

iii) Comparativos Irregulares

Los siguientes adverbios forman su comparativo en forma irregular:

well	→ better	far	→ farther/further
badly	→ worse	little	→ less

Al comparar tres o más cosas empleamos el grado superlativo, el cual se construye de la siguiente forma:

i) Adverbios de Una Sílaba

THE + ADVERBIO + "EST"

fast	→ fastest
hard	→ hardest

ii) Adverbios de Dos o Más Sílabas

THE + MOST + ADVERBIO

slowly	→ most slowly	quickly	→ most quickly
carefully	→ most carefully		

iii) Superlativos Irregulares

Los siguientes adverbios forman su superlativo en forma irregular:

well	→ best	far	→ farthest/furthest
badly	→ worst	little	→ least



George Boole, (born November 2, 1815, Lincoln, Lincolnshire, England—died December 8, 1864, Ballintemple, County Cork, Ireland), English mathematician who helped establish modern symbolic logic and whose algebra of logic, now called Boolean algebra, is basic to the design of digital computer circuits.

Boole submitted a stream of original papers to the new Cambridge Mathematical Journal, beginning in 1839 with his "Researches on the Theory of Analytical Transformations." These papers were on differential equations and the algebraic problem of linear transformation, emphasizing the concept of invariance. In 1844, in an important paper in the Philosophical Transactions of the Royal Society he discussed how methods of algebra and calculus might be combined. Boole soon saw that his algebra could also be applied in logic.

In 1857 Boole was elected a fellow of the Royal Society. The influential Treatise on Differential Equations appeared in 1859 and was followed the next year by its sequel, Treatise on the Calculus of Finite Differences. Used as textbooks for many years, these works embody an elaboration of Boole's more important discoveries. Boole's abstruse reasoning has led to applications of which he never dreamed: for example, telephone switching and electronic computers use binary digits and logical elements that rely on Boolean logic for their design and operation.

UNIDAD 8**CASO POSESIVO (GENITIVO)**

Para indicar posesión para personas o animales, y en expresiones de tiempo, empleamos el caso genitivo, el cual se materializa por medio de ['s] y equivale a las relaciones de posesión que en castellano vienen indicadas con la preposición "de". En el lenguaje científico se lo emplea generalmente para denotar a los autores de reglas, leyes, teoremas, etc. En forma empírica, entonces:

[A]'s [B]	→	[B] de [A]
the worker's force Young's modulus	→	La fuerza del operario Módulo de Young (En castellano)

Ejemplos:

- Michelson's interferometer → _____
A student's personal use → _____
The instructor's solutions manual → _____
Maxwell's Equations → _____
Heisenberg's uncertainty principle → _____
a skilled player's ability → _____
Einstein's special theory of relativity → _____
the passenger's weight → _____
Hooke's law → _____

En los demás casos (objetos inanimados) empleamos la preposición [of].

Ejemplos:

- the displacement of the object → _____
the positive direction of the x axis → _____
the slope of the straight line → _____
the calculation of the average velocity → _____
the vertical velocity of the object → _____
the projection of the vector → _____

UNIDAD 9**SINÓNIMOS Y ANTÓNIMOS**

Los sinónimos son palabras que tienen significados equivalentes o muy similares, y además pertenecen a la misma categoría gramatical. En consecuencia, es posible substituirlos o permutarlos en un texto sin que se altere su sentido.

La contraparte del sinónimo es el antónimo, es decir, un vocablo que expresa ideas opuestas o contrarias.

EJERCICIOS DE APLICACIÓN**9-1 INDIQUE LA PALABRA O FRASE CUYO SIGNIFICADO SEA EQUIVALENTE AL DE LA PALABRA SUBRAYADA.**

1. It is not hard to see the cause due to which the characteristic x-ray spectrum shows such impressive regularities from element to element whereas the optical spectrum in the visible and near-visible region does not.

a) because of which	c) the purpose
b) because	d) why
2. To assert that different constructions lead to the same straight line is to accept without proof that which we set out to prove.

a) agree	c) assume
b) accept with proof	d) not accept
3. Although many of the next steps can be bypassed with a vector-capable calculator, you will learn more about scalar products if, at least here, you use these steps.

a) after	c) following
b) trailing	d) pursuing
4. This particular coefficient matrix is nonsingular and the system is guaranteed to have a solution. So, no matter which vector we might have chosen for z, we would have been certain to discover that it was an element of (R).

a) some	c) any
b) many	d) none
5. With data given in two significant figures, your final answer should have only two significant figures. Nevertheless, depending on the mode setting of your calculator, many more digits might be displayed.

a) anyhow	c) whoever
b) whatever	d) however
6. We have great freedom in choosing a coordinate system since the relations among vectors do not depend on the location of the origin.

a) however	c) due to
b) because	d) so

7. On a graph of x versus t , the average velocity for a time interval Δt is the slope of the straight line connecting the points on the curve that represent both ends of the interval.
- the second
 - the two
 - a couple of
 - twice
8. Often, adjustable parameters allow the user to change a property of the system and to see the effects of that change on the subsequent behavior
- make
 - become
 - transform
 - turn
9. The displacement function and the pressure-variation function of a traveling sound wave are made up of an amplitude and an oscillating term.
- include
 - provide for
 - reside in
 - are made up
10. We can increase the amount of information obtainable from the nuclidic chart of Fig. 42-5 by including a third axis showing the mass excess Δ expressed in the unit MeV/c^2 .
- comparable
 - available
 - usable
 - accessible
11. The charge of a single electron and that of a single proton have the same magnitude but are opposite in sign. Therefore, an electrically neutral atom contains equal numbers of electrons and protons.
- nonetheless
 - indeed
 - hence
 - neither
12. The pressure provided between the workpieces by means of cylinders 63 through rods 64 affords the necessary force to weld the heated workpieces.
- takes
 - makes
 - provides
 - proceeds

9-2 EMPLEE EL DICCIONARIO Y COMPLETE LA SIGUIENTE TABLA.

- | | | | | |
|----------|--------------|------------|-------------|-----------------|
| • RISE | • MATCH | • GO AWAY | • EXACTLY | • BRIGHTEN |
| • REMAIN | • LAG BEHIND | • FOCUS ON | • DARKEN | • APPROXIMATELY |
| • PLUNGE | • IGNORE | • FINALIZE | • CONFIGURE | |

<u>PALABRA</u>	<u>SINÓNIMO</u>	<u>ANTÓNIMO</u>
ABOUT		
BLACK OUT		
DEAL WITH		
GO DOWN		
KEEP UP WITH		
MOVE OFF		
SET UP		

9-3 SEÑALAR LOS SINÓNIMOS Y LOS ANTÓNIMOS**INTEGERS**

- [1] An analog-to-digital converter (ADC) converts a continuous analog input signal (e.g. voice from a microphone or measurement values from a sensor) into discrete digital values. There are two main characteristics that are important: 1
2
3
- [2] The vertical resolution is given by the so-called bit width of the converter: e.g. a 4-bit ADC divides the input signal range into $2^4 = 16$ digital values. As of today, common bit widths are in the range of 18 to 24. Hence, the smallest representable value is way smaller than the interfering signals that are normally present, as for example, signal noise. 4
5
6
7
8
- [3] The sampling rate, sometimes also called sampling frequency, equals the time between two samples and is thus the horizontal resolution on the time axis. The more values per time unit the analog-to-digital converter captures (usually stated as samples per second Sps) the faster signals can be recorded. But this implies that more values are to be stored; this again increases the memory requirement. As a conclusion: the sampling rate must be chosen carefully. Common sampling rates are in the range of just a few samples per second (e.g. for temperatures) up to several million samples per second for very dynamic signals (e.g. from explosions). 9
10
11
12
13
14
15
16

Consultar el texto y encontrar sinónimos de las siguientes palabras:

- | | | |
|-------------------|---------|-------|
| 1. specified | (r. 4) | _____ |
| 2. as a result | (r. 6) | _____ |
| 3. referred to as | (r. 9) | _____ |
| 4. specification | (r. 13) | _____ |
| 5. ordinary | (r. 14) | _____ |

Consultar el texto y encontrar antónimos de las siguientes palabras:

- | | | |
|--------------|---------|-------|
| 1. maintains | (r. 1) | _____ |
| 2. unknown | (r. 4) | _____ |
| 3. maximal | (r. 6) | _____ |
| 4. frees | (r. 11) | _____ |
| 5. several | (r. 15) | _____ |

UNIDAD 10**HIPERONIMIA E HIPONIMIA**

Se llama hiperónimos a los términos genéricos e hipónimos a los términos individualizadores.

10.1 SELECCIONAR EL HIPERÓNIMO DE CADA GRUPO.

- | | | |
|---|---|--|
| <u> </u> 1. (A) gold
(B) metal
(C) iron –
(D) copper | <u> </u> 2. (A) orange
(B) lemon
(C) grapefruit
(D) citrus | <u> </u> 3. (A) meat
(B) cereals
(C) food
(D) bread |
| <u> </u> 4. (A) tool
(B) saw
(C) scissors
(D) axe | <u> </u> 5. (A) summer
(B) spring
(C) season
(D) autumn | <u> </u> 6. (A) drama
(B) genre
(C) fiction
(D) poetry |
| <u> </u> 7. (A) Catholicism
(B) Judaism
(C) Buddhism
(D) Religion | <u> </u> 8. (A) green
(B) aquamarine
(C) jade
(D) verdigris | <u> </u> 9. (A) air conditioner
(B) refrigerator
(C) freezer
(D) appliance |
| <u> </u> 10.(A) kerosene
(B) gasoline
(C) fuel
(D) biodiesel | <u> </u> 11.(A) Art
(B) Subject
(C) Geography
(D) Math | <u> </u> 12.(A) period
(B) century
(C) decade
(D) year |
| <u> </u> 13.(A) organ
(B) liver
(C) bladder
(D) kidney | <u> </u> 14.(A) peony
(B) daisy
(C) flower
(D) tulip | <u> </u> 15.(A) frog
(B) amphibian
(C) toad
(D) salamander |

10.2 SELECCIONAR EL HIPERÓNIMO DE CADA GRUPO.

- ____ 1. (A) cerium ____ 2. (A) tyrannosaurus ____ 3. (A) cut
(B) neodymium (B) dinosaur (B) slice
(C) lutetium (C) velociraptor (C) dice
(D) lanthanide (D) triceratops (D) mince
- ____ 4. (A) bed ____ 5. (A) insect ____ 6. (A) fighter
(B) desk (B) ant (B) bomber
(C) furniture (C) beetle (C) transport
(D) table (D) butterfly (D) aircraft
- ____ 7. (A) methadone ____ 8. (A) noun ____ 9. (A) Economics
(B) drug (B) verb (B) Discipline
(C) ibuprofen (C) word class (C) Psychology
(D) tramadol (D) adjective (D) Anthropology
- ____ 10. (A) chemical ____ 11.(A) scooter ____ 12.(A) multigrain
(B) methylamine (B) station wagon (B) baguette
(C) toluene (C) van (C) bread
(D) acetone (D) vehicle (D) sourdough
- ____ 13. (A) crocodile ____ 14.(A) apple ____ 15.(A) fish
(B) snake (B) pear (B) vertebrate
(C) lizard (C) fruit (C) bird
(D) reptile (D) strawberry (D) mammal
- ____ 16. (A) drink ____ 17.(A) knitting ____ 18.(A) chair
(B) wine (B) sewing (B) hamburger
(C) coffee (C) carpentry (C) microscope
(D) lemonade (D) hobby (D) noun

UNIDAD 11**ADJETIVOS PARTICIPIALES**

En la gramática inglesa, *adjetivo participial* es un término tradicional para denotar a un adjetivo que tiene la misma forma que un participio (es decir la forma verbal que termina en *-ing* o *-ed/-en*) y que habitualmente muestra las propiedades comunes de un adjetivo. También se lo conoce como *adjetivo verbal* o *adjetivo deverbal*.

El significado de los adjetivos participiales depende del participio del cual se originan. Los adjetivos terminados en *-ing* (*interesting, increasing, limiting*) tienen un significado activo mientras que los adjetivos terminados en *-ed* (*interested, increased, limited*) tiene un significado completo o pasivo. Esto quiere decir que el adjetivo originado en el V_{ING} provoca el estado descripto por el adjetivo originado en el V_{PARTICIPIO}. Veamos algunos ejemplos:

V _{ING}	V _{PARTICIPIO}	V _{ING}	V _{PARTICIPIO}
blocking	→ blocked	increasing	→ increased
charging	→ charged	interesting	→ interested
limiting	→ limited	manufacturing	→ manufactured
multiplying	→ multiplied	shorting	→ shorted

EJERCICIO DE APLICACIÓN**11.1 COMPLETE LOS ESPACIOS CON EL ADJETIVO DEVERBAL CORRECTO.**

- Hooke's law—the proportionality of stress and strain in elastic deformations—has a _____ range of validity. (limiting/limited)
- The _____ devices share data caches that store frequently transmitted data. (optimizing/optimized)
- The instantaneous velocity vector is usually more _____ and useful than the average velocity vector. (interesting/interested)
- The laws of Newtonian mechanics are a _____ case of relativistic mechanics. (limiting/limited)
- The operation principle of the _____ rectifier is explained with an example of three sources. (optimizing/optimized)
- We will usually be _____ in the instantaneous acceleration, not the average acceleration. (interesting/interested)

UNIDAD 12

USO DEL DICCIONARIO

El diccionario recopila en orden alfabético las palabras de una lengua y explica sus distintos significados. Los diferentes significados de cada palabra se denominan *acepciones*. El diccionario permite consultar el significado de una palabra, su ortografía y su pronunciación. Asimismo, aporta información sobre la etimología y la categoría gramatical. Es en este último punto donde se presenta la mayor dificultad ya que (como en todos los idiomas) muchas palabras del Inglés pueden pertenecer a más de una categoría gramatical mientras que otras pertenecen solamente a una de ellas. En consecuencia, es de capital importancia determinar la categoría de la palabra antes de buscar su significado en el diccionario.

BÚSQUEDA DE PALABRAS

Al abrir un diccionario en cualquiera de sus páginas, se observa que en la parte superior hay escrita una palabra: la de la página izquierda corresponde a la primera palabra que aparece en las páginas que hemos abierto y la de la derecha a la última. Se las denomina *palabras guía* porque nos ayudan a realizar búsquedas rápidas. Así accedemos rápidamente a la página en la cual está la palabra que buscamos si sus letras se ubican en el alfabeto entre ellas.

Primera palabra que aparece en ambas páginas

Última palabra que aparece en ambas páginas

<p>meatball /mɪ:t'bul/ adj <i>loosely</i> meatball /mɪ:t'bul/ verb 1. to attack or handle roughly. <i>He was badly mauled by the tiger.</i> 2. to criticize someone severely. <i>The minister was mauled by the tabloid press.</i> (NOTE: Do not confuse with <i>mall</i>.)</p> <p>meatcureum /mɛ:t'kju:rəm/ noun a special building in which an important person is buried. <i>Sydney Meatcureum</i></p> <p>meatiness /mɛ:t'ɪnɪs/ adj light pinkish-purple. <i>The winter wear means there's a mix of light pinkish-purple colour.</i> She had the dining room walls painted in <i>meatiness</i>.</p> <p>meatvark /'me:t'vɑ:k/ noun a person who is unusual and does not fit into a normal pattern. <i>She's a political meatvark.</i> It adj unusual; odd. <i>meatiness</i> means <i>unusual patterns</i>. <i>He is well-known for his meatvark behaviour.</i></p> <p>max /mæks/ verb maximum</p> <p>maxim /mæks'ɪm/ noun a wise saying</p> <p>maximize /mæks'maɪz/ verb to make something as large as possible. <i>An essay's maximise</i></p> <p>maximum /mæks'maɪmə/ adj the greatest possible. <i>That is the maximum number of guests the hotel can take at the same time.</i> verb to increase to the maximum. <i>Measures are being taken to increase profitability at the maximum.</i> <i>It's at the maximum at noon fifteen, not more than fifteen.</i></p> <p>max/may/mayd /mæks/ verb it is possible if you don't hurry, you may miss the train. <i>I take your word for it, they say the train's late.</i> <i>It's max/may/mayd for me to get to work and my flight's waiting for me outside.</i> 2. can, it is allowed. <i>Guests may park in the hotel car park free of charge.</i> <i>You may sit down if you want.</i> 3. asking questions politely. <i>May I ask you a question?</i> 4. maybe we have breakfast early to maximize our time in London.</p> <p>maximize /mæks'maɪz/ verb a verb used by people holding certain positions. <i>In other words: the Mayor of Berlin; the Mayor of Paris; the Mayor of New York.</i></p> <p>mayoress /me'ɔ:s/ noun 1. the wife of a mayor. <i>The mayor and mayoress ride to the town hall in a horse-drawn carriage.</i> 2. a woman who is married to a mayor. <i>Everyone was surprised when the mayoress opened the hotel's front door.</i></p> <p>mayo /mæj'o/ noun 1. a corkscrew of pulsating pads in which you can get lost. <i>It's hard to find our way out of the Hampton Court maze.</i> 2. can, it is allowed. <i>He led me along a maze of corridors.</i> 3. a complicated network of things. <i>We have to go through a maze to find our way through the city.</i> <i>Europe's mazes</i> (NOTE: Do not confuse with <i>maize</i>.)</p> <p>MB abbrev <i>mba</i></p> <p>MB abbrev <i>Master of Business Administration</i></p> <p>MC abbrev <i>master of ceremonies</i></p> <p>MD /mæd/ noun a director who is in charge of a whole company. Full form <i>chief executive officer</i></p> <p>me /mi:/ pron used by the person who is speaking to talk about himself or herself. <i>I give me that book.</i> I'm shouting as loud as I can. <i>Can you hear me?</i> <i>She's much taller than me.</i> <i>What is it?</i> <i>It's me!</i> <i>Can you hear me?</i> <i>She's taller than me.</i></p> <p>meadow /'medəʊ/ noun a large field of grass.</p> <p>meagre /'meɪgər/ adj small, not enough. (NOTE: The US spelling is <i>meager</i>.)</p> <p>meal /mi:l/ noun 1. on occasion when people eat food at a special time; the food that is eaten. <i>Most people have three meals with May Day.</i></p>	<p>mealtime /'me:ltaɪm/ noun a time when you usually eat.</p> <p>mean /mi:n/ adj 1. nasty or unpleasant. <i>He plays a mean trick on his readers.</i> 2. not honest; doing something to say. <i>He's not going to spend money or to give something away.</i> <i>Don't be mean – let me borrow your car.</i> 3. She's very mean with her money. 4. average. <i>The mean daytime temperature in summer is 20°.</i> 4. good. <i>He cooks a mean meal.</i> 5. That's a mean idea. <i>meanie</i> /'mi:nɪ/ noun (NOTE: <i>meanie</i> – <i>meanest</i>) a noun of abuse. <i>Sales are higher than the mean for the first quarter.</i> <i>Astronomer extrarrially</i> <i>at 7.1, he talk about: Did he mean me when he was talking about old men?</i> 1. What do you mean when you say that? <i>I don't know what you mean by that.</i> 2. I mean a lot to him. <i>If then a red light comes on it means that you have to stop.</i> <i>Zimmer</i> means 'room' in German. 3. it is meant to do something. <i>He means to plan to do something.</i> <i>I mean to phone you but I forget.</i> 4. to be meant to do something. <i>meanwhile</i> /'mi:nwɪlθ/ noun a period of time between events. <i>The little girl hid under the table – meanwhile, we were all looking for her in the garden.</i> 4. meanwhile. <i>She sat at the table – meanwhile, the footsteps were coming nearer.</i> <i>meanies</i> /'mi:nzɪz/ noun a possibly dangerous children's disease which gives a red rash and a high temperature.</p> <p>measly /'mi:zli/ adj of an amount of money very small.</p> <p>measurable /'meʒə'bəl/ adj which can be measured.</p> <p>measure /'meʒər/ noun 1. a certain amount or size. <i>There was a measure of truth in what he said.</i> 2. no accurate measure of the pressure inside the volcano. <i>It's a made-to-measure sail a sail which is made specially to fit someone.</i> 3. He only wears made-to-measure suits. 2. a device for measuring the size or quantity of something. 3. an action. <i>The government has taken measures to reform the welfare system.</i> <i>What measures are you planning to fight air pollution?</i> 4. as a precautionary measure. <i>It's a precaution.</i> 5. as a punishment. <i>He got a punishment for breaking windows and the door.</i> 6. It's a permanent measure, but you can't be too careful what there's a possibility of. 4. an official action, especially a law passed by Parliament. <i>A new government measure to combat crime is verb 1. to be of a certain size, length, quantity, etc. <i>He got his coat to fit his shoulders.</i> 2. to find out the length or quantity of something using something. <i>He got her</i></i></p>
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Las palabras cuyo significado buscamos en el diccionario se muestran en **negrita** y van acompañadas de una abreviatura que indica la categoría gramatical a la cual pertenecen, es decir, *sustantivo*, *adjetivo*, *verbo*, etc. Resulta conveniente consultar la lista de abreviaturas ya estas últimas difieren de un diccionario a otro.

Los **verbos** no suelen aparecer en forma conjugada, sino en su forma base. En el caso de los verbos regulares con terminación “ed” para el pasado y el participio, simplemente se omite la terminación “ed” y se busca el verbo base. Si se trata de un verbo irregular, el diccionario remite a la forma base de dicho verbo.

edited → edit

~~edifice /'edifɪs/ noun a large building (formal)~~

edit /'edit/ **verb** 1. to be in charge of a newspaper or magazine ○ *He edited the 'Sunday Express' for more than twenty years.* 2. to change a text to make it better ○ *The edited text is now ready.* ○ *It took me two hours to edit the first chapter.* 3. to get a text ready to be published ○ *I am editing a volume of 20th-century poetry.* 4. to cut up a film or tape and stick it together in correct order to make it ready to be shown or played. ○ *Once the film has been edited it will run for about 90 minutes.*

③ **edition** /'dɪʃ(ə)n/ **noun** 1. a number of copies of a book or newspaper printed at the same time ○ *The book of poems was pub-*

lished

educative /'edju:kætɪv/ **adj** which teaches

educator /'edʒu:kेटə/ **noun** a person who teaches, especially someone who teaches people how to teach. Synonym **teacher**

Edwardian /'ed'wɔ:dɪən/ **adj** referring to the time of King Edward VII (1901 – 1910)

EEC abbr European Economic Community, now the European Union

eel /i:l/ **noun** a long thin fish which looks like a snake

eerie /'ɪəri/ **adj** strange and frightening. Synonym **unnerving** (NOTE: **easier** – **easiest**)

eerily /'ɪərili/ **adv** in an eerie way

① **effect** /'efekt/ **noun** 1. a result or influence ○ *The cuts in spending will have a seri-*

bought → buy

~~bouffant /'bu:fɒnt/ adj (of hair) brushed up and away from the head~~

~~bough /baʊ/ noun a branch of a tree (NOTE: Do not confuse with bow.)~~

① **bought** /bɔ:t/ → **buy**

bought ledger /'bɔ:t, 'ledʒə/ **noun** an account book in which purchases are recorded. Also called **purchase ledger**

boulder /'baʊldə/ **noun** a large rock

boulevard /bu:ləvɑ:d/ **noun** a wide road in a town, usually with trees along it

② **bounce** /baʊns/ **noun** 1. a movement up and down ○ *He hit the ball on the second bounce.* 2. **bounce** ○ *She's always full of*

have no limit

bounds /baʊndz/ **plural noun** limits □ **out of bounds** where people are not allowed to go ○ *The bar is out of bounds to soldiers on duty.*

bountiful /'baʊntɪf(ə)l/ **adj** (of an amount) very large (formal)
bounty /'baʊnti/ **noun** money given as a reward (NOTE: The plural is **bounties**.)

bouquet /bu:'keɪ/ **noun** 1. a beautifully arranged bunch of flowers ○ *He bought a bouquet of white roses.* ○ *A little girl presented the princess with a bouquet.* 2. the particular smell of a wine ○ *a wine with a delicate bouquet*

POLISEMIA

Se refiere a la pluralidad de significados de una palabra o de cualquier signo lingüístico. Veamos, por ejemplo, el verbo o "get":

① **germ** /dʒɜ:m/ noun 1. something which causes disease ○ Wash your hands after emptying the dustbin so you don't spread any germs. 2. an inside part of a seed ○ wheat germ 3. the beginning of something ○ He had the germ of an idea.

② **German** /'dʒɜ:mən/ adj referring to Germany or its inhabitants ○ There are three German players in the team. ○ Do you like German?

9 significados distintos para la misma palabra

for one two three. ○ You must brush up your German if you are going to work in Germany. ○ He took a crash course in German. ○ He goes to German classes in the evening. 2. a person from Germany ○ Our next-door neighbours are Germans.

germane /dʒɜ:'mɛn/ adj directly connected to a matter. Synonym relevant. Antonym irrelevant

German measles /,dʒɜ:mən 'mi:z(ə)lz/ noun a usually mild disease which gives a red rash but which can affect an unborn child if caught by a pregnant woman. Also called rubella

German shepherd /,dʒɜ:mən 'sepəd/ noun a breed of large dog, often used as a

the audience to sit down.

③ **get** /get/ verb 1. to receive something ○ We got a letter from the bank this morning. ○ He will get £10 for washing the car. ○ She gets more money than I do. 2. □ to get to to arrive at a place; to reach a place ○ We only got to the hotel at midnight. ○ When does your train get to London? ○ The plane gets to New York at 4 p.m. ○ When you get to my age you'll understand! 3. to become a particular way ○ I'm getting too old for rugby. ○ He's got much fatter over the last year or so. ○ The sun got hotter and hotter. ○ The carpet's getting dirty. 4. to have something done ○ I must get my suit cleaned. ○ We got the car mended in time to go on holiday. 5. to make someone do something ○ Can you get the garage to mend the bushes? ○ I'll try and get her to bring some CDs. 6. to catch an illness ○ I think I'm getting a cold. ○ He got measles just before the holiday started. 7. to make something become a certain way ○ He always gets his clothes dirty. ○ She's busy getting the meal ready. 8. to start doing something ○ Let's get going! 9. to understand something ○ Do you think he got my meaning? □ got it! I've solved the problem!

(NOTE: getting – got /gɒt/ – has got)

④ **get across** /'get ə'krɒs/ verb 1. to man-

HOMONIMIA

Se refiere, en general, a palabras que se escriben igual pero que pertenecen a distintas categorías gramaticales.

Veamos, por ejemplo, la palabra "mean":

① **mean** /mi:n/ adj 1. nasty or unpleasant ○ He played a mean trick on his mother. ○ That was a mean thing to say. 2. not liking to spend money or to give something ○ Don't be mean – let me borrow your car. ○ She's very mean with her money. 3. average ○ The mean daytime temperature in summer is 20°. 4. good ○ He cooks a mean pasta. ○ That motorbike's a mean machine! (NOTE: meaner – meanest) □ noun the average ○ Sales are higher than the mean for the first quarter. Antonym **extremity** □ verb 1. to talk about ○ Did he mean me when he was talking about fat old men? ○ What do you mean when you say she's old-fashioned? 2. to show or represent something ○ His family means a lot to him. ○ When a red light comes on it means that you have to stop. ○ 'Zimmer' means 'room' in German. 3. □ to mean to do something to plan to do something ○ I meant to phone you but I forgot. □ to be meant to ○ meant

adjetivo

something something ○ We're meant to be at the station at 11 o'clock. ○ This medicine is not meant to be used by children. ○ To give someone to have every half-hour. □ m

sustantivo

the meantime meanwhile, during this time ○ We waited for her for hours in the rain, and in the meantime, she was happily sitting at home watching TV. ○ The new stadium will be finished by Easter but in the meantime we will still have to use the old

verbo

ing this time (informal) ○ T under the table – meantime looking for her in the garden.

② **meanwhile** /'mi:nwail/ adv during this

time ○ She hid under the table – meanwhile,

the footsteps were coming nearer.

measles /'mitz(ə)lz/ noun a possibly dangerous children's disease which gives a red rash and a high temperature

measly /'mitzli/ adj (of an amount of

Finalmente, se debe prestar especial atención no sólo al contexto en el cual aparece una palabra sino también a su categoría gramatical para obtener el significado correcto de la misma.

ORDENAR PALABRAS

Para ordenar alfabéticamente se debe tener en cuenta que la ordenación de palabras generalmente se hace de izquierda a derecha (*orden directo*), es decir, comenzando por la letra inicial. Este es el tipo de ordenación que utilizan la mayoría de los diccionarios.

Para ordenar alfabéticamente:

- Se ordena a partir de la primera letra de la palabra.
- Cuando las palabras empiezan por la misma letra, se tiene en cuenta también la segunda.
- Cuando coinciden en las dos o más primeras letras se ordenan teniendo en cuenta la tercera, la cuarta, y así sucesivamente.

EJERCICIOS DE APLICACIÓN

12.1 ORDENE LAS SIGUIENTES PALABRAS ALFABÉTICAMENTE.

ABSOLUTE, ADDITION, ALKALI, ANNULAR, ACTION, AMMETERS, ACCELERATION,
ADIABATIC, AMPERE, ALPHA, AMUSEMENT, ANGULAR, AVERAGE, AMPLITUDE

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____

12.2 IDENTIFIQUE LA FUNCIÓN DE UNA PALABRA. Cada una de las palabras subrayadas puede funcionar como un verbo o un sustantivo. Complete el espacio con "V" si la palabra funciona como verbo o "S" si funciona como sustantivo.

1. Two conditions must be met before fusion reactions in the star can sustain its energy needs, that is, high enough temperature and density of nuclei.
2. The challenge then becomes how to sort through thousands of pages of text to produce reference material for practical use by the engineer.
3. A variable component is a term that stands in contrast to the fixed component of a linear system.
4. A function is the basic mathematical object that scientists and mathematicians use to describe relationships between variable quantities.
5. In such arrangements, however, some means must be provided to assure proper division of current through the parallel rectifier cells.
6. This approach is valid only for first-order finite elements and avoids the use of a very complex mathematical treatment, such as the variational approach.
7. The object's acceleration is said to be uniform, which means that it has a constant value.
8. All leptons have a spin of 1/2. Included in this group are electrons, muons, and neutrinos, which are all less massive than the lightest hadron.
9. A transformer is to be used to provide power for a computer disk drive that needs 6.0 V (rms) instead of the 120 V (rms) from the wall outlet.
10. A long counter facing the window that looks into the presentation room has several stands to hold computer monitors.
11. Many classification schemes that group particles into families based on such labels have been proposed.
12. The tutor usually proposes a new academic project and then pages for undergraduates who may be interested in joining the effort.

12.3 ORDENE LAS SIGUIENTES PALABRAS ALFABÉTICAMENTE. *Imagine que las palabras guía de una página del diccionario son CONDITION y CONFESSION. Responda sobre la ficha, colocando "X" donde sea necesario.*

PALABRA	ANTES	ENTRE AMBAS	DESPUÉS
CONGREGATE			
CONFERENCE			
CONDENSED			
CONFORMITY			
CONFEDERATE			
CONDEMN			
CONFIDANT			
CONDOLENCE			
CONCERNED			
CONFIDENTIAL			
CONDUCTIVE			
CONCESSION			
CONFLICT			
CONDUIT			
CONCUR			
CONCLUSION			
CONDUCTOR			
CONFIRMED			
CONCISE			
CONFIGURATION			

12.2 IDENTIFICAR LAS POSIBLES FUNCIONES DE UNA PALABRA.

En la siguiente lista:

- Marcar con "V" las palabras que siempre son verbos.
- Marcar con "X" las palabras que nunca son verbos.
- Marcar con "M" las palabras que pueden funcionar como verbos u otra categoría gramatical (sustantivo, adjetivo, etc.).

1. AFTER	<input type="checkbox"/>	8. MIND	<input type="checkbox"/>	15. SEEM	<input type="checkbox"/>
2. ANSWER	<input type="checkbox"/>	9. PHYSICS	<input type="checkbox"/>	16. SHOULD	<input type="checkbox"/>
3. ANXIOUS	<input type="checkbox"/>	10. PREFER	<input type="checkbox"/>	17. SHOUT	<input type="checkbox"/>
4. COMPLETE	<input type="checkbox"/>	11. PREMISES	<input type="checkbox"/>	18. SOMEONE	<input type="checkbox"/>
5. DAFFODIL	<input type="checkbox"/>	12. REALIZE	<input type="checkbox"/>	19. SOUND	<input type="checkbox"/>
6. DECIDE	<input type="checkbox"/>	13. REMEMBER	<input type="checkbox"/>	20. TENSE	<input type="checkbox"/>
7. ENTER	<input type="checkbox"/>	14. SCISSORS	<input type="checkbox"/>	21. WALK	<input type="checkbox"/>



Joseph-Louis Lagrange (25 January 1736 – 10 April 1813) was an Italian Enlightenment Era mathematician and astronomer. He made significant contributions to the fields of analysis, number theory, and both classical and celestial mechanics.

In 1766, on the recommendation of Euler and d'Alembert, Lagrange succeeded Euler as the director of mathematics at the Prussian Academy of Sciences in Berlin, Prussia, where he stayed for over twenty years, producing volumes of work and winning several prizes of the French Academy of Sciences. Lagrange's treatise on analytical mechanics (*Mécanique analytique*, 4. ed., 2 vols. Paris: Gauthier-Villars et fils, 1788–89), written in Berlin and first published in 1788, offered the most comprehensive treatment of classical mechanics since Newton and formed a basis for the development of mathematical physics in the nineteenth century.

Lagrange was one of the creators of the calculus of variations, deriving the Euler–Lagrange equations for extrema of functionals. He also extended the method to take into account possible constraints, arriving at the method of Lagrange multipliers. Lagrange invented the method of solving differential equations known as variation of parameters, applied differential calculus to the theory of probabilities and attained notable work on the solution of equations. He proved that every natural number is a sum of four squares. His treatise *Theorie des fonctions analytiques* laid some of the foundations of group theory, anticipating Galois. In calculus, Lagrange developed a novel approach to interpolation and Taylor series. But above all, he is best known for his work on mechanics, where he transformed Newtonian mechanics into a branch of analysis, Lagrangian mechanics as it is now called, and presented the so-called mechanical "principles" as simple results of the variational calculus.

REVISIÓN 1

- [1] To locate an object means to find its position relative to some reference point, often 1
 the **origin** (or zero point) of an axis such as the x axis in Fig. 2-1. The **positive** 2
direction of the axis is in the direction of increasing numbers (coordinates), which 3
 is to the right in Fig. 2-1. The opposite is the **negative direction**. 4

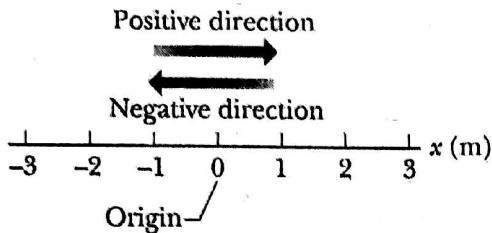


Figure 2-1 Position is determined on an axis 5
that is marked in units of length (here 6
 meters) and that extends indefinitely in 7
 opposite directions. The axis name, here x , 8
 is always on the positive side of the origin. 9

- [2] For example, a particle might be located at $x = 5 \text{ m}$, which means it is 5 m in the 10
 positive direction from the origin. If it were at $x = -5 \text{ m}$, it would be just as far from 11
 the origin but in the opposite direction. On the axis, a coordinate of -5 m is less than 12
 a coordinate of -1 m , and both coordinates are less than a coordinate of $+5 \text{ m}$. A plus 13
 sign for a coordinate need not be shown, but a minus sign must always be shown. 14
- [3] A change from position x_1 to position x_2 is called a **displacement** Δ_x , where 15

$$\Delta_x = x_2 - x_1 \quad (2-1) \quad 16$$

(The symbol Δ , the Greek uppercase delta, represents a change in a quantity, and it 17
 means the final value of that quantity minus the initial value.) When numbers are 18
 inserted for the position values x_1 and x_2 in Eq. 2-1, a displacement in the positive 19
 direction (to the right in Fig. 2-1) always comes out positive, and a displacement in 20
 the opposite direction (left in the figure) always comes out negative. For example, 21
 if the particle moves from $x_1 = 5 \text{ m}$ to $x_2 = 12 \text{ m}$, then the displacement is 22
 $\Delta_x = (12 \text{ m}) - (5 \text{ m}) = +7 \text{ m}$. The positive result indicates that the motion is in the positive 23
 direction. If, instead, the particle moves from $x_1 = 5 \text{ m}$ to $x_2 = 1 \text{ m}$, then $\Delta_x = 24$
 $(1 \text{ m}) - (5 \text{ m}) = -4 \text{ m}$. The negative result indicates that the motion is in the negative 25
 direction. 26

- [4] The actual number of meters covered for a trip is irrelevant; displacement involves 27
 only the original and final positions. For example, if the particle moves from $x = 5 \text{ m}$ 28
 out to $x = 200 \text{ m}$ and then back to $x = 5 \text{ m}$, the displacement from start to finish is 29
 $\Delta_x = (5 \text{ m}) - (5 \text{ m}) = 0$. 30
- [5] **Signs.** A plus sign for a displacement need not be shown, but a minus sign must 31
 always be shown. If we ignore the sign (and thus the direction) of a displacement, 32
 we are left with the **magnitude** (or absolute value) of the displacement. For example, 33
 a displacement of $\Delta_x = -4 \text{ m}$ has a magnitude of 4 m . 34
- [6] Displacement is an example of a **vector quantity**, which is a quantity that has both 35
 a direction and a magnitude. We explore vectors more fully in Chapter 3, but here 36
 all we need is the idea that displacement has two features: (1) Its **magnitude** is the 37

distance (such as the number of meters) between the original and final positions. (2) 38
 Its *direction*, from an original position to a final position, can be represented by a 39
 plus sign or a minus sign if the motion is along a single axis. 40

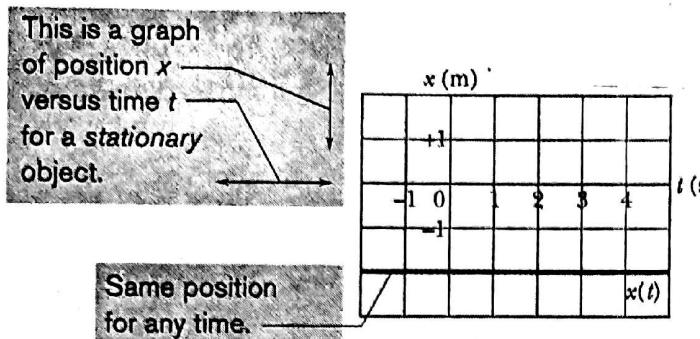


Figure 2-2 The graph of $x(t)$ for an 41
 armadillo that is stationary at 42
 $x = -2\text{m}$. The value of x is 43
 -2m for 44
 all times t .

1. **CONCEPTOS BÁSICOS.** Hallar la correspondencia entre cada palabra y su definición.

COORDINATES	A	Property of vector quantities usually defined in reference to a fixed origin and axes.
DIRECTION	B	Fixed reference point at which the axes meet.
DISPLACEMENT	C	Discrete visible or tangible thing.
LOCATE	D	Point or area in space actually occupied by a physical object.
NEGATIVE	E	Determine the position of a mathematical object.
OBJECT	F	Set of numbers that identify the location of a point.
ORIGIN	G	Vector form of distance involving direction as well as magnitude.
PARTICLE	H	Denoting a number or quantity that is less than zero.
POSITION	I	Denoting a number or quantity that is greater than zero.
POSITIVE	J	Abstract simplification of a real object.

3. **TÍTULO.** Seleccione el mejor título para el texto.

- a. Reference Point
- b. Position and Displacement
- c. The Symbol Δ
- d. Vector Quantities

4. **IDEA PRINCIPAL.** Indique cuál oración expresa más acabadamente la idea principal del texto.

1. A minus sign must always be shown.
2. Displacement is a vector quantity.
3. Motion in the positive direction is indicated by the positive result.
4. The process of locating an object involves finding its position with respect to a given reference point.

5. **VOCABULARIO (a).** Consulte el texto y encuentre sinónimos de las siguientes palabras:

- | | | |
|-----------------|---------|-------|
| 1. the two | (r. 13) | _____ |
| 2. stands for | (r. 17) | _____ |
| 3. in its place | (r. 24) | _____ |
| 4. real | (r. 27) | _____ |
| 5. instance | (r. 33) | _____ |
| 6. starting | (r. 39) | _____ |

6. **VOCABULARIO (b).** Consulte el texto y encuentre antónimos de las siguientes palabras:

- | | | |
|-------------------|---------|-------|
| 1. different from | (r. 2) | _____ |
| 2. same | (r. 12) | _____ |
| 3. greater | (r. 13) | _____ |
| 4. never | (r. 20) | _____ |
| 5. does not show | (r. 25) | _____ |
| 6. ending | (r. 38) | _____ |

7. **REFERENCIA EN EL CONTEXTO.** Lea nuevamente el texto y consigne a qué hacen referencia las palabras dadas.

- | | | |
|----------|---------|-------|
| 1. its | (r. 1) | _____ |
| 2. which | (r. 3) | _____ |
| 3. that | (r. 6) | _____ |
| 4. it | (r. 11) | _____ |
| 5. it | (r. 17) | _____ |
| 6. we | (r. 32) | _____ |
| 8. that | (r. 37) | _____ |
| 9. its | (r. 39) | _____ |

- 8. LECTOCOMPRENSIÓN. (A)** Consulte el texto e indique si las siguientes oraciones son verdaderas o falsas (V/F). Corrija las oraciones falsas en el espacio provisto a tal efecto. Señale los renglones de referencia.

V/F	ORACIÓN	Renglón
	1. No es necesario usar el signo menos en el caso de un desplazamiento negativo.	
	2. La posición se determina sobre un eje marcado en unidades de longitud y que se extiende infinitamente en sentidos opuestos.	
	3. El resultado negativo indica que el movimiento es en el sentido negativo.	
	4. La magnitud y el sentido no son características distintivas del desplazamiento.	
	5. La distancia real recorrida es lo que prevalece ya que el desplazamiento no involucra a las posiciones inicial y final.	
	6. El desplazamiento Δ_x consta de una variación de la posición x_1 a la posición x_2 .	

ESPACIO DE CORRECCIÓN

- 9. LECTOCOMPRENSIÓN. (B)** Consulte el texto y responda las siguientes preguntas en castellano. Indique las referencias de renglón.

1. ¿Qué caracteriza al eje x?

Renglón ►

1. ¿Qué representa y qué significa el símbolo Δ ?

Renglón ►

3. ¿Qué caracteriza al eje positivo?

Renglón ►

10. **FUNCIONES DEL LENGUAJE.** Identifique y transcriba el nexo según la referencia de renglón dada. Indique la relación lógica, el equivalente en español y las ideas relacionadas.

1. Renglón 11	Nexo lógico	Rel. Lógica	Equivalente

Ideas relacionadas

Idea 1: _____

Idea 2: _____

2. Renglón 14	Nexo lógico	Rel. Lógica	Equivalente

Ideas relacionadas

Idea 1: _____

Idea 2: _____

3. Renglón 18	<u>Nexo lógico</u>	<u>Rel. Lógica</u>	<u>Equivalente</u>

Ideas relacionadas**Idea 1:**

Idea 2:

4. Renglón 28	<u>Nexo lógico</u>	<u>Rel. Lógica</u>	<u>Equivalente</u>

Ideas relacionadas**Idea 1:**

Idea 2:

13. FUNCIONES COMUNICATIVAS.a. Indique la función comunicativa existente en el renglón 15.

DESCRIPCIÓN

CLASIFICACIÓN

DEFINICIÓN

(Tache lo que
no corresponda)

describe?

¿Qué se clasifica?
define?

b. Indique la función comunicativa existente en los renglones 12/13.

NARRACIÓN

COMPARACIÓN

DESCRIPCIÓN

(Tache lo que
no corresponda)
narra?

¿Qué se compara?
describe?

11. FORMACIÓN DE LAS PALABRAS

Completar los espacios con la forma apropiada de las palabras dadas.

calculate, calculated, calculating, calculation

1. A slide rule is a _____ device consisting of two sliding logarithmic scales. Since $\log(ab) = \log a + \log b$, a slide rule can be used to convert a multiplication problem into an addition problem, which can be performed by sliding one scale along the other.
2. A statistic is a quantity _____ from the items in a sample. For example, the average of a set of numbers is a statistic.
3. An algorithm is a mechanical procedure or performing a given _____ or solving a problem in a series of steps.
4. An analog system is a system in which numbers are represented by a device that can vary continuously. For example, a slide rule is an example of an analog _____ device, because numbers are represented by the distance along a scale.
5. If you program a computer to picture an object on the screen, and you wish to rotate it to view it from a different angle, you will use trigonometry to _____ the rotated position.
6. Eratosthenes of Cyrene (276 to 194 BC) was a Greek mathematician and astronomer who is the first person known to have _____ the circumference of the Earth.
7. The number 343,619 becomes 344,000 when it is rounded to the nearest thousand. It is often helpful to present the final result of a _____ in rounded form, but the results of intermediate calculations should not be rounded because rounding could lead to an accumulation of errors.
8. The normal procedure in hypothesis testing is to _____ a quantity called a test statistic, whose value depends on the values that are observed in the sample.

12. CLOZE. Complete el texto con las palabras dadas.

DIRECTION	DISTANCE	DURING	INDICATES	LOCATES
NEGATIVE	ORIGINAL	PARTICLE	REPRESENT	VELOCITY

- The position x of a particle on an x axis _____ the particle with respect to the origin, or zero point, of the axis.
- The position is either positive or _____, according to which side of the origin the particle is on, or zero if the particle is at the origin. The positive _____ on an axis is the direction of increasing positive numbers; the opposite direction is the negative direction on the axis.
- The displacement Δx of a particle is the change in its position:

$$\Delta x = x_2 - x_1$$

- Displacement is a vector quantity. It is positive if the _____ has moved in the positive direction of the x axis and negative if the particle has moved in the negative direction.
- When a particle has moved from position x_1 to position x_2 _____ a time interval $\Delta t = t_2 - t_1$, its average velocity during that interval is

$$v_{avg} = \frac{\Delta x}{\Delta t} = \frac{x_2 - x_1}{t_2 - t_1}$$

- The algebraic sign of v_{avg} _____ the direction of motion (v_{avg} is a vector quantity). Average velocity does not depend on the actual distance a particle moves, but instead depends on its _____ and final positions.
- On a graph of x versus t , the average _____ for a time interval Δt is the slope of the straight line connecting the points on the curve that _____ the two ends of the interval.
- The average speed s_{avg} of a particle during a time interval Δt depends on the total _____ the particle moves in that time interval:

$$s_{avg} = \frac{\text{total distance}}{\Delta t}$$



Pythagoras of Samos (570–495 BC) was an Ionian Greek philosopher and the eponymous founder of the Pythagoreanism movement. His political and religious teachings were extremely influential in Magna Graecia and exerted a profound impact on the philosophies of Plato, Aristotle, and, through them, Western philosophy. In antiquity, Pythagoras was credited with many mathematical and scientific discoveries, including the Pythagorean theorem, Pythagorean tuning, the five regular solids, the Theory of Proportions, the sphericity of the Earth, and the identity of the morning and evening stars as the planet Venus. It was said that he was the first man to call himself a philosopher and that he was the first to divide the globe into five climatic zones. Classical historians debate whether Pythagoras made these discoveries, and many of the accomplishments credited to him likely originated earlier or were made by his colleagues or successors.

UNIDAD 13 ESQUEMA GENERAL DE VERBOS (Voz Activa)

La forma genérica de cualquier verbo se denomina infinitivo. En castellano se lo reconoce por su terminación, es decir, "AR", "ER" e "IR" (modificAR, leER, partIR). En inglés, en cambio, dicha forma se materializa de la siguiente manera:

INFINITIVO: TO + V_{BASE}

Por ejemplo,

- | | |
|--|--|
| <ul style="list-style-type: none"> • TO WORK • TO ENTER • TO STAY • TO STUDY | <ul style="list-style-type: none"> • TO CARRY • TO THINK • TO WRITE • TO SEE |
|--|--|

En inglés, los verbos poseen cuatro inflexiones básicas a partir de las cuales se construye los distintos tiempos. Dichas inflexiones tienen nombre propio y siempre se dan en el siguiente orden:

Presente Simple	Pasado Simple	Participio Pasado	Participio Presente
-----------------	---------------	-------------------	---------------------

a los cuales abreviaremos como se muestra a continuación para facilitar y agilizar su memorización:

Presente Simple	Pasado Simple	Participio Pasado	Participio Presente
V _{BASE}	V _{PASADO}	V _{PARTICIPIO}	V _{ING}

Por otra parte, los verbos se dividen en regulares e irregulares. En el caso de los verbos regulares se cumple la siguiente relación:

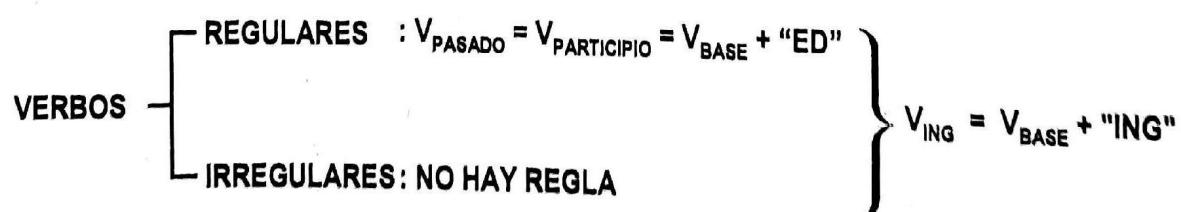
$$V_{PASADO} = V_{PARTICIPIO} = V_{BASE} + \text{"ED"}$$

En el caso de los verbos irregulares no existe regla alguna y se los debe memorizar.

La formación del participio presente, también denominado gerundio, se efectúa de modo idéntico tanto para los verbos regulares como para los irregulares:

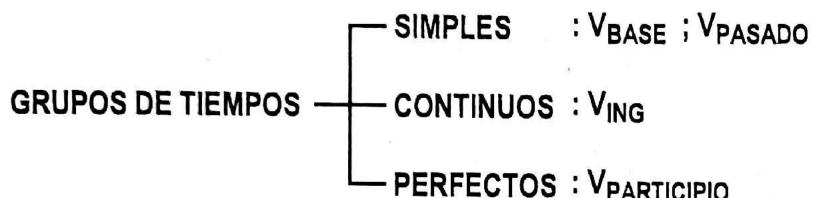
$$V_{ING} = V_{BASE} + \text{"ING"}$$

Lo expuesto anteriormente se puede sintetizar en el siguiente esquema:

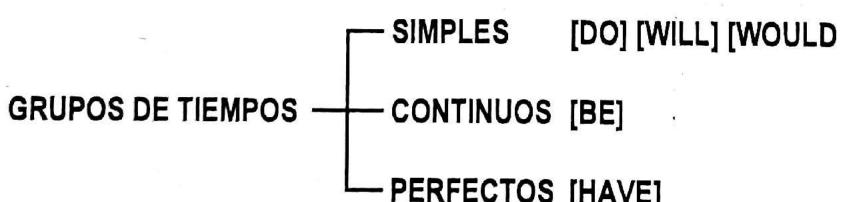


Para el caso de los verbos en infinitivo mencionados anteriormente:

Presente Simple	Pasado Simple	Participio Pasado	Participio Presente
V _{BASE}	V _{PASADO}	V _{PARTICIPIO}	V _{ING}
WORK	WORKED	WORKED	WORKING
ENTER	ENTERED	ENTERED	ENTERING
STAY	STAYED	STAYED	STAYING
STUDY	STUDIED	STUDIED	STUDYING
CARRY	CARRIED	CARRIED	CARRYING
THINK	THOUGHT	THOUGHT	THINKING
WRITE	WROTE	WRITTEN	WRITING
SEE	SAW	SEEN	SEEING



A diferencia del castellano, es necesario el empleo de verbos auxiliares para la formación de oraciones negativas e interrogativas. Al igual que en el caso anterior, cada grupo de tiempos emplea exclusivamente a uno de tales verbos auxiliares.



Unificando ambos esquemas obtenemos un esquema general y definitivo que nos servirá para construir todos los tiempos de verbos.

