LISTEN AND CONSIDER

In this part you will learn to:

- describe the functions of objects with used to/used for
- ask and answer questions about measurements
- form nouns from measurements adjectives
- form singular and plural nouns from verbs
- recognize and use stress in two-syllable verbs
- recognize shift of stress in words like increase (v)and increase (n)
- use corrective stress

and you will: write a description of the moon

- Make an oral presentation: description of the moon

- **Let's think about it**
- **Listen and do**
- **Language in context**
- **Writing**

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Let's think about it

Look at the pictures and discuss the following questions:

1- What do pictures 1 &2 represent?
2- What are space satellites used for?





Listen and do

1- Sentences A-F describe how telecommunication satellites work. They are not in order. Read them carefully. Then listen to the first part of the text and re-order them. Write numbers 1-6 in the table below.

Jumbled sentences	**A**	**B**		**D**	**E**	**F**
Order						

A- This satellite sends signals back to other earth stations.
B- It sends the signals to one of the satellites hovering above the earth.
C- A radio or TV company transmits signals by ordinary telephone.
D- The broadcasting stations transmit them to the homes of millions of viewers.
E- These signals go to an earth station.

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F- They change the signals and send them by phone to the local broadcasting stations in each country.

2- Listen to the second part of the text and choose the right answer to each of the following questions about the Hubble Space Telescope. Circle the letter corresponding to it.

A. How far is the Hubble Telescope from the Earth? It is…

a.106 km b. 610 km c.160 km

B. What is its shape? It is ….. in shape

a. circular b. rectangular c. cylindrical C.

C. How long is it? It is …. long

a. 13 m b. 30 m c.31 m

D. How much does it weigh? It weighs …. tons

a. 110 b. 11 c. 101

Language in context

A/ Grammar

Describing the function of objects : used to/used for

Consider sentences 1-3 below and answer questions A-C that follow.

1. What are satellites **used for**?
2. They are **used for** sending computer data.
3. They are **used to** survey the earth and make weather forecasts.

A. Which preposition follows the verb **used** in the interrogative?

B. What do you notice about the forms of the verbs which follow **used for** and **used to** ?

C. Match **used for** and **used to** with the form of the verbs that come after.

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used for + used to +	verb in the infinitive verb + ing

See grammar reference (p149-154)

Task 1: Write the correct form of the verbs in brackets.

a. The space shuttle is a space transportation system used for (transport) people and cargo to and from orbit around Earth. It is also used to (launch) satellites.

b. The International Space Station has laboratories that are used to (conduct) experiments on the changes that occur in space on the human body and (study) the galaxy.

c. The Hubble Space Telescope, which was launched in 1990 by the space shuttle Discovery, is used for (capture) images of stars, galaxies and other astronomical objects in the universe. The images taken from the Hubble Space Telescope has helped scientists make many important discoveries about the universe.

Task 2: Match questions 1-6 with answers A-F.

1. What is it? 2. What does it do ? 3. What is its shape? 4. What does it consist of ? 5.What is it made of ? 6. What is it used for?	A. Case/eyepiece lens/object lens B. Optical instrument C. Magnify pictures of faint and distant objects D. Cylindrical E. Observe the stars F. Metal and glass

Task 3: Use the answer to task 2 above to write a description of the telescope and its functions.

Start like this:

A telescope is ……

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Asking question about measurements

1- Go back to the questions and answers in listening task 2 and answer the following questions.

   A. What question word is used to ask he questions about the dimensions/size of the Hubble Space Telescope and its distance from our planet?

   B. What do you notice about the position of the adjectives in the answers?

2- Read the words in the two columns with attention. Then complete each heading with the question word : “how” or “what” that must precede them .

..... is it?	.....is its .....?
1.tall 2.high 3.long 4.fast 5.heavy 6.deep 7.wide 8.far	1.height 2.length 3.width 4. depth 5. weight

Task. Look at sentences A-G. Use the words in the table above to complete the questions. The questions are asked to get the information in bold type.

A- *Question : how ..... is the Moon from the Earth?*
Answer: The average **distance** to the Moon from the Earth is **384,400 km.**

B- Question: How ..... does a Shuttle travel?
Answer: Like any other object in low-Earth orbit, a Space Shuttle must reach **speeds of** about **17,500 miles per hour (28,000 kilometers per hour**) to remain in orbit.

C- *Question :* How .....does it take the Hubble telescope to make one revolution round our planet?

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Answer: It only takes the Hubble telescope **97 minutes** to make 1 revolution around our planet.

d- *Question* : What is ……. of the Hubble telescope?

Answer: The Hubble telescope has a **weight of 11,110 kg**, but is as light as a feather in space.

B/ Vocabulary

Task. Match the words on the left with their associated words on the right.

1. Temperature	**A.**miles,kilometers, knots (nautical miles)
2. Distance	**B.**hot, heat, high, low, cold, warm, Celsius scale, Fahrenheit scale
3. Area	**C.** square foot, square metre , square kilometre, acre
4.Volume	**D.** feet, inches, metres, centimeters, tall, short
5.Measurements/size (humans)	**E.**Litres, centiliters, milliliters, cubic litres, cubic metres

C/ Pronunciation

- Pick out the words ending in “s” in the previous task and classify them in the table below according to the pronunciation of their final”s” .

/S/	/Z/	/ IZ/

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WRITING

- Write a short description of the Moon.

1. Write a draft expository presentation of the Moon using the notes in the fact file below. Include any other details you think appropriate.

2. Read your draft version and correct your mistakes.

3.Write a final version of your presentation.

Fact File

- Earth satellite

Diameter: 3,476 km

Mass: 0.012 (approximately) one-eightieth that of the Earth

Surface gravity: only 0.16 (one-sixth) that of Earth

Average distance from Earth:384,402 km

Orbit: - west-to-east direction but orbits in a west-to east every 27.32 days

- No atmosphere and no water

Temperature: sunlit side:+110°C

Lunar nights: -170°C

Composition: Rocky

Age: about 4,6 billion years.

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READ AND CONSIDER

this part you will learn to:

- to use the **comparatives** with short and long adjectives and with adverbs
- express contrast with **whereas**, **while**…….
- make hypotheses/ suppositions using **if- conditional type 2**
- read figures
- use **stative verbs** : think , suppose … and **action verbs :** listen, play, write …;
- form **plural nouns** : galaxy- galaxies

and you will:

write an expository essay

- **Let's think about it**
- **Read and do**
- **Language in context**
- **Writing**

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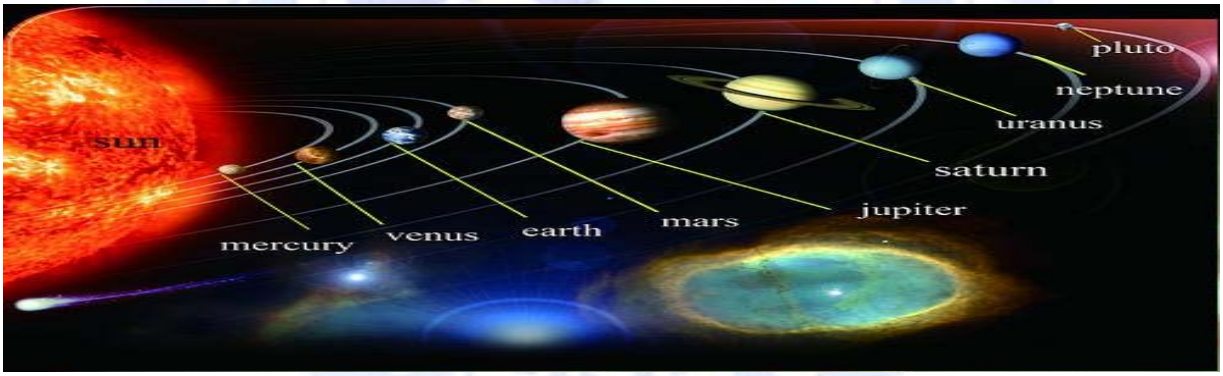
Let's think about it

- Answer the questions below

1. What do you think are the similarities and the differences between astronomy and astrology?
2. How many planets are there in our solar system? Name them.
3. What do you think is the difference between a moon and a planet?

Now, read the text and check your answer to questions 2 and 3.

Read and do



The Solar System

If you were out in space, billions of miles away from our planet, you would see the Earth as a tiny ball moving in a wide path around a star that you might recognize as our sun. You would also see, at various distances from the Sun, seven other spherical bodies of different sizes- the other planets-all travelling in the same direction in almost circular paths around the Sun. Moving around some of the planets are smaller balls- the satellites or moons of the planets. **(§1)**

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Now suppose you were still in space and that you were looking at the space between the orbits of planets Mars and Jupiter, what would you see? There would be thousands of little planets, or asteroids, also revolving around the Sun. Cutting in this way and that, across the paths of the planets, you would see comets- starry-headed objects, sometimes with long tails streaming after them as they draw near the Sun. You might also catch a glimpse of swarms of even smaller particles – the meteors- swirling through space. **(§2)**

All these heavenly bodies make up our vast solar system. If you continued to view them for months or for years, you would see that they were moving together through space as a unit, at the speed of some twelve miles a second, in the general direction of the blue star Vega. **(§3)**

The Sun is the very heart of our solar system. It is a typical star- one of the several thousand millions of stars in our galaxy; like the rest, it is an incandescent body made up of highly compressed gases. Compared with the other stars, the Sun is of average size, but it is a giant in comparison with even the largest planets. Its diameter of 865,600 miles is 109 times that of the Earth; even though it is gaseous, it weighs more than 300,000 times as much as the Earth. Its surface temperature is about 10,000 degrees Fahrenheit; at its centre the temperature may be as high as 27,000,000 degrees Fahrenheit. The heat energy and light energy radiating from the Sun make it possible for life to exist upon Earth. Without the reflection of the Sun's light, we could not see the other members of the solar system except for the comets and meteors**. (§4)**

The Sun is just one of the stars in our universe. When the skies are clear, we can see the twinkling of these other stars at night. Their light is less intense than that of the Sun because they are far more remote from us than any other heavenly bodies. **(§5)**

We know that the planets of the solar system are different from the distant stars in some very important ways. Unlike stars, which shine with their own light, the planets give off no light of their own. All we can see is the light from the Sun that they reflect back to us as if they were huge

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mirrors in the sky. In addition, each one of the eight planets travels in its own special path or orbit around the Sun held in place by the powerful force of the Sun's gravity, very much as if it were a ball speeding around the Sun in a matter of a few months. More distant planets have larger orbits and travel far more slowly. Jupiter, for example, takes more than eleven Earth years to make one complete turn around the Sun while Earth makes its path around the Sun in just 365 1/4 days- in other words, once a year**.(§6)**

Language in context

A/ Grammar

Comparatives of adjectives and adverbs

1. Read the text again and pick out the sentences which contain comparatives of adjectives and adverbs and write them in the table below.

Comparatives	Adjectives	Adverbs
superiority		
equality		
inferiority		

2. How are the comparatives of adjectives and adverbs formed? Complete the following table with the missing information.

See grammar reference (p149-154)

Comparatives	Adjectives/Adverbs	
superiority	Short	adj /adv +…..+than
	Long	….+ adj/adv+ ……

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equality	……+ adj/adv+ ….
inferiority	…..+adj/adv+ ……..

Task. Study the figures in the table below. Then complete the sentences with the right comparative form of the adjectives and adverbs in the yellow box.

quickly - close – large - fast

Planets	Diameter: thousand km	Average distance from the sun: million km	Time for one orbit: Earth years	Time for one rotation at their axis
Mercury	4.88	58	0.241	88 days
Venus	12.10	108	0.615	30 days
Earth	12.76	150	1	24 hours
Neptune	48.6	4.497	164.8	15 hours and 48 minutes

A. Mercury is …….. to our Sun …….. Venus, Earth and Neptune.
B. Neptune has a …….. diameter ……. Mercury, Venus and Earth.
C. Neptune rotates on its axis …… Earth does.
D. Mercury and Venus complete one revolution around the Sun ……. Earth.

Expressing comparison and contrast

1.Read the text again. Pick out one sentence expressing similarity and one sentence expressing difference , and write them in the table below. **Leave out** the sentences which contain comparatives and superlatives.

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Comparison/contrast	Sentences
Similarities	
Differences	

2. a. Consider the sentences you have written in the table above and underline the **link words** used to express similarity and difference.
   b. What do the following link words express : similarity or difference? Put a cross (x) in the appropriate column.

Link words	Similarity	Difference
while		
similarly		
unlike		
but		
Just as/like		
like		
on the contrary		
similar to		
whereas		

See grammar reference (p149-154)

Task. Join the following pairs of sentences, using a link word from the table above, to get a meaningful sentence . Make any necessary change.

1. It takes Uranus 84 years to complete one revolution around the sun. It takes Neptune 164.8 years to complete one revolution around the sun.
2. Mercury has no moon or natural satellite. Venus has no moon or natural satellite.
3. Mercury, Venus, Earth, and Mars are mostly composed of rock and metal. Jupiter, Saturn, Uranus, and Neptune are formed by mostly gaseous material.

4 . The time it takes Earth to rotate on its axis equals one day or 24 hours. The time it takes Marsto rotate on its axis equals one day or 24 hours.

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Making hypotheses : if- conditional type 2

Go back to the text and pick out the sentences which contain **if** and **suppose**? Then consider them and answer these questions.

1. What do the sentences express? Circle the right answer.
   a. A real or possible situation
   b. An unreal or imaginary situation
   c. An impossible past situation

2. What tenses are used? Complete the following table.

Condition	Result
……	……..

See grammar reference (p149-154)

Task. Give the correct form of the verbs in brackets.

A. If the earth (stop) orbiting the sun, the northern hemisphere (keep) getting hotter and hooter while the southern hemisphere (be) colder and colder.

B. If earth (cease) rotating about its axis but (continue) revolving around the sun , the length of a year (remain) the same, but a day (last) as long as a year

C. What (happen) to us if a large asteroid (smash) into the Earth?

D. If the sun (stop) shining , we (need) heavy coats and flashlights.

We (see) the stars 24 hours a day, but we (never know) when one day became the next day. And we (never) see the moon again.

Stative verbs and action verbs

Consider the verbs in bold type in sentences 1-4 below.

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1. We **know** that the planets of the solar system **are** different from the distant stars.
2. All we can **see** is the light from the sun.
3. Each of the 8 planets **travels** in its own special path or obit.
4. Unlike stars, which **shine** with their own light, the planets **give off** no light of their own.

Now answer questions A-D.

A. Which verbs describe an action?
B. What do we call the verbs that refer to an action ?
C. Which verbs describe a state?
D. What do we call the verbs that refer to a state?

See grammar reference (p149-154)

and answer the following questions:

A. What is the major difference between the two types of verbs?
B. Which verbs have both simple and progressive forms?
C. Which verbs cannot have a progressive form?

Task. There are mistakes in the **simple/progressive aspect** of some of the verbs in bold. Correct them to get a grammatically correct conversation between speaker A and speaker B.

A. 'I used to hate astronomy, but I love it now. Do you know why?'
B. 'No, actually, I don't'
A. 'Well, because I **am understanding** now what astronomy really is.'
B. 'Sorry, I **don't understand** what you **are meaning**.'
A. ' Well, I **mean** that astronomy can help us understand the mysteries of the universe.'
B. ' Oh, I **am seeing** that you **have** a telescope in your room. I **suppose** that you bought it yourself.'
A. Actually, I didn't buy it . You **are knowing**, it used to belong to my grandfather, but now it **is belonging** to me. I **am still remembering** the day when he gave it to me.'

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B/ Vocabulary

1. Find in the text the words and phrases that match the definitions below.

A. very small **(§1)**

B. identify again (sb or sth) that one has seen before **(§1)**

C. moving continuously and smoothly in one direction **(§2)**

D. have a quick imperfect view of (sb or sth) **(§2)**

E. giving out light when heated **(§4)**

F. shining with a light that gleams unsteadily **(§5)**

G.send, emit **(§6)**

H. very big **(§6)**

I. moving very quickly **(§6)**

2. Add suffix **–ist** or **–er** to the words in brackets to get a meaningful text.

An (astrology) is completely different from an (astronomy) and an (astrophysics). All three are constant (observe) of the skies, but only the latter two really deserve the title of (science). The difference between them is similar to the one between a fortuneteller and a (psychology).

C/ Spelling

1. Look at the tip box below. Give some more examples from the text to illustrate the rules for forming the plural of nouns.

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TIPS

1. We add **–s** to form the plural of most nouns.
   E.g. ……..
2. We add **– es** after some nouns ending in **–o**, and nouns ending in **-s**, **-x**, **-ch**, and **–sh.**
   E.g. ……..
3. We change the vowels of some nouns to form the plural.
   E.g. m**a**n /m**e**n, cris**i**s / cris**e**s , emphas**i**s /emphas**e**s,
   …… / ……
4. We change the consonant **f** for the consonant **v** of some nouns in the plural.
   E.g. Li**fe** / li**ves** , lea**f**/ lea**ves** , loa**f** /loa**ves**
   …… / ……
5. But we don't change the f ending of some other nouns
   E.g. chie**f** / chie**fs**

2. Put the nouns in brackets in the text below into the **plural**. Pay attention to the spelling form.

The (theory) about the creation of the world can be divided into two (category) : religious and scientific. The first category is constituted of divine (thesis) elaborated by (man) and (woman) with strong religious (belief). These (man) and (woman) are more interested in divine (mystery) than in producing tangible (fact) about the (origin) of the world and its evolution. The second category is composed of a number of (hypothesis) put forward by astrophysicists and astronomers ……

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WRITING

- Suppose a comet collided with the Earth; what would happen then? Follow the guidelines to write a twenty-line essay predicting the consequences of such a collision.

1. List any other ideas to expand on the notes below.

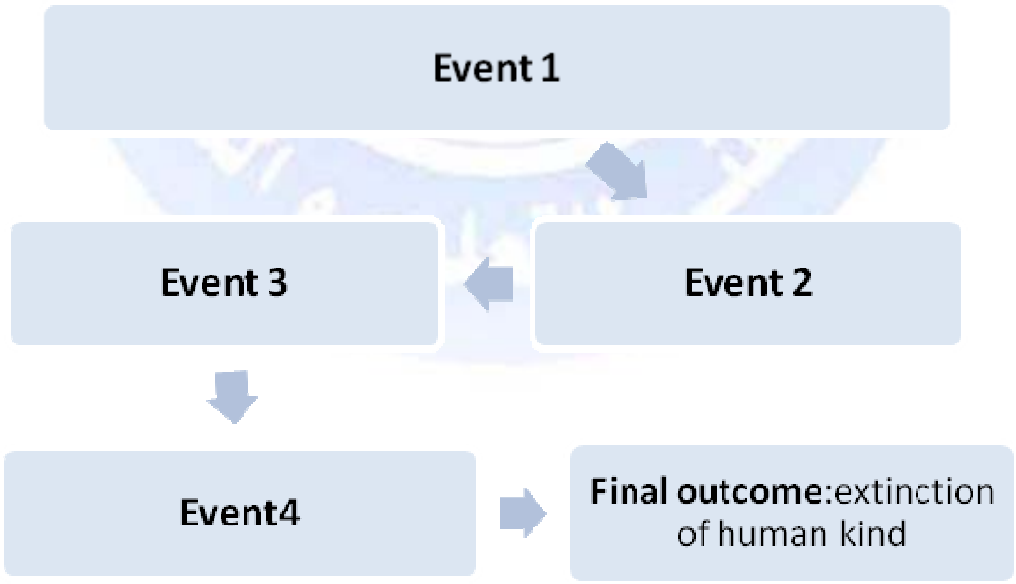
Expanding notes

Impact on the Earth surface – cause crater- volcanic eruption- climate change- flooding- Tsunami- earthquake- alteration of the Earth orbit- great freeze- extinction of human kind….

2. Place your ideas in the chain of events that follows.

Chain of events :

Collision with a comet



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3. Select the most pertinent ideas and write your first draft. Make use of the useful language box below.

Useful language

-Stative verbs: believe , suppose …
-Action verbs : collide, destroy …
- Modals and adverbs expressing probability: may, might, probably,possibly, perhaps …
- Comparatives and link words for expressing comparison and contrast: while, as, similarly …
- **Link words for expressing result**: as a result, so , consequently…

3. Correct your mistakes. Use the draft revision checklist below.

Draft revision checklist

- Have you used the language items above correctly?
- Have you structured the essay appropriately (introduction, developing paragraphs, conclusion)?

4.Write the final version of your essay.

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LISTENING

In this part you will :

- make inferences
- respond to an oral text
- agree and disagree (verb+ so or not)
- make suppositions and hypotheses

and you will:

make a speech in defense of an opinion

- **Let's think about it**
- **Listen and do**
- **After listening**
- **Writing**

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Let's think about it

- Look at the pictures and answer the questions.

1. **E.T.** in the caption of the picture below is an abbreviation. What do you think it stands for? Do you believe in ETs?





E.T. (1982) by Steven Spielberg

2. Suppose you saw a UFO (an unidentified flying object) landing in front of you. How would you react?



3. Do you think that if Martians existed, they would be intelligent?

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4.What do you think is the difference between **science** and **science-fiction** ?

Listen and do

1.Listen to the radio programme about ETs and compare your answers to the questions above to those of Mr. Henshaw.

2. Sentences A-D below are not in order. Listen to the programme again and reorder them according to their occurrence in the interview. Write letters A-D in the following table.

Order in the lecture	**1**	**2**	**3**	**4**
Jumbled sentences				

A. They want to be ready to respond adequately to any message coming from outer space.
B. Mr. Henshaw and his colleagues believe in the probable existence of intelligent beings in outer space.
C. In their laboratory, the S.E.T.I's researchers look for signals or messages from sidereal clever beings.
D. They think other species of beings could suspect we exist and try to contact us.

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After listening

- Have a look at the coping box. Then do tasks 1 and 2 that follow.

Coping

We often use **stative verbs** like **:** think, believe, hope, guess, suppose, etc. **to express agreement** or **disagreement with** what is said to us.

- **When we agree**, we use : think **so** / believe **so**/ hope **so** / guess **so** / suppose **so**

E.g. "Will man be capable of settling on the moon some day?"

"I **think so**"

- **When we disagree**, we use:

doesn't / don't think **so** - **doesn't/don't** believe **so**

doesn't/don't guess **so** - **doesn't/don't** hope **so** + **so**

doesn't/don't suppose

E.g. "It may stop raining tomorrow"

" I **don't think so**"

Task. Think of a response to one of the questions and statements below using the verbs in the coping box above with so.

A. "Is what they are telling us about space laboratories true?"

"I ……."

B. "Are we really capable of settling permanently on another planet?"

"I ……."

C. "Have people really seen all those UFOs reported in newspapers?"

"I ……."

D. "pace exploration is just a waste of money."

" I ……."

E. " Today we are capable of diverting comets from their orbits."

" I ……."

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WRITING

- Make a short public speech in defence of the usefulness of astronomy. Follow the procedure below.

1. Read the following notes to expand. These are arguments you can include in your speech. **Add facts or details to support them**.

Notes

- Predicting catastrophe
- Solving the mysteries of the universe
- Improving telecommunications
- Making celestial and nautical navigation safer
- Making weather forecast

2. Organize your arguments from the most to the least important. Then write a short draft speech in defence of astronomy starting with this opening:

Ladies and gentlemen,

I think that astronomy is one of the most useful sciences today.

……

3. Read your draft speech for error checking. Use the following editing checklist.

Editing checklist

- Are the paragraphs of the speech well marked off?
- Are the linked words used appropriately?
- Is there a pertinent conclusion?
- Are there any mistakes in grammar and spelling?
- Is the punctuation right?

4. Write your final version of your speech.

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READING AND WRITING

In this part you will :

- predict the content of a text
- identify the type of text and author's purpose
- make inferences
- distinguish between different types of reasoning in argumentative texts

and you will :

write an argumentative essay

- **Let's think about it**
- **Listen and do**
- **Read and do**
- **After reading**
- **Writing**

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Let's think about it

- The paragraph below is taken from a lengthier text. Read it very quickly and answer questions 1 , 2 and 3 .

'DEEP IMPACT'

(by David Grinspoon)

On Sunday night, NASA fired a 3 -foot wide, 820-pound explosive barrel directly into the path of a 9 -mile long, potato-shaped comet called Tempel 1. The two successfully collided at 23,000 mph while a spaceship photographed the collision and sent the pictures home to us. Why?



1. What kind of source is it taken from? Circle the letter corresponding to the right answer and say why.

A. a science-fiction book B. a scientific report

C. a newspaper article D. a letter of complaint

2. What, do you think comes next in the text?

3. Where do you think the paragraph fits in the text? Is it at the beginning, in the middle, or at the end ? Why?

Read and do

- Read the text below to check the guesses and predictions you have made in answering questions 1-3 on the previous page.

TEXT

So we can learn about the impact that a collision with comets might have on our planet. We will also have the chance to look at the crater caused by the collision, and study the ice and vapor that are released. In this way, we will also learn about the life secrets that lie deep within **the hole** of the comet. **(§1)**

When I describe the mission to people, I receive mixed reactions. **Some** feel that it is not really 'fine' to throw rockets at comets just to see what happens. They say that it is like greeting a stranger by shooting first and asking questions later. Aren't we going too far to satisfy our curiosity here? **(§2)**

Well, no. This explosion is not going to hurt anyone or anything. Here is an analogy. You would be justifiably angry if, in order to learn about shorelines, some scientist decided to dig up your favourite beach. But you wouldn't object if the scientist took a few grains of sand to study. There are approximately one trillion comets larger than 1 mile in diameter, in this solar system alone, and **many more** in the wider universe. So even if we destroyed the comet Tempel 1 entirely we would not be doing any harm to the cometary system. **(§3)**

In addition, this mission will not demolish the comet, alter its course, or affect the cosmos in any way. Comets collide with other celestial objects all the time. The only thing extraordinary about this particular impact is that we provoked it. 'Deep Impact' will simply make one more small hole in an object that, like all planets large and small, has been repeatedly hit by colliding debris since our solar system's origin, 4.6 billion years ago. **(§4)**

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It is the beginnings of the universe that this experiment can illuminate. Beneath the dirty ice crust of a comet like Tempel 1 is the material that has been frozen since the birth of our solar system. Inside this timeless frozen rock are organic molecules like those that made life possible on Earth. The study of that ice crust may help us explain the story of our origin. **(§5)**

As H.G. Wells once wrote, " There is no way back into the past. The choice is the universe- or nothing." It has been said that the dinosaurs disappeared because **they** couldn't go to another planet. Sooner or later a killer comet will again cross Earth's path, threatening all life. Fortunately, because we have knowledge about comets and space science, we will be able to survive. **(§6)**

(From ***International Herald Tribune***, Tuesday, July, 5, 2005, p.5)

1. Read the whole text again and answer the following questions.
   A. Why did the NASA fire an explosive barrel in the path of Tempel 1? Give one reason only.
   B. Did people approve of throwing rockets at comets?
   C. The author believes that the origin of life on Earth can be explained through a better knowledge of space. What paragraph indicates that?
   D. Why is space science vital for humanity according to the author? Explain by analogy with the fate of dinosaurs.

2. What do the words written in bold in the text refer to?
   A. Paragraph one
      … **the hole** ….. ⟶ ……..
   B. Paragraph two
      Some feel ….. ……..
   C. Paragraph three
      …. **many more** …… ……
   D. Paragraph six
      …. because **they** …. ……

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3. Match each of the following words or expressions with its appropriate explanation.

Words/ expressions	Explanations
1. crater	a. to have a bad effect on somebody or something
2. mixed	b. a hard layer of ice
3. hurt	c. a large hole in the ground caused by something hitting it.
4. demolish	d. of very different types
5. ice crust	e. destroy

After reading

- Read the coping box below and do the task that follows.

Coping

Argumentative texts defend implicitly or explicitly ideas, or points of view. They have **two functions:** a **polemical function** (dismissing someone else's point of view) and a **persuasive function** (changing someone else's point of view).

Argumentative texts resort to **three categories of reasoning** : **deductive** reasoning (drawing conclusions each time you say something), **concessive** reasoning (making concessions to other people's arguments, the better to criticize them) and **reasoning by analogy** (making your arguments more concrete by comparing situations).

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Task. On the basis of the information provided in the coping box, complete following table with sentences from the text to illustrate each category of reasoning.

Categories of reasoning	Sentences from the text
1. deductive	……
2. concessive	……
3. by analogy	……

WRITING

- Write a twenty-line newspaper article **refuting** the statement below. Use either **deductive** or **concessive** reasoning or both. Help yourself with the guidelines that follow and the useful language.

Statement

Some people think that the budget devoted to space exploration is wasted money.

1. Study the notes in the outline below. Flesh it out by adding details of your own. Then write a first draft.

Introduction

……

……

Body

❖ **Arguments against space exploration**

- Space exploration is a wild dream

- Huge amounts of money are gone into smoke
- This money is needed to relieve poverty in the Third World
- Medical research should be encouraged instead

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❖ **Arguments in favour of space exploration**

- Predicting earthquakes
- Satellite communication
- Weather forecasting
- Solving environmental problems
- Blood analysis

Conclusion

- The benefits of space exploration

Useful language

Expressions for making claims:

some people claim/assert/believe/state that ……

Adverbs, phrases and link words expressing concession:

Admittedly, certainly, though, although, in spite of the fact that, despite the fact that, it is true that, but …..

Link words for making deductions:

and so , thus, as a result, hence, then ……..

Expressions for putting forward a point of view:

I would argue that, I believe ……..

2.Correct your mistakes. Then write the final version of your article.

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READING AND WRITING

In this part you will :

- predict the content of a text
- identify the type of text and author's purpose
- make inferences
- distinguish between different types of reasoning in argumentative texts

and you will :

write an argumentative essay

- **Let's think about it**
- **Read and do**
- **After reading**
- **Writing**

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Let's think about it

- The paragraph below is taken from a lengthier text. Read it very quickly and answer questions 1 , 2 and 3 .

'DEEP IMPACT'

(by David Grinspoon)

On Sunday night, NASA fired a 3 -foot wide, 820-pound explosive barrel directly into the path of a 9 -mile long, potato-shaped comet called Tempel 1. The two successfully collided at 23,000 mph while a spaceship photographed the collision and sent the pictures home to us. Why?



1. What kind of source is it taken from? Circle the letter corresponding to the right answer and say why.

A. a science-fiction book B. a scientific report

C. a newspaper article D. a letter of complaint

2. What, do you think comes next in the text?

3. Where do you think the paragraph fits in the text? Is it at the beginning, in the middle, or at the end ? Why?

Read and do

- Read the text below to check the guesses and predictions you have made in answering questions 1-3 on the previous page.

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TEXT

So we can learn about the impact that a collision with comets might have on our planet. We will also have the chance to look at the crater caused by the collision, and study the ice and vapor that are released. In this way, we will also learn about the life secrets that lie deep within **the hole** of the comet. **(§1)**

When I describe the mission to people, I receive mixed reactions. **Some** feel that it is not really 'fine' to throw rockets at comets just to see what happens. They say that it is like greeting a stranger by shooting first and asking questions later. Aren't we going too far to satisfy our curiosity here? **(§2)**

Well, no. This explosion is not going to hurt anyone or anything. Here is an analogy. You would be justifiably angry if, in order to learn about shorelines, some scientist decided to dig up your favourite beach. But you wouldn't object if the scientist took a few grains of sand to study. There are approximately one trillion comets larger than 1 mile in diameter, in this solar system alone, and **many more** in the wider universe. So even if we destroyed the comet Tempel 1 entirely we would not be doing any harm to the cometary system. **(§3)**

In addition, this mission will not demolish the comet, alter its course, or affect the cosmos in any way. Comets collide with other celestial objects all the time. The only thing extraordinary about this particular impact is that we provoked it. 'Deep Impact' will simply make one more small hole in an object that, like all planets large and small, has been repeatedly hit by colliding debris since our solar system's origin, 4.6 billion years ago. **(§4)**

It is the beginnings of the universe that this experiment can illuminate. Beneath the dirty ice crust of a comet like Tempel 1 is the material that has been frozen since the birth of our solar system. Inside this timeless frozen rock are organic molecules like those that made life possible on Earth. The study of that ice crust may help us explain the story of our origin. **(§5)**

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As H.G. Wells once wrote, " There is no way back into the past. The choice is the universe- or nothing." It has been said that the dinosaurs disappeared because **they** couldn't go to another planet. Sooner or later a killer comet will again cross Earth's path, threatening all life. Fortunately, because we have knowledge about comets and space science, we will be able to survive. **(§6)**

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GRAMMAR REFERENCE SECTION

- What is it for?
- Stative verbs and action verbs
- Link words (discourse connectors)
- Comparatives of adjectives and adverbs
- Conditional type 2

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What is it for?

* When we describe the purpose of something, we use one of the following structures:

* **It's used for + verb + ing**
E.g. ***It's used for*** *cutting wood.*

* **It's used to + verb in the inf**
E.g. ***It's used to cut*** *wood.*

* Or simply **It's for + verb + ing**
E.g. ***It's for*** *cutting wood.*

* The question: **What is it (used) for?** - asks about the purpose of something. i.e. What **we use something for**.

E.g. A. *What's this machine (**used) for**?*
B. *It's **(used)** for cutting wood.*

* We can't use the preposition **to** with **used** when we ask a question about the purpose of something.

* Make sure you don't confuse **it is used to do something/ it is used for doing something** with the semi- modal **used to**. The former expresses purpose whereas the latter indicates a constant and frequent practice in the past.

E.g. *I **used to** dance when I was a child. (But now I no longer do it)*

* Finally make sure you don't confuse it is **used to do something** with **used to (doing) something**, which means **accustomed to**.

E.g. *I'**m used** to cutting wood. (= I'**m accustomed to** cutting wood)*

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Stative verbs and action verbs

Verbs in English can be divided into two main categories :

Action verbs

(Also called ***dynamic verbs***) describe events which happen in a limited period of time, and have a definite beginning and end. Action verbs have both simple and progressive forms.

Examples : * *I always listen to music.* (***Simple present tense***)
* *I'm listening to a record.* (***Simple progressive tense***)

Stative verbs

(Also called ***nonconclusive / state verbs) .****They describe* states which continue over a period of time and need not have a well-defined beginning and end. Stative verbs cannot usually have a progressive form (Or continuous form)

Example: *'I am knowing English' is incorrect because '**know**' describes a continuing state. Therefore, the correct formulation is 'I know English.*

Stative verbs fall into five main group

Verbs referring to **feelings :** like, love, hate, detest, etc.
* Verbs referring to **thinking/ believing**: think, understand, remember, know, etc.
* Verbs referring to **perception**: see, hear, smell, touch, taste, etc.
* Verbs referring to **wants**: want, prefer, etc.
* Verbs referring to **being/ having**: seem, own, belong, appear, possess, etc.

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Note:

* Some of the verbs above can be in the progressive when describing an action or a process.

Example: *I see (= understand) what you mean. (Not I am seeing ...)*

But you can say, '*I am seeing (= meeting) the headmaster tomorrow*.

* Verbs of perception are often preceded by the auxiliary **can**.

Example: *On a clear day, we **can** see Algiers from here*.

Link words (discourse connectors)

Whether you speak or write, you need to help people make sense of what you say by signaling to them how one idea leads on to another. The words and phrases which have this connecting function are called ***link words*** or ***discourse connectors***. They generally come at the beginning of a sentence. Among their functions are :

Comparing:

In comparison with, like, likewise, similarly, compared with, both...and... , *neither*... nor... etc.

Example: *The doctor advised him to stop smoking. **Similarly**, he recommended him to eat much less and to take plenty of exercise.*

Contrasting:

But, however, and yet, while, whereas, conversely, on the one hand, on the other hand express contrast.

Example: *Living in the country is quite healthy; **and yet** it can be rather boring at times.*

Comparatives of adjectives and adverbs

I- Comparatives of equality

A. Comparative of **positive equality*:***

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as+ short or long adjective/adverb + as

- My house is **as big as** yours.
- This exercise is **as difficult as** the one we did yesterday.

B. Comparative of negative equality

not as + short or long adjective /adverb+ as

- The Thames is **not as long as** the Nile.
- Travelling by train is **not as expensive as** travelling by plane.

II- Comparatives of superiority

Adjective /adverb+ er + than

A. We use in the following cases :

- with adjectives/adverbs of one syllable
  - It is **hotter** in the Sahara desert **than** in the Gobi desert.
- With adjectives ending in **–y** , -**w** , or **–le**
  - My satchel is **heavier than** yours.
  - This street is **narrower than** the one over there.
  - Your teacher is **gentler than** mine.

Note:

a. In adjectives with one syllable ending with a **vowel+ consonant** (big, hot) we **double the consonant**
(big**ger** , hot**ter**)

b. We add **– er** to **adjectives ending in w and y,** even if they have **more than one syllable.**

c. In **adjectives ending in - y ,** we transform **-y into -i**

d. With **adjectives ending in –le** we can **use** either **more + adjective+ than** or **adjective+er + than**

B. We use **More + adjective /Adverb + than** with

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Adjectives/adverbs which have more than **2 syllables**.

- A meal in a restaurant is **more expensive than** a sandwich.
- She drives **more carefully** than I do

III- Comparatives of inferiority

- We use **less+ short or long adjective/ adverb + than**
  - A sandwich is **less expensive than** a meal in a restaurant.
  - It is **less hot** in the Gobi desert **than** in the Sahara desert.

Conditional type 2

Form

If + …… past simple ……. , …….+ **would** (or **'d**)

a. If I **were** you**,** I **would** apologize

b. If the Martians invaded our planet one day**,** they**'d** kill us all.

Meaning :

We use the second conditional to talk about the present, and to imagine something totally different from the real situation now or in the future.

In sentence **a**, the speaker is just imagining himself/herself that he is me. But he can't really be me.

In sentence **b,** the speaking is just imagining that one day the Martians will invade our planet. But we know well that Martians do not exist.

Note:

You can use **were** for all forms of **be** in the if -clause of the second conditional.

Example: If Karim was/**were** rich**,** he would travel to Australia.

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LISTENING

SCRIPTS

- **Script 1 : Listen and consider**
- **Script 2 : Listening**

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Unit 3, Script 1 : Listen and consider

PART 1

Have you ever wondered how more than one billion people, in more than one hundred countries, can all watch the World Cup at the same time?

Well, it's done by telecommunication satellites. Dozens of them are hovering above the equator all the time.

Together they make a telephone and TV link-up which covers the whole world. They are part of the International Satellite Telecommunication Organisation - Intelsat. This organisation tells all member countries what's going on in space, and decides how new satellites should be used.

Now, how does this system work? Do the satellites just wait for big news like a World Cup match to happen? No, they don't. This is how it works: first, a radio or TV company transmits signals from the place where the news is happening- a World Cup stadium for example-by ordinary telephone. These signals go to an earth station. An earth station is a radio station which sends signals to, and receives signals from satellites in space. Once this earth station has received the World cup information, it sends it to one of the satellites hovering above the Earth. This satellite sends the signals back to other earth stations in different parts of the world. They change the signals, make them more powerful, and send them by phone to the local broadcasting stations in each country. They are then transmitted to the homes of millions of viewers.

PART 2

Apart from sending pictures, what are satellites used for? Well, satellites are used for sending computer data and helping ships find their way. They are also used to survey the earth, to make weather forecasts. Satellites can carry telescopes like the Hubble Space Telescope, which was put in orbit at an altitude of 610 km. This telescope is roughly

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cylindrical in shape. It is 13 m long and 4m in diameter. It is very heavy. It weighs more than 11 tons. By having a large telescope above Earth's atmosphere, astronomers are able to look at the universe with more clarity than ever before.

(From ***Modern English International*** p.32)

Unit 3, Script 2 : Listening

Radio host : The questions that we will try to answer in our programme this afternoon are : are we, human beings, alone in the universe? Or are there any other intelligent beings in it ?And if so, how do we get in touch with them ?Our guest today is Mr. Graham Henshaw who is a radio astronomer working at the SETI laboratory. First of all, Mr Hensaw, would you like to tell our listeners what SETI is?

Mr Henshaw : Certainly. The letters S-E-T and I stand for Search for Extra-Terrestrial Intelligence. What we do in our laboratory is try to detect and keep track of any signal or message that might come from outer space.

Radio host : Thank you. Now Mr Henshaw, could there really be a race of intelligent beings somewhere out there I the vastness of space … beyond the solar system, perhaps even beyond the milky way?

Mr Henshaw :I suppose there could be. You know, for many centuries we were ignorant of what we call the New World today. So why not believe that there might be another race of intelligent beings out there?

Radio host : I see. And could other species of beings be sking the same questions that we are asking in this programme? I mean, could they also wonder whether they are alone or not? Perhaps they suspect we exist. So could they be trying to contact us?

Mr Henshaw : We hope so. Actually, we at the S.E.T.I are listening for that kind of message with ultra-sensitive receivers linked with radio telescopes.

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Radio host : Does the idea of an extra-terrestrial message make you think of space invaders, flying saucers and little green men?

Mr Henshaw : Not at all. The S.E.T.I's scientists are determines to distance themselves from science fiction and fantasy. Ours is a serious and sophisticated project, in what we believe is a legitimate field of research. So should a signal come from some intelligent species, we would want o be ready to respond adequately.

Radio host : Supposing extra-terrestrials came into contact with us, would that change anything for us here on earth?

Mr Henshaw : Oh, the implications would be tremendous. That would shed light on the origin, the nature and the future of the universe as a whole.

(Adapted from ***The Good News***)

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KEY TO

ACTIVITIES

- LISTEN AND CONSIDER
- READ AND CONSIDER
- LISTENING
- READING AND WRITING

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UNIT 3: ASTRONOMY AND THE SOLAR SYSTEM

LISTEN AND CONSIDER

Let's talk about it

1. Pictures 1&2 represent satellites(a natural satellite and an artificial satellite)
2. Space satellites are used for various purposes: observing distant planets, tele-communications, navigation, weather forecast ,monitoring water and atmospheric pollution, warning for natural disasters, and military services.

Listen and do

1. 1/C- 2/E-3/B- 4/A- 5/F-6/D
2. A- It is 610 km away from the Earth.
   B- It is cylindrical in shape.
   C- It is 13m long.
   D- It weighs 11tons.

A/ GRAMMAR

Describing the function of objects: used for/used to

A- For

B- The form of the verbs which follows *used for* is the ING form and *used to* is followed by the infinitive form.

C- Used to+ verb in the infinitive
Used for+ verb +ing

Task 1

a. Transforming- to launch
b. Conduct- study
c. Capturing

Task 2

1/ B- 2/C- 3/D-4/A- 5/F- 6/E

Task 3 : A suggested paragraph

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A telescope is an optical instrument which magnifies pictures of faint and distant objects. It is cylindrical in shape and consists of a case, an eyepiece lens and object lens. A telescope is made of metal and glass and it is used for observing stars.

Asking questions about measurement

1/ A- How

B- It is cylindrical in shape. (before a preposition phrase)

- It is 13 m long.(after a noun /measurement)

2/

How……is it	What…….is it

A. How far is the Moon from the Earth?

B. How fast does a shuttle travel?

C. How long does it take the Hubble Telescope to make one revolution round our planet?

D. What is the weight of the Hubble telescope?

B/VOCABULARY

Task 1. 1/B- 2/A- 3/C-4/E- 5/D

C/ PRONOUCIATION

/ S/ - knots / Z/ kilometers- meters- liters- centiliters / IZ/ inches

READ AND CONSIDER

Let's talk about it

1. Astronomy is a science whereas astrology is a pseudo-science. The former(astronomy) studies the sun, the moon, stars and planets to get information about them whereas the latter(astrology) observes them with the belief that their positions will tell about man's destiny.

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2. There are nine planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune and Pluto .According to experts ,Pluto is no longer considered a planet but just a member of an asteroid belt beyond Neptune along with 12 newly discovered mini-worlds.
3. A moon is an earth satellite. I t orbits the Earth
   A planet orbits the Sun

Read and do

A/ GRAMMAR

Comparative of adjectives and adverbs

- Comparatives of superiority

- They are far **more remote** from us **than** any other heavenly bodies.
- **More distant** planets have **larger** orbits.

Comparatives of equality

- You would see the Earth **as** a tiny ball moving in a wide path around a star that you might recognize **as** our sun

- Comparatives of inferiority

- Moving around some of the planets are **smaller** balls……
- You might also catch a glimpse of swarms of even **smaller** particles…..
- Their light is **less** intense **than** that of the sun.
  Comparatives of adverbs
- More distant planets have larger orbits and travel far **more slowly**
- More distant planets have larger orbits and don't travel **as quickly as** the ones which are close to the sun.

2- Complete the table to get the rule

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comparatives	Adjectives/ adverbs
superiority	Short adj/adv+er+than Long more+adj/adv+than
equality	As+ adj/adv+as
inferiority	Less + adj/adv+than

Task: There are many possible answers

A. Mercury is closer to our Sun than Venus, Earth and Neptune.
B. Neptune has a larger diameter than Mercury, Venus and Earth.
C. Neptune rotates on its axis faster than Earth does.
D. Mercury and Venus complete one revolution around the sun more quickly than Earth .

Expressing comparison and contrast

1-

Comprison/ contrast	sentences
similarities	**Like** other stars, the Sun is an incandescent body made up of highly compressed gases.
differences	The planets of the solar system are **different from** the distant stars

2- b

Link words	similarity	difference
While		x
Similarly	X	
Unlike		x
But		x
Just as	X	
Like	x	
On the contrary		x
Similar to	x	
Whereas		x

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Both	x	
Neither….nor	x	

Task

1. Unlike Uranus, which takes 84 years to complete one revolution around the Sun, Neptune makes it in 164.8years..
2. Like Mercury, Venus has no moon or natural satellite/ Neither Mercury nor Venus has a moon or natural satellite.
3. Just as Earth takes one day or 24 hours to rotate on its axis so does Mars.

Or Time taken by Earth to rotate on its axis is similar to that of Mars.

4 .Mercury, Venus, Earth and Mars are mostly composed of rock and metal whereas/ while/on the contrary Saturn, Uranus and Neptune are formed by mostly gaseous material.

Making hypothesis: if conditional type 2

Sentences which contain *if* and *suppose*

If you **were** out in space, billions of miles away from our planets, you **would see** the Earth as tiny ball moving in a wide path around a star that you might recognize as our sun.

Suppose you were still in space and that you **were looking** at the space between the orbits of planets Mars and Jupiter, what **would** you **see?**

1- The sentences express **an unreal or imaginary situation**

2-

CONDITION	RESULT
Past simple	Would + stem

Task

A- If the earth **stopped** orbiting the sun, the northern hemisphere **would keep** getting hotter and hotter, while the southern hemisphere **would be** colder and colder.

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B- If Earth **ceased** rotating about its axis but continued revolving around the sun, the length of a year **would remain** the same, but a day **would last** as long as a year.

C- What **would happen** to us if a large asteroid **smashed** into the Earth?

D- If the sun **stooped** shinning, we **would need** heavy coats and flashlights.We **would see** the stars 24 hours a day, but we **would** never **know** when one day became the next day. And we **would** never **see** the Moon.

Sative verbs and action verbs

A- Verbs describe an action: travels- shine- give off

B- Dynamic/ action verbs

C- Verbs describe a state: know- are- see

See grammar reference page.36 and answer the questions given.

Task

A. " I used to hate astronomy, but I love it now. Do you know why?"

B. " No, actually, I don't"

A. Well, because I understand now what astronomy really is."

B. " Sorry, I don't understand what you mean."

A. " Well, I mean that astronomy can help us understand the mysteries of the universe."

B. " Oh, I see that you have a telescope in your room.I suppose that you bought it yourself."

A. Actually, I didn't buy it. You know, it used to belong to my grandfather, but it belongs to me. I still remember the day when he gave it to me.

B/ Vocabulary

Task 1- A- tiny- B- recognize- C- streaming- D- catch a glimpse- E- radiating- F- twinkling- G- give off- H- huge- I- speeding.

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Task 2- astrologist- astronomer- astrophysicist- observers- scientist- psychologist.

C/ Spelling

Rule1- Eggs- tables- cameras

Rule 2 Negroes- potatoes- tomatoes- boxes- matches- kisses- brushes

Rule 3 Woman/women-bacterium/bacteria- criterium/ criteria

Rule 4 Knife/knives- half /halves-wife/wives

Rule 5 Roof/roofs- belief/beliefs-proof/proofs

Task 2

Theories- categories- theses- men- women- beliefs- men- women- facts- origins- hypotheses.

LISTENING

Listen and do

2- 1.c 2.b 3.d 4.a

After listening

Task: A."I guess/ suppose so"

B."I don't believe/think so."

C."I suppose/guess so."

D."I don't think/believe so."

E."I hope/guess so."

READING AND WRITING

Let's think about it

1.→C

2. An answer.

3.The beginning because "Why" indicates that a rhetorical question is asked and we expect that the answer will come next.

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Read and do

1A: In order to learn about the impact that a collision with comets might have on our planet/…in order to learn about the life secrets that lie within the hole of the comet.

B: There were mixed reactions .Some approved while others didn't.

C: §5

D: Dinosaurs would not have disappeared if they had known how to divert the course of comets The space programme is vital because it can help avoid the kind of collision that caused the disappearance of dinosaurs.

2. A: the crater B: people C : comets D: the dinosaurs

3. 1.c 2.d 3.a 4.e 5.b

After Reading

Task:

Categories of reasoning	Sentences from the text
1.deductive	So we can learn about the impact that that collision with comets might have on our planet.
2.concessive	Aren't we going to far to satisfy our curiosity here? Well , no.
3.by analogy	Here is an analogy. You would be justifiably angry if in order to learn about shorelines, some scientist decided to dig tour favourite beach.

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KEY TO ACTIVITIES

- LISTEN AND CONSIDER
- READ AND CONSIDER
- LISTENING
- READING AND WRITING

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UNIT 3: ASTRONOMY AND THE SOLAR SYSTEM

LISTEN AND CONSIDER

- **Let's talk about it**

1. Pictures 1&2 represent satellites(a natural satellite and an artificial satellite)
2. Space satellites are used for various purposes: observing distant planets, tele-communications, navigation, weather forecast ,monitoring water and atmospheric pollution, warning for natural disasters, and military services.

- **Listen and do**

1. 1/C- 2/E-3/B- 4/A- 5/F-6/D
2. A- It is 610 km away from the Earth.
   B- It is cylindrical in shape.
   C- It is 13m long.
   D- It weighs 11tons.

A/ GRAMMAR

Describing the function of objects: used for/used to

A- For

B- The form of the verbs which follows *used for* is the ING form and *used to* is followed by the infinitive form.

C- Used to+ verb in the infinitive
Used for+ verb +ing

Task 1

a. Transforming- to launch
b. Conduct- study
c. Capturing

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Task 2

1/ B- 2/C- 3/D-4/A- 5/F- 6/E

Task 3 : A suggested paragraph

A telescope is an optical instrument which magnifies pictures of faint and distant objects. It is cylindrical in shape and consists of a case, an eyepiece lens and object lens. A telescope is made of metal and glass and it is used for observing stars.

Asking questions about measurement

1/ A- How

B- It is cylindrical in shape. (before a preposition phrase)

- It is 13 m long.(after a noun /measurement)

2/

How……is it	What…….is it

A. How far is the Moon from the Earth?

B. How fast does a shuttle travel?

C. How long does it take the Hubble Telescope to make one revolution round our planet?

D. What is the weight of the Hubble telescope?

B/ VOCABULARY

Task 1. 1/B- 2/A- 3/C-4/E- 5/D

C/ PRONOUCIATION

/ S/ - knots / Z/ kilometers- meters- liters- centiliters / IZ/ inches

READ AND CONSIDER

Let's talk about it

1. Astronomy is a science whereas astrology is a pseudo-science. The former(astronomy) studies the sun, the moon, stars and

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planets to get information about them whereas the latter(astrology) observes them with the belief that their positions will tell about man's destiny.

2. There are nine planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune and Pluto .According to experts ,Pluto is no longer considered a planet but just a member of an asteroid belt beyond Neptune along with 12 newly discovered mini-worlds.
3. A moon is an earth satellite. I t orbits the Earth
   A planet orbits the Sun

- **Read and do**

A/ GRAMMAR

Comparative of adjectives and adverbs

- Comparatives of superiority

  - They are far **more remote** from us **than** any other heavenly bodies.
  - **More distant** planets have **larger** orbits.

Comparatives of equality

- You would see the Earth **as** a tiny ball moving in a wide path around a star that you might recognize **as** our sun

- Comparatives of inferiority

- Moving around some of the planets are **smaller** balls……
- You might also catch a glimpse of swarms of even **smaller** particles…..
- Their light is **less** intense **than** that of the sun.

Comparatives of adverbs

- More distant planets have larger orbits and travel far **more slowly**
- More distant planets have larger orbits and don't travel **as quickly as** the ones which are close to the sun.

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2- Complete the table to get the rule

comparatives	Adjectives/ adverbs
superiority	Short adj/adv+er+than Long more+adj/adv+than
equality	As+ adj/adv+as
inferiority	Less + adj/adv+than

Task: There are many possible answers

A. Mercury is closer to our Sun than Venus, Earth and Neptune.
B. Neptune has a larger diameter than Mercury, Venus and Earth.
C. Neptune rotates on its axis faster than Earth does.
D. Mercury and Venus complete one revolution around the sun more quickly than Earth .

Expressing comparison and contrast

1-

Comprison/ contrast	sentences
similarities	**Like** other stars, the Sun is an incandescent body made up of highly compressed gases.
differences	The planets of the solar system are **different from** the distant stars

2- b

Link words	similarity	difference
While		x
Similarly	X	
Unlike		x
But		x
Just as	X	
Like	x	
On the contrary		x

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Similar to	x	
Whereas		x
Both	x	
Neither….nor	x	

Task

1. Unlike Uranus, which takes 84 years to complete one revolution around the Sun, Neptune makes it in 164.8years..
2. Like Mercury, Venus has no moon or natural satellite/ Neither Mercury nor Venus has a moon or natural satellite.
3. Just as Earth takes one day or 24 hours to rotate on its axis so does Mars.

Or Time taken by Earth to rotate on its axis is similar to that of Mars.

4 .Mercury, Venus, Earth and Mars are mostly composed of rock and metal whereas/ while/on the contrary Saturn, Uranus and Neptune are formed by mostly gaseous material.

Making hypothesis: if conditional type 2

Sentences which contain *if* and *suppose*

If you **were** out in space, billions of miles away from our planets, you **would see** the Earth as tiny ball moving in a wide path around a star that you might recognize as our sun.

Suppose you were still in space and that you **were looking** at the space between the orbits of planets Mars and Jupiter, what **would** you **see?**

1- The sentences express **an unreal or imaginary situation**

2-

CONDITION	RESULT
Past simple	Would + stem

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