

# **Diocese of Davenport**



## **4<sup>th</sup> Grade**

**Science  
Diocesan  
Assessment**

**2009**

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**DIRECTIONS:**

The following test has multiple choice and short answer questions over science concepts you have learned during this year and past years.

On the multiple choice questions please review all of the choices and select the one you think best answers the question. On the separate answer sheet, fill in the circle of the answer you chose. See sample.

Short answer questions are located on the answer sheet and need to be answered to complete the test. Use complete sentences when responding to these short answer questions.

**SAMPLE QUESTION:**

1. Which of these makes its own food?
- A. A dog
  - B. A fish
  - C. A tree
  - D. A cat

**SAMPLE** Please completely fill in the circles that best represent your responses. Fill in marks like this: ● not like this: ⊙ ⊗

|    |   |   |   |   |     |   |   |   |   |     |   |   |   |   |
|----|---|---|---|---|-----|---|---|---|---|-----|---|---|---|---|
| 1. | Ⓐ | Ⓑ | ● | Ⓓ | 34. | Ⓐ | Ⓑ | Ⓒ | Ⓓ | 67. | Ⓐ | Ⓑ | Ⓒ | Ⓓ |
| 2. | Ⓐ | Ⓑ | Ⓒ | Ⓓ | 35. | Ⓐ | Ⓑ | Ⓒ | Ⓓ | 68. | Ⓐ | Ⓑ | Ⓒ | Ⓓ |
| 3. | Ⓐ | Ⓑ | Ⓒ | Ⓓ | 36. | Ⓐ | Ⓑ | Ⓒ | Ⓓ | 69. | Ⓐ | Ⓑ | Ⓒ | Ⓓ |
| 4. | Ⓐ | Ⓑ | Ⓒ | Ⓓ | 37. | Ⓐ | Ⓑ | Ⓒ | Ⓓ | 70. | Ⓐ | Ⓑ | Ⓒ | Ⓓ |
| 5. | Ⓐ | Ⓑ | Ⓒ | Ⓓ | 38. | Ⓐ | Ⓑ | Ⓒ | Ⓓ | 71. | Ⓐ | Ⓑ | Ⓒ | Ⓓ |
| 6. | Ⓐ | Ⓑ | Ⓒ | Ⓓ | 39. | Ⓐ | Ⓑ | Ⓒ | Ⓓ | 72. | Ⓐ | Ⓑ | Ⓒ | Ⓓ |

**CODES:**

|                           |    |
|---------------------------|----|
| Bettendorf Lourdes        | 01 |
| Burlington Notre Dame     | 02 |
| Clinton Prince of Peace   | 04 |
| Dav. Assumption           | 05 |
| Dav. All Saints           | 06 |
| Dav. JFK                  | 07 |
| Dav. St. Paul the Apostle | 08 |
| DeWitt St. Joseph         | 09 |
| Holy Trinity              | 10 |
| Iowa City Regina          | 11 |
| Keokuk Catholic           | 12 |
| Muscatine Bish. Hayes     | 13 |
| Ottumwa Seton             | 14 |
| Washington St. James      | 15 |

1. The flow of electricity from place to place is an electric
- A. current
  - B. circuit
  - C. charge
  - D. bolt

2. We can see objects that are NOT light sources only if they
- A. absorb light
  - B. reflect light
  - C. produce light
  - D. are heated

3. Sound travels fastest and most easily through
- A. solids
  - B. liquids
  - C. gases
  - D. cloth

4. To make a high-pitched sound, you must make something
- A. vibrate quickly
  - B. vibrate slowly
  - C. amplify slowly
  - D. amplify quickly

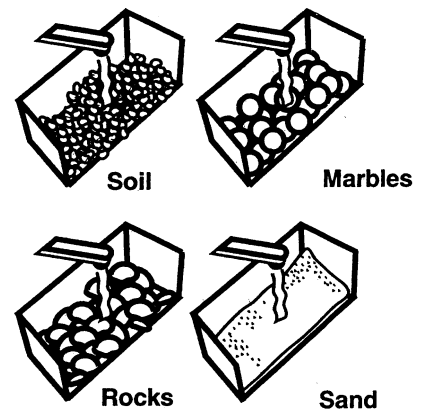
5. Your weight is a measure of the force of
- A. gravity
  - B. inertia
  - C. friction
  - D. kinetic energy

6. A rabbit's claws and a beaver's teeth are examples of
- A. gears
  - B. screws
  - C. inclined planes
  - D. wedges

7. Arthur has a glass terrarium with lots of plants in it. What would you expect to find on the inside of the glass?
- A. water droplets
  - B. soil
  - C. oxygen
  - D. snowflakes

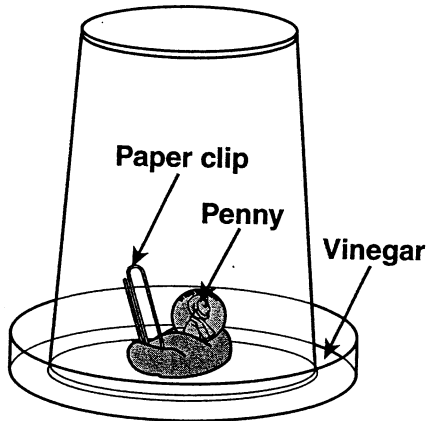
8. What is the name of the process at a water treatment center that removes impurities from a liquid by passing it through materials?
- A. condensation
  - B. treatment
  - C. filtration
  - D. sewage

**Directions:** Use the information and the pictures below to answer questions 9 & 10. Lee wants to find out how different environments affect water run-off. He pours the same amount of water on to each of the different environments and measures the amount of water that runs off into a measuring cup.



9. Which environment do you think Lee discovered had the least amount of water runoff?
- A. soil
  - B. marbles
  - C. rocks
  - D. sand
10. What does this experiment help Lee understand?
- A. water pressure
  - B. how floods can begin
  - C. ocean tides
  - D. water permeability

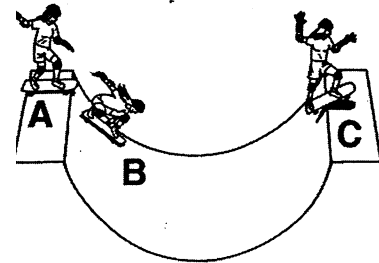
**Directions:** Use the information and the picture below to answer questions 11–14.



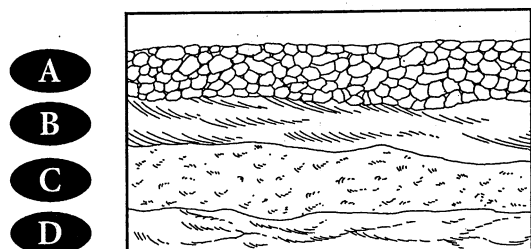
Hanna placed a penny and a paper clip on a small wad of clay. She then placed it in a petri dish filled with a tiny bit of vinegar, but not enough to cover either the penny or the paper clip. She placed a plastic cup over it.

11. After two hours, what will probably happen?
  - A. both the penny and the paper clip will turn green
  - B. only the paper clip will turn green
  - C. both the penny and the paper clip will turn black
  - D. only the penny will turn green
12. Hanna also placed both the penny and the paper clip in the vinegar and left it over night. What do you think she saw when she returned the next morning?
  - A. only the penny turned green
  - B. both the penny and the paper clip turn green
  - C. both the penny and paper clip remained their original color
  - D. only the paper clip turned green
13. What does this experiment best help you to understand?
  - A. how plants are killed by pollution
  - B. why some metal statues change color
  - C. how acid rain is formed
  - D. that vinegar changes the color of all metals

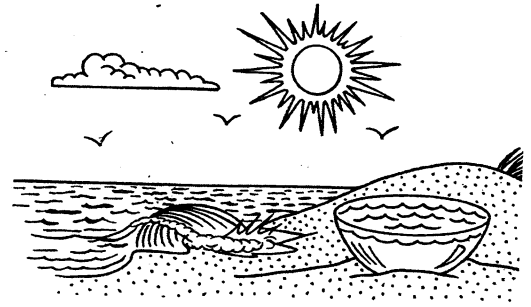
14. Why did Hanna place a plastic cup over the petri dish?
  - A. so that the vapor from the vinegar would not escape
  - B. so that the temperature of the air would remain the same
  - C. so that the penny and paper clip would not fall out of the petri dish
  - D. so that the air particles would not mix with the vinegar fumes



15. At point B, the skateboarder is probably
  - A. slowing down
  - B. changing direction
  - C. speeding up
  - D. not moving at all
16. If a red hybrid flower were crossed with a white hybrid flower the offspring would be white, red, white and red, or pink. This is an example of:
  - A. inherited trait
  - B. learned trait
  - C. socialized trait
  - D. unlearned trait
17. Which of the following animal parts would be most likely to form a fossil?
  - A. skin
  - B. fur
  - C. bones
  - D. blood
18. Which layer of rock in the picture is probably the oldest?
  - A
  - B
  - C
  - D



19. Earthworms and ants make their homes in the soil. How does this affect the soil?
- They help destroy soil
  - They contaminate soil
  - They help create soil
  - They deprive soil of water

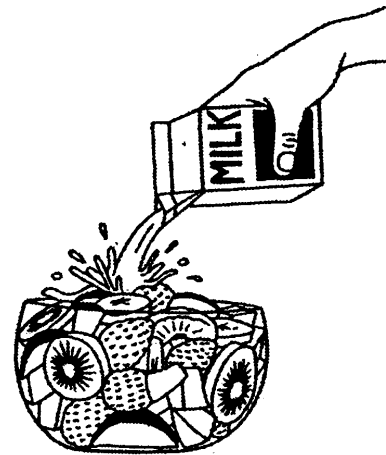


20. Which of the following would not become a fossil?
- Rib cage of a cat
  - Leg bone of a lion
  - A sea shell
  - Brain of a rabbit

24. On a warm sunny day, what will most likely happen to the bowl of sea water?
- The water will freeze
  - The water will evaporate leaving behind salt
  - The water will evaporate leaving the bowl empty
  - The bowl will crack

21. How does the flow of lava from a volcano help build the Earth's surface?
- It creates plants in new places
  - It carries insects to new places
  - It creates rocks in new places
  - It carries animals to new places

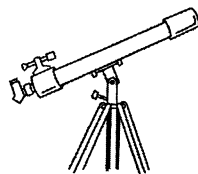
22. What do volcanoes, floods, earthquakes, and droughts have in common?
- They never change ecosystems
  - They never affect animals
  - They all can change ecosystems
  - They never affect plants



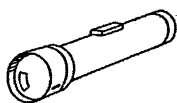
23. What could be used to look at faraway planets?



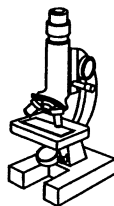
A



B



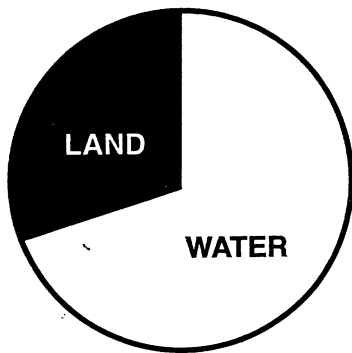
C



D

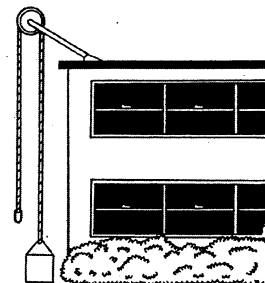
25. How would you describe this mixture?
- Solid and solid
  - Solid and liquid
  - Gas and liquid
  - Liquid and liquid

26. Maxine has a snowball in her hand. Why will it begin to melt?
- Heat flows from the snowball to Maxine's hand.
  - Heat flows from Maxine's hand to the snowball
  - Maxine's hand has a greater mass than the snowball
  - It won't melt at all



**Directions:** Use the information and the picture below to answer questions 30 and 31.

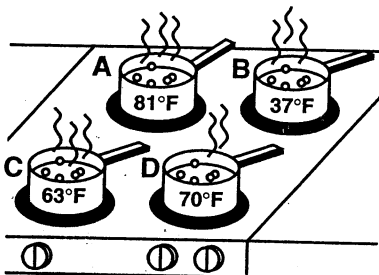
| Object | Time     |
|--------|----------|
| A      | 10.3 sec |
| B      | 8.1 sec  |
| C      | 11.2 sec |
| D      | 7.5 sec  |
| E      | 11.3 sec |



27. About how much of the Earth's surface is covered by water?

- A. 20%
- B. 50%
- C. 70%
- D. 97%

**Directions:** Use the picture below to answer question 28.



28. If the temperature of the flames of the burners are equal, which pot of water above will take the least amount of time to boil?

- A. A
- B. B
- C. C
- D. D

29. How is ocean water different from river water?

- A. Ocean water has animals in it, but river water does not
- B. Ocean water is salty, but river water is fresh
- C. Ocean water is warm, but river water is cold
- D. Ocean water has plants in it, but river water does not

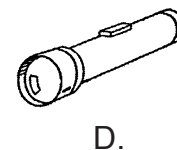
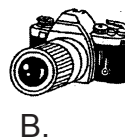
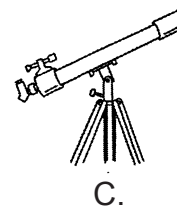
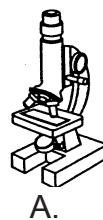
30. If the same amount of energy were used to pull each object, what can you conclude about object D?

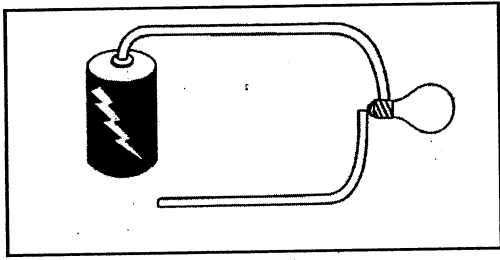
- A. It weighs the most
- B. It weighs the least
- C. It has the largest volume
- D. It weighs more than object B

31. Which object has the greatest weight?

- A. C
- B. A
- C. E
- D. D

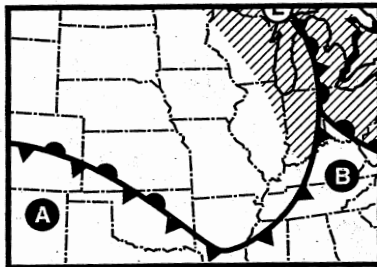
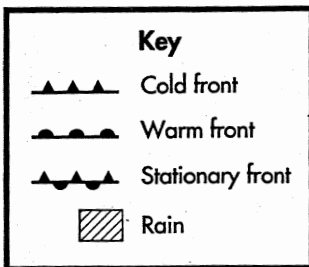
32. What could be used to look at cells from the body?



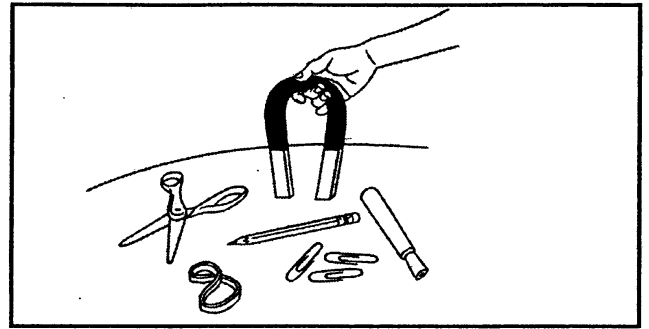


33. If this circuit had an on/off switch and you turned it on, what would happen to the light bulb?
- It would light up
  - It would melt
  - Nothing would happen
  - It would start flickering

Use this chart to answer question 34 and 35.



34. People living in area B will most likely hear this type of forecast for tomorrow:
- Rain or snow
  - Sunny
  - Windy
  - Cold
35. People living in area A will most likely be able to \_\_\_\_\_ tomorrow.
- Go skiing
  - Go on a picnic
  - Go swimming
  - Need an umbrella



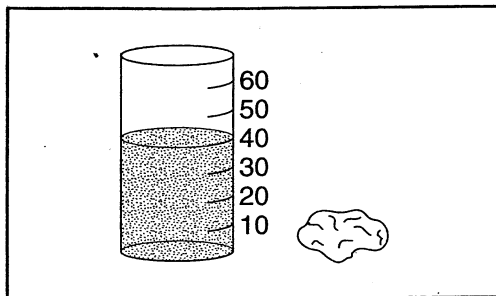
36. Which two objects will be attracted to the magnet?
- Pencil and rubber band
  - Paper clip and scissors
  - Paper clips and magic marker
  - Scissors and pencil
37. What is true about heated particles?
- They are pulled down by gravity
  - They do not transfer energy
  - They rise
  - They move slowly
38. The force that slows down moving objects is
- Inertia
  - Gravity
  - Friction
  - Work
39. Which of the following is an example of pollution?
- Newspapers and bottles are brought to a recycling center
  - Factories dump chemicals into a river
  - Garbage is buried in the ground in landfills
  - Oil is shipped from place to place in a tanker
40. Decay occurs just after organisms
- Are born
  - Reproduce
  - Die
  - Become extinct



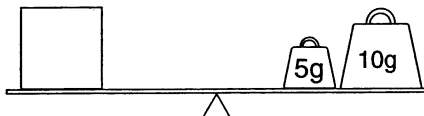
41. What can you make with leftover food scraps?
- A. Lava
  - B. Compost
  - C. Oil
  - D. Coal

42. Fossils can form when plants and animals are buried in
- A. Water
  - B. Leaves
  - C. Mud
  - D. Ice

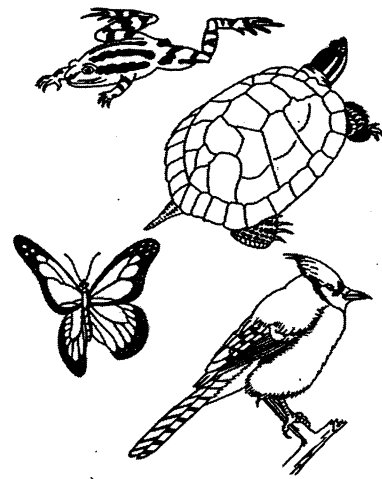
43. Fossils can tell us the \_\_\_\_\_ of dinosaurs.
- A. Names
  - B. Size
  - C. Sounds



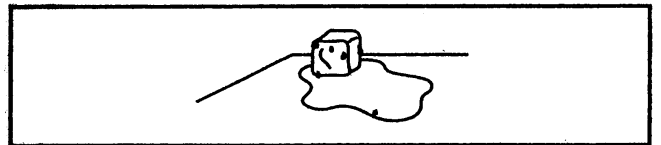
44. What will happen when the rock is put into the glass of water
- A. The rock will float
  - B. The water will go over 40
  - C. The water will go below 40
  - D. The water will stay at 40



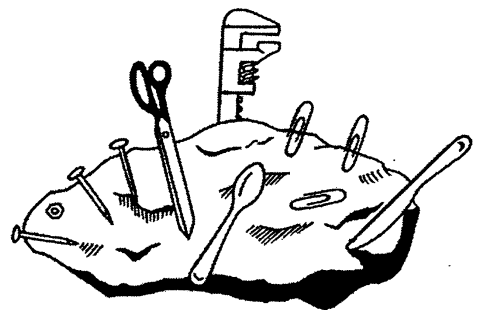
45. What is the mass of the block?
- A. 2 g
  - B. 5 g
  - C. 10 g
  - D. 15 g



46. What do these organisms have in common?
- A. They are mammals
  - B. Their young develop inside the female
  - C. Their young develop outside the female
  - D. They are insects



47. What is shown in the picture?
- A. Only a solid
  - B. A solid and a liquid
  - C. Only a liquid
  - D. A liquid and a gas



48. Anita found a strange rock in the forest one day. What can she definitely conclude about this rock?
- A. It has repellent properties
  - B. It has magnetic properties
  - C. It is a gas
  - D. It is a fossil

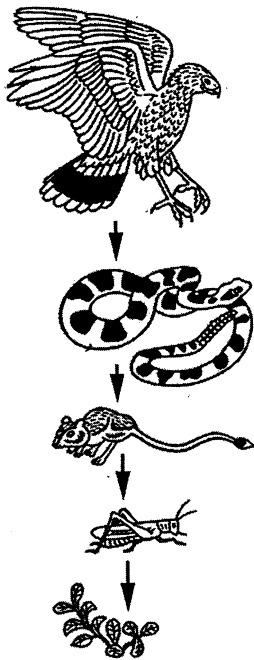
49. Aldo wrote down some observations one day. He put them into the following chart.

| Thing | Has parts that protect/support | Has parts that move | Has parts that get information | Has parts that take in materials |
|-------|--------------------------------|---------------------|--------------------------------|----------------------------------|
| 1     | NO                             | NO                  | NO                             | NO                               |
| 2     | YES                            | YES                 | YES                            | YES                              |
| 3     | YES                            | YES                 | YES                            | YES                              |
| 4     | YES                            | YES                 | NO                             | NO                               |

Which things are most likely living organisms?

- A. 2 and 4
- B. 1 and 4
- C. 3 and 4
- D. 2 and 3

50. If the hawks were suddenly to become extinct, what would you expect to happen?



- A. The snake population would decrease
- B. The mice population would increase
- C. The snake population would increase
- D. It would have no effect

51. Bacteria are one-celled organisms that are decomposers. If Earth did not have bacteria, what do you think might happen?

- A. Average temperatures would rise
- B. Earth would be covered by dead plants and animal material
- C. The Earth would be a healthier place to live
- D. The soil would be more fertile

52. A new plant can grow from

- A. A seed
- B. A cone
- C. Pollen
- D. A petal

53. Which of these definitely does not live in the desert?

- A. Rabbit
- B. Mouse
- C. Snake
- D. Polar Bear

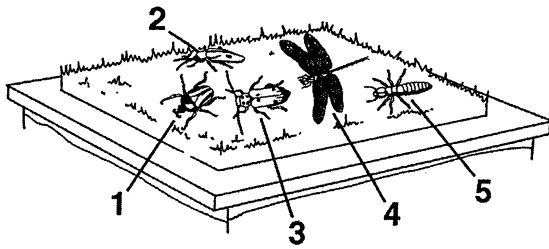
54. Victoria went to a stream near her house and recorded these observations.

|                          |                   |
|--------------------------|-------------------|
| <input type="checkbox"/> | Water Temperature |
|                          | 90° degrees       |
|                          | Water Speed       |
| <input type="checkbox"/> | Still             |
|                          | Number of Insects |
|                          | Few               |
| <input type="checkbox"/> | Water Quality     |
|                          | Strange odor      |

What can Victoria conclude about the stream?

- A. It is clean
- B. It is suitable to drink
- C. It is polluted
- D. It has lots of fish

**Directions:** Use the information and the picture below to answer questions 55–58.



Joshua and Wynona wanted to see how the color of an insect might affect its survival. They placed a patch of artificial green grass on a table. One by one they placed five fake insects onto the grass. Insect 1 is bright red, Insect 2 is brown, Insect 3 is green, Insect 4 is blue, and Insect 5 is tan. Joshua and Wynona pretend that they are hungry birds who want their lunch. They both stand five feet in front of the grass area and slowly walk further away from it. Some of the insects become less noticeable the farther away they walk.

55. If Joshua and Wynona are about twenty feet away from the grass, which insect do you think they would most likely eat if they were birds?
- A. 1
  - B. 2
  - C. 3
  - D. 5
56. Which insect do you think would have the greatest chance of survival?
- A. 1
  - B. 2
  - C. 3
  - D. 4
57. What did Joshua and Wynona probably conclude about the relationship between insects and their color?
- A. The better they blend in, the less chance they have of surviving
  - B. It has no affect upon their survival
  - C. The better they blend in, the greater chance they have of surviving
  - D. Bright colors make them less visible

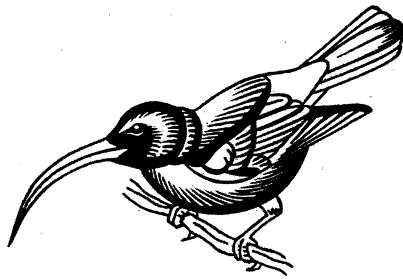
58. Before doing this experiment, Joshua and Wynona had a pretty good idea of how the results would turn out. They made a statement and tested it with the experiment. What is this statement called?
- A. Thesis
  - B. Question
  - C. Hypothesis
  - D. Inference
59. Which is NOT a way that seeds are spread?
- A. Animals
  - B. Wind
  - C. Tubers
  - D. Water



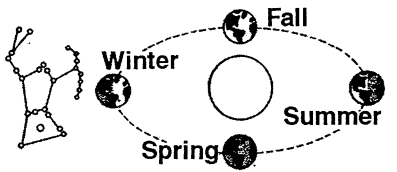
60. What do you predict will happen to Angelica's breathing after she has been jumping rope for five minutes?
- A. She will breather slower
  - B. There will be no change in her breathing
  - C. She will breathe faster
  - D. She will breathe in less oxygen
61. How do squirrels help trees reproduce?
- A. They climb on the trees
  - B. They bury acorns that grow into trees
  - C. They help trees find water and sunlight
  - D. They live in the trees

62. Your heart beats about seventy-five times per minute when you are walking slowly. If you were to run for one mile, how many times per minute might your heart beat?
- A. 75
  - B. 60
  - C. 150
  - D. 72

63. How does shivering best help us?
- A. It exercises our muscles
  - B. It helps us keep cold
  - C. It exercises your bones
  - D. It helps us keep warm



64. Why do you think this type of honeycreeper's beak is very long and pointed?
- A. To eat seeds
  - B. To cut through wood
  - C. To sip nectar from flowers
  - D. To help it chirp



65. What will happen to the constellation Orion during the summer?
- A. It will be seen more easily
  - B. It will move below the Earth
  - C. It will disappear from view
  - D. It will be partially visible
66. Earth's seasons are caused by its revolution and the
- A. Tilt of its axis
  - B. Phases of the moon
  - C. Orbit around the moon
  - D. Constant light from the sun

67. What will a caterpillar turn into when it is fully developed?
- A. A fruit fly
  - B. A beetle
  - C. A butterfly
  - D. An earthworm
68. What tool do scientists use to observe a microorganism?
- A. Telescope
  - B. Microscope
  - C. Binoculars
  - D. Tweezers

Use the illustration below to answer questions 69–71.

69. Here you see pictures of different moon phases. Which shows a full moon?



A



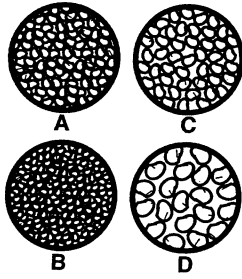
B



C

70. The moon's cycle of phases takes \_\_\_\_ to complete.
- A. About one week
  - B. About 29 days
  - C. A full year
  - D. Several years
71. If a man lives until he is 82 years old, about how many revolutions has the Earth made around the Sun?
- A. 82 revolutions
  - B. 0 revolutions
  - C. 41 revolutions
  - D. 164 revolutions

**Directions:** Use the information and the picture below to answer questions 72–74.

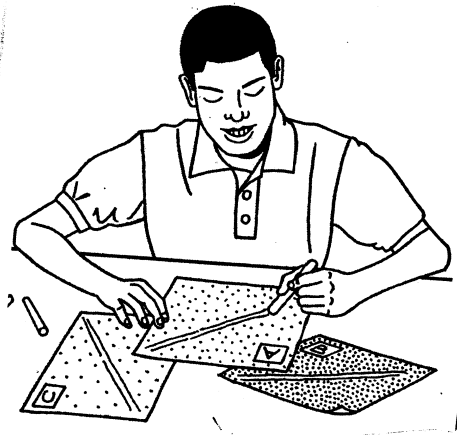


Iris wants to find out how different kinds of soils affect plants. Every day for two weeks, she waters all of the pots with the same amount of water

72. What do you think Iris will conclude about the plant in Pot B?
- A. It will reproduce
  - B. It will grow taller
  - C. It will drown and die
  - D. It will die from drought
73. Which soil will Iris probably conclude is the most ideal for plants?
- A. A
  - B. B
  - C. C
  - D. D
74. If Iris decides to cut holes in the bottom of each of the pots, which one do you think will leak the most amount of water?
- A. A
  - B. B
  - C. C
  - D. D

75. What characteristic of matter remains the same when the matter goes through a physical change?
- A. Size
  - B. Kind
  - C. Shape
  - D. Weight
76. Which of these is an example of a physical change?
- A. Metal rusting
  - B. Wood burning
  - C. Water boiling
  - D. Silver tarnishing

Directions: Use the information below to answer question. Angelo wanted to learn more about how the environment changes over time. To do this his science teacher, Mrs. Chin, gave him three equal-length pieces of yellow chalk and three different kinds of sandpaper which she labeled A, B, and C. He drew a straight line on each of the different pieces of sandpaper using the same amount of pressure.



77. After he drew the straight lines on the different sandpapers, he measured each chalk and found that the chalk that he drew the line with on sandpaper C was the shortest. What can you conclude about sandpaper C?

- A. It has the softest surface
- B. It is probably wet
- C. It has the roughest surface
- D. It is similar to sandpaper A

78. What do you think this activity helps you to understand?

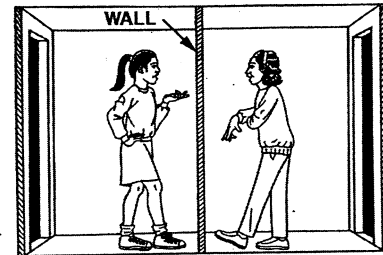
- A. How the soil changes during a hurricane
- B. How wind that carries sand changes rocks
- C. How sand erodes beaches
- D. How water changes rocks

79. What does the chalk represent in this experiment?

- A. Wind and sand
- B. Soil
- C. Rocks
- D. Water

80. If each sandpaper represented a different environment, what can you definitely conclude about the environment of sandpaper C?

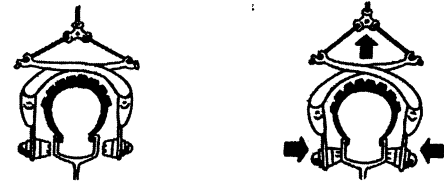
- A. It is very windy and sandy
- B. It is very cold
- C. It snows a lot
- D. It is very dry



81. What is most likely happening here?

- A. The girls can see but not hear each other
- B. The girls can hear but not see each other
- C. The girls cannot see or hear each other
- D. Light waves pass through the wall but sound waves do not

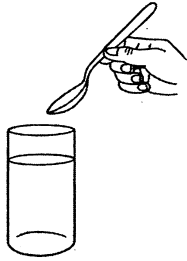
bicycle brake



82. What does the picture tell you?

- A. A bicycle slows down when the brakes squeeze the wheels
- B. A bicycle slows down when the rider pedals faster
- C. A bicycle slows down when the brakes move away from the wheels
- D. A bicycle slows down when the tire gets pumped up

**Directions:** Use the picture below to answer questions 83–84.



83. If you placed this spoon in the glass of water, how might the spoon's appearance change when you look at it through the water?

- A. It will not look any different
- B. It will appear backwards
- C. It will appear to split in two
- D. It will appear upside down

84. What can you conclude from this experiment?

- A. Light rays travel straight through water
- B. Light rays bend when traveling through water
- C. Light rays do not travel through water
- D. Light rays travel slower than sound waves

85. What makes apples fall from a tree?

- A. Erosion
- B. Gravity
- C. Electricity
- D. Temperature

86. What will be the easiest way to lift the big rock?

A.



B.



C.



D.



87. Which of these is NOT a fossil?

- A. A dinosaur bone that has turned to stone
- B. The impression of an ancient giant fern in a rock
- C. The feather of a passenger pigeon
- D. An ancient cockroach, pressed in mud, turned to stone

88. Classification of animals into two large groups is based on

- A. Eating habits
- B. Where they live
- C. Presence or absence of a backbone
- D. Care of their young

89. What do humans and frogs have in common?

- A. Both have backbones
- B. Both are amphibians
- C. Both are mammals
- D. None of the above

90. Matter is anything that has mass and

- A. Is alive
- B. Takes up space
- C. Is not broken
- D. Holds water or air