

# NATIONAL SCIENCE LEAGUE – 2015

## GRADE 3 and GRADE 4 CONTEST

**- ANSWER KEY -**

1. \_\_\_\_\_ A \_\_\_\_\_

2. \_\_\_\_\_ B \_\_\_\_\_

3. \_\_\_\_\_ C \_\_\_\_\_

4. \_\_\_\_\_ A \_\_\_\_\_

5. \_\_\_\_\_ D \_\_\_\_\_

6. \_\_\_\_\_ B \_\_\_\_\_

7. \_\_\_\_\_ C \_\_\_\_\_

8. \_\_\_\_\_ D \_\_\_\_\_

9. \_\_\_\_\_ A \_\_\_\_\_

10. \_\_\_\_\_ D \_\_\_\_\_

11. \_\_\_\_\_ D \_\_\_\_\_

12. \_\_\_\_\_ B \_\_\_\_\_

13. \_\_\_\_\_ D \_\_\_\_\_

14. \_\_\_\_\_ A \_\_\_\_\_

15. \_\_\_\_\_ C \_\_\_\_\_

16. \_\_\_\_\_ A \_\_\_\_\_

17. \_\_\_\_\_ C \_\_\_\_\_

18. \_\_\_\_\_ D \_\_\_\_\_

19. \_\_\_\_\_ B \_\_\_\_\_

20. \_\_\_\_\_ B \_\_\_\_\_

21. \_\_\_\_\_ A \_\_\_\_\_

22. \_\_\_\_\_ B \_\_\_\_\_

23. \_\_\_\_\_ A \_\_\_\_\_

24. \_\_\_\_\_ C \_\_\_\_\_

25. \_\_\_\_\_ B \_\_\_\_\_

26. \_\_\_\_\_ D \_\_\_\_\_

27. \_\_\_\_\_ B \_\_\_\_\_

28. \_\_\_\_\_ D \_\_\_\_\_

29. \_\_\_\_\_ C \_\_\_\_\_

30. \_\_\_\_\_ B \_\_\_\_\_

31. \_\_\_\_\_ A \_\_\_\_\_

32. \_\_\_\_\_ B \_\_\_\_\_

33. \_\_\_\_\_ A \_\_\_\_\_


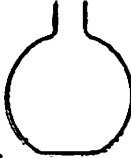


34. \_\_\_\_\_ C \_\_\_\_\_

35. \_\_\_\_\_ D \_\_\_\_\_

**NATIONAL SCIENCE**  
**Grades 3 and 4**

**DIRECTIONS:** On the answer sheet, write the letter of the choice that best answers or completes the question.

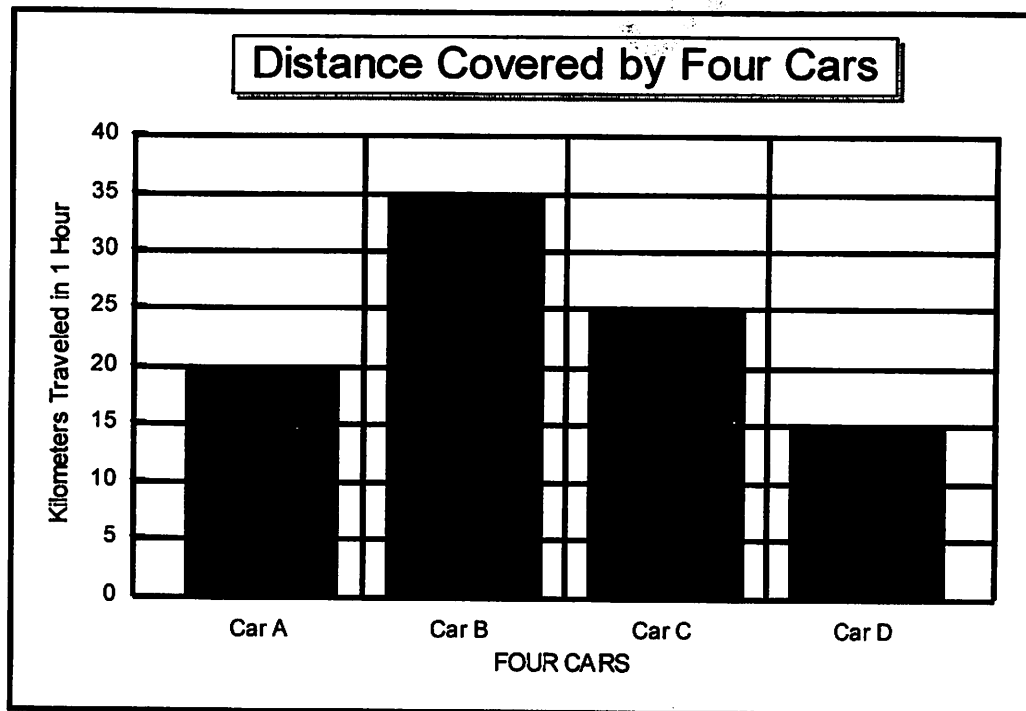
1. Which is true about all whales?
  - A. They have lungs and breathe air.
  - B. They have scales on their bodies like fish do.
  - C. They are herbivores.
  - D. They are some of the smallest animals known.
  
2. What can green plants do that animals can not do?
  - A. Only green plants can use oxygen and make carbon dioxide.
  - B. Only green plants can use sunlight to make their own food.
  - C. Only green plants can live in dark places such as basements.
  - D. Only green plants can move from place to place to find water.
  
3. The fourth planet from the sun is \_\_\_\_\_.
  - A. Mercury
  - B. Venus
  - C. Mars
  - D. Saturn
  
4. Which is a correct statement about rocks?
  - A. Metamorphic rocks form when other types of rocks are changed.
  - B. Sedimentary rocks are made during volcanic eruptions.
  - C. Sandstone is a metamorphic rock.
  - D. Dinosaur fossils are usually found in igneous rocks.
  
5. The gas that is used to fill birthday balloons that float in the air is \_\_\_\_\_.
  - A. oxygen
  - B. nitrogen
  - C. carbon dioxide
  - D. helium
  
6. Adult insects have a jointed exoskeleton, \_\_\_\_\_.
  - A. two legs, and a body with two parts
  - B. six legs, and a body with three parts
  - C. four legs, and a body with two parts
  - D. eight legs, and a body with three parts
  
7. Frogs, salamanders, and toads are \_\_\_\_\_.
  - A. reptiles
  - B. invertebrates
  - C. amphibians
  - D. warm-blooded

8. What is made when 10 grams of sugar are poured into 2 liters of water?  
A. an element  
B. a compound  
C. an atom  
D. a mixture
9. About 30% of the earth's surface is covered by \_\_\_\_\_.  
A. land  
B. water  
C. mountains  
D. ice
10. Fahrenheit and Celsius are two different types of \_\_\_\_\_.  
A. weight measurement scales  
B. volume measurement scales  
C. length measurement scales  
D. temperature measurement scales
11. Which is an example of gravity at work?  
A. a positive electric pole and a negative electric pole attracting each other  
B. a north magnetic pole and a south magnetic pole attracting each other  
C. scotch tape holding two pieces of paper together  
D. the moon and the earth attracting each other
12. In which part of a plant is the most food made?  
A. the roots  
B. the leaves  
C. the flowers  
D. the stems
13. Which of these is the longest distance?  
A. 1 cm  
B. 1 dm  
C. 1 mm  
D. 1 km
14. From which container will water evaporate the fastest?
- A. 
- B. 
- C. 
- D. 
15. Food and oxygen are carried to your body cells by the \_\_\_\_\_.  
A. digestive system  
B. nervous system  
C. circulatory system  
D. skeletal system

16. When a candle is burning it uses \_\_\_\_\_.
- A. oxygen gas and makes carbon dioxide gas
  - B. nitrogen gas and makes oxygen gas
  - C. carbon dioxide gas and makes oxygen gas
  - D. hydrogen gas and makes carbon dioxide gas
17. Which of these is needed in order to make weather predictions?
- A. a telescope
  - B. a stethoscope
  - C. a barometer
  - D. a microscope
18. Matthew has a drum that has a low pitch to it. If he wants to have a drum with a higher pitch he should \_\_\_\_\_.
- A. get a larger drum
  - B. hit the drum more softly
  - C. hit the drum harder
  - D. get a smaller drum
19. Water leaves oceans and lakes and enters the air during \_\_\_\_\_.
- A. condensation
  - B. evaporation
  - C. freezing
  - D. melting
20. What kind of a simple machine is a hammer?
- A. a wheel and axle
  - B. a lever
  - C. an inclined plane
  - D. a pulley
21. Plastic can be used to \_\_\_\_\_.
- A. make insulation for electrical wires
  - B. build a compass needle
  - C. make permanent magnets
  - D. conduct heat away from hot objects quickly
22. An example of reflection is seeing \_\_\_\_\_.
- A. your shadow
  - B. yourself in the mirror
  - C. a rainbow in the sky
  - D. the sun in the morning
23. A leaf on a tree is the habitat of \_\_\_\_\_.
- A. a caterpillar
  - B. a rabbit
  - C. a centipede
  - D. an owl
24. Which of these four food groups contains the least protein?
- A. dairy
  - B. grain
  - C. fruits and vegetables
  - D. meats

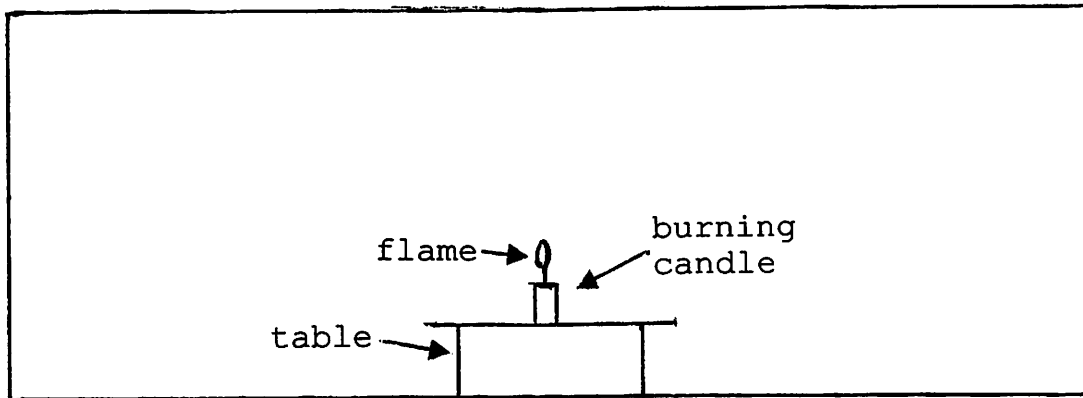
USE THE FOLLOWING INFORMATION AND YOUR KNOWLEDGE OF SCIENCE TO ANSWER QUESTIONS 25 AND 26:

The bar graph below shows the number of kilometers traveled by four cars in one hour.

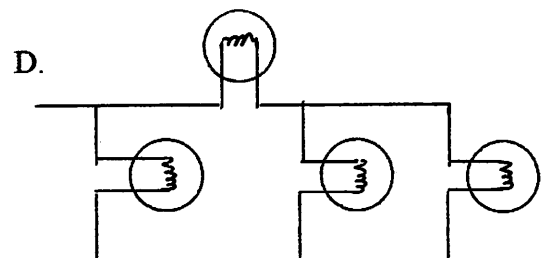
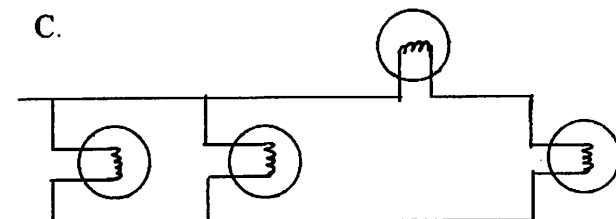
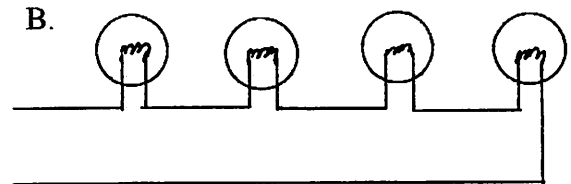
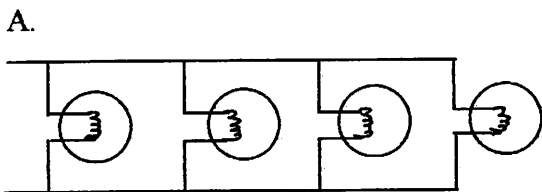


25. Which car covered the greatest distance in the one hour?  
A. Car A  
B. Car B  
C. Car C  
D. Car D
26. Which car went the slowest during the one hour?  
A. Car A  
B. Car B  
C. Car C  
D. Car D
27. Mechanical energy is changed to electrical energy by a  
A. motor  
B. generator  
C. battery  
D. solar cell
28. On which part of the earth do we live and walk?  
A. the inner core  
B. the outer core  
C. the mantle  
D. the crust
29. Which of these would change the **least** if left outside in the rain for five years?  
A. a copper penny  
B. an iron nail  
C. a glass bottle  
D. a metal bicycle

USE THE FOLLOWING DIAGRAM AND YOUR KNOWLEDGE OF SCIENCE TO ANSWER QUESTION 30:



30. In which direction will the air above the candle's flame be going?
- A. to the left side
  - B. up toward the ceiling
  - C. to the right side
  - D. down toward the floor
31. Which is a true statement about cells?
- A. All living things are made of cells.
  - B. Cells are large enough to be seen with your eye.
  - C. Many cells in your body do not have a nucleus.
  - D. The cells in plants are identical to the cells in animals.
32. In which circuit below will all of the bulbs go out if one of the bulbs suddenly stops working?



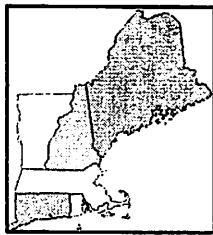
33. Which object has an orbit around the sun that looks like this?



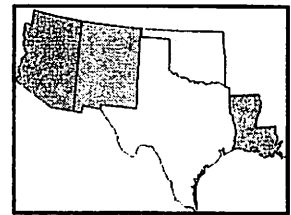
- A. a comet  
 B. a planet  
 C. a star  
 D. a moon

USE THE FOLLOWING DIAGRAM TO ANSWER QUESTIONS 34 AND 35:

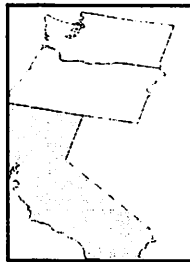
The four diagrams below show groups of several states in the United States. The groups are labeled A, B, C, and D.



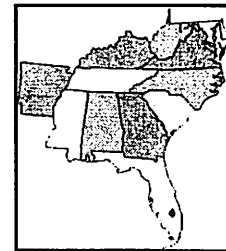
A.



B.



C.



D.

34. In which group of states do the most earthquakes occur?  
 A. Group A  
 B. Group B  
 C. Group C  
 D. Group D
35. Which group of states has the most hurricanes?  
 A. Group A  
 B. Group B  
 C. Group C  
 D. Group D