Name	Date	Core

8th Grade OAKS Pre-Test

Physical Science- Matter

- 1. In order to be able to determine the density of an objects' material, that has both physical and chemical properties, what MUST be known about the material?
- A. Mass and volume
- B. Weight and thickness
- C. Length and width
- D. Shape and Volume
- 2. What is the smallest unit of an element that still has the properties of that element?
- A. an atom
- B. a compound
- C. an electron
- D. a molecule
- 3. Carbon (C), Silicon (S), and Germanium (Ge) are all in the same column of hte Periodic Table. What do they all have in common
- A. Similar chemical and physical properties
- B. Similar atomic masses
- C. Same number of protons
- D. Same number of neutrons
- 4. Although an object may change density, when particles in an object move faster, the particles' density
- A. increases
- B. decreases
- C. remains the same
- 5. You are given a flask with a mixture of salt and water and asked to separate the two. You could
- A. use an electric current to separate the salt from the water
- B. evaporate the water and collect the salt
- C. put it under the microscope to separate the salt and the water
- D. let the salt settle out and pour off the pure water from the top

- 6. In an atom, electrons are located
- A. in the nucleus
- B. in a cloud around the nucleus
- C. in orbits like planets
- D. embedded on the nucleus

Forces and Energy

- 7. Light is which type of energy?
- A. Mechanical energy
- B. Nuclear energy
- C. Thermal energy
- D. Electromagnetic energy

8. The diagram below shows a wave diagram. Place the letter A where the crest of the wave is. Place the letter B where the trough of the wave is.



- 9. Which of the following would NOT help bike riders coast farther on a level surface?
- A. Crouching low over their bikes while coasting
- B. Swerving their bikes from side to side
- C. Pumping more air into their tires
- D. Oiling the wheel bearings
- 10. A heated metal object measures 120 degrees celsius. It is dropped into a bucket filled with water measuring 10 degrees celsius. Which of the following is most likely to occur?
- A. both the water and the metal will adjust to the same temperature below 10 degrees
- B. the water and metal will adjust to different temperatures above 120 degrees celsius
- C. the water will remain the same temperature, but the metal will cool to 10 degrees celsius
- D. the water and metal will adjust to the same temperature between 10 degrees C and 120 degrees C

Cells, Body Systems, and Reproduction

11. Which of the following is different in a plant cell if compared to an animal cell?

- A. The presence of a nucleus
- B. The presence of a cell wall
- C. The presence of proteins
- D. THe presence of ribosomes

12. Ten minutes into the race, the students are perspiring or sweating. Which human body system is now involved?

- A. Nervous system
- B. Respiratory system
- C. Skeletal system
- D. Excretory system
- 13. Based on the diagram, which of the following statements is true?



- A. lemurs were the most recent to evolve
- B. gorillas evolved directly from chimpanzees
- C. spider monkeys and lemurs evolved at the same time
- D. gorillas and baboons evolved from a common ancestor
- 14. Which process do plants use to capture energy?
- A. Digestion
- B. Photosynthesis
- C. Respiration

- 15. Which organelle is necessary to transform the sun's energy into energy a cell can use?
- A. Chloroplast
- B. Ribosome
- C. Nucleus
- D. Cell membrane
- 16. In mice, dark brown (B) coloration is dominant over light brown (b) coloration. It is not sex-linked. A dark brown male is crossed with a light brown female. They produce a litter of three dark brown baby mice.

Suppose the parents have a second litter of baby mice. The second litter contains 2 dark brown offspring and 2 light brown offspring. Based on this and the previous information, what is the genotype of the father?

- A. bb
- B. Bb
- C. BB
- 17. Many plants reproduce asexually. How does the genetic material (DNA) compare between the new plant and the parent plant in this type of reproduction?
- A. It is similar but not identical
- B. It depends on the plant the parent is crossed with
- C. It depends on the climate it is grown in
- D. It is identical

Geology and Water Cycle

18. Which is neither a solid nor a liquid layer of the Earth?

- A. Asthenosphere
- B. Core
- C. Lithosphere
- D. Crust

19. Identify the processes the water cycle and answer the following question. At point A, what process in the water cycle is taking place?



- A. Condensation
- B. Precipitation
- C. Run-Öff
- D. Evaporation

20. Which of the following is most likely to make a rock crack and crumble?

- A. Dew evaporating on the rock
- B. Leaves decaying on the rock
- C. Snow melting in the crack of a rock
- D. Water freezing in a crack in the rock

21. Between which two stages in the rock cycle will volcanoes MOST likely occur?

- A. Between igneous and sedimentary stages
- B. Between sedimentary and metamorphic stages
- C. Between magma and igneous stages
- D. Between magma and metamorphic stages



- 22. While digging, a person found that most of the rocks were igneous rock. What can be concluded?
- A. The rocks were probably carried there by ancient people
- B. The area was once covered by an ocean
- C. A glacier passed through at one time
- D. A volcano was nearby at one time

Astronomy and Weather

- 23. Which of the following characteristics of an inner planet (Mercury, venus, Earth, Mars)?
- A. Have many moons
- B. Have a rocky surface
- C. Have rings
- D. Are larger than outer planets
- 24. You observe the following over a month during the winter:

-when it is clear at night, there tends to be frost in the morning -when it is cloudy at night, there is usually dew on the ground in the morning

What might be the BEST questions that could be investigated based on both observations?

- A. Why is it warmer when there are clouds at night?
- B. How does frost form?
- C. What causes dew to form?
- D. What is the difference between frost and dew?
- 25. The Earth has seasons because the
- A. equator and poles receive different amounts of energy
- B. Earth is closer to the sun in the summer
- C. Earth's axis is tilted

Ecosystems, Ecology and Natural Resources

26. An example of a predator- prey relationship would be

- A. tree- water
- B. cow- grass
- C. hawk- mouse
- D. tick- dog

27. Which can have a direct NEGATIVE impact on the environment?

- A. mining
- B. recycling
- C. using solar power
- D. using composted material

28. Which of the following gasses is the result of life forms being present on Earth?

- A. Oxygen
- B. Carbon Dioxide
- C. Water Vapor
- 29. Which of the following creates global environmental change?
- A. Volcanic ash
- B. Burning fossil fuels
- C. Building dams
- 30. Which of the following is not an environmental factor that affects growth and reproduction in an organism?
- A. Food
- B. Space
- C. Water
- **D.** Genetic Variations
- 31. What is the best way to determine evolutionary relationships between ancient and modern organisms?
- A. Graphs and tables
- B. Fossil record
- C. Observation
- D. Computer models

32. Shown below are 4 species of finches, derived from a common ancestor. These species inhabit the same island. Which of the following BEST explains the appearance of these birds' beaks?



- A. Predation by the larger birds on he smaller birds led to a decreased population of the smaller birds
- B. Competition for limited food resources led to an increased similarity among species
- C. Predation by the larger birds on the smaller birds led to an increased fitness of the smaller birds
- D. Competition for limited food resources led to an increased diversity among species