suit to study molten lava up close, but those who do are able to get close enough to the magma flow to make observations, take measurements, or collect gas and lava samples. This special suit is coated with ...
- A. **reflective plastic**
 - B. **fireproof insulation**
 - C. **reflective metal**
 - D. **flammable liquid**
11. André tested the effects of water on the natural rock samples found in his schoolyard. He tested the rock samples with pure water (pH 6.8), rainwater (pH 4.5) and tap water (pH 6.7). The type of weathering he investigated was classified as ...
- A. **chemical**
 - B. **biological**
 - C. **mechanical**
 - D. **gravitational**
12. The movement of materials from place to place is called ...
- A. **weathering**
 - B. **deposition**
 - C. **glaciation**
 - D. **erosion**
13. A science field trip included a stop at the 'Big Rock' in Okotoks. A receding glacier left behind this rock. It is called ...
- A. **an erratic**
 - B. **a moraine**
 - C. **a striation**
 - D. **an abrasion**
14. Allison and Rachel were investigating the effects of landforms that have been created by the action of running water. They were told that the Alberta badlands are an example of this type of landform, called ...
- A. **sediment**
 - B. **fluvial**
 - C. **bedrock**
 - D. **striation**

Section 2 – The Rock Cycle describes how rocks form and change over time

15. Specific patterns such as cubic, tetragonal, hexagonal, orthohombic, monoclinic and triclinic describe how minerals line up in a regular pattern creating smooth surfaces and sharp edges, making systems of ...
- A. **mineral hardness**
 - B. **crystal structure**
 - C. **cleavage types**
 - D. **synthetic models**
16. Minerals can be identified by certain clues. The clue that identifies the color of the powdered form of the mineral left behind when it is rubbed against a rough surface is called its ...
- A. **streak**
 - B. **lustre**
 - C. **color**
 - D. **cleavage**

17. The relative hardness of a mineral is measured with a scale. The scale is used to help identify different minerals, because each mineral will scratch all the minerals with a lower scale ranking than its own. Named after a German scientist, the scale is called...
- A. **Newton's Force Scale**
 - B. **Fahrenheit's Scale**
 - C. **Mohs Hardness Scale**
 - D. **Richter's Seismic Scale**
18. Igneous rock can be classified by how it is formed. If it has formed beneath the surface, cooling slowly, it has larger grains and is called ...
- A. **interior**
 - B. **intrusive**
 - C. **exterior**
 - D. **extrusive**
19. Soil that has organic, living material, gets covered over and each layer puts pressure on the organic debris – compressing it into peat, lignite, bituminous and anthracite. The hardest type of coal ...
- A. **peat**
 - B. **anthracite**
 - C. **lignite**
 - D. **bituminous**
20. Shale changes to slate and then changes to schist. To change these rocks into other types requires ...
- A. **time and technology**
 - B. **time and sediments**
 - C. **heat and pressure**
 - D. **heat and temperature**
21. Geologists identify mineral ores locations, which are hidden below the surface of the Earth, using different tools and technologies. Using sensitive instruments, such as a magnetometer, geologists are using this technique ...
- A. **remote sensing**
 - B. **geophysical prospecting**
 - C. **geochemical prospecting**
 - D. **exploration**
22. The formation of different types of rocks is described in the Rock Cycle. An important feature of this cycle is that it ...
- A. **always forms rocks the same way**
 - B. **cannot be reversed**
 - C. **does not have a set order**
 - D. **doesn't have any shortcuts or detours**
23. The rocks and minerals that cover the first 50 meters or so of the Earth's surface include sand, gravel, stones, and boulders. This material is called ...
- A. **underburden**
 - B. **overburden**
 - C. **shield cover**
 - D. **common rock cover**
24. You will likely find dramatic examples of these types of rocks in *The Badlands* of Dinosaur Provincial Park, around Drumheller. The erosion and exposure of this type of rock took many years to complete.
- A. **igneous**
 - B. **magma**
 - C. **sedimentary**
 - D. **metamorphic**

Section 3 – Landforms provide evidence of change

25. Alfred Wegener determined that the continents at one time all fit together to form one large supercontinent, called Pangaea. Their interlocking shapes and other evidence helped him form the Theory of Continental Drift. The other evidence included all of the following, **except** ...
- A. **Glossopteris fossils**
 - B. **Folded mountains**
 - C. **Glacial deposits**
 - D. **Gold deposits**
26. Glaciers once existed in the southern hemisphere. The evidence Wegener found to prove this were the ...
- A. **moraines found**
 - B. **erratics found**
 - C. **bedrock abrasions**
 - D. **ice caves**
27. The science community rejected Wegener's idea because they believed that mountains formed when the crust wrinkled like the skin of a dried-up ...
- A. **apple**
 - B. **pear**
 - C. **grape**
 - D. **orange**
28. The ocean floor has been mapped out in detail and provided interesting patterns. Scientists noted that volcanoes and earthquakes tended to occur in the ...
- A. **deep trenches of the ocean**
 - B. **vast plains of the ocean floor**
 - C. **same areas around the world**
 - D. **continents that fit together**
29. Because rock is moving away from the mountain ranges found along the mid-Atlantic ridge, new rock is being formed. This sea-floor spreading indicates that rock nearest the continents is ...
- A. **older**
 - B. **younger**
 - C. **softer**
 - D. **harder**
30. A place where two tectonic plates slide past each other is called a ...
- A. **transform boundary**
 - B. **diverging boundary**
 - C. **converging boundary**
 - D. **subduction boundary**
31. Over 500 million years ago Alberta was tropical and the border with British Columbia was ...
- A. **a mountain range**
 - B. **a shallow sea**
 - C. **an underwater trench**
 - D. **a fluvial landform**
32. The collision of the North American Plate and the Pacific Plate caused the Pacific plate to slip under the North American Plate. At the same time, the force of the collision caused the North American plate to ...
- A. **slip and slide**
 - B. **fold and break**
 - C. **fold and separate**
 - D. **Bend and compress**
33. The downfold in the rock that is folded when pressure is placed on it is called ...
- A. **compression**
 - B. **Fault block**
 - C. **anticline**
 - D. **syncline**

Section 4 – The fossil record provides evidence of Earth's changes over time

34. Trilobites are one of the most famous groups of fossils. They are now extinct. They lived in ...
- A. Gobi Desert
 - B. Antarctic Tundra
 - C. Fresh water lakes
 - D. Warm ocean water
35. There is more than one way for living organisms to become fossilized. A cavity or track that was left behind by a living organism – providing evidence that it existed, is a type of fossil called a ...
- A. cavity fossil
 - B. evidence fossil
 - C. trace fossil
 - D. track fossil
36. The process that takes thousands of years and can only happen under certain conditions is called fossilization. The most common fossils found are ...
- A. plants
 - B. worms
 - C. jellyfish
 - D. vertebrates
37. Geological columns are formations in sedimentary rock that help scientists to determine the age of fossils they find. Fossils found in column 7 will be ...
- A. older than those found in 2 and 8
 - B. younger than those found in 10 and 6
 - C. older than those found in 4 and 3
 - D. younger than those found in 2 and 9
38. Layers of sedimentary rock stay in their original position, with the newest layers on the top and the older layers on the bottom. These layers of rock are called ...
- A. indexing
 - B. parent rock
 - C. rock strata
 - D. superimposed
39. The preserved remains of many soft tissue species have been located in the Burgess Shale Fossil Beds, located in Yoho National Park, British Columbia. These fossils are usually the remains of ...
- A. producers and herbivores
 - B. herbivores and consumers
 - C. consumers and decomposers
 - D. decomposers and scavengers
40. The general time periods that organize the history of the Earth are called ...
- A. eras
 - B. periods
 - C. years
 - D. centuries
41. In the Geologic Time Scale, dinosaurs ruled the land and then became extinct during this era.
- A. Precambrian
 - B. Paleozoic
 - C. Mesozoic
 - D. Cenozoic
42. Scientists have inferred that there might be some relationship between dinosaurs and birds from some of the Archaeopteryx fossils they discovered a few impressions of feathers
- A. wings
 - B. feathers
 - C. webbed feet
 - D. hollow bones