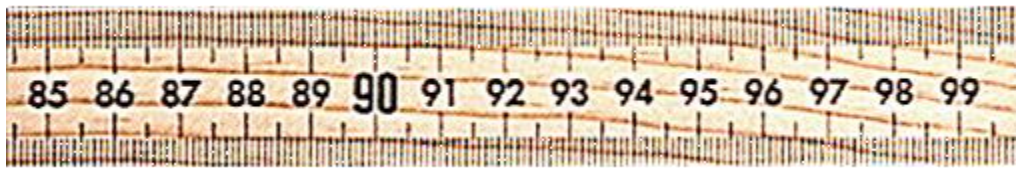




Rate Builders Level J

Rate builder exercises test the readers on the different levels of Bloom's Taxonomy. Reading the material the reader acquires the **knowledge** presented in the rate builder. While reading, the reader practices paraphrasing the material to help the reader acquire **comprehension**. Answering the questions in the rate builder develops the reader's **application** and **analysis** of the material presented in the rate builder. Some of the questions also call for the reader to **synthesize** and **evaluate** the information presented in the rate builder.

3B Rate Builder-Lime #7



Meter Stick

In 1791 the French nation, in the midst of a revolution, wished to break with the past, especially with those aspects of it which they considered illogical and useless. One of these was the traditional system of weights and measures then in use. Not only was the system overly complicated, but it also varied widely from place to place.

In constructing the new system, the French began by setting up a unit of distance equal to one forty-millionth part of the earth's circumference. Unfortunately, later measurements showed that the unit designated was not exactly that fraction, but they continued to use it. (Today the unit is defined simply as the distance between two marks on a platinum-iridium bar kept in a suburb of Paris.) The unit is the meter, and the system of measurements based on this unit is the metric system, the system today used by scientists the world over.

The metric system is built in units of ten, Greek prefixes showing multiples, and Latin prefixes showing fractions. The Greeks had no word for a number larger than ten thousand and the Romans had none for a number larger than one thousand, but the system was extended by using less specific words; for instance *megameter* (one million meters) is derived from a Greek word that means simple "large

1. The French constructed a new system of weights and measures because

- A. their system did not conform to other nations' systems
- B. they were in the midst of a revolution
- C. simplifying the old system proved difficult
- D. they wished to break with the past

2. The selection says that the traditional system of measurements in France

- A. varied widely from place to place
- B. was based on a complicated logic
- C. was useless
- D. both A and C

3. The new system was to be developed from

- A. a single basic unit
- B. a worldwide standard of measurement
- C. an old Greek system
- D. the smallest unit of the traditional system

4. The basic unit of the system was to be

- A. the meter
- B. a metric
- C. a megameter
- D. micrometer

5. At first the basic unit was to equal

- A. one-millionth part of the earth's circumference
- B. the distance between two marks on a platinum-iridium bar
- C. one forty-millionth part of the earth's circumference
- D. one forth-millionth part of the earth's diameter

6. When the first unit was proved inexact, the French

- A. reconstructed the entire system
- B. changed to another system
- C. redefined the meter
- D. returned to the traditional system of measurements

7. Multiples in the metric system are shown by

- A. Greek prefixes
- B. Latin prefixes
- C. specific Latin numbers
- D. general words adopted from the Greeks

8. Implied but not stated:

- A. All units in the metric system related to the basic meter.
- B. The metric system was immediately adopted as a standard system throughout the world.
- C. The limitations of Greek and Latin proved a great obstacle to extending the system.
- D. The basic unit of the metric system was to equal a measurable part of the earth's circumference.

Answers to 3B Lime# 7 Rate Builder: (1) D, (2) A, (3) A, (4) A, (5) C, (6) C, (7) A, (8) A

3B Rate Builder-Lime #11



European Organization for Nuclear Research

In Switzerland, six miles west of Geneva, lies a collection of laboratories and buildings, and most curious of all, a circular mound of earth more than 650 feet in diameter. This cluster has unique importance. It is Europe’s one and only atomic city dedicated to investigating the atom for peaceful purposes.

The strange buildings belong to the European Organization for Nuclear Research, more popularly known, from its French initials, as CERN. The organization was born when a handful of statesmen and scientific experts met in Paris in 1950. Their aim was to “establish an organization providing for collaboration among European states in nuclear research of a pure scientific and fundamental character.

The CERN agreement was signed in 1953, and work on the atomic city began in 1954. Today CERN’s facilities are among the most modern and the most diversified in the world. Impressive as the scientific aspect may be, the real significance of CERN may lie with the 3,500 people — the scientists, lab workers, and administrative crew drawn from the thirteen member nations — who populate it. British engineers work side by side with Swiss mathematicians. The official languages are French and English, with German an unofficial third. But CERN is no tower of Babel — the language of science is universal and all-embracing.

1. The laboratories and buildings discussed in the selection belong to
 - A. a private research organization
 - B. Switzerland
 - C. the European Organization for Nuclear Research
 - D. the United Nations

2. The cluster has unique significance because it is
- A. Europe's only atomic city
 - B. a city devoted to nuclear research
 - C. a city dedicated to investigating the atom for peaceful purposes
 - D. a clearinghouse for the world's nuclear research
3. The European Organization for Nuclear Research was evolved by
- A. the officers of the United Nations
 - B. a group of European scientists
 - C. the statesmen and scientists of Switzerland
 - D. a handful of statesmen and scientific experts
4. CERN was established with the aim of promoting
- A. nuclear research of a fundamental character
 - B. collaboration among the world's nuclear scientists
 - C. pure study in all fields of science
 - D. both A and B
5. CERN's facilities for research are
- A. limited but effective
 - B. among the best in the world
 - C. rapidly expanding
 - D. both A and C
6. The selection says that CERN is not a tower of Babel because
- A. works is the common denominator of all the staff
 - B. the language of science is universal
 - C. CERN has adopted only two official languages
 - D. all the workers are drawn from one country
7. The real significance of CERN may lie in its staff because they
- A. work in international harmony
 - B. come from all over the world
 - C. are investigating all phases of human conduct
 - D. are eliminating the problems of individual nationalism
8. Implied but not stated:
- A. The aims of CERN have been extended since its inception.
 - B. Italy is included in CERN.
 - C. CERN's contributions to the field of nuclear research have been impressive.
 - D. All the countries of Europe belong to CERN.

Answers to 3B Lime# 11 Rate Builder: (1) C, (2) C, (3) D, (4) A, (5) B, (6) B, (7) A, (8) C

3B Rate Builder-Lime #13



Joseph Hansom's cabriolet

In Hong Kong one might hail a *rickshaw*, in Kiev a *droshky*, in the United States a cab, and anywhere else in the Western world a taxi.

Londoners who depended on carriages for hire for their transportation had to be thankful for the day in 1834 when, according to some sources, Joseph Hansom obtained a patent on a two-wheeled closed carriage in which passengers could ride in privacy, enjoying the scenery rather than looking at the back of the driver who was now stationed in a seat atop the rear of the vehicle. An earlier type of carriage was known as a “*cabriolet*,” shortened to “cab” — thus Hansom cab.

The name “taxi” derives from “taximeter,” a device invented by Wilhelm Bruhn in 1891 that combined a timing mechanism with a system for computing distance.

The convergence of the two ideas — cab and taximeter — occurred in 1907, shortly after American Harry N. Allen was charged \$5 by a New York cab driver who drove him less than a mile. Rightly enough, Allen reasoned that there might be many people who did not take cabs because of overcharging and haggling. He tested his theory by equipping some automobiles with taximeters and providing them with uniformed drivers. The uniforms are gone now, but the rest of Allen’s scheme is very much with us.

1. One would find a *droshky* in

A. England

B. the Soviet Union

C. China

D. the Netherlands

2. Joseph Hansom obtained his patent in the

A. first half of the eighteenth century

B. second half of the eighteenth century

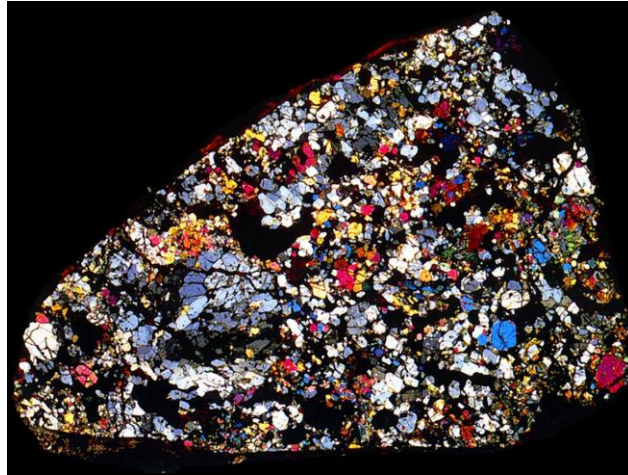
C. first half of the nineteenth century

D. second half of the nineteenth century

3. According to the article, passengers in a Hansom cab could enjoy
- A. the scenery
 - B. each other's conversation
 - C. peace and quiet
 - D. a bumpless ride
4. The driver of a Hansom cab controlled the vehicle from a
- A. platform beside the cab
 - B. seat atop the rear of the cab
 - C. saddle atop the horse pulling the cab
 - D. bench at the front of the cab
5. The word *cab* was derived from the word
- A. cabin
 - B. cabana
 - C. cabaret
 - D. cabriolet
6. Wilhelm Bruhn invented a device that measured
- A. time and distance
 - B. weight and distance
 - C. distance and number of passengers
 - D. time and weight
7. The taximeter was invented in
- A. 1834
 - B. 1891
 - C. 1907
 - D. 1950
8. Harry N Allen reasoned that many people did not take cabs because they
- A. preferred to walk
 - B. felt cabs were unsafe
 - C. were afraid they'd be overcharged
 - D. did not know such vehicles were available

Answers to 3B Lime# 13 Rate Builder: (1) B, (2) C, (3) A, (4) B, (5) D, (6) A, (7) B, (8) C

3B Rate Builder-Lime #15



Mosaic Meteorite

Men seem to have always taken an interest in meteorites, but not until the early nineteenth century were these objects considered worth preserving for scientific study.

In the beginning, people believed that because meteorites fell from the heavens, they were either gods themselves or messengers from the gods. Thus the more civilized of early men carefully kept the meteorites, draping them in costly linens and anointing them with oil. In many instances, the people built special temples in which the meteorites were to be worshiped. Meteorite worship was common long ago in the Mediterranean area, and in Africa, India, Japan, and Mexico; such worship still persists in some regions.

Although many people held meteorites in reverence, particularly if they were seen to fall, other practical-minded individuals made good use of the durable and easily-worked alloy provided by nature in the nickel-iron meteorites. They frequently used this metal to make tools, and often pots and other utensils. Throughout history, meteorite iron has been used in the manufacture of special swords, daggers, and knives for members of royalty. Attila and other early conquerors of Europe boasted of “swords from heaven.” As late as the end of the nineteenth century, several swords were made from a Japanese iron meteorite at the command of a member of the Japanese court.

1. In the nineteenth century men began to

- A. study meteorites scientifically
- B. preserve meteorites
- C. take more than a casual interest in meteorites
- D. investigate practical uses for meteoritic iron

2. Meteorite worship grew from the belief that meteorites were

- A. signs of the god's displeasure
- C. swords from heaven

- B. messengers of the gods
- D. signs of special favor

3. The more civilized early men tended to

- A. have no interest in meteorites
- C. recognize what meteorites actually are

- B. preserve meteorites carefully
- D. make practical use of meteorites

4. Meteorite worship was

- A. limited to small isolated tribes
- C. common throughout much of the world

- B. common everywhere in the world
- D. limited to the least civilized of early men

5. The men who first made use of meteorite metal were

- A. nineteenth century scientists
- C. warriors

- B. those who did not revere meteorites
- D. both B and C

6. Until the end of the nineteenth century meteorite iron was used to

- A. build churches and temples
- C. provide special weapons for royalty

- B. manufacture sturdy tools
- D. all of the above

7. Implied but not stated:

- A. Meteorite worship persist in some areas today.
- B. Since the nineteenth century, man has studied the composition of meteorites.
- C. Only meteorites which were seen to fall were worshiped.
- D. Meteorite worship was common in Japan in the nineteenth century.

8. An appropriate title for this selection would be

- A. Meteorites in Ancient times
- C. Man Looks at the Heavens

- B. Meteorite Worship
- D. What Man Has Thought of Meteorites

Answers to 3B Lime# 15 Rate Builder: (1) A, (2) B, (3) B, (4) C, (5) B, (6) C, (7) B, (8) D