

Project 5

Astronomy and The Solar System

Sequence I

Reading comprehension

Pronunciation

Word Building

Grammar

Writing

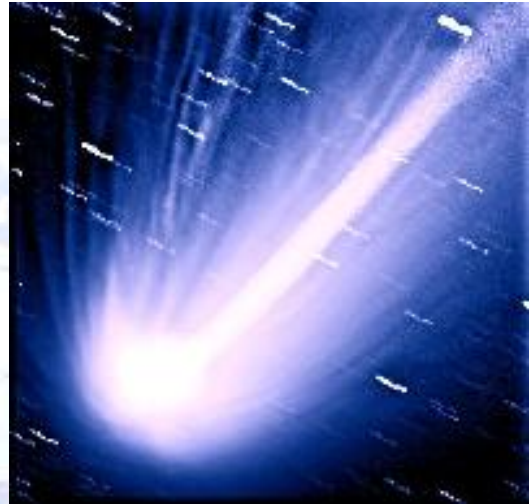
The Andromeda Galaxy



A. Reading Comprehension

Read the following text then do the activities

Astronomy



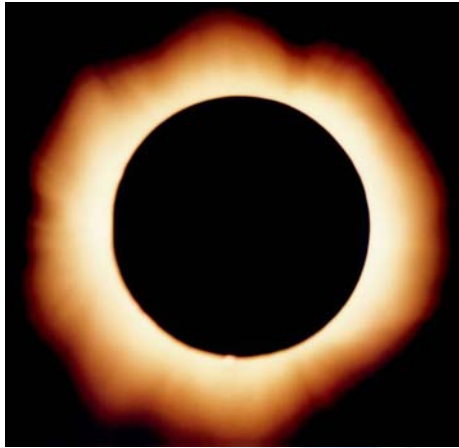
Astronomy is the science of celestial objects (such as stars, planets, comets and galaxies) and phenomena that originate outside the Earth's atmosphere (such as auroras and cosmic radiation). It is concerned with the evolution and motion of celestial objects, as well as the formation and development of the universe.



Astronomy is one of the oldest sciences. Astronomers of early civilizations performed observations of the sky; however, the invention of the telescope was required before astronomy was able to develop into a modern science.

In early times, astronomy only comprised the observations and predictions of the motions of objects visible to the naked eye. As civilizations developed, most

notably Babylonia, Persia, Egypt, Greece, India and China, astronomical observations were assembled, and ideas on the nature of the universe began to be explored.



Some astronomical discoveries were made prior to the application of the telescope. The Chinese estimated the obliquity of the ecliptic about 1,000 BC. The Chaldeans discovered that eclipses recurred in a repeating cycle.

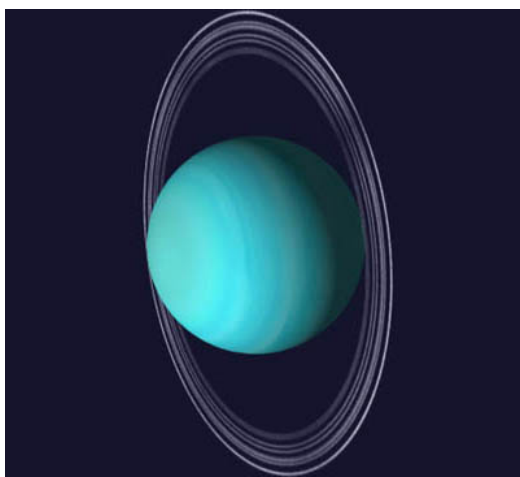
During the Middle Ages, astronomy flourished in the Persian Empire and other parts of the Islamic world. Islamic astronomers introduced many names that are now used for identifying stars. Then came a scientific revolution.

During the Renaissance, Copernicus proposed a heliocentric model of the solar system. His work was defended and corrected by Galileo Galilei and Johannes Kepler who used telescopes. Later Newton's invention of celestial dynamics and his law of gravitation finally explained the motions of the planets. Further discoveries paralleled the improvements in



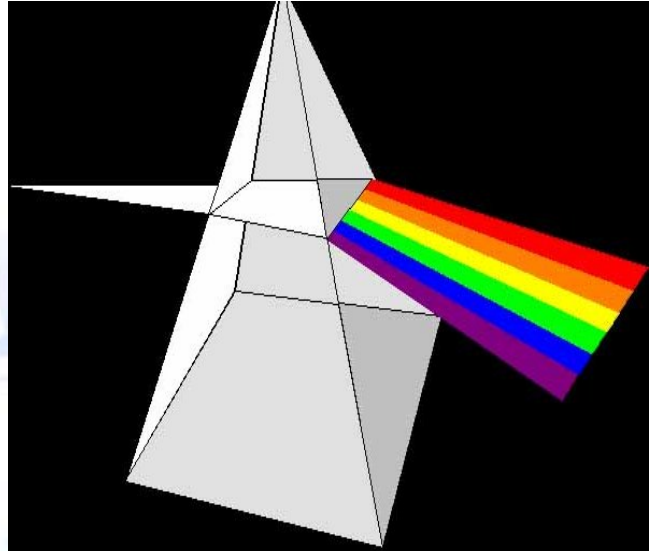
the size and quality of the telescope.

The astronomer William Herschel discovered the planet Uranus in 1781 and Friedrich



Bessel measured the distance to a star in 1838. During the 19th century Euler and D'Alembert made more accurate predictions about the motions of the Moon and planets.

Significant advances in astronomy came about with the introduction of new technology, including the spectroscope and photography.



The existence of the Earth's galaxy, external galaxies and of the Milky Way were only proved in the 20th century.

In the future more observations and discoveries will certainly be made as technology will improve.

From Wikipedia, the free encyclopedia

Activity 1:

Say whether these statements are true (T) or false (F) . Correct the false ones.

1. Astronomy is concerned with the development of our planet Earth only.
.....
2. Thanks to the invention of the telescope astronomy has become a modern science.
.....
3. Before the invention of the telescope , no discoveries were made.
.....
4. During the Middle Ages, astronomy developed in the Persian Empire and Islamic world.
.....
5. The spectroscope and photography have allowed great progress in astronomy.
.....

Activity 2:

Find the questions for these answers

1.?
The observation and predictions of the motions of objects visible to the naked eye.
2.?
During the Middle Ages.
3.?
William Hershel did.
4.?
More accurate predictions about the motions of the moon and planets

Activity 3:

Match each word in A with its definition in B

1. celestial	a. happen again; be repeated
2. motion	b. before
3. prior to	c. prosper; be well and active
4. recur	d. instrument for producing and examining the image of a ray of light
5. flourish	e. of the sky
6. spectroscope	f. careful and exact;
7. accurate	g. manner of moving; movement

1.	2.	3.	4.	5.	6.	7.
...

Activity 4:

What or who do the underlined words in the text refer to?

- It is concerned ... →
- ...that are now ... →
- ... his law ... →

B. Pronunciation

How to pronounce the final -s- / -es-

- ◆ Remember that **s/es** is the mark of plural nouns or the 3rd person singular with the present simple tense.

We also use `s with the genitive or possessive case

book	→	books
to run	→	he runs
the toy of the little boy	→	the little boy's toy

- ◆ The final -s- for plural nouns is sometimes written **es** when the word ends with **sh/ch – tch – z – s**

to watch	→	he watches.
a bus	→	buses

- ◆ The final -s- is pronounced /s/ after the sounds **k, p, t, f, tk**

cooks	bats	laughs	baths
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- ◆ The final -s- is pronounced /iz/ after the sounds **s, z, ch, tch, dg**

buses	uses	washes	bridges
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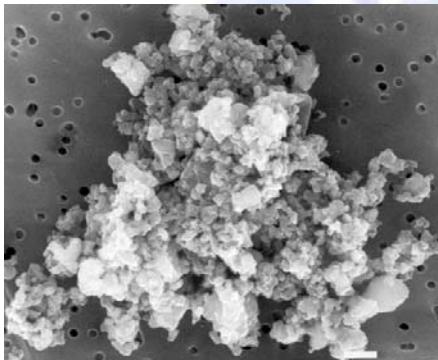
- ◆ The final -s- is pronounced /z/ after the sounds **b, d, g, l, m, n, r, v, w, y**, and the **vowels**.

cars	bands	windows	carries
------	-------	---------	---------

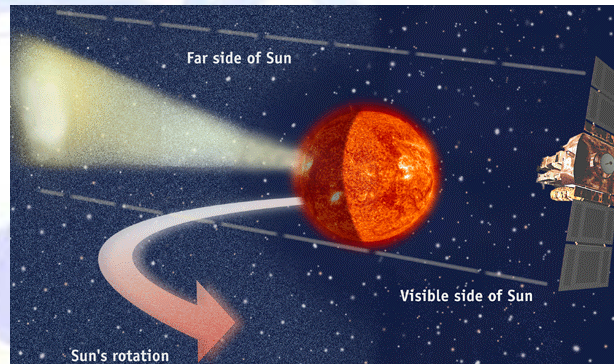
Activity 1:

Classify the words in this passage according to the pronunciation of their final –s-

Nearly all the solar system by volume appears to be an empty void. Far from being nothingness, this vacuum of “space” comprises the interplanetary medium. It includes various forms of energy and two main material components: interplanetary dust and interplanetary gas.



Interplanetary gas



Interplanetary dust

-Interplanetary dust consists of microscopic solid particles. Interplanetary gas is a tenuous flow of gas and charged particles, mostly protons and electrons – plasma- which stream from the sun, called the solar wind .

/s/	/z/	/iz/
.....
.....	
	
	
	
	

C. Word Building

Forming plural nouns

- ◆ The usual mark of the plural is 's'.

e.g.: car → cars

Sometimes it is necessary to add 'e' before 's':
the mark is 'es'

e.g.: bus → buses

bush → bushes

- ◆ However there are other spellings:

- ✓ Words ending in -f (or -fe) make the plural by changing the -f to -ves

e.g.: leaf → leaves

wife → wives

- ✓ Words ending in -o make their plural with -es or -s

e.g.: potato → potatoes radio → radios

- ✓ **Irregular plurals:** Some words do not take 's' in the plural form. There is a change in their spelling.

e.g.: man → men. (woman → women)

child → children

foot → feet (tooth → teeth)

mouse → mice (louse →

lice)

ox → oxen

phenomenon → phenomena

criterion → criteria

oxymoron → oxymora

crisis → crises

medium → media

<http://www.cnefd.edu.dz>

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Activity 1:

Rewrite these sentences using the underlined words in the plural form.

Make any necessary change.



1. I wonder what criterion has been chosen by the firm to promote some employees.

.....



2. What is the most performing communication medium in your opinion?



.....
.....

3. Look! There is a mouse in the box.

.....



4. The print of a foot could be clearly seen in the snow outside the house.
-

5. A strange phenomenon has appeared in the sky recently.
-

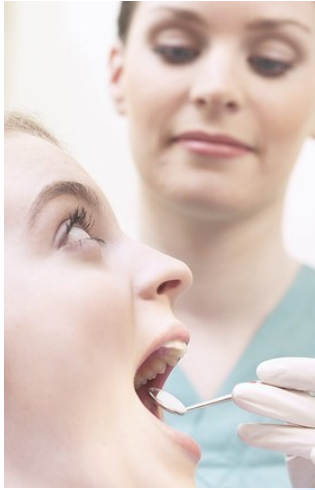


6. When the crisis broke out, nobody could do anything.
-

7. An ox is a very useful animal in a farm.
-

<http://www.onefd.edu.dz>





8. Her tooth was decaying, so she had to see the dentist.

.....

9. A louse is an insect that sucks blood and proliferates in dirty places.

.....



10. When the war broke out, he had to leave his child to join the army.

.....

USED TO / USED FOR

♦ **USED TO** is a past verb.

It has no present form.

It is followed by the infinitive.

It is used for an action that happened in the past repeatedly; a habitual action.

e.g.: I **used to live** in Blida. (= but now, I live in Algiers.)

My aunt **used to teach**. (= but now, she doesn't; she has retired.)

♦ **IS/ARE USED FOR** means:

is/are employed for a purpose.

It is followed by the gerund (verb + -ing)



e.g.: A hammer **is used for driving** in nails

e.g: A telescope **is used for making** distant objects appear nearer and larger.



Activity 1:

Complete with used to or is/are used for:



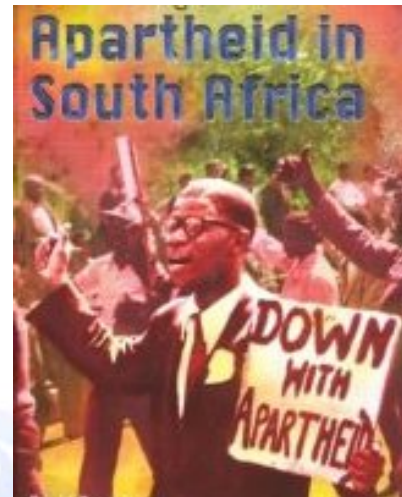
1. There be a grocery shop next to the post office.



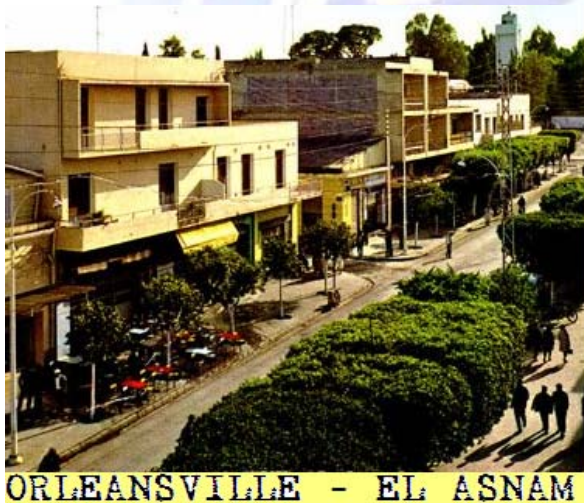
2. A wrench gripping and turning nuts, bolts etc...

3. Valves controlling the flow of air, liquid or gas into or through a tube or a pipe.





4. South Africa have a system based on racial discrimination that was called apartheid.



5. El Asnam Orleansville until 1962.

6. A barometer measuring the pressure of the atmosphere and for forecasting the weather.





7. Men fights duels with swords or pistols when they quarreled.

8. Jacks raising heavy weights off the ground, especially for raising cars to change a wheel.



Activity 2:

Complete each sentence with the right verb from the box in the correct form.

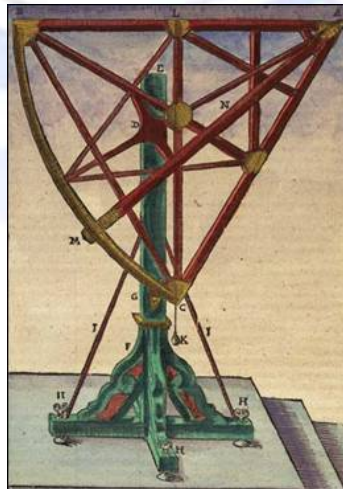
take - make – protect - convey - extract - observe - travel



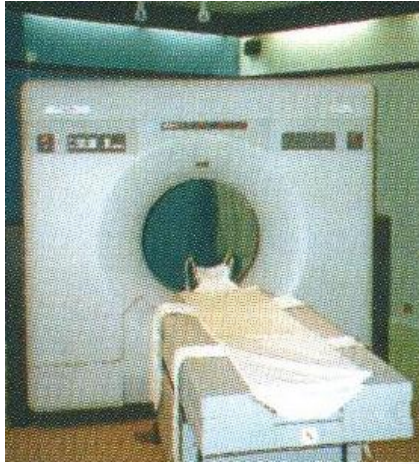
1. A derrick is used for oil from the soil.



2. Binoculars are used for distant objects seem nearer.



3. Observatories are used for natural phenomena.



4. A scanner is used for..... accurate pictures before a patient undergoes an operation.

5. Pipelines are used for..... oil places.



6. A sledge is used for from one place to another in Canada.

7. A helmet is used for..... one's head.



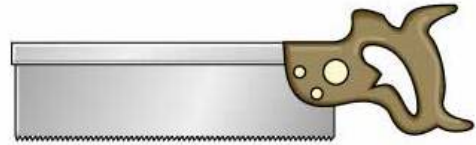
Activity 3:

Find what these instruments are used for.



1. A razor

2. A saw



3. A balance

4. Scissors



5. A pair of compasses

E. Writing

Using these notes, write the biography of Al-Zarquali, a famous Arab astronomer.

- Al-Zarquali (known as Arzachel in Latin Europe)
- born 1028 CE / Andalusia (now Spain)
- Arab mathematician
- excelled at construction of precision instruments for astronomical use.



constructed
- flat astrolabe and water clock to determine hours of day and night / indicate lunar months.



- contributed to the Tables of Toledo, compilation of astronomical data.
- famous for his Book of Tables: find the days on which the Roman, lunar and Persian months begin / other tables give position of planets at any time / others predict solar and lunar eclipses/
- Arzachel Crater on the moon named after him
- death : 1087 CE



Al-Zarquali known as
Arzachel in Latin Europe was
born in 1028 CE in Andalusia,
now Spain. He was an

.....

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