

College of Engineering English

123

BA, LNK, SJH, CEA

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Student Name _____

Section Number _____

Unit 4

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يولد الإنسان جاهلاً وليس غيباً، لكن
أغلب أنظمة التعليم تحوله إلى غبي.

Unit 4 - Reading 7

The Sun and Other Stars

- (1) The sun is a star. It is a flaming ball of extremely hot gases. The surface temperature is about 11,000° F, hot enough to turn every solid to vapor, but relatively cool compared to the intense heat at the center.
- (2) Located about 93 million miles from the earth, the sun has a diameter **that** is approximately equal to 109 of our earths lined up like a row of beach balls and a mass that is about 330,000 times the mass of the earth.
- (3) The sun is the original source of nearly all our energy. It is mostly made of hydrogen, although it also contains nearly every other kind of atom that exists on the earth. The sun derives its energy from a process of fusion in which hydrogen atoms are converted into helium atoms under extreme heat and pressure. This process creates a tremendous noise, but we cannot hear **it** because sound does not travel through empty space.
- (4) Our sun is not even especially large or bright compared to other stars. Stars vary in size from smaller than the earth to large enough to hold a good part of our solar system! The color of a star may be red (the coolest), yellow (like our sun), white, or blue (the hottest).
- (5) The nearest star is 4.3 light-years from the earth. A light-year is the distance light travels in one year, or about 6 million million miles (6,000,000,000,000 miles). The farthest stars are billions of light-years away. Some are so far away that if they were to blow up today, their light would continue to be seen from the earth for a million years!
- (6) Our sun is part of an enormous galaxy of 30 billion stars called the Milky Way. In addition, there are billions of galaxies within range of our telescopes and countless billions beyond. The enormity of space is quite beyond human comprehension. How exciting **it** is to live in an age when human beings have begun to explore that space.

البعض ينشر السعادة أينما ذهب،
البعض يخلفها وراءه متى ذهب.

Reading Comprehension - Unit 4

Reading 7 - The Sun and Other Stars

1. The main idea of Paragraph 3 is that _____.
 - a) we cannot hear the tremendous noise that the sun makes
 - b) the sun contains hydrogen, helium, and most other types of atoms
 - c) the sun and the earth derive their energy from the fusion of hydrogen into helium**
 - d) all of the above

2. According to the reading, the sun is the _____ star.
 - a) largest
 - b) brightest
 - c) farthest
 - d) none of the above**

3. In Line 4 of the reading, the word that refers to _____.
 - a) earth
 - b) sun
 - c) diameter**
 - d) balls

4. In Line 11 of the reading, the word it refers to _____.
 - a) heat
 - b) noise**
 - c) pressure
 - d) temperature

5. In Line 24 of the reading, the word enormity means _____.
 - a) largeness**
 - b) darkness
 - c) energy
 - d) fusion

6. According to the reading, all galaxies _____.
 - a) can be seen with the naked eye
 - b) can be seen with telescopes
 - c) can be seen without telescopes
 - d) none of the above**

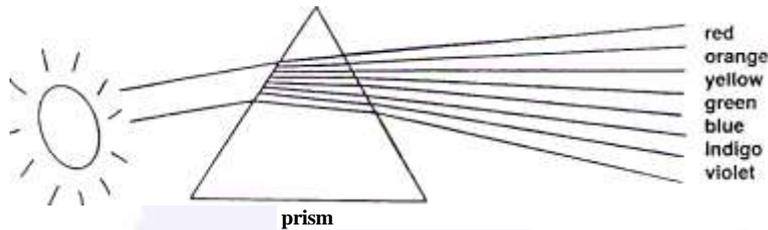
7. It can be concluded from the reading that the surface temperature of the sun is _____.
 - a) hotter than a blue star
 - b) cooler than a red star
 - c) cooler than a white star**
 - d) all of the above

العجيب أن أغلبنا يسعى فقط لتجنب الألم، لا لإيجاد السعادة.

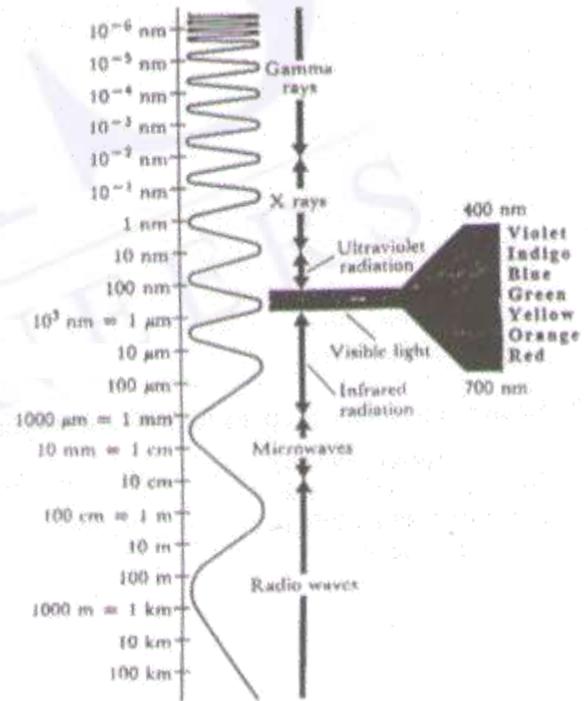
Unit 4 - Reading 8

The Nature of Color

- (1) Why is the sky blue and the grass green? Why is the sky not green and the grass not blue? And why is a rose red instead of purple? What is seen as color is the way the brain responds to the different wavelengths of light.
- (2) Light is a form of electromagnetic energy that travels very quickly on different frequencies, or wavelengths, which are seen as different colors. For example, a wavelength of 400 nanometers (nm) is seen as violet. A wavelength of 700 nm is seen as red. The color brown is induced by the mixing of wavelengths. Yellow can be produced by either its own wavelength or a mixture of the wavelengths for red and green. The sky looks blue because molecules of oxygen and nitrogen in the air scatter more blue wavelengths than any other color.



- (3) White light results from a mixing of the wavelengths of all colors. Sir Isaac Newton discovered that when sunlight passed through a glass prism, the white light dispersed into a spectrum of colored light. Newton then allowed the spectrum to pass through a second prism and the colors recombined, producing a beam of white light. This simple experiment demonstrated that white light contains all the colors of the spectrum. A beautiful and dramatic example of this occurs when sunlight falls on drops of water in the air after a rain. The beam of white sunlight **spatters** into a rainbow of colors.



- (4) Certain colors are invisible to human eyes. Wavelengths shorter than that of violet produce ultraviolet light that can damage skin cells. Wavelengths longer than that of the color red produce infrared light, microwaves, and radio waves. X-rays and **gamma rays** have wavelengths which are shorter than that of the color violet. The colors produced by these wavelengths cannot be seen, but their energy can be measured and used.

ظهور أمارات السعادة عليك
تجذب إليك أروع البشر.

Reading 8- The Nature of Color

B. Using the information given in Reading 8, choose the answer that best completes the following statements. Write your answers (a, b, c, or d) on the blanks provided.

- The main idea of Paragraph 2 is that _____.
 - different wavelengths can be mixed to form brown or yellow colors
 - oxygen and nitrogen scatter more blue wavelengths than other colors
 - colors are induced by electromagnetic energy traveling quickly on different wavelengths**
 - all of the above
- Sir Isaac Newton proved that _____.
 - white light is a combination of the wavelengths of seven visible colors
 - sunlight contains all the colors of the spectrum
 - a prism can be used to disperse white light into a spectrum of seven colors and vice versa
 - all of the above**
- The word **Spatters** in paragraph 3 means _____.
 - combines
 - disperses**
 - tolerates
 - resist
- It can be concluded that a rainbow can be seen when the sun shines after a rain because _____.
 - the air is clean and we can see better
 - there is no dust in the air
 - the drops of water in the air act as a prism to disperse white light**
 - none of the above
- According to the reading, the correct classification definition for **gamma rays** is:
 - Gamma rays are rays that are not visible to human eyes.
 - Gamma rays are rays whose wavelengths are shorter than that of red.**
 - Gamma rays are wavelengths which are longer than that of violet.
 - Gamma rays are rays like x-rays and infrared light.

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UNIT 4 VOCABULARY

B. Write your answers (a, b, c, or d) on the blanks provided.

1. A/An _____ alloy is a substance that can be used to start fires because it gives off sparks when struck with steel.

- a) aquamarine b) astrol c) **pyrophoric** d) terraced

2. The moon is _____ of life because it has no water and no atmosphere.

- a) **devoid** b) viscous c) countless d) flammable

3. Some of the _____ that circle the earth transmit international telephone and television communications.

- a) volcanoes b) regions c) telescopes d) **satellites**

4. Sodium chloride is edible, but chlorine (which is one of its components) is _____.

- a) smooth b) **toxic** c) curved d) dense

5. Wood is _____, so it is used to make doors, not windows.

- a) malleable b) bright c) volatile d) **opaque**

6. Fission and fusion produce a _____ amount of energy.

- a) **tremendous** b) sour c) lunar d) soluble

7. Einstein theorized that energy equals mass _____ the speed of light squared.

- a) derives b) **times** c) blows up d) explores

8. We are now living in the _____ of computers.

- a) **age** b) center c) rugged terrain d) ball

9. An egg has an _____ shape.

- a) enormous b) innumerable c) **elliptical** d) empty

10. Matter changes form but does not _____ when it burns.

- a) compare b) explore c) hold d) **vanish**

UNIT 4 VOCABULARY

C. Use words from the box to complete the sentences below. (See page 161 in *English for Science*)

caustic	combustible	curved	dense	edible	elastic
flammable	flexible	fragile	malleable	odorless	

1. An odorless substance is a substance that **has no smell**. Some flowers are odorless, but other flowers smell wonderful.
2. A curved shape is a shape that is **rounded** and does not follow a straight line. An arc is a curved shape.
3. A dense substance is a substance that has a **high relative density** or a **high specific gravity**. Iron and lead are very dense.
4. A flexible substance is a substance that has **the ability to change its shape or position without breaking**. The wind sometimes breaks old, brittle trees. However, trees that are flexible will bend, but not break, during wind storms.
5. A malleable substance is a substance that is **easily shaped by hammering**. Gold is used to make jewelry because it is beautiful and very malleable.
6. A caustic substance is a substance that **has the ability to chemically destroy or corrode other substances**. Acids are very caustic.
7. A fragile object is an object that is **easily broken or damaged**. Glass objects are usually very fragile.
8. A flammable or combustible substance is a substance that **has the ability to ignite and burn easily**. Gasoline is highly flammable or combustible.
9. An elastic substance is a substance that **has the ability to return to its original shape after being expanded or deformed**. Rubber is highly elastic.
10. An edible substance is a substance that **can be eaten**. Fruits and vegetables are edible, but sand is not.

من الحقائق المحزنة أن ممارسة التمارين الرياضية لأغلبنا لا تمثل أولوية.

UNIT 4 VOCABULARY

D. Use words from the box to complete the sentences below. (See page 161 in *English for Science*.)

opaque	rigid	rough	smooth	soluble
sour	toxic	transparent	volatile	viscous

1. A rigid object is an object that is **resistant to bending** and that **will easily break when bent**. Some rulers are flexible and will bend a lot without breaking, but others are very rigid and break easily.
2. A soluble substance is a substance that is **able to dissolve and form a solution**. Salt and sugar are soluble in water, but sand is not.
3. A toxic substance is a substance that is poisonous. All toxic substances must be stored where children cannot reach them.
4. A viscous substance is a substance that **does not flow easily**. Glue and honey are somewhat viscous, but water is not.
5. A volatile liquid is a liquid that **easily changes to a gas**. Perfume is volatile and must be stored in closed containers so that it does not evaporate.
6. A rough surface is a surface that is **uneven and irregular**. During storms, the surface of the sea becomes very rough.
7. An opaque substance is a substance that **prevents light from passing through**. Doors and walls are opaque, but windows are not.
8. A transparent substance is a substance that **allows light to pass through easily and that can be clearly seen through**. Windows are usually transparent, but bathroom windows are usually translucent.
9. A smooth surface is a surface that is **flat and without irregularities**. Marble floors are very smooth, and they are dangerous to walk on when they are wet.
10. A sour substance is a substance that **has an acidic taste**. Lemons and vinegar are very sour.

احذر عدوك مرة وصديقك ألف مرة فإن
انقلب الصديق فهو أعلم بالمضرة.

UNIT 4 VOCABULARY (Chapter 11 - Describing)

1) devoid	without	بدون
2) leak	drip water	يترسب
3) vegetation	plant life	حياة نباتية
4) cosmic	space	فضاء
5) filter	screen	يرشح
6) solar	sun	شمس
7) eclipsed	blocked	خسوف، كسوف
8) alternate	vary	يتغير
9) diffuse	spread	يتبعثر
10) lunar	moon	قمر
11) satellite	moon	قمر
12) adverse	unfavorable	معاكس، مناوئ
13) elliptical	oval	بيضاوي
14) proximity	nearness	دنو، قرب
15) rugged terrain	rough surface	سطح خشن
16) volcanoes	mountains	براكين
17) regions	areas	مناطق
18) sustain	support	يتحمل
19) innumerable	many	كثير، لا يمكن عدّه
20) vanish	disappear	يتلاشى

Prefixes

1) aqua-	water	متعلق بالماء
2) terra-	earth	متعلق بالأرض
3) pyro-	fire	متعلق بالنار
4) astro-	star	متعلق بالنجوم

الصدقة المزيفة كالطير المهاجر
يرحل إذا ساء الجو.

1) flaming	التهاب	26) comprehension	فهم، إدراك
2) ball	كرة	27) age	عُمر
3) relatively	نسبياً	28) explore	يفجر، ينفجر
4) compare	يقارن	29) caustic	مادة كاوية، لاذع
5) diameter	قطر	30) combustible	قابل للاشتعال
6) approximately	تقريباً	31) curved	منحني
7) row	صف	32) dense	كثيف
8) times	أوقات	33) edible	صالح للأكل
9) original	أصلي	34) elastic	مرن
10) source	مصدر	35) flammable	قابل للاشتعال
11) nearly	تقريباً	36) flexible	مرن، لين
12) derive	يشترك	37) fragile	قابل للكسر
13) tremendous	ضخم	38) malleable	قابل للطرق
14) empty	فارغ	39) odorless	عديم الرائحة
15) not even	غير متساوٍ	40) opaque	معتم
16) especially	بصورة خاصة	41) rigid	صلب
17) bright	ناصح، لامع	42) rough	خشش
18) hold	يمسك، يقبض على	43) smooth	ناعم، أملس
19) blow up	ينفجر	44) soluble	سريع الزوبان
20) range	مدى، يتراوح	45) sour	شراب
21) telescope	منظار	46) toxic	سام
22) countless	لا يمكن عدة، كثير	47) transparent	شفاف
23) beyond	خلف، وراء	48) volatile	سريع التطير
24) enormity	ضخامة	49) viscous	لزوجة
25) quite	هادئ		

أعلم أن كثيرا ممن حولي أعداء في صورة
أصدقاء، لكنهم ينتظرون الفرصة المناسبة.