

Grade 7 Science Summer Packet

Summer 2011

Dear Student:

This packet is to be completed and turned in to your 8th grade teacher on the first day of the 2011-2012 school year- August 29th.

If your current copy is lost or misplaced, you may go to the Science department website found on [www. Bridgeportedu.net](http://www.Bridgeportedu.net) to print another copy.

Have a great summer!

Name: _____

1. Dr. Jalli wonders what antibacterial, or cleaning substance, kills the most bacteria. He designs an experiment to test four antibacterials by putting them onto colonies of bacteria and measuring how much of the bacteria is killed. His results from each of three trials are listed below:

Antibacterial	% Bacteria Killed	Antibacterial	% Bacteria Killed
1	65%	1	72%
2	23%	2	17%
3	18%	3	21%
4	31%	4	39%

Antibacterial	% Bacteria Killed
1	75%
2	12%
3	18%
4	29%

From the information in the tables, what is an appropriate conclusion?

Write your response here:

2. Addison has two dogs that are sisters. One of the dogs has white fur and the other dog has black fur.



Explain using genetic principles how the dogs are two different colors.

Write your response here:

3. Dr. Burke performs an experiment to determine how plants grow in a variety of temperature and moisture conditions. He runs five trials with five different groups of the same species of plant. The table below shows the results from his experiment.

Plant Group	Temperature	Moisture	Average Plant Growth
Group 1	high	high	2 in
Group 2	moderate	moderate	6 in
Group 3	low	low	0 in
Group 4	high	moderate	3 in
Group 5	moderate	high	4 in

After finishing the experiment, Dr. Burke explains that heat and moisture have no effect on plant growth. Based on the evidence shown in the table, is his explanation valid?

Write your response here:

4. Gabriel wants to find out what the melting point of wax is. He has a block of wax, a graduated cylinder, a pan, a thermometer, and scales. Which is the best procedure to follow for the experiment?

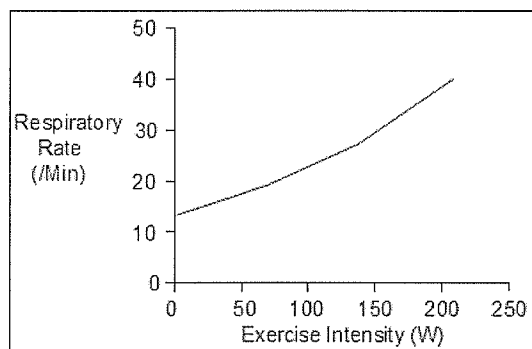
Write your procedure here:

5. Two teams of scientists studying lung disease have each developed a new drug. Each team claims that its drug will greatly fight lung disease.

The two teams have agreed to join together to fight lung disease, but they only have enough money to continue developing one of the drugs. How do they decide which drug to continue developing?

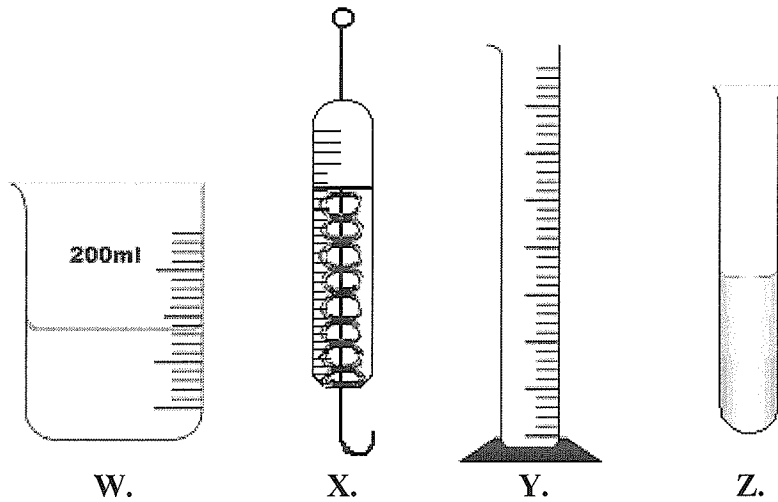
Write your response here:

6.



Study the line graph above. What relationship does the graph reveal?

7. Which of the following is a beaker?



Name each scientific instrument W – Z and explain what they are used for.

W - _____

X - _____

Y - _____

Z - _____

8. Dean is conducting a science experiment. He wants to see how the average length of an earthworm changes with its age.

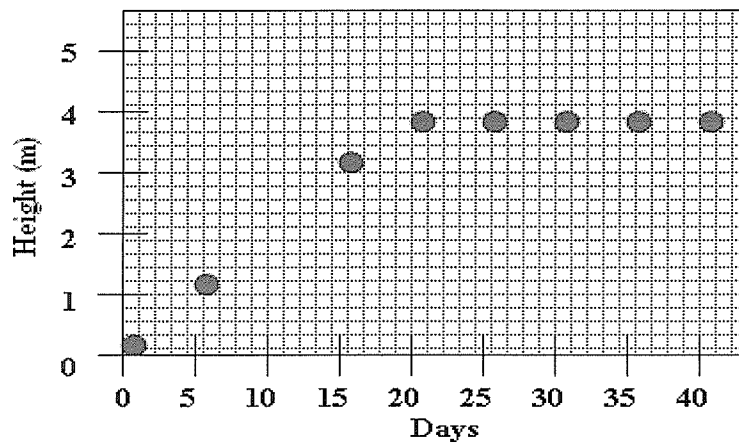
What unit of measurement would be best for Dean to use to measure the lengths of the earthworms in his study?

- A. liter
- B. meter
- C. milliliter
- D. centimeter

Explain why you chose this answer:

9. What would happen if all the trees in a forest got cut down?

10. The graph below shows the growth of a tree with time, but some data are missing. What was the most likely height of the tree in meters (m) at 10 days? Explain why



you chose that height.

11. Observations that deal with descriptions that cannot be expressed in numbers are called

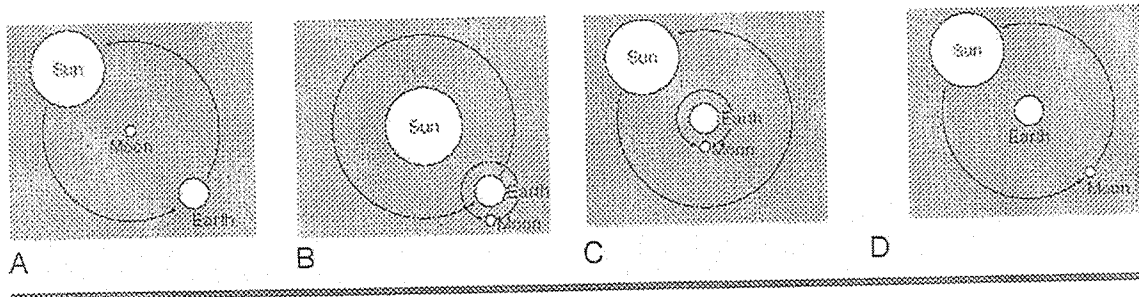
- a.) Manipulated observations
- b.) Quantitative observations
- c.) Qualitative observations
- d.) Operational observations

12. An animal that has a backbone is called a(n)

- a.) cnidarians
- b.) predator
- c.) vertebrae
- d.) invertebrate

13. Organisms that grown on or in other organisms are called
- parasites
 - hosts
 - prey
 - scavengers
14. What did Gregor Mendel do to study different characteristics in his genetics experiments?
- He studied only asexual plants
 - He studied only tall and short plants
 - He cross-pollinated plants
 - He cross-pollinated plants and animals
15. Factors that control traits are called:
- genes
 - purebreds
 - recessives
 - parents
16. Scientists call an organism that has two different alleles for a trait a
- hybrid
 - trait
 - purebred
 - factor
17. What does a punnett square show?
- all the possible outcomes of a genetic cross
 - only the dominant alleles in a genetic cross
 - only the recessive alleles in a genetic cross
 - all of Mendel's discoveries about genetic crosses
18. If a homozygous black guinea pig (BB) is crossed with a homozygous white guinea pig (bb), what is the probability that an offspring will have black fur?
- 25%
 - 50%
 - 75%
 - 100%

19. Which of these best shows the relationship between Earth, the moon, and the sun?



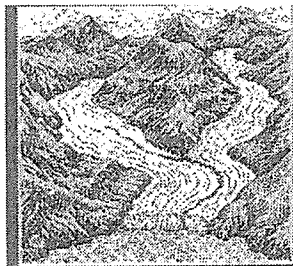
20. What happens during meiosis?
- two sex cells combine
 - Chromosome pairs separate and are distributed into new sex cells.
 - the cells nucleus divides into two new nuclei
 - the nuclear envelope forms around chromosomes

21. Explain the difference between: **independent variable**, **dependent variable**, **control variable** and **hypothesis**.

22. The moon revolves around the Earth. This causes:
- a.) Earth to warmer at night
 - b.) Earth to rotate more rapidly
 - c.) The moon to shine more brightly than other objects in the sky.
 - d.) The moon to appear as different shapes during the month.

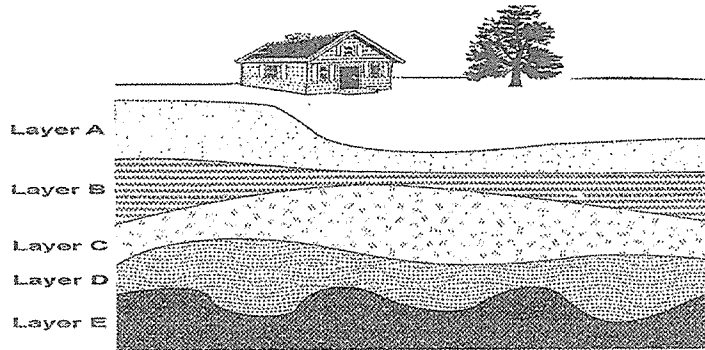
23. Which factor causes the greatest effect on the seasons on the Earth?
- a.) The Earth is farther away from the sun in winter
 - b.) The sun is higher in the sky in winter
 - c.) The Earth is tilted away from the sun in winter
 - d.) The time of daylight is shorter in winter

24. A glacier moving down a mountain valley is pictured below. Glaciers are frozen, slow-moving rivers of ice that can move down mountain valleys at about three feet per day. How does a glacier help create new soil?



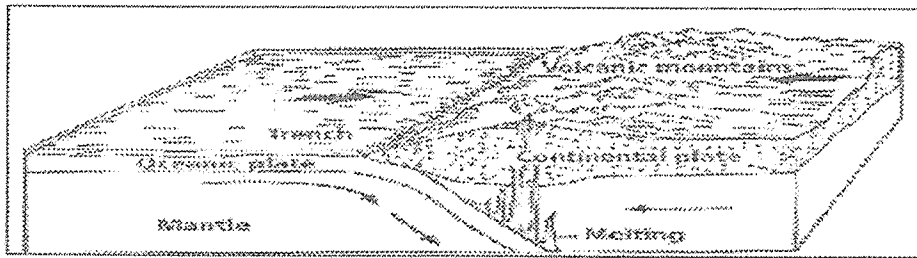
- a.) by carrying living plant material to the ocean
 - b.) by scraping particles off large rocks
 - c.) by melting rocks along its path down the valley
 - d.) by freezing small particles of soil to form large rocks.
25. Which of the following best describes the function of mitochondria?
- a.) They convert energy from food molecules into energy the cell can use.
 - b.) They store energy from food molecules
 - c.) They store energy from sunlight
 - d.) They produce nucleic acids that release energy.
26. What is the function of a cell wall?
- a.) to protect and support the cell
 - b.) to perform different functions in each cell
 - c.) to prevent water from passing through it
 - d.) to prevent oxygen from entering the cell

27. The invention of the microscopes made it possible for people to discover
- plants
 - skin
 - animals
 - cells



28. Different layers of rock within the Earth are shown in the picture above. Fossils were found in the layers A, B, C, and D. Which fossils are probably the oldest?

- Those found in layer A
 - Those found in layer B
 - Those found in layer C
 - Those found in layer D
29. The diagram below shows the convergence between an oceanic plate and a continental plate. Collisions between these two types of plates are thought to be driven by:



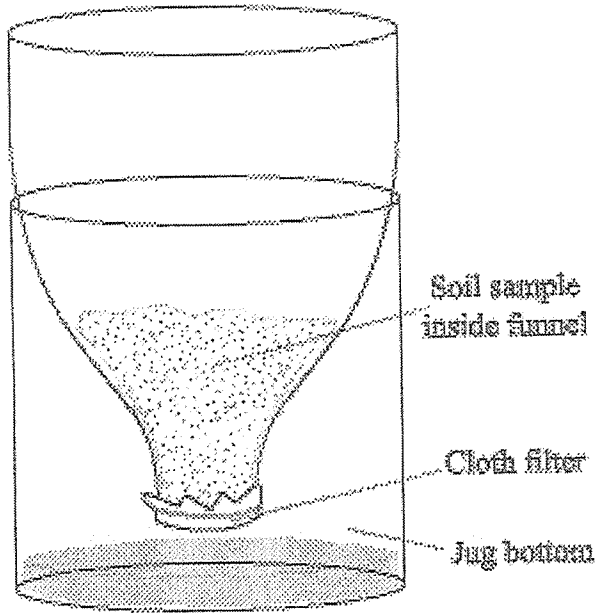
- Convection currents in the mantle.
 - Hot liquid magma in the inner core.
 - Volcanic eruptions along coastlines.
 - Meteor impacts in the ocean basins.
30. A class wants to do an experiment to determine how fitness affects a person's heart rate. Before they do the experiment they want to determine each person's average resting heart rate as a control group. In order to do this they should _____.
- Take each person's heart rate once at the beginning of class.
 - Take each person's heart rate several times during the week and average the results.
 - Take each person's heart rate once in the middle of class and average the results.
 - Let each person measure their heart rate once whenever they want.

31. The timber wolves, rabbits, and vegetation in a particular region of northern New York together constitute a _____.
- Population
 - Community
 - Genus
 - Species
32. Mushrooms are examples of _____.
- Fungi
 - Plants
 - Animals
 - Bacteria
33. As water moves slowly through a wetland, some waste materials settle out, some waters are absorbed by plants, and silt and mud is trapped by plant roots. In this way, wetlands act as natural
- filters.
 - habitats.
 - tributaries.
 - artesian wells.
34. What does the chromosome pair XY indicate in humans?
- The person is male
 - The person is female
 - The person is tall
 - The person is short
35. From Earth to space, the main layers in our atmosphere are:
- troposphere, stratosphere, mesosphere, thermosphere.
 - stratosphere, troposphere, mesosphere, thermosphere.
 - mesosphere, troposphere, stratosphere, thermosphere.
 - thermosphere, troposphere, stratosphere, mesosphere.
36. Identify the part of the female reproductive system that produces eggs.
- Testes
 - Fallopian tubes
 - Uterus
 - Ovaries
37. The average, year-after-year conditions of temperature, precipitation, winds, and cloud in an area are known as its
- climate.
 - weather.
 - global warming.
 - seasons.
38. For a solar eclipse to occur,
- the sun must be directly between Earth and the moon.
 - the moon must be directly between Earth and the sun.
 - the moon must be directly behind Earth.
 - Earth must be directly between the sun and the moon.

39. In your body, what two organs work together to make sure that oxygen gets to all the other organs in your body?
- Lungs and kidneys
 - Heart and lungs
 - Brain and kidneys
 - Heart and liver
40. What is the smallest part of the circulatory system?
- Veins
 - Arteries
 - Capillaries
 - Heart
41. Approximately what percentage of Earth's water is fresh water?
- 97 percent
 - 71 percent
 - 30 percent
 - 3 percent
42. What type of motion is possible with a hinge joint?
- Rotating
 - Sliding
 - Backward or forward
 - Side to side
43. The role of the respiratory system is to exchange gases. Which statement below is correct?
- The respiratory system brings carbon dioxide in and oxygen out.
 - The respiratory system brings air in and water vapor out.
 - The respiratory system brings oxygen in and carbon dioxide out.
 - The respiratory system brings nitrogen in and carbon dioxide out.
44. The hawk hunts and eats mice. In this example, the hawk is the _____.
- Producer
 - Herbivore
 - Predator
 - Prey
45. In an energy pyramid, which level has the most available energy?
- Producer level
 - Primary consumer level
 - Secondary consumer level
 - Tertiary consumer level
46. A group of land ecosystems with similar climates and organisms is called a(n) _____.
- Energy pyramid
 - Climate
 - Biome
 - Food web

47. The place where an organism lives and that provides the things the organism needs is called its _____.
- Habitat
 - Population
 - Species
 - Community
48. The struggle between organisms to survive in a habitat with limited resources is called _____.
- Competition
 - Predation
 - Symbiosis
 - Parasitism
49. The ozone layer protects living things on Earth from
- visible light.
 - infrared rays.
 - ultraviolet radiation.
 - carbon dioxide.
50. The brain and spinal cord make up the
- Central nervous system
 - Peripheral nervous system
 - Somatic nervous system
 - Autonomic nervous system
51. The many overlapping food chains in an ecosystem make up an
- Food web
 - Niche
 - Energy pyramid
 - Feeding level
52. Vultures, which feed on the bodies of dead organisms, are
- First level consumers
 - Scavengers
 - Producers
 - Herbivores
53. Which ecosystem is found where fresh water of a river meets salt water of the ocean?
- Estuary
 - Neritic zone
 - Surface zone
 - Rocky intertidal zone
54. The very slow movement of the continents is called
- Continental drift
 - Biogeography
 - Dispersal
 - Distribution

55. A group of students tested different soils to compare how much water they each can hold. They used the following setup:



They used the following procedure:

Put some sand, clay or garden soil into a funnel.

Pour water into the funnel and measure the amount of water that drips through the funnel.

Repeat for all 3 soil types.

Describe two improvements that could be made to their procedure. Explain how each improvement would make their data and conclusion more reliable.
