

8th GRADE CRT TEST REVIEW

A41-48

1. What is the difference between a chemical and physical change?
2. Would metal tarnishing or rusting be an example of a chemical or physical change? Why?
3. How do you know that mixing baking soda and vinegar is a chemical change?
4. Would sanding wood into sawdust be an example of a chemical or physical change? Why?
5. If you burn a piece of wood is it a chemical or physical change? Why?
6. When water boils, bubbles come to the surface. What is that gas? Is this a chemical or physical change?
7. Name some possible results in an experiment that indicate a chemical change.
8. What are the reactants and products of a chemical reaction?
9. How do you know that mass is conserved during a chemical reaction?
10. If you heated up the reactants in a chemical reaction what would happen to the rate of the reaction?
11. If you were to stir the reactants in a chemical reaction, what would happen to the rate of the reaction?
12. What are endothermic and exothermic reactions? Give an example of each.
13. A table is round, three feet tall, brown and made of oak. What types of properties are these?

A 51-55

14. What type of properties are melting and boiling point? What type of change are phase changes?
15. What temperature does water boil at sea level? What happens to the boiling point as you go higher?
16. If you're melting ice, what will happen to the temperature when the ice is melting? What happens to the temperature of the water if you continue to add heat? Draw the graph.
17. When ice melts and water freezes, what happens to the thermal energy?
18. Which state of matter has the greatest amount of energy?
19. What happens to molecules when you heat them?

20. When you perform an experiment, how many variables can you test?
21. What part of the experiment do you use to compare to the results of the variable?
22. explosion, how could you find the cause?
23. Why are chemical reactions so vital to our modern lifestyle? Give some examples.
24. Where does the gasoline burned in a car go?

Cells and Heredity

25. What is the equation for photosynthesis?
26. What is the equation for respiration?
27. What chemical changes take place during photosynthesis?
Respiration?
28. Which stores energy and which releases energy-photosynthesis or respiration?
29. Who requires respiration to stay alive? What is the source for respiration?

Ecology 22-28

30. What is a producer? What is the difference between producers and autotrophs?
31. What is a consumer? What is the difference between consumers and heterotrophs?
32. What is the difference between primary consumers and secondary consumers?
33. In a biosphere or terrarium, why is it important to have the right balance of plants and animals?
34. Draw a simple food chain that includes a producer, primary consumer and secondary consumer.
35. What is the original source of energy for all food chains?
36. What would happen to an ecosystem if you killed all of the major predators, like wolves?
37. What are all the food chains in an ecosystem called?
38. What is the Pyramid of Energy? What does it show? Why does that happen?

Ecology 54-61

39. What is symbiosis?
40. What is mutualism? Give an example.
41. What is commensalism? Give an example.

42. What is parasitism? Give an example.
43. What is a predator/prey relationship? Give an example?
44. What is the difference between a predator and a parasite?
45. How are predator and prey populations related?

Ecology 18, 19, 90-92

46. Why do they call gas and oil fossil fuels?
47. What causes global warming?
48. What is the biggest problem with landfills?
49. How do humans impact the ecosystem?
50. High sulfate and sulfide levels from burning coal cause what environmental problem?

B 150-155

51. Utah has vast coal reserves in Eastern Utah. How did that coal form?
52. How long does it take fossil fuels to form?
53. Compare the rate of fossil fuel use to its formation.

B 148-149, 163-169

54. Why should we concentrate on developing new energy sources like solar and wind?

A 115-120, 132-136, 145-149

55. What are the major sources of erosion on Earth?
56. How does gravity cause erosion?
57. What force causes the change of rock into sediment?
58. Explain how weathering and erosion form rocks and soil.
59. What is the source of mineral particles in soil?
60. What kinds of hazards would heavy rains and melting snow cause?
61. Why do some cities have codes against building on a steep hillside?
62. Explain the process of chemical weathering. Give an example.
63. What processes best explain the changes in landscapes over time?
64. What causes the movement of the Earth surface?
65. What type of energy causes the formation of mountains?
66. Earthquakes and volcanoes are natural changes to the surface of the Earth. Name some human-made ones.

A 74-101

67. Diagram the Rock Cycle.
68. What type of rock requires heat and pressure to form?
69. What type of rock must be melted and cooled?

70. What type of rock does the process of weathering, erosion, compaction and cementation form?

CSE 132-134, 143

71. When looking at a profile of rock layers, explain why some can be tilted while others are not.
72. When geologists find younger rock layers under older rock layers what are the possible causes?
73. Explain the principle of Uniformitarianism.
74. What is the principle of Superposition?
75. Why does magma inside the Earth rise to the surface if it finds a crack?
76. Draw the sequence for these events, include a key: limestone, shale, sandstone, igneous intrusion, erosion, conglomerate.

A 43-57

77. What factors are most helpful in identifying a mineral?
78. What is a mineral?
79. What is Mohs' Hardness Scale? What are some tools to using it?

B 111-117

80. What parts of once living organisms do we usually find as fossils?
81. Name the stages of fossil formation.
82. Why are fossils of corals, shells and trilobites common while fossils of jellyfish and octopus are not?
83. What layer of rock would a paleontologist expect to hold the oldest fossils?
84. Which layer of rock is most likely to contain fossils similar to existing organisms?

C 121-128

85. What do scientists call the energy of motion?
86. If you threw a baseball straight up, where would the kinetic energy be the greatest?
87. If you were on a roller coaster at the top of the first hill, where would the potential energy be greatest?
88. Which has greater kinetic energy a gas or a solid? Why?
89. What is the energy called that is stored in food?
90. What are the three ways energy can travel? Give an example of each.
91. List the types of energies and if they are kinetic or potential.
92. Define potential and kinetic energy.

93. Which type of energy is in seismic waves?
94. Which type of energy is found in magma?
95. Which type of energy is found in molecules?
96. When you burn wood, which kinds of energy are produced?
97. Describe the energy conversions that occur when you slide down a slide.
98. What is the Law of Conservation of Energy?
99. What is the correct sequence of energy conversions from the sun to animals?
100. What kind of energy conversions takes place during respiration?
101. What kind of energy is stored in oil and gasoline?

C 145-167

102. Name the six simple machines.
103. What is the advantage of using a simple machine?
104. What is a machine made of two or more simple machines called?
105. Name all of the simple machines found on a bicycle.
106. What is mechanical advantage?
107. How do you calculate the M.A. of a lever?
108. How do you calculate the M.A. of an inclined plane?
109. How do you calculate the M.A. of any machine if you only know the forces?
110. If a lever requires a smaller force to use than another, it has a better _____.
111. Explain why any machine has an efficiency less than 100%.
112. What is the force-distance trade off in machines?
113. What is a good example of science and technology working together to design a better car?

B 51-55

114. What are the three types of seismic waves?
115. What is the epicenter of an earthquake?
116. From where does the energy to produce earthquakes and volcanoes come?
117. How do earthquakes and volcanoes alter the surface of the earth?

D 9-21

118. Draw a wave and label the amplitude, wavelength, crest and trough.
119. What is frequency?
120. What kind of wave travels fastest?

121. Why do you see lightening before you hear thunder?

D 96, 96, 120

122. How are a raindrop and a prism alike?

123. How is a rainbow formed?

124. How are you able to see the color of your shirt? How are you able to see anything at all?

D 37-63

125. Define pitch and intensity of sound.

126. How is sound made?

127. Relate pitch to frequency and wavelength. Relate amplitude to intensity.

128. What changes pitch? What changes intensity?

129. How does the size of the pipe affect the pitch of a wind chime?

C 77-83

130. How would you calculate your weight on the Moon?

131. What is the difference between mass and weight?

132. If you're designing a bridge, what force are you trying to overcome?

133. If a rock and a piece of flat paper are dropped on the ground, which will hit first? Why? What can you do to change that?

134. What happens to gravity as the mass of an object gets bigger? What happens to gravity as the distance gets farther?

C 85-89

135. What causes friction?

136. What changes the amount of friction between two objects?

137. What are the three types of friction?

138. When is friction useful?