

A Concise Guide to the English Language Structure and Grammar

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Version 1.0

 Publication Series

Dedication

To my parents

Acknowledgement

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Motive

As an international student in the U.S. many moons ago, I have struggled, like many, to advance my knowledge of the English language. This struggle was in no small part due to the lack of an advanced practical, but compact, guide to the English language.

So, I felt that such work will benefit many international students. As I completed the work and based on my limited experience, I also felt that many native English speaking junior university students could potentially benefit from this work.

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A Concise Guide to the English Language Structure and Grammar

Introduction

This English language short guide is not a replacement for an introductory English language course.

The main objective of the guide is to provide a concise summary of the structure and grammar of the English language and particularly the scientific English language. This has two basic utilities:

- To serve as a concise reference
- To provide a fairly extensive overview, which is more suitable for university-level students than the traditional serial piece-after-piece approaches that suit young learners at elementary schools.

Evolution of the English Language

Today's English language has evolved primarily from the mixture of two languages. The common people language which is very close to German, and the educated language (spoken by the elites) which is basically French.

As a result, English had the combined complexities of both languages. In short:

- French has overly complex grammar, but most of all, things have gender: masculine or feminine
- Like French, German has complex grammar and things gender is even more complex: feminine, masculine, or neutral (no gender).

Since both French and German do not have effective simple rules to determine the gender of words, both languages required extensive memorization to learn the language.

However, **unlike** the French and the Germans, who celebrate the complexity of their languages as a reflection of their national identities, the English decided to be more practical and simplify their language. So they:

- Simplified the grammar
- Eliminated gender from their words and left it to the word meaning to indicate gender if any. For example, a “chair” has no gender, while a “man” is masculine, and a “woman” is feminine.

As a result, modern English is both simple and powerful which is a major factor in its wide spread use in our modern world.

However, the difficulty to harmonize two different languages under one set of rules explains why it is said that “English is easy to learn, but is very difficult to master”.

In particular, word derivation rules are numerous, always have exceptions, and English is “not phonetic” since it is particularly difficult to predict pronunciation of many words based their written form.

Pronunciation

English words pronunciation can be challenging since English has evolved as a mix of the French and German languages such that English is not a phonetic language (i.e., it is not always pronounced as it is written).

To deal with this problem, paper English language dictionaries use two techniques to convey the pronunciation of words: syllable and phonetics.

- Syllables: dictionaries divide words into multiple single sound parts/segments called syllables. For example:  “history → his-to-ry”,  “information → in-for-ma-tion”, etc.
- Phonetics: represent the sounds of words using symbols or letters. For example: “history → /'hist(ə)rē/“, “information → /infər'māSH(ə)n/“, etc.

Moreover, pronunciation sometimes changes with letter combinations, and thus, can become challenging. Appendix I lists most sounds of letters and letter combinations with their phonetics, as well as, their audio sounds and the sounds of many words.

Reading Tip

New learners of English initially struggle with the pronunciation of individual words. Moreover, this may become a habit later when they read English texts to others who would naturally view the reader to be mumbling ...

To overcome this problem:

- Step 1: At the beginning of a new sentence, pause reading aloud and **scan** with the eyes **half** of the sentence, then
- Step 2: Read the **full** sentence **aloud** (slowly but clearly), then pause and repeat Step 1
- Note: if the full sentence is composed of **several connected simple sentences**, then **pause at the beginning of each simple sentence**.

Example: to read “The sun was shining over the green valley, and the cows were grazing peacefully along the river. Then suddenly, an avalanche of rain poured down and created a flood.”

mumbling 	method 	soft 	ideal 	too loud 
--	--	--	---	--

*Note 1: these are sounds taken from Google Translate Text-to-Speech after alterations

*Note 2: the audio links in this section and in Appendix I only work on Windows 10/11 systems. IOS/Android users and older versions of Windows need to use the HTML versions

A good way to practice speaking and reading, is to form small groups and practice talking, writing, and using text to speech technology. For example:

- To write a couple of sentences into “Google Translate” and translate them into English
- Utilize the Google’s Text-to-Speech  capability to hear how the sentences are pronounced/read

Basics

Abbreviations

The guide uses “/” to mean “or”, “vs” to mean “versus/against”. However, English has many standard abbreviations

‘e.g.’	for “for example”
“i.e.”	for “that is”
“a.k.a/aka”	for “also known as”
“etc.”	for “more similar things”. Origin: the ancient Middle East and means “until the end of the line”
“et al.”	for “and others”. Origin: French
“circa”	for “around or approximately (time)”. Origin: Latin
“O.K.”	for acceptance. Variations: OK, okay, okeh. Origin: American English for “all correct/complete” with possible roots from Americans of German decent saying “oll korrekt/komplet”

Letter Case

Letters are written in upper case (e.g., “A”, “B”, ..) or lower case (e.g., “a”, “b”, ..) and follow the conventions:

Rule	Examples
Names (start with a capital letters)	“John”, “Mary”, “Adam”, “Eve”
Sentences (start with capital letters)	“The sun sets in the west”, “Our students study very hard”
All capital letters to bring attention in special circumstances like warning/anger/shouting in written materials	‘SNAKE’, ‘ATTENTION’, “STOP”, “ENOUGH”, “JUST GO”, “SCRAM”, “TAKE A HIKE”, “I AM ANGRY”,
Acronyms: most acronyms are written in capital letters (discussed later)	“IP”, “TCP”, ‘CAD’, ‘CAT’, “NMR”, ... Note: some acronyms have become mainstream (.e.g. laser)

Vowels and Consonants

English letters are divided into **vowels** (“i”, “o”, “a”, “e”, “u”) or **consonants** (i.e., not vowels).

Sentences vs Phrases

A **sentence** expresses a **complete thought** and contains a subject and a verb at a minimum (e.g., Birds fly), while a **phrase** is made of **several related words** within a sentence but it **does not express a complete thought** on its own. Phrases are used to express attributes of a nouns, verbs, etc.

There are several types of phrases:

- **Noun phrases** (e.g., the big chair, the sunny room, a good meal, a colourful painting, etc.),
- **Verb phrases** (e.g., sleeping well, working hard, eating lightly, running fast, waking early, etc.),
- **Propositional phrases** (e.g., before breakfast, after lunch, before going to bed, at noon, etc.),
- **Adjective phrases** (e.g., happy as kids, cheap as dirt, cool to touch, warm as the sun, etc.), and
- **Adverbial phrases** (e.g., every year, each day, every other week, almost always, etc.).

Basics about English words and sentences

Types of persons

Imagine telling a story

1 st person	is the teller (uses “I”) or the tellers (use “we”) of the story
2 nd person	is the person or persons the story is told to (uses “you”)
3 rd person	is an indirect form to refer to persons other than the 1 st and 2 nd persons that uses (she/he) for singular or (they) for plural references

Word Types

English words can be roughly divided into the following types (and some may have sub-types)

Type	Symbol	Examples
verbs to be (active)		be/am/is/are
verbs (active)	v/vb	run, jump, write, draw, study, sleep, eat, drink, walk
nouns (passive)	n	dog, cat, car, house, man, woman, child, school, book
adjectives (descriptive)	adj	blue, red, white, loud, soft, strong, weak, bleak, vivid
adverbs (descriptive)	adv	strongly, heavily, lightly, loudly, quietly, evenly, coarsely
pronouns (express relations)		specify subjects or relations to subjects (e.g., my, our ..)
prepositions (express states)		express a state in time, place, etc. (e.g., at, in, outside, ..)
articles (serve several functions)		a, an, (indefinite articles), the (definite article)

* As it will be discussed later, each of these groups may have several sub-types.

Single and Plural Sense

English has either a **singular** sense (about one thing), or otherwise, **plural** sense (about two/multiple things). **Sense does not affect adjectives nor adverbs but does affect nouns, verbs, and verbs to be:**

Nouns (singular sense*)	they are preceded by “a” (e.g., a car, a plane), or “an” when the noun starts with a vowel (e.g., an apple, an envelope, an orange, an understanding, an idiom).
Regular nouns (plural sense)	an “s” is added at the end (e.g., car → cars, plane → planes) or “es” if they end with an “s” (e.g., address → addresses, compass → compasses).
Irregular nouns (plural sense)	the above rule of adding s/es does not apply. Example: phenomenon → phenomena, woman → women, man → men, datum → data, etc.
Verb to be	-“be” in a singular sense becomes “is” or “was”, and in a plural sense “are” or “were”. -“has” is only used in a single (3 rd person) sense while “have” is used in all other cases.
Simple present verb (single 3 rd person sense)	an “s/es” is added to the verb. Example: “My teacher arrives to the class on time”, “Our family likes to talk over dinner”, “This answer addresses my question”

Pronouns

A pronoun is a word or a group of words that may substitute for a noun or noun phrase. They divide into

subject pronouns	I, you, he, she, it, we, you, they Example: We like liberty, justice, and the rule of law
object pronouns	me, you, him, her, it, us, you, them Example: Nature feeds us if we care for her
reflexive/reciprocal pronouns	myself, yourself, thyself, himself, herself, itself, ourselves, yourselves, themselves Example: I taught myself by reading many books and watching documentaries.
possessive pronouns	mine, yours, his, hers, its, ours, yours, theirs Example: This book is mine, and it has my name written on the first page.
demonstrative pronouns	this, these, that, those, former / latter Example: I borrowed these books from the local library.
relative pronouns	who, whom, which, that, whose, where, when, why, Example: I do not know who misplaced my keys.
compound relative pronouns	whoever, whomever, whichever, whosever, wherever, whenever, whyever, whereby, wherein, wherefrom Example: The police will pursue criminals wherever they are.
interrogative pronouns	who, whom, which, what, whose, where, when, what, why, how, how much, how many, what, whoever, whomever, whatever, whichever, suchlike, whereto Example: How many times do I need to take the medicine?
indefinite pronouns (singular)	any, anybody, anyone, anything, anytime, each, each one, each other, either, either one, everybody, everyone, everything, another, one, one's, oneself, the other one, neither, neither one, nobody, no-one, nothing, none, one, some, somebody, someone, something, forever, whichever Example: I do not feel like eating anything.
indefinite pronouns (plural)	all, both, few, a few, many, more, several, some, any, ones, others, the other ones, several, multiple Example: I have really enjoyed this book, so I read it many times.
indefinite/quantifier pronouns (uncountable)	little, a little, more, much, much more, a lot of, lots of, some, any, none, something, everything, most, plenty, enough Example: On hot days, it is advisable to drink a lot of water.

* main sources: LibreText ESL courses, Wikipedia, etc.

Paragraphs vs Sentences

Sentences are single thoughts, while paragraphs are groups of related sentences about a subject.

The style of paragraphs is primarily dictated by the subject matter but the general pattern is to introduce the topic using a sentence or two, then to explore its various aspects in some details, and potentially have a conclusion or summary at the end.

For example this is a description of a trouble at a cafe while on a journey:

“Soon after I sat at the corner cafe, I noticed a husband and wife were having a heated argument. This developed into a shouting match after some clients objected to the noise, which forced the cafe owner to call the police. The police came and fined the husband and one of the clients, before things went back to normal.”

In this paragraph things progressed from noticing the introductory event, then describing the events that followed, and then, describing the restoration of normality at the end.

Basic verb conjugation

Verbs are either regular or irregular. Also, a conjugated verb form can be in one of four states:

(1) base form (infinitive), (2) present participle, (3) past, and (4) past participle.

- The **“present participle” form** is obtained by adding “ing” to the verb base form (infinitive). Also this may require a slight modification to the verb ending before adding the “ing”. Examples:

Base form (infinitive)	Present Participle form
agree, play, jump, climb, walk	agreeing, playing, jumping, climbing, walking
(ends with “e”) arrive, behave, shave	(eliminate the “e”) arriving, behaving, shaving
(the letter before last is a vowel) run, cut, drip, plan, flop	(double the last letter) running, cutting, dripping, planning, flopping

- For **regular verbs**, the “past” and “past participle” forms are obtained by adding “ed” or “d” to the end of the verb. Examples:

Base form (infinitive)	Past or Past Participle forms
play, jump, climb, walk, watch	(add “ed”) played, jumped, climbed, walked, watched
(verbs end with “e”) arrive, agree, free	(add “d”) arrived, agreed, freed

- For **irregular verbs**, the “past” and “past participle” do not follow the above rule, and Appendix II contains the conjugation list of the most common irregular verbs. Examples:

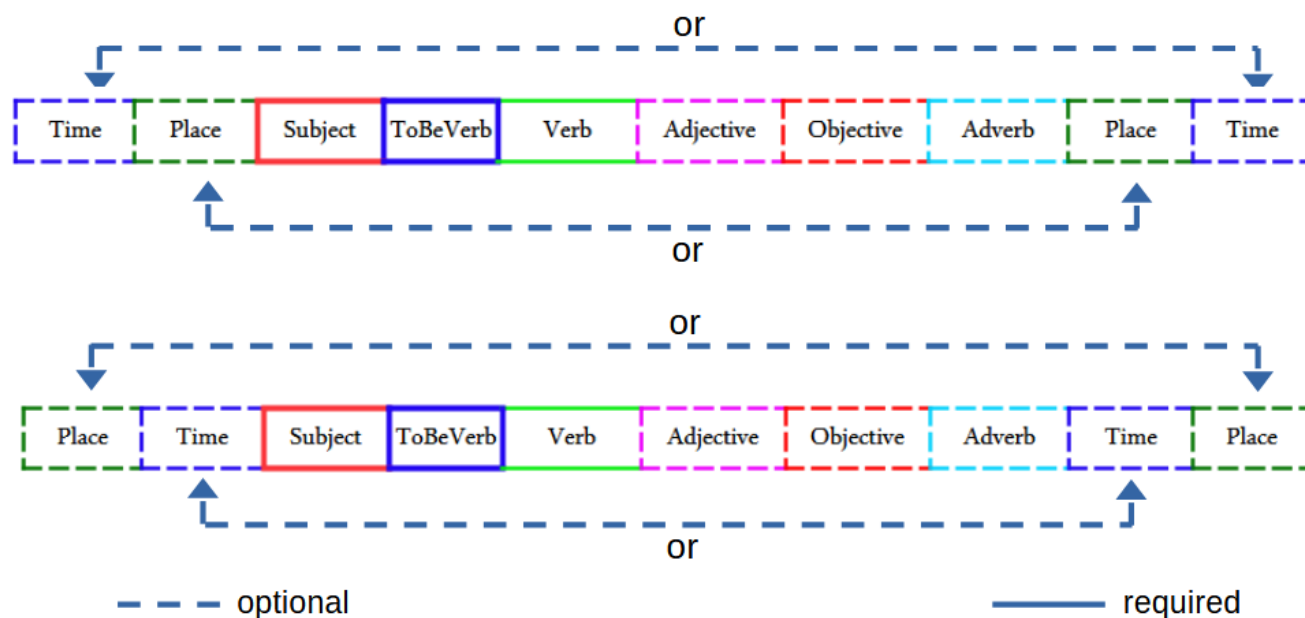
Base form (infinitive)	Past form	Past Participle form
drive, write, rise	drove, wrote, rose	driven, written, risen
have/has	had	had
sleep, leave, lend, meet, mean	slept, left, lent, met, meant	slept, left, lent, met, meant
lay, pay, make	laid, paid, made	laid, paid, made
know, grow, go	knew, grew, went	known, grown, gone
eat	ate	eaten
let, put, say, quit	let, put, said, quit	let, put, said, quit
lose, fight	lost, fought	lost, fought
run	ran	run

Sentence Structure

The main components of English sentences are:

- **Subject:** [subject] either a word for the active side or an article (**I/you/she/he/it**) for singular subjects, and (**we/you/they**) for plural subjects
- **To be Verb** (or auxiliary verb): (**am/is/was/has**) for singular subjects, (**be/are/were**) for plural subjects, or (**had/be/shall/will/being**)
- **Verb:** specifies the type of work/action.
- **Objective:** is a noun that specifies the passive thing/person affected by the verb
- **Adjective:** an attribute that specifies/alters nouns
- **Adverb:** an attribute that specifies/alters verbs (i.e., an adjective for verbs)
- **Place and Time:** specify the location and time where and when the verb happens

Sentences in the English language have several tenses (will be discussed later). However, the following structure is common among all basic sentences in all tenses



Moreover, sentences can be **active** (e.g., “John pushed the table”) or **passive** (e.g., “The table was pushed”).

Time and place in sentences are optional can be at the beginning or at the end of sentences. Therefore, the following sentences are equivalent

Last night, in the kitchen, I did eat a big cheese sandwich quickly.
I did eat a big cheese sandwich quickly last night in the kitchen,
In the kitchen, last night, I did eat a big cheese sandwich quickly.
Last night, I did eat a big cheese sandwich quickly in the kitchen.
In the kitchen, I did eat a big cheese sandwich quickly last night.

Shortest sentences: at a minimum a sentence should have a **subject** and a **verb (or a verb to be)** that depend on the tense (present, past, or future). Here are some basic examples about the use of ‘verbs to be’

Tense	Example of “ verb to be ” use
present	I am. He/She/It is. You/They are
past	I was. He/She/It was. You/They were
future	I will/shall. He/She/It will/shall. You/They will/shall

Furthermore, English sentences contain **adverbs** (descriptive), **pronouns** (express relations), **prepositions** (express state), **gerunds** (express state derived from verbs), and **articles** (serve several functions).

- **Pronouns:** specify subjects or relations to subjects. These can be in:

1 st person	singular: I/me/my/mine/myself,	plural: us/our/ourselves
2 nd person	singular: you/your/yours/yourself,	plural: yourselves
3 rd person	singular: she/she/it/her/him/hers/his/its, and reflexive pronouns (singular: herself/himself/itself,	plural: they/them/their/theirs, plural: themselves)

- **Gerund:** is a **noun derived from a verb**. Examples: sleeping, running, etc. which are verbs (sleep, run) with “**ing**” added to them. Example: **Going** to school is very important.
- **Adverb:** a word or phrase that **modifies or qualifies an adjective, verb, or another adverb** e.g. very/much/happily/strongly. Example: In peace, most people live happily.
- **Preposition:** **expresses a state in time, place**, etc. Examples: between, below, above, after, before, etc.

Auxiliary Verbs

Auxiliary verbs are also called “helping verbs”. The main auxiliary verbs are (**be, have, do**) and **modal auxiliary verbs** are (**can, could, may, might, must, ought to, shall, should, will, would**). Examples:

I do like ice cream I am feeling not well You have been nice I could not study well while watching TV	Most farmers can plant and take care of animals Teachers have to teach in the Fall and Spring semesters The cooks ought to cook for hungry refugees I can not ask a poor person to pay for his meal
--	--

While the **modal auxiliary verbs never change**, the main auxiliary verbs do change with the sentence tense and may depend on if it is 1st, 2nd, or 3rd person in the sentence. This is shown in the table below

Be	Do	Have
am (present 1 st person) is (present 3 rd person) are (present 2 nd person, 3 rd person plural) was (past 3 rd person) were (past 2 nd person, 3 rd person plural,) being (present participle) been (past)	does (present 3 rd person) do (present 1 st /2 nd persons) did (past)	has (present 3 rd person) have (present 1 st /2 nd persons) had (past) having (present participle)

Intransitive vs Transitive Verbs

Intransitive verbs do not require objectives (e.g., The family slept), while transitive verbs require an objective (e.g., I kicked the ball).

Active vs Passive Voice

In active (direct) voice the subject acts, while in passive (indirect/polite) voice is the subject is acted upon.

Example: **(active voice)** Our baker made this cake → **(passive voice)** This cake was made by our baker.

Affirmation

Affirmation is basically saying ‘YES’ to/about something especially when “verbs to be” are used. Examples:

The sky is blue	I go to school (or: I do go to school)	I agree (or: I do agree)
-----------------	---	---------------------------------

Sometimes additional words are used to strengthen the affirmation. Examples:

To affirm “I go to school”	To affirm “The sky is blue”	To affirm “I agree”
“I do go to school” “Indeed, I do go to school” “In fact, I do go to school”	“Indeed, the sky is blue” “The sky is blue indeed” “In fact, the sky is blue” “Without doubt, the sky is blue” “The sky is blue without question”	“I do agree” “In fact, I do agree”

Negation

Negation is basically saying “NO/NOT” to/about something especially when “verbs to be” or “auxiliary verbs” are used. Examples:

I go to school (or: I do go to school)	The sky is blue	I can sing well
I don’t go to school, I do not go to school (stronger)	The sky isn’t blue, The sky is not blue (stronger)	I can’t sing, I cannot sing (stronger)

When negation is used on two matters, the article “**nor**” is used to refer to the 2nd matter. Examples:

Affirmation	Negation
I have a notebook and a pen	I do not have a book nor a pen
Yesterday, I have slept well and I had breakfast	Yesterday, I have not slept well nor I had breakfast

For multiple matters, the last matter is preceded by “**nor**”. Examples:

Affirmation	Negation
I have a notebook, a pencil, an eraser, and a pen	I do not have a book, a pencil, an eraser, nor a pen
Yesterday, I have slept well; I showered; and I had breakfast	Yesterday, I have not slept well; I did not shower; nor I had breakfast

Also with negation, some words have to be substituted by other words. Example:

Affirmation	Negation
I have many pens	I do not have any pen
I can afford to buy several articles	I can not afford to buy any article
I can either afford to buy a car or a house	I can neither afford to buy a car nor a house

Forming Questions

As in most languages, question formation depends on the range of anticipated answers. For example, if the expected answers

Range of anticipated answers	Possible question
"I did eat" or "I did not eat"	"Did you eat?"
"I did eat this morning", or "I did not eat this morning"	"Did you eat this morning?", or "This morning, did you eat?"
"I can", "I can not", "I cannot",	"Can You?"
"I will", "I will not", "I won't",	"Will you?"
"I should", "I should not", "I shouldn't", ...	"Should you?"

In a question, the "verb to be" or "auxiliary verb" precedes the subject as shown in the table below

Structure of anticipated answers	Structure of possible questions
<subject><verb to be>....	<verb to be><subject>....?
<subject><auxiliary verb>....	<auxiliary verb><subject>....?

Additionally, questions may use the following keywords

Word	Target	Examples
where	place	Where is my book?, Where are the cities on this map?, Where are the children?
when	time/date	When did the accident happen?, When can you finish?, What year was it?
why	cause/reason	(direct) (Newton's question) Why did the apple fall?, Why schools are important? (indirect) What caused the apple to fall?, What makes schools important?
what	nature/purpose	(active) What shall I do?, What does make life difficult?, What is life? (passive) What damage did the collision cause?
how	method	How can I help?, How does the car run?, How can I solve this problem?
who	person (active)	Who can answer the question?, Who ate the apple?, Who will start first?
whom	person (passive)	I gave the apple to John → Whom did I give the apple to?

Expressing an Intention or a Wish

Gerund are sometimes used to express a **liking** (e.g., I like **swimming** in the river) which does not necessarily indicate an intention/wish to act.

But, if action is intended based on an intention/wish, then “**to**”+<**verb in base form (infinitive)**> is used.

For example: “I like/wish/intend/want/plan **to swim** in the river”.

In this case “to swim” becomes as if an object (i.e. a noun)

Requests, Declarations, and Modal Verbs

Requests and declarations are special forms of questions or statements.

For example: At an airline desk

(demanding/rude statement)	I want a Paris-to-London one-way ticket
(polite statements)	I would like a Paris-to-London one-way ticket. I hope that you can accommodate me.
(polite statement)	I appreciate to buy a Paris-to-London one-way ticket
(strong statement)	I must see a valid ID before allowing you to go on the plane
(polite strong statement)	My apologies, but I must refuse passengers without IDs to go on the plane
(question)	Is a Paris-to-London one-way ticket available?
(question)	Can I have a Paris-to-London one-way ticket?
(polite question and statement)	Could I have a Paris-to-London one-way ticket? I hope that you can accommodate me.

Modal verbs play are often used in requests and declarations

modal verb	expression utility	Examples	
have to	demand/obligation	Criminals have to go to jail	I have to take my medicine
need	necessity	We need to eat soon	Our neighbourhood needs security
may	likely intention/need/permission	She may need medicine	They may address the parliament
might	weak intention/need/permission	She might need medicine	She might forgive the criminal
shall	strong intention/obligation	Criminals shall go to jail	I shall take my medicine
should	weak intention/obligation	Students should study hard	I should go to sleep soon
will	strong intention	The judge will jail criminals	I will take my medicine
would	intention	Students would go to university if they can afford it	
must	obligation	The national armed forces must defend the country against invasions	
ought to	duty/call for	We all ought to obey the law	Doctors ought to treat patients
can	possibility/ability	Doctors can cure many diseases with antibiotics	
could	weak possibility/ability	The police could be more effective if they get proper support	

Prepositions

Prepositions express a state in time, place, etc.

Example: I placed a book **on** the table, and I will read it **after** I finish drinking my coffee.

The table below lists some frequently used ones.

above	around	between	for	on	to
abroad	as	beyond	from	opposite	toward
across	at	by	in	outside	under
after	before	down	inside	over	up
against	behind	beneath	into	past	while
along	below	during	of	prior	with
amid	beneath	except	off	through	without

Connecting Words

Connecting words are used to compose long sentences by connecting multiple shorter sentences using connecting words.

- Example: “The road ahead is easy, **but** floods made it impossible to travel.”
- Example: “Life was hard, **and** there was no electricity, **but** with some organization of our time, we managed to study in the daytime **and** work in the evening.”
- Note: usually short sentences are preferred over longer ones. For example, the above long sentence can be broken into two sentences: “Life was hard, **and** there was no electricity. **But** with some organization of our time, we managed to study in the daytime **and** work in the evening.”

The table lists some common connecting words

and	or	but	else
because	since	also	due to
again	too	another	next
yet	nor	prior	whether
either ... or	neither ... nor	first/firstly	second/secondly
thus	therefore	so	third/thirdly
except	while	however	consequently
when	whenever	after	before
for	moreover	further	furthermore
then	besides	similarly	correspondingly
indeed	regarding	finally	moreover
additionally	in addition to	subsequently	eventually
still	otherwise	nevertheless	albeit

Adverbs vs Adjectives

Adjectives describe attributes for nouns, and adverbs are kind of adjectives for verbs (e.g., “I walk slowly to school”).

Also, **adjectives appear before nouns** (e.g., “blue ocean”), while **adverbs appear before or after verbs** (e.g., “I slowly got out of bed” or “I got out of bed slowly”).

While few adverbs are identical to the adjectives (e.g., fast/late/early/never/often/never/sometimes/too/always), the vast majority of adverbs are derived from adjectives by appending “ly” (e.g., slow → slowly, financial → financially).

Examples: incredibly, happily, angrily, quickly, scientifically, logically, usually, sadly, fortunately, rarely, delightedly, hungrily, poorly, possibly, invariably, systematically, quietly, basically, generally, definitely, probably, fortunately, unfortunately, luckily, certainly, hardly, ..

Moreover, if the adjective ends with “y”, then it is converted to “i” before adding “ly” (e.g., easy → easily).

Shortening verbs with contractions

Especially in spoken language, contractions on verbs are often used to speak faster and to sound less formal.

Example: I **did not** sleep well yesterday → I **didn't** sleep well yesterday

before contraction	after contraction	before contraction	after contraction
is/has (e.g., She is/has)	's (e.g., He's, She's)	had/would/should (e.g., I had)	'd (e.g., I'd)
are (e.g., Who are)	're (e.g., Who're)	will/shall (e.g., I will)	'll or 'll (e.g., I'll)
have (e.g., They have)	've (e.g., They've)	do not	don't
does not	doesn't	had not	hadn't
is not	isn't	did not	didn't
are not	aren't	was not	wasn't
will not	won't	shall not	shan't
cannot/can not	can't	could not	couldn't
would not	wouldn't	should not	shouldn't
were not	weren't	let us	let's
might not	mightn't		

Countable and Uncountable References

References to things may depend if they can be counted or not. Examples:

Countable (can be counted)	Uncountable
I like to buy few/many apples	I like to swim a little/a lot
Please, put two spoons of sugar in my coffee	Please put a lot of sugar in my coffee

Types of References

There are three types of references: Indefinite reference, Definite reference, and Relationships.

- **Indefinite reference:** does not specify particular objects (e.g., Give me **a** pen ... does not refer to any particular pen). Uses “a/an”, “any” for reference to a singular object, and “some” for reference to multiple objects.

Examples:

Give me a pen	Give me any envelope	Give me some envelopes
Give me an envelope note: “an” is used instead of “a” since “envelope” starts with a vowel (a/e/i/o/u)		

- **Definite reference:** refers to particular objects (e.g., Give me **the** pen.... refers to a “particular known” pen). Uses “the/this/that” for reference to a singular object, and “the/these/those” for reference to multiple objects.

Examples:

Give me the pen	Give me this pen (if the pen is near) Give me that pen (if the pen is far away)	Give me these pens (if the pens are near) Give me those pens (if the pens are far away)
-----------------	--	--

- **Relationships:** refers to objects that belong to someone/owner (e.g., please sign with your blue pen). Uses “my”, “your”, “her”, “his” for reference to a singular owner, and “your”, “their” for reference to multiple owners.

Examples:

Give me my pen	Give me his/her pen	Give me their pen
Give me your pen note: “your” in this case can refer to an ownership by single person or group of persons		

Sentence Tense

The English language has several tenses. The three main verb tenses are the past, present, and future. But there are also four grammatical aspects: simple, continuous, perfect, and perfect continuous. Below are the most common ones

Tense	Description
Simple Present	expresses an action in the present time recurring as a habit
Present Continuous	expresses an ongoing action in the present
Present Perfect	expresses an action that took place (without specifying its occurrence time)
Present Perfect Continuous	expresses an action that started in the past but it is still happening
Simple Past	expresses an action that has happened in the past at a specified time
Past Continuous	Has three use types: - Type 1: an ongoing event at a specific time in the past - Type 2: an ongoing event that was interrupted by an event in the past - Type 3: two ongoing simultaneous events in the past
Past Perfect	expresses an action that completed before another action in the past
Past Perfect Continuous	expresses an action that started in the past and continued up to another action in the past
Simple Future	expresses an action to take place in the future
Future Continuous	Has four use types: - Type 1: a future ongoing event at a specific time - Type 2: a simple future event that occurs during a future ongoing event - Type 3: two/multiple simultaneous future ongoing events - Type 4: a plausible future ongoing event
Future Perfect	expresses an action that will be completed before a specific point in the future
Future Perfect Continuous	expresses an action that will be in progress until a specific point in the future

Simple Present

expresses an action in the present time recurring as a **habit**

form: <subject><infinitive verb+”**s/es?**”>

- “**s**” or “**es**” are added to the “infinitive verb” for singular 3rd person subjects (e.g., he/she/it)

- Note: if the verb ends with “i/o” vowels, “**es**” is used instead of “**s**”

I go to school everyday	John goes to work early in the morning
We go to school in the morning	Jimmy returns from work very late
In the evening, they return from work	Every winter, he skies for about two weeks
They return from school in the afternoon	She eats lunch at work between 12:00 – 1:00 pm

Present Continuous

expresses an **ongoing** action in the present

form: <subject><**verb to be in the present**><infinitive verb+”**ing**”>

I am going to school	She is going to school
You are walking to school	He is making ** a mistake
They are walking to school	It is raining now
They are running * to school	The police is inferring * guilt based on the evidence
The patient is lying *** on his bed	We are ignoring ** the pain in order to survive

*for verbs of one-syllable (or two-syllables with stress on the 2nd syllable), the last letter is doubled before adding “ing” if it preceded by “a/e/u”.

** if the verb ends with “e”, it is removed before adding “ing”.

*** if the verb ends with “ie” it is replaced by “y” before adding “ing”.

Present Perfect

expresses an action that took place (without specifying its occurrence time)

form: <subject><have/has><verb in past perfect (participle) form>

Note 1: making a verb in the past perfect (participle) form depends if it is a regular verb or an irregular verb. For regular verbs, it is <verb>+ "ed^{*,**}". For irregular verbs, **Appendix I** contains a list of irregular verbs

Note 2: "has" is used for single 3rd person, otherwise, "have" is used

Regular verbs	Irregular verbs
(start): I have started watching TV	(drink): I have drunk my coffee cup
(arrive): You have arrived to school	(sleep): You have slept for 8 hours
(move): She/he has moved out of town	(drive): She/He has driven for hours
(hurry): We/They have hurried [*] to school	(teach): We/They have taught physics

* sometimes verb endings are changed before adding the "ed". Examples: verbs ending with "c → ck", "y → i" if it is preceded by a consonant e.g. "study → studied" while "play → played".

** if the verb ends with a consonant that is preceded by a/e/o/u, then the last letter is doubled before adding "ed". Examples: plan → planned, enrol → enrolled, open → opened, gut → gutted.

Present Perfect Continuous

expresses an action that started in the past but it is still happening

form: <subject><have/has><been><infinitive verb+ "ing">

I have been walking to school for an hour	She has been going to school forever
You have been walking to school since 7:00 am	He has been going to school since a year ago
Have they been walking to school for long?	It has been raining for an hour
They have been running [*] to school	We have been exploring ^{**} hard since a month ago
This patient has been lying ^{***} in bed for a long time	This problem has been recurring [*] for a long time

*for verbs of one-syllable (or two-syllables with stress on the 2nd syllable), the last letter is doubled before adding "ing" if it is preceded by "a/e/u".

** if the verb ends with "e", it is removed before adding "ing".

*** if the verb ends with "ie" it is replaced by "y" before adding "ing".

Simple Past

expresses an action that has happened in the past **at a specified time**

form <subject><verb in simple past form>....<specific time>

Note: making a verb in the past form depends if it is a regular verb or an irregular verb. For regular verbs, it is <verb>+”ed^{*,**}”. For irregular verbs, **Appendix II** contains a list of irregular verbs

Regular verbs	Irregular verbs
(start): I started watching TV at 8:00 pm yesterday	(drink): I drank coffee this morning
(arrive): You arrived at 8:30 am to school	(sleep): You slept for 8 hours last night
(move): She/he picnicked all day yesterday	(drive): She/He drove for hours yesterday
(hurry): We/They hurried to school this morning	(teach): We/They taught physics last year

* sometimes verb endings are changed before adding the “ed”. Examples: verbs ending with “c → ck”, “y → i” if it is preceded by a consonant e.g. “study → studied” while “play → played”.

** if the verb ends with a consonant that is preceded by a/o/u, then the last letter is doubled before adding “ed”. Examples: plan → planned, enrol → enrolled, gut → gutted.

Past Continuous – Use type 1: an ongoing event at a specific time in the past

past continuous event form: **was**<verb>+”**ing**” (for singular subject) and **were**<verb>+”**ing**” for plural

At 8:00 am John was driving to work this morning	My two sons were sleeping at 9:00 pm last night
At 8:00 am this morning, John was driving to work	At 6:00 am this morning, we were drinking coffee
He was running to school this morning	We were ignoring ^{**} the thunder noise this morning

*for verbs of one-syllable (or two-syllables with stress on the 2nd syllable), the last letter is doubled before adding “ing” if it preceded by “a/e/u”.

** if the verb ends with “e”, it is removed before adding “ing”.

*** if the verb ends with “ie” it is replaced by “y” before adding “ing”.

Past Continuous – Use type 2: an ongoing event that was interrupted by an event in the past

past continuous event form: **was**<verb>+”**ing**” (for singular subject) and **were**<verb>+”**ing**” for plural

I was sleeping when the phone rang	We were eating when the phone rang
The phone rang when I was sleeping	The phone rang when we were eating
Ana was walking to school when she fell	The athletes were running before it rained

Past Continuous – Use type 3: two ongoing simultaneous events in the past

past continuous event form: **was**<verb>+”**ing**” (for singular subject) and **were**<verb>+”**ing**” for plural

John was watching TV while he was eating	All family members were arguing while I was eating
While John was eating , he was watching TV	We were listening to music while the others were dining
My son was singing while he was bathing	They were singing while I was dancing all evening

Past Perfect

expresses an action that completed before another action in the past

form: <subject><had><verb in past perfect (participle) form>

Note: making a verb in the past perfect (participle) form depends if it is a regular verb or an irregular verb. For regular verbs, it is <verb>+”ed^{*,**}”. For irregular verbs, **Appendix I** contains a list of irregular verbs

She **had put** the baby to sleep before she went to sleep (i.e., the baby sleeping before her sleeping)

I **had finished** my homework before I went to bed

By the time I arrived, everyone else in the family **had finished** dinner

We **had bathed** using cold water for few days before the heating system was fixed

* sometimes verb endings are changed before adding the “ed”. Examples: verbs ending with “c → ck”, “y → i” if it is preceded by a consonant e.g. “study → studied” while “play → played”.

** if the verb ends with a consonant that is preceded by a/o/u, then the last letter is doubled before adding “ed”. Examples: plan → planned, enrol → enrolled, gut → gutted.

Past Perfect Continuous

expresses an action that started in the past and continued up to another action in the past

form: <subject><had><been><infinitive verb+”ing”>

I **have been walking** until I slipped

You **have been studying** when the door bell rang

Had they **been walking** to school before the accident happened?

They **had been running**^{*} until they got arrested again

We **have been exploring**^{**} for oil until the project terminated

This patient **has been laying**^{***} in bed for years until he woke up from his coma

*for verbs of one-syllable (or two-syllables with stress on the 2nd syllable), the last letter is doubled before adding “ing” if it preceded by “a/e/u”.

** if the verb ends with “e”, it is removed before adding “ing”.

*** if the verb ends with “ie” it is replaced by “y” before adding “ing”.

Simple Future

expresses actions to happen **in the future**

form: <subject><will/shall><infinitive verb>

Note: “**will**” expresses **intention/belief** while “**shall**” is more **formal and expresses obligation**

I **will** go to university next year

We **will** go to school

In the evening, my parents **will** return from work

The children **will** return from schools soon

John **shall** go to work early in the morning

I **shall** pay my bills tomorrow

Next year, she **shall** go to school

You **shall** pay fines for speeding

Future Continuous – Use type 1: a future ongoing event at a **specific time**

form: <subject><will/shall><be><infinitive verb+”ing”>

Note: “**will**” expresses **intention/belief** while “**shall**” is more **formal and expresses obligation**

I **will be** walk**ing** to school in few minutes

You **will be** walk**ing** to school soon

They **will be** driv**ing** to work after finishing coffee

She **shall be** go**ing** to school after an hour

He **shall be** study**ing** physics next year

They **shall be** work**ing** on the project in a week

*for verbs of one-syllable (or two-syllables with stress on the 2nd syllable), the last letter is doubled before adding “ing” if it preceded by “a/e/u”.

** if the verb ends with “e”, it is removed before adding “ing”.

*** if the verb ends with “ie” it is replaced by “y” before adding “ing”.

Future Continuous – Use type 2: a **simple future event** that occurs during a **future ongoing event**

form: <subject><will/shall><be><infinitive verb+”ing”>

Note: “**will**” expresses **intention/belief** while “**shall**” is more **formal and expresses obligation**

All passengers **shall be** sitt**ing** down when the captain **will** land the plane

When the captain **will** land the plane, all passengers **shall be** sitt**ing** down

The workers **shall be** work**ing** when the inspector **will** arrive

Future Continuous – Use type 3: **two/multiple simultaneous future ongoing events**

form: <subject><will/shall><be><infinitive verb+”ing”>

Note: “**will**” expresses **intention/belief** while “**shall**” is more **formal and expresses obligation**

The town bell **will be** ring**ing** when the returning troops **will be** enter**ing** the town

The noise **will be** deafen**ing** when the plane **will be** pass**ing** low

The people **will be** rejoic**ing** when the politicians **will be** sign**ing** the peace treaty

Future Continuous – Use type 4: a **plausible future ongoing event**

form: <subject><will/shall><be><infinitive verb+”ing”>

Note: “**will**” expresses **intention/belief** while “**shall**” is more **formal and expresses obligation**

Chances are that it **will be** rain**ing** soon due to these dark clouds

The sky **will** likely **be** darken**ing** due to the extensive forest fires

Based on the economic data, it is likely that many economists **will be** predict**ing** recession

Future Perfect

expresses an action that **will be completed** before a specific point in the future

form: <subject><will have><verb in past perfect (participle) form>

Note: making a verb in the past perfect (participle) form depends if it is a regular verb or an irregular verb.

For regular verbs, it is <verb>+ "ed^{*,**}".

For irregular verbs, **Appendix I** contains a list of irregular verbs

She **will have put** the baby to sleep before 8:00 pm

I **will have finished** my homework before I go to bed

By the time I will arrive, everyone else in the family **will have finished** dinner

We **will have bathed** using cold water for few days before the heating system will be repaired next week

* sometimes verb endings are changed before adding the "ed". Examples: verbs ending with "c → ck", "y → i" if it is preceded by a consonant e.g. "study → studied" while "play → played".

** if the verb ends with a consonant that is preceded by a/o/u, then the last letter is doubled before adding "ed". Examples: plan → planned, enrol → enrolled, gut → gutted.

Future Perfect Continuous

expresses an action that **will be in progress** until a specific point in the future

form: <subject><will/would have><been><infinitive verb+ "ing">

By tomorrow, I **would have been working** for 10 years in my company

You **would have been studying** for three months before you will take the exam

They **would have been running**^{*} for at least an hour before reaching the finish line

We **would have been exploring**^{**} for oil for about two years before the project termination

*for verbs of one-syllable (or two-syllables with stress on the 2nd syllable), the last letter is doubled before adding "ing" if it preceded by "a/e/u".

** if the verb ends with "e", it is removed before adding "ing".

*** if the verb ends with "ie" it is replaced by "y" before adding "ing".

Advanced Grammar

Punctuation

Best illustrated by the following examples

,	He visited labs in Bangkok, Berlin, and Beijing.	She ate a sandwich, an apple, and drank juice.
,	I, a doctor, have examined this patient.	John Smith, MD. John Smith, Ph.D.
;	I saw the patient; but, I didn't think that he was ill.	I can't do it; it is simply beyond me.
;	The soccer games will be held in Denmark, Sweden; China, Russia, Korea; Brazil and Argentina.	
;	The soccer games will be held in Copenhagen, Denmark; Stockholm, Sweden; and Frankfurt, Germany.	
:	Car: a common small transport vehicle of four wheels	One remedy for headache: Aspirin
:	I have to go to the grocery store to buy: bread, butter, meat, vegetables and fruits	
-	mother-in-law, car-owner, post 1900s, pre-lunch (several words making one word)	Example 1- This red apple looks delicious ... Example 2- Pineapples are large and exotic
" "	The doctor declared: "We are free of the virus".	"We are free of the virus", the doctor declared.
'	This farmer's cow (cow belongs to a single farmer)	These farmers' cow (cow belongs to several farmers)

- **Semicolons** (;) connect two independent clauses when (i) they are closely related, (ii) the second restates the first, or (iii) to separate and clarify related subgroups

- **Colons** (:) are used (i) for definitions, (ii) to summarize/restate/explain, or (iii) to introduce a list of things.

- **Quotation marks** (" ") are used to isolate quotation phrases from the rest of the sentence (for clarity).

- **Apostrophes** (') to indicate possession (for plural ending in "s": words's, otherwise: word's).

Oxymoron

An oxymoron is two words of opposite meaning that are put together, and are often described as a contradiction in terms.

On the surface, oxymoron expressions are quite strange. However, oxymoron expressions sometimes abbreviate long sentences.

For example: "This book was discovered missing" abbreviates "This book has been missing and it was not known that it was missing" or "It was not known that this book has been missing".

The table list some oxymoron expression

feel numb	real simulation	authentic replica	objective opinion
discovered missing	pretty ugly	clearly ambiguous	only choice
definite possibilities	partially complete	constant variable	open secret
advanced beginner	medium large	controlled chaos	original copy
accurate estimate	may certainly	routine emergency	half full
genuine imitation	required elective	same difference	light heavyweight
ill health	strangely familiar	tentative conclusion	thoroughly inadequate
important trivia	liquid gas	working vacation	living dead

Synonyms and Antonyms

Synonyms and Antonyms are extensively used and enrich sentence expression.

- **Synonyms** mean equivalent/similar to. For example: beautiful ↔ exquisite ↔ gorgeous ↔ lovely.
- **Antonyms** mean opposite to. For example: plenty vs few, great vs insignificant, night vs day.

Note 1: using “not” does not necessary transform a word into its antonym. Example: “not plenty” could mean few, some, etc.

Note 2: several, especially online, dictionaries can be searched for synonyms and antonyms (e.g., Cambridge, Webster, etc.), **which is quite helpful in enriching the vocabulary of new learners.**

Avoiding verbosity

Verbosity (the use of too many words) is generally discouraged because it can be very confusing.

Instead, choosing the right terms/vocabulary can shorten sentences and provides a more precise meaning.

Examples: “I think this option is unjustifiable” instead of “In my opinion there is not any justification to adopt this option”.

The table below lists some common expressions and their shorter substitutes

Expression	Shorter substitute	Expression	Shorter substitute
a considerable amount of	much	are of the same opinion	agree
in my opinion it is not a justification	unjustifiable	adjacent to	near
the question as to whether	whether	a majority of	most
take into consideration	consider	a considerable number of	many
blue in colour	blue	a number of	some
on a daily basis	daily	a small number of a	few
of great theoretical and practical importance	useful	a great number of times	often
lacked the ability to	could not	additionally	also
accounted for by the fact that	because	despite the fact that	although
absolutely essential	essential	based on the fact that/ due to the fact that	because
it may, however, be noted that	but	at this point in time	now
first of all	first/firstly	in many cases	often
in the event that	if	has the capability of	can
it is worth pointing out that	note that	for the purpose of	for
with a view to	to	through the use of	by

Acronyms

Acronyms are quite extensively used in science and technology and reduce verbosity. The vast majority of acronyms are written in capital letters and are not new English words.

Acronyms are rather a special form of abbreviation of several words, by taking the first letter of (almost) each word in the definition of the acronym.

For example

Acronym	Definition (original words)
ASAP	As Soon As Possible
Laser / LASER	Light Amplification by Stimulated Emission of Radiation
LED	Light Emitting Diode
Sonar / SONAR	Sound Navigation And Ranging
Radar / RADAR	Radio Detection And Ranging
IP	Internet Protocol
TCP	Transfer Control Protocol
NMR imaging	Nuclear Magnetic Resonance imaging
CAT scan	Computer Aided Tomography scan
LTE	Long Term Evolution (a type of wireless communications)
FFT	Fast Fourier Transform

Idioms and Terms

- Idioms: are groupings of several words together to mean something different. Examples:

Idiom	Meaning	Idiom	Meaning
look for	search (physically)	under the weather	sick/ill
look up	search (for a meaning)	feeling the blues	depressed/feeling not well
understand	comprehend/empathize	follow up	continue/pursue/check on

- Terms: are new words created by putting together several words. Examples

subsonic	supersonic	hypersonic	endothermic	hypothermic
millimeter (mm)	centimeter (cm)	meter (m)	kilometer (km)	wireless
kilobyte (KB)	Megabyte (MB)	Gigabyte (GB)	undercontrol	overcontrol

Important note: while the meaning of a term is generally predictable from its parts (e.g., **subsonic** means under speed of sound from **sub** ↔ **under** and **sonic** ↔ **speed of sound** in this case), idioms are generally unpredictable and have to be memorized.

Comparative and Superlative Sentences

Comparative sentences compare two things, (e.g., less/more ..) while superlative sentences state an extreme state of a quality (e.g., best/worst).

In both cases, the key is manipulating the adjective in the sentence which depends on the adjective type:

- Comparative: either (-er) is added at the adjective end, or (more) is used before the adjective, or the (irregular) adjective itself changes
- Superlative: either (-est) is added at the adjective end, or (most) is used before the adjective, or the (irregular) adjective itself changes

Moreover, comparatives have to use comparative linking words (e.g., than). Examples

Comparative Sentence	Superlative Sentence
Dogs are generally bigger than cats	The blue whale is the biggest animal on earth
Girls are more attentive to clothing than boys	For many, espresso is the most delicious coffee
My little brother is better than me in math	My little brother is the best in his class

Appendix III contains most adjectives that accepts (-er) and (-est).

The following table lists the irregular adjectives

Adjective	Comparative	Superlative
bad	worse	worst
good	better	best
much	more	most
some	more	most
many	more	most

Quoted vs Reported Speech

Generally speaking, reported speech is more common than quoted speech since all they need is to convey the same meaning, while **quoted speech** (i.e., within the quotation marks “ ”) **needs to be exact***.

Examples:

Quoted Speech	Reported Speech
The minister said “The government shall provide aid to the victims of the flood”	-It was reported that the minister has promised government aid to the victims of the flood -The minister affirmed aid to the victims of the flood
The jury said “We find the plaintiff guilty”	-The jury has found the plaintiff guilty -The jury has delivered a guilty verdict

* if changes are to be introduced to a quoted text (e.g., for clarification or to correct spelling), then they should be enclosed in **square brackets**. Example: The doctor said “[that he found] no infections”.

Conditional Sentences

Simple conditional sentences are a special type of **two** connected sentences, and have the forms:

<result sentence><connecting word><condition sentence>	<condition sentence><connecting word><result sentence>
"I will be able to rest if I can sit down"	"If I can sit down, then I will be able to rest"
"I would have been safe, had I sat down"	"Had I sat down, I would have been safe"
"The patient would have survived, had the ambulance arrived sooner"	"Had the ambulance arrived sooner, the patient could have survived"
"The city will not be flooded, if the hurricane changes its course away from the city"	"If the hurricane changes its course away from the city, the city will not be flooded".

Sometimes conditional sentences contain **three** connected sentences. That is:

(1) "the **condition**", (2) "the result if the condition **IS met**", and (3) "the result if the condition **IS NOT met**".

Since, such sentences tend to be long, it is preferred if they broken into two sentences (when possible).

Examples:

If I can sit down, then I will be able to rest, and otherwise, I feel that I could fall down.
(preferred alternative): If I can sit down, then I will be able to rest; Otherwise, I feel that I could fall down.
If the heavy wind stops, then aeroplanes can land in our airport, and otherwise, the incoming aeroplanes will need to go to other airports.
(preferred alternative): If the heavy wind stops, then aeroplanes can land in our airport; Otherwise, the incoming aeroplanes will need to go to other airports.

Explicit and Implicit Sentences

Explicit sentences make **direct reference** (e.g., I believe that you ate my apple that was on the table) while implicit sentences make **indirect reference** (e.g., I don't believe that I ate my apple that was on the table).

- Explicit sentences are useful to **warn** (e.g., Snake/Danger ...) and eliminate any room for differing interpretations, but tend to sound rude or intimidating in some cases. Also, explicit statements often require facts or evidence.
- Implicit sentences sound weaker than explicit statements, but they sound polite, reduce friction, and generally do not require facts nor evidence.

Explicit	Implicit
(strong warning) Do not often disagree with your boss	(caution) If I was you, I would not often disagree with my boss
(proper strong warning) Do not touch electric appliances when your hands are wet	(weak) I would not touch electric appliances when my hands are wet
(strong but offensive) He was rude	(polite) A gentleman would not have said that

Word (Morphological) Derivation

Word derivation extensively enrich the English language (as with other languages) and especially in the scientific/technical fields either by

- The joining of two words (i.e., “hydro” and “phobia” → ‘hydrophobia’ to mean not dissolvable in water), or by
- Performing morphological derivation

In word (morphological) derivation, new words (vocabulary) are derived from a word in a base form. The new vocabulary may be nouns, verbs, adjectives, adverbs, and gerund.

- Word derivation rules are **useful to determine the meaning of a derived word** based on the meaning of its base word (e.g. “wonder → wonderful” which means full of wonders).

- **CAUTION: word derivation rules are generally NOT useful in predicting derived words from a base word.** Reasons:
 - For any particular word: **there are, at best, very few valid ways to derive words from it**; while there are many potential derivation rules.
 - Some words are derived from words that are no longer used in English (i.e., archaic). For example: “parliament” is derived from the archaic “parle” which is French and means “to speak”.

There are three ways to perform word (morphological) derivation:

- Adding a **prefix** to the beginning of the base word (e.g., subsonic .. by using the prefix “sub” before the word “sonic”)
- Adding a **suffix** to the end of the base word (e.g., needless ... by using the suffix “less” after the word “need”)
- Changing the base word (e.g., “scientific” from the base word “science”)

Both the methods of adding a prefix and/or suffix follow predictable patterns. Also, the derived meaning is largely predictable based on the prefix, word, and the suffix meanings. Moreover, they may in some cases, involve slight manipulation before adding prefix or suffix.

However unfortunately, the third method that involves a change to the base word usually does not follow a specific pattern although the meaning of the derived word is usually predictable.

Note: in some uncommon cases, there could be multiple derivations on a base word (e.g., kind → unkind → unkindness, **or** kind → kindness → unkindness).

Appendix IV lists many frequent words and their derivatives.

Appendix VII is devoted to the most frequent use of prefixes and suffixes in word derivation and categories of word derivations into:

- **Nouns:** into verbs, adjectives, or modified nouns
- **Verbs:** into nouns, adjectives, adverbs, or modified verbs
- **Adjectives:** into nouns, adverbs, or modified adjectives

Writing and Presentation Styles

This section briefly covers writing and presentations.

- Writing is a one way communication of information from writers to readers.
- Presentations are largely similar to writing but involve some real-time interactions from the audience, and have a presentation time constraint (e.g., from few minutes to 1 hour).

Since this subject is quite wide and is highly subjective, it is futile to cover everything in it in few pages. Therefore, this section only attempts to present a brief overview of its key aspects and outlines covering the most important factors, characteristics, and the writing process in general.

One point, to be strongly emphasized, is that even with good rules and instructions about styles, mastering any style is highly dependent on practice (i.e., just like swimming which cannot be just theoretical).

So, a good advice is to:

- Read similar works, and learn from them useful structures and expression patterns, then
- Practice writing starting by initially mimicking these patterns, and then with time,
- Develop a comfortable personal style.

Types of Literature

Broadly speaking, literature subdivides into fiction and non-fiction. While fiction emphasizes pure imagination, non-fiction emphasizes facts and their interpretations according to some generally accepted norms or rules.

Examples:

Non-fiction version	Harry and Sally met 10 years ago, fell in love, got married, and had two children. First, a girl, now 8 years old, then a boy, now 5 years old.
Fiction version	One Summer 10 years ago, in the Alpine mountain region where the snow capped mountains overlooked a beautiful green valley, the air was filled with the spirit of romance. Harry a tourist, met a local girl called Sally at the souvenir shop. When Harry laid his eyes on Sally, he felt a strong heart beat. He imagined walking with her in the surrounding beautiful green fields with the birds singing and the butterflies flapping their wings around the beautiful roses that filled the place (fast forward few pages ...). They got married by the Fall in a beautiful ceremony in the neighbouring Alpine village (fast forward few pages ...). [the story about their daughter...], [the story about their son ...]....

Thus the non-fiction version of the story has a low artistic value. However, it is **precise and concise** by sticking to the bare facts and possibly some relevant short interpretations.

On the other hand, the fiction version emphasizes artistic value by adding imaginary details that spices the subject and keep the reader engaged with the story.

It should be noted that the term artistic value is highly dependent on the type of the subject. For example, in romantic stories, it is about beauty, appealing to and exploring human feelings, etc., while for drama stories, it is about the plot, the interactions of characters, strongly engaging the reader, etc.

Moreover, the structure of liberal arts writing, and in particular fiction writing, tends to be loose and primarily author dependent. This contrasts professional and scientific writing and presentations that tend to have relatively well defined structures.

Writing Styles

Broadly speaking, there are several general styles

Style Category	Description
Persuasive	Takes a position (i.e., thesis) and justify it using logical arguments, quotations, expert opinions, similar positions, pros and cons, examples, evidence, data, etc. Examples: news columns, business letters, advertisements, marketing presentations, cover letters, recommendations, speeches, proposals, and points of view.
Narrative	Tells a story exploring its characters and their interactions, the plot, the overall setting of locations, environments, etc. Examples: works on historical events, general stories, anecdotes, biographies and autobiographies, poems, myths, sagas, oral traditions and history.
Descriptive	Strives to describe a subject and paints a picture by combining elements like facts, persons/characters, places, objects, and events. Examples: novels, plays, news reports, nature and geographical documentaries.
Expository	Explores a subject in a neutral fashion, like in textbooks. It fairly equally explores the various subtopics of a subject/topic. Examples: textbooks, scientific and technical writings, business analysis reports, educational presentations, and objective news reports.
Reviews	Explore and analyse existing literature works and news reports by examining their stories, characters, plots, arguments, evidence, accuracy and consistency of data, etc. Examples: book or film reviews, and commentary news columns.
Hybrid styles	Combines multiple styles. Examples: - Autobiographies may include insights, description of historic events, general and personal stories - Analytical works are combinations of expository and persuasive works - News articles are combinations of narrative, descriptive, and persuasive styles

Moreover, presentations largely follow these classification, but additionally, have the time constraint (i.e., lecture/presentation time, etc.). Thus, presentations are confined to few slides that use bullet items with little or no written elaboration (details will be discussed later).

Also, speeches fall into the persuasive category, and are time constrained. Therefore, speeches have:

- A short introduction (called **opening statement**) that very briefly contains a statement of aim (or appeal),
- Then the bulk of time is devoted into details supporting this aim (arguments, data, evidences), and lastly,
- A brief conclusion that capitalizes on the core of the speech and repeats the aim (and may point out to solutions).

Central to the success of persuasive writing, is a **well written thesis**. A good thesis:

- (i) is formed as an argument that can defended/demonstrated or as a question that can be answered,
- (ii) it **strongly addresses the subject** with **specificity and precision**, and
- (iii) it projects confidence and mastery of the subject.

Examples:

weak	The paper talks about heat in the atmosphere and abnormal weather.
average	The paper addresses recent heat trapping in the atmosphere and abnormal weather patterns.
strong	The paper addresses the relationship between recent increased in atmospheric heat trapping and abnormal weather patterns, and then, relates them to elevated levels of atmospheric carbon dioxide.

Pillars of Professional and Scientific Writing

Writing has five main pillars

- Knowledge of the target audience
- Knowledge of the subject matter and its relevant details (e.g., facts, data, key figures, standards, etc.)
- Good topic manageability by a clever combination of the subject scope and depth
- A compatible style with the subject matter and the target audience.
- Mastery of relevant vocabulary, terms, and expressions

In particular, the target audience and subject matter combination shapes/dictates the writing style (i.e., theoretical, experimental, practical/pragmatic, etc.), and strongly influences the subject scope and depth.

Also, the mastery of relevant vocabulary, terms, and expressions demonstrates knowledge of the subject matter, and supports the goals of being **precise and concise**.

Unfortunately, scientific, technical, and professional terms are subject dependent with a very big scope. Therefore, they are beyond the scope of this document.

However, knowledge of the Bloom taxonomy of verbs (Appendix V) represents a rich set of useful verb vocabulary that university students should know and use.

Important tips to improve the vocabulary of new English learners:

- To look up the verbs of Appendix V preferably in a hard-copy/paper dictionary (i.e., not an online dictionary). The aim is to browse around these verbs for nouns, adjectives, adverbs, and example of use. This process enhances vocabulary learning and is also consistent with the aims of Appendices II, III, IV, and VII.
- To look up illustrated English dictionaries, and particularly, children books that contain illustrated vocabulary groups (e.g., within the home/kitchen/parc, at farms/factories, at hospitals/clinics, at work/school, at an airport, at a train station, etc.).
- Several, especially online, dictionaries (e.g., Cambridge, Webster, etc.) can be searched for synonyms and antonyms .
- To use translation engines (e.g., Google translate, Microsoft Translator, etc.) to translate words into English and to use their Text-to-Speech  capabilities to learn their pronunciation.

Important Factors

Definitely the most important factors in any literary work are the (i) overall goal of the work, (ii) its target audience, and (iii) its intended scope.

However, there are other factors:

- There are three principal modes of learning: auditory, visual, and kinesthetic (means learning through practice and problem solving).
- Different people may learn better in some modes than others. Therefore, if the subject matter permits, there should be a healthy mix of information presentation tools (e.g., narration, arguments, tables, graphs, pie charts, images, etc.).
- Also, the efficiency of information presentation styles in learning are very subject dependent (e.g., social sciences vs pure sciences vs technology).

Methodologies of Good Writing and Presentations

Good composition needs:

- a clear introductory statement of purpose,
- good partitioning into subtopics,
- clarity within each subtopic,
- good integration coherence among the subtopics, and
- to end with a brief conclusion statement.

Differently stated, a good composition will have **the main message conveyed three times:**

- **briefly in the introduction** as an intention,
- **in details in the body** of the composition, and
- **briefly again in the conclusion** but with the spices of main results, findings, demands, and decisions.

Moreover, the following qualities are central to achieving coherence and clarity

- **the absence of unrelated details to the main message,**
- having few repetitions of key words and concepts to reinforce comprehension,
- **separating facts from interpretations or opinions,**
- a good partitioning into **few homogeneous subtopics** with minimal dependencies and interactions among them.

Furthermore, special attention should be given to supporting ideas or claims by providing a variety of factual/experimental evidence, supporting figures, arguments, conclusions, references, personal observations and analysis.

One powerful technique in persuasive work, is **to introduce alternative theses and disprove them.** This demonstrates fairness and more comprehensive treatment of the subject.

This should take place in the body of the work, as well as, **be mentioned briefly in the conclusion.**

For example: “several other bridge designs that use concrete or wood were investigated. However, they were found to be less performing and less efficient than the proposed steel based bridge design”.

The Writing Process

Good writing is basically an iterative process especially for new learners of English. The number of iterations needed to produce good work varies based on factors like: the writing skill, familiarity with the subject, length of the work, and the type of the subject.

Also, best practice methods are largely subject (and perhaps writer) dependent. However, virtually all of them do have the following pattern:

Phase	Description
Planning	- In this phase a brainstorming of the issues/ideas takes place*. - Then it is followed by a high level determination/planning of the work structure by subdividing the work into subtopics, and writing an outline consisting of brief notes on each subtopic, sequencing of subtopics, and the relationships among the subtopics.
Initial Writing	- In this phase, the emphasis is about NOT losing the focus on the subject matter. - So, writing takes place from the heart and the mind with little (if any) attention to optimizations like spelling or sentence structure, etc.
Revisions and Optimization**	- In this phase, the work is done in several iteration by reading for optimization with minor attention on proofreading. - The primary focus of this phase is on subtopic/paragraph restructuring, on modifying/adding/deleting some content, and on adjusting the document structure if needed. - This phase ends when having a semi-final version of the work except for some grammar/spelling mistakes or some data inaccuracies.
Proofreading and Checking***	The document is read very carefully to correct grammar/spelling mistakes, and to correct any data inaccuracies. This may also requires several iterations.

***Brainstorming**: is to list all ideas and issues without any checking until the listing ends. Then afterwards, optimizing them (i.e., eliminating bad ones, modifying some, etc.).

Good writing from the 1st or 2nd time is generally a myth. For this to happen, the work must be short (no more than two pages), and it must be a repetition of a previous very familiar work with very few modifications. Hence, **the key to good writing is several iterations, practice, and more practice.

***After the proofreading phase, it may be wise to have other persons review the work and provide feedback. This is particularly important for new English learners.

One important note to make is to strongly advise that of the introduction/abstract and the conclusion parts **are basically (re)written after the completion of the document body**.

The main reason is that both parts are highly dependent on the whole body of the work.

- **In literature works**: the introduction serves to set the stage and develop the theme of the work, while the conclusion (could be a chapter) serves to close loose ends and provide a closure (or a closing message).

- **In professional and scientific works**: the introduction introduces the objective, previous relevant work, and a short description of what the work will provide/explore. The conclusion on the other hand, summarizes the objective, the findings of the work, and may point to desired/required things in the future.

Presentations

Presentations are basically written works with a presentation time constraint.

Thus, presentations are about (i) presenting key-points in slides in bullet forms, and (ii) elaborating on each key-point verbally.

Typically, **each slide contains a title and 1-4 key-points in a bullet form**, and potentially, the use of some visual aid (table, graph, image, etc.). The time spent on each slide varies with the subject and how deep is the desired verbal elaboration (e.g., many slides with short verbal elaborations, or fewer slides with longer verbal elaborations).

Like any written work, there will be a (i) title slide, (ii) an introductory slide outlining the presentation goal/objective, (iii) body slides with the key points, and (iv) a conclusion slide.

One good practice, as illustrated in Appendix VI, is

- to treat the presentation as a normal document in the sense of adding **to most key bullet points the verbal elaboration points**, then,
- **to generate a new set of slides** (that will be presented to the audience) by stripping out the verbal elaboration points

This approach has the advantages of (i) doing a comprehensive/detailed preparation that greatly helps the speaker during preparation and (ii) it helps the presenter to accurately elaborate during the presentation.

Listing of Sources

Source citations depend on the type of the source

Source	Citation items
Books	Title, edition (if not the first), author(s), editors, translators, publisher
Articles	Author(s), title, publisher (magazine, journal, newspaper ..), publication date, volume, issue, and article page numbers
Database	Database name, service, URI (Universal Resource Identifier), DOI (Digital Object Identifier), retrieval date
Web page	Authors, title, site/publisher/company, date of last update, URL (Uniform Resource Locator)

*adapted from: “About Writing: a Guide — Revised Edition”, by Robin Jeffery, Open Oregon Educational Resources, Portland, Oregon

Sample Works

Appendix VI contains several samples of written works and presentations. It covers most writing styles for stories, analysis reports, science reports, formal business letters/emails, etc.

The main objective in Appendix VI is **to provide some familiarity** with these styles and **to illustrate how each subject matter affects the writing/presentation style**.

Principal Sources For Further Reading

- “About Writing: a Guide — Revised Edition”, by Robin Jeffery, Open Oregon Educational Resources, Portland, Oregon
- “The Elements of Style, 3rd Edition”, by Strunk & White — 1979 Allen and Baker Pub
- [“ESL Grammar The Way You Like It”, by Don Bissonnette, LibreText, 2025](#)
- [“College ESL Writers Applied Grammar and Composing Strategies for Success”, by Barbara Hall & Elizabeth Wallace, LibreText 2025](#)

Appendix I: Pronunciation Rules

#	letters	phenom	audio	comments	examples	audio
1	a	/æ/		except for “alter, all, overall”	cat, sat, bat, hat, have, has, had	
2	a	/ɑ:/		long “a”	father, harm, far, bar, barrel	
3	ai	/eɪ/		long “ei”	straight, wait, bait, faint	
4	au	/ɔ:/		“o”	daughter, Australia, augment, laurel	
5	ay	/eɪ/		long “ei”	day, stay, play, today, may, stray, hay	
6	a+[]+e	/eɪ/			ate, evade, persuade, navigate, fate, gate	
7	aw	/ɔ:/		light “o”	law, awesome, awkward, awful	
8	b	/b/			boy, bottle, binary, bottom, below, above	
9	c	/k/		“k” if not followed by [e,i,y]	cat, create, cope, cup, cut, cozy, cart, carve	
10	c+[e,i,y]	/s/		“s” + [e,i,y]	cereal, ceremony, circle, cigar, cycle, civil	
11	ch	/k/		light “k”	character, school, chemistry, schedule	
12	ch	/ʃ/		light “sh”	chef, chic, niche. Except “loch, lochness”	
13	ch	/tʃ/		like “t.sh”	chicken, cheese, cheep, chocolate, chamber	
14	ck	/k/		strong “k”	clock, crack, snack, knock, block, track	
15	d	/d/			dear, door, dog, dig, dumb, drive, beard	
16	e	/e/		silent at the end of words	envelope, arrive, elaborate, resonate, rely	
17	ea	/i/		slightly long “i”	eat, repeat, defeat, cheat, ear, speak, treat	
18	ee	/i:/		long “i”	week, weed, exceed, indeed, need, knee	
19	eigh/aigh	/eɪ/		long “ai”	eight, freight, weight, straight, eighteen	
20	er	/ə/			mother, father, further, another, singer	
21	ere	/er/		long /er/	here, mere, sphere, atmosphere, adhere	
22	ey	/i/		long “i”	key, kidney, Sydney, honey, money	
23	eye	/aɪ/			eye, eyebrow, eyeball, redevye, pinkeye	
24	f	/f/		except “of”	four, figure, fire, fellow, few, fish	
25	g	/g/			gather, go, gutter, give, get, together	
26	g+[e,i]	/dʒ/+ [e,i]		“j”+[e,i]	Germany, gigantic, bridge, fridge, bulge	
27	gn	/g.n/		long “n”	sign, align, assign, design, foreign Except: signature, signal, signaling, designate	

#	letters	phenom	audio	comments	examples	audio
28	gh	/eɪ/		light and long “ei”/“ae”	right, straight, might, thought, bought	
29	h	/h/		except “ch, sh, th..”	hat, hot, hill, high, honey, overhaul, hen	
30	i	/ɪ/			imaging, irrigate, ignore, idiom, ignite	
31	i	/ɜː/		short “i”	bit, hit, knit, sit, stir, kit, it, itself, is, his	
32	ie/ei	/iː/		“ee”	field, yield, shield, thief, chief, receive Tip: in spelling/writing it is always “ie” (e.g., field) unless it is preceded by “c” (e.g., rece ive)	
33	i+[]+e	/aɪ/[]		“ai”+[consonant]	rise, like, bike, strike, write, lite, site, kite	
34	igh	/aɪ/		deep “ai”	high, thigh, flight, sight, bright, might	
35	ing	/ɪŋ/			hiding, king, bring, sing, walking, sitting	
36	j	/dʒ/			joke, jump, jury, judge, joy, jasmine, jug	
37	k	/k/			kite, kilo, kin, kid, kind, kick, kindle, kiss	
38	kn	/n/		deep “n”	knowledge, knife, know, knock, knob	
39	l	/l/			lamb, lump, loop, line, align, live, liberate	
40	ll	/l/		strong “l”	allocate, align, alligator, all, ally, finally	
41	m	/m/			marble, merit, make, mellow, mom, dam	
42	n	/n/			noble, name, nominal, analysis, abnormal	
43	ng	/ŋ/		strong “n”+ short “g”	wrong, song, sing, bring, cling, sting, wing	
44	ng	/ŋg/		strong “n”+ strong “g”	longer, strongest, warmonger, fearmonger	
45	ngst	/ʌŋst/		“n”+ short “gst”	amongst, angst, youngster	
46	nk	/ŋk/		short “n”+ short “k”	think, blink, drink, brink, mink, link, kink	
47	o	/ɔː/			operate, over, open, occur, horse, course	
48	o	/ɒ/		short “o”	stop, sock, shock, block, rock, off, of, on	
49	oo	/uː/		“oo”	cool, fool, stool, pool, spool, tool, school	
50	oo	/ʊ/		short “oo”	look, book, cook, nook, crook, took, shook	
51	oo	/ɔː/		long “oo”	door, floor, trapdoor, doorstep, underfloor	
52	oo	/ʌ/		short “a”	blood, flood, pureblood, lifeblood	
53	ose	/oʊ/		“oz”	nose, rose, verbose, glucose, fructose, pose	
54	ou	/aʊ/		‘aw”	mouth, south, account, out, amount, tout	
55	ou	/ɔː/		long “o”	four, fourteen, candour, vapour, colour	
56	ou	/ʊ/		short “oo”	would, could, should, you, your, pour	
57	ough	/uː/		long “oo”	through, although, brought, thought	
58	ow	/aʊ/		“aw”	now, cow, how, bow, brow, vow, allow	
59	ow	/oʊ/		“o”	low, snow, blow, beau, glow, know, borrow	

#	letters	phenom	audio	comments	examples	audio
60	oy	/ɔɪ/		“oi”	boy, toy, joy, employ, alloy, deploy, ploy	
61	p	/p/			plane, pen, pencil, ample, approach	
62	ph	/f/		strong “f”	symphony, phone, philosophy, laugh	
63	ps	/s/		light “p” + strong “s”	psychology, psalm, psyche, psychiatry	
64	q	/k/			quality, quantum, equal, qualifications	
65	r	/r/			run, random, transfer, around, remedy	
66	s	/ŋ/			sing, super, transfer, administer, say, sick	
67	[vowel]s			“z”	is, rise, resort, disaster, advise, close (v)	
	[vowel]	/z/			Exception: browse	
68	sh	/ʃ/			trash, shall, shock, shiver, shallow, ship	
69	sion	/ɪʒən/		“jj.n”	collision, revision, vision, television	
70	t	/t/			time, plant, material, metal, town, try, to	
71	tch	/tʃ/			catch, snatch, scratch, match, hatch, snatch	
72	th	/θ/			method, theory, theatre, things, though	
73	th	/ð/		strong “z”	this, that, there, therefore, father, mother	
74	tion	/ɪʒən/		“sh.n”	equation, donation, revelation, invitation	
75	tt	/t̪/		“strong t”	attack, cutting, fitting, plotting, sitting	
76	u	/ʌ/		“short a”	cut, cup, lumber, hut, nut, but, butter, gut	
77	u	/u/			situation, usual, use, abuse, accuse, excuse	
78	ue	/uː/		“you”	blue, hue, clue, true, fuel, glue, accrue	
79	v	/v/			very, live, liver, love, hover, cover, vow	
80	w	/w/			witch, were, worry, follow, why, what, was	
81	wh	/w/		deep “w”	where, which, what, whom, white, whither	
82	x	/k.s/		“ks”	proxy, epoxy, except, exclude, exchange	
83	xe/xy	/k.se/		“ze” / “zi”	xenon, xenophobia, xylophone	
84	y	/i/			yes, yoke, assembly, yap, yard, yarn, yeah	
85	y	/aɪ/		strong “ai”	byte, bye, by, fly, try, fry, cry, why	
86	z	/z/			zero, zebra, zoo, zone, organize, zinc, zip	

Appendix II: Irregular Verbs

Infinitive/Base Form	Past Simple	Past Participle	Infinitive/Base Form	Past Simple	Past Participle
beat	beat	beaten	find	found	found
become	became	become	fly	flew	flown
begin	began	begun	forget	forgot	forgotten
bend	bent	bent	forgive	forgave	forgiven
bet	bet	bet	freeze	froze	frozen
bite	bit	bitten	get	got	got
bleed	bled	bled	give	gave	given
blow	blew	blown	go	went	gone
break	broke	broken	grow	grew	grown
breed	bred	bred	have	had	had
bring	brought	brought	hear	heard	heard
build	built	built	hide	hid	hidden
burn	burnt/burned	burnt/burned	hit	hit	hit
buy	bought	bought	hold	held	held
catch	caught	caught	hurt	hurt	hurt
choose	chose	chosen	keep	kept	kept
come	came	come	know	knew	known
cost	cost	cost	lay	laid	laid
cut	cut	cut	lead	led	led
do	did	done	lean	leant/leaned	leant/leaned
dig	dug	dug	leave	left	left
draw	drew	drawn	lend	lent	lent
dream	dreamt/dreamed	dreamt/dreamed	let	let	let
drink	drank	drunk	lose	lost	lost
drive	drove	driven	make	made	made
eat	ate	eaten	mean	meant	meant
fall	fell	fallen	meet	met	met
feed	fed	fed	pay	paid	paid
feel	felt	felt	put	put	put
fight	fought	fought	quit	quit	quit

Infinitive/Base Form	Past Simple	Past Participle	Infinitive/Base Form	Past Simple	Past Participle
read	read	read	split	split	split
ride	rode	ridden	spread	spread	spread
ring	rang	rung	speed	sped	sped
rise	rose	risen	stand	stood	stood
run	ran	run	steal	stole	stolen
say	said	said	stick	stuck	stuck
see	saw	seen	sting	stung	stung
sell	sold	sold	stink	stank	stunk
send	sent	sent	sweep	swept	swept
set	set	set	swim	swam	swum
shake	shook	shaken	swing	swung	swung
shine	shone	shone	swear	swore	sworn
shoe	shod	shod	take	took	taken
shoot	shot	shot	teach	taught	taught
show	showed	shown	tear	tore	torn
shrink	shrank	shrunk	tell	told	told
shut	shut	shut	think	thought	thought
sing	sang	sung	throw	threw	thrown
sink	sank	sunk	understand	understood	understood
sit	sat	sat	wake	woke	woken
sleep	slept	slept	wear	wore	worn
speak	spoke	spoken	win	won	won
spend	spent	spent	write	wrote	written

Appendix III: Regular Adjectives

Adjective	Comparative	Superlative	Adjective	Comparative	Superlative
angry	angrier	angriest	dark	darker	darkest
big	bigger	biggest	deep	deeper	deepest
black	blacker	blackest	dense	denser	densest
bland	blander	blandest	deadly	deadlier	deadliest
blue	bluer	bluest	dirty	dirtier	dirtiest
bold	bolder	boldest	dry	drier	driest
bossy	bossier	bossiest	dull	duller	dullest
brave	braver	bravest	dumb	dumber	dumbest
brief	briefer	briefest	dusty	dustier	dustiest
bright	brighter	brightest	early	earlier	earliest
broad	broader	broadest	easy	easier	easiest
busy	busier	busiest	evil	more evil	most evil
calm	calmer	calmest	faint	fainter	faintest
cheap	cheaper	cheapest	fair	fairer	fairest
chewy	chewier	chewiest	fancy	fancier	fanciest
chubby	chubbier	chubbiest	far	farther	farthest
classy	classier	classiest	fast	faster	fastest
clean	cleaner	cleanest	fat	fatter	fattest
clever	cleverer	cleverest	few	fewer	fewest
close	closer	closest	fierce	fiercer	fiercest
cloudy	cloudier	cloudiest	filthy	filthier	filthiest
clumsy	clumsier	clumsiest	fine	finer	finest
coarse	coarser	coarsest	firm	firmer	firmest
cold	colder	coldest	fit	fitter	fittest
cool	cooler	coolest	flaky	flakier	flakiest
crazy	crazier	craziest	flat	flatter	flattest
creamy	creamier	creamiest	fresh	fresher	freshest
creepy	creepier	creepiest	friendly	friendlier	friendliest
crispy	crispier	crispiest	full	fuller	fullest
crunchy	crunchier	crunchiest	funny	funnier	funniest
curly	curly	curliest	gentle	gentler	gentlest
curvy	curvier	curviest	gloomy	gloomier	gloomiest
cute	cuter	cutest	greasy	greasier	greasiest
damp	damper	dampest	great	greater	greatest

Adjective	Comparative	Superlative	Adjective	Comparative	Superlative
gross	grosser	grossest	pure	purier	purest
hairy	hairier	hairiest	quick	quicker	quickest
happy	happier	happiest	quiet	quieter	quietest
hard	harder	hardest	raw	rawer	rawest
harsh	harsher	harshest	rare	rarer	rarest
healthy	healthier	healthiest	rich	richer	richest
heavy	heavier	heaviest	ripe	riper	ripest
high	higher	highest	risky	riskier	riskiest
hip	hipper	hippest	roomy	roomier	roomiest
hot	hotter	hottest	rough	rougher	roughest
humble	humbler	humblest	rude	runder	rudest
hungry	hungrier	hungriest	rusty	rustier	rustiest
icy	icier	iciest	sad	sadder	saddest
itchy	itchier	itchiest	safe	safer	safest
juicy	juicier	juiciest	salty	saltier	saltiest
moist	moister	moistest	sane	saner	sanest
narrow	narrower	narrowest	scary	scarier	scariest
nasty	nastier	nastiest	shallow	shallower	shallowest
naughty	naughtier	naughtiest	sharp	sharper	sharpest
near	nearer	nearest	shiny	shinier	shiniest
neat	neater	neatest	short	shorter	shortest
needy	needier	neediest	shy	shyer	shyest
nervous	more nervous	most nervous	silly	sillier	silliest
new	newer	newest	simple	simpler	simplest
nice	nicer	nicest	sincere	sincerer	sincerest
noisy	noisier	noisiest	skinny	skinnier	skinniest
odd	odder	oddest	sleepy	sleepier	sleepiest
oily	oilier	oiliest	slim	slimmer	slimmest
old	older/elder	oldest/eldest	slimy	slimier	slimiest
plain	plainer	plainest	slow	slower	slowest
polite	politer	politest	small	smaller	smallest
poor	poorer	poorest	smart	smarter	smartest
pretty	prettier	prettiest	handy	handier	handiest
proud	prouder	proudest	smelly	smellier	smelliest

Adjective	Comparative	Superlative	Adjective	Comparative	Superlative
smoky	smokier	smokiest	thick	thicker	thickest
smooth	smoother	smoothest	thin	thinner	thinnest
soft	softer	softest	thirsty	thirstier	thirstiest
soon	sooner	soonest	tiny	tinier	tiniest
steep	steeper	steepest	tough	tougher	toughest
stingy	stingier	stingiest	true	truer	truest
sore	sorer	sorest	ugly	uglier	ugliest
sorry	sorrier	sorriest	warm	warmer	warmest
sour	sourer	sourest	weak	weaker	weakest
spicy	spicier	spiciest	wealthy	wealthier	wealthiest
strange	stranger	strangest	weird	weirder	weirdest
strict	stricter	strictest	wet	wetter	wettest
strong	stronger	strongest	wide	wider	widest
sunny	sunnier	sunniest	wild	wilder	wildest
sweaty	sweatier	sweatiest	windy	windier	windiest
sweet	sweeter	sweetest	wise	wiser	wisest
tall	taller	tallest	worldly	worldlier	worldliest
tan	tanner	tannest	worthy	worthier	worthiest
tasty	tastier	tastiest	young	younger	youngest

Appendix IV: Derivative Words

Noun	Verb	Adjective	Adverb
absence		absent	
access, accessibility	access	accessible	
accuracy		accurate	accurately
adaptation, adaptability	adapt	adapted, adaptable	
addict, addiction		addicted, addictive	
addition	add	additional	additionally
affection	affect	affected	affectedly
alphabet		alphabetical	alphabetically
amazement	amaze	amazing	amazingly
analysis	analyse/ analyze	analytical	analytically
appearance	appear	apparent	apparently
application, applicant	apply	applied	
appointment	appoint	appointed	
appreciation	appreciate	appreciative	appreciatively
archaeology, archaeologist		archaeological	archaeologically
arrangement	arrange	arranged	
art artist		artistic	artistically
attractiveness	attract	attractive	attractively
		available, unavailable	availability
base, basis	base	basic	basically
beating	beat	beaten	
beginning, beginner	begin		
bias	bias	biased	
breadth	broaden	broad	broadly
building	build	builder	building
celebration	celebrate	celebratory	

Noun	Verb	Adjective	Adverb
character, characteristic, characterization	characterize	characteristic, characterless	characteristically
choice	choose	chosen	
classic		classic, classical	
close, closing, closure	close	closed	
collection	collect	collective	collectively
commitment	commit		
comparison	compare	compared, comparative	comparatively
complexity		complex	
composure	compose	composed	
computer, computerization	computerize	computerized	
connection	connect	connected	connecting
consequence		consequent	consequently
consultation, consultant, consultancy	consult	consultative	consulting
count	count	countable, countless, uncountable	
coverage	cover	covered	
creation	create	creative	creatively
currency		current	currently
date	date	dated, out-dated	
day		daily	daily
decrease	decrease	decreasing	decreasingly
delight	delight	delighted, delightful	delightedly, delightfully
dependence	depend	dependable	
depth	deepen	deep	deeply
desire, desirability	desire	desirable, desired	desirably
distinctiveness	distinguish	distinctive, distinct	distinctively

Noun	Verb	Adjective	Adverb
diversity, diversification	diversify	diverse	
domination	dominate	dominating, domineering	
doubt	doubt	doubtful, doubtless, undoubted	undoubtedly, doubtfully
drama	dramatize	dramatic	dramatically
eagerness		eager	eagerly
ecology		ecological	ecologically
education	educate	educational	
efficiency		efficient	efficiently
elegance		elegant	elegantly
emphasis	emphasize	emphatic	emphatically
enjoyment	enjoy	enjoyable	
enlargement	enlarge	large	largely
enrichment	enrich	enriched	
	ensure	sure	
enthusiasm, enthusiast	enthuse	enthusiastic	enthusiastically
entry, entrance	enter	entry	
estimate, estimation	estimate	estimated	
evolution	evolve	evolutionary	
excellence	excel	excellent	excellently
expansion	expand	expandable	
expectation, expectancy	expect	expected, expectant, unexpected	expectedly, unexpectedly
exhaustion	exhaust	exhaustive	
explanation	explain	explanatory	
extension	extend	extendable, extended, extensive	extensively
fact		factual	factually
failure	fail	failed	
finance	finance	financial	financially
flexibility	flex	flexible	flexibly

Noun	Verb	Adjective	Adverb
forgetfulness	forget	forgetful	forgetfully
foundation, founder	found		
freshness	freshen	fresh	freshly
fullness	fill	full	fully
globe	globalize	global	globally
growth	grow	growable	growing
health		healthy, unhealthy	healthily
heat	heat	hot	
height	heighten	high	highly
hesitation, hesitancy	hesitate	hesitant	hesitantly
history		historic, historical	historically
hope, hopefulness, hopelessness	hope	hopeful, hopeless	hopefully, hopelessly
hour		hourly	hourly
imagination	imagine	imaginable, imaginative, imaginary, unimaginable	imaginatively
immediacy		immediate	immediately
impression	impress	impressive	impressively
importation, import	import	imported	
inclusion	include	included, including, inclusive, includable	
increase	increase	increasing	increasingly
infant, infancy		infantile	
influence	influence	influential	
intent, intention	intend	intentional	intentionally
interpretation, interpreter	interpret	interpretive, interpretative	interpretively, interpretatively
interruption	interrupt	interrupted	
knowledge, acknowledgement	know, acknowledge	knowledgeable, knowledgeable	knowingly
leader, leadership	lead	leading	
lecture, lecturer	lecture		

Noun	Verb	Adjective	Adverb
length	lengthen	long, lengthy	
literacy, illiteracy		literate, illiterate	
loyalty		loyal	loyally
maintenance	maintain		
management, manager	manage	managerial	
manufacture, manufacturer	manufacture	manufacturable	
measure, measurement	measure	measurable	measurably
memory	memorize	memorable	memorably
monotony, monotone		monotonous	monotonously
narrator, narrative, narration	narrate		
number, numbering	number	numbered	
obsession	obsess	obsessive, obsessed	obsessively
origin	originate	original	originally
pack, packet, package, packaging	pack, unpack	packed, unpacked	
person	personify	personal	personally
persuasion, persuasiveness	persuade	persuasive	persuasively
pleasure	please	pleasurable	
population	populate	populated	
postponement	postpone	postponed	
practice	practice	practical	practically
precision	precise	precise	precisely
preference	prefer	preferred, preferable	preferably
prime		prime, primarily	primarily
production, producer, product, productivity	produce	productive	productively
prospect	prospect	prospective	
publisher, publishing	publish	published	
readiness	ready	ready	readily

Noun	Verb	Adjective	Adverb
reason	reason	reasonable unreasonable	reasonably unreasonably
reception, receipt, receiver	receive		
recognition	recognize	recognizable	recognizably
recommendation	recommend	recommended	
reduction	reduce	reduced	
rehearsal	rehearse		
relaxation	relax	relaxed	relaxing
reliability reliance	rely	reliable, unreliable self-reliant	reliably
relief	relieve	relieved	
remark	remark	remarkable	remarkably
removal, remover	remove	removable, removed	
repetition	repeat	repeated	repeatedly
reserve, reservation	reserve	reserved, unreserved	unreservedly
resourcefulness		resourceful, resourced	resourcefully
response, responsiveness	respond	responsive, unresponsive	responsively
responsibility		responsible	responsibly
irresponsibility		irresponsible	irresponsibly
revolution, revolutionary	revolutionize	revolutionary	
requirement	require	required	
riches	enrich	rich	richly
satisfaction	satisfy	satisfied, satisfactory, unsatisfactory, satisfying	satisfactorily
saviour, savings	save	saved	
science, scientist		scientific	scientifically
simplicity	simplify	simple, simplistic	simply
solution	solve	solved	

Noun	Verb	Adjective	Adverb
space	space	spacious, spatial	spaciously
specialty	specialize	special	specially
spectacle		spectacular	spectacularly
stability, stabilizer, stabilization	stabilize	stable	
style		stylistic, stylized	stylistically
subject		subjective	
substance	substantiate	substantial	substantially
success	succeed	successful	
sufficiency	suffice	sufficient	sufficiently
surgery, surgeon		surgical	surgically
surprise	surprise	surprised	surprisingly
sweet, sweetener	sweeten	sweet	sweetly
sympathy	sympathize	sympathetic	sympathetically
taste	taste	tasteful, tasteless	tastefully, tastelessly
distaste	distaste	distasteful	distastefully
temperament		temperamental	temperamentally
thought	think	thoughtful, thoughtless	thoughtfully, thoughtlessly
tradition		traditional	traditionally
treatment	treat		
truth		true	truly
universe		universal	universally
vacancy	vacate	vacant	vacantly
validity	validate	valid	validly
variety	vary	varied, varying	varying
width	widen	wide	widely
world		worldwide	worldly
wrapping	wrap	wrapped	

Appendix V: Bloom's Taxonomy Action Verbs

The following tables contain many adaptations of Bloom's original taxonomy action verbs of 1956 and its revision. These verbs are viewed to be important for university students to know, and are categorized into several groups:

Group	Definition
Remember/Know	Exhibit remembrance by recalling facts, terms, basic concepts, and answers.
Understand	Demonstrate understanding of facts and ideas by stating and describing main ideas. Exhibit skills in organizing, comparing, translating, interpreting, etc.
Apply	Apply and adapt knowledge (facts, techniques, rules, etc.) to solve new problems
Analyse	Examine information using techniques such breaking information into simpler homogeneous parts, making inferences, and finding evidence to support generalizations.
Evaluate	Present and defend opinions by making criteria based judgments regarding validity of information and ideas or quality of work.
Create/Synthesise	Creative information use by combining elements in a new pattern or proposing alternative solutions.

Major sources: (1) LibreText course "ESL Grammar the Way You Like It" by Don Bissonnette, (2) "Center for Teaching Excellence" at the University of Waterloo, and the (3) The National Association for the Education of Young Children (NAEYC).

Group	Action Verbs
Remember/ Know	arrange, choose, cite, copy, define, describe, draw, duplicate, enumerate, identify, index, indicate, inform, label, list, locate, match, memorize, name, omit, order, outline, point, quote, read, recall, recite, recognize, recollect, record, recount, relate, rename, repeat, reproduce, review, select, specify, state, stipulate, study, support, tabulate, tell, trace, underline, write Examples: "Identifying the major factors in the subject leads to better understanding", "Repeating new vocabulary improves memorization", "Reciting poetry is the most effective way to master it", "Relating events and factors improves subject understanding", "For memorization, I had to tabulate and recite many specifications during my licence exam study"

Group	Action Verbs
Understand	add, approximate, articulate, associate, characterize, cite, clarify, classify, compare, comprehend, compute, contrast, convert, defend, demonstrate, describe, detail, differentiate, discuss, distinguish, elaborate, estimate, explain, express, extend, extrapolate, factor, generalize, give examples, grasp, identify, illustrate, indicate, infer, interact, interrelate, interpolate, interpret, judge, locate, match, observe, order, organize, paraphrase, picture, predict, present, question, recast, recognize, reiterate, relate, report, represent, restate, retell, review, rewrite, select, show, summarize, tell, translate, visualize Examples: “One must be very careful about generalizations and data extrapolations”, “The student demonstrated a deep understanding of the subject by identifying, characterizing, and interrelating the major factors in the subject”, “Giving examples usually improve presentations and students’ interactions”, “The information presentation was well organized, and demonstrated a good grasp of the topic”.

Group	Action Verbs
Apply	act, acquire, adapt, allocate, apply, approximate, argue, assign, attain, audit, avoid, breakdown, calculate, capture, change, characterize, choose, clarify, complete, compute, confirm, construct, customize, custom make, demonstrate, depreciate, derive, determine, develop, diagram, discover, distinguish, dramatize, draw, employ, engage, exaggerate, execute, exercise, exhibit, experiment, explain, generalize, handle, hire, identify, illustrate, implement, interpret, interview, judge, manage, manipulate, modify, operate, organize, paint, personalize, practice, predict, prepare, price, prioritize, process, produce, project, provide, relate, replicate, reveal, round (off), schedule, select, show, simulate, sketch, solve, supervise, train, translate, use, utilize, write Examples: “The professor has adapted the analysis method to the new situation by acquiring more samples”, “The validity of our approximations were confirmed by new measurements and simulations”, “I need to compute and interpret the results of the new experiment before I can judge its success”, “The experiment was not organized nor accurate enough to distinguish between bacteria types”, “The employed technique seems to exhibit some irregularities which explains the observed errors”, “There is no need to dramatize these initial bad results since we cannot yet project and generalize”

Group	Action Verbs
Analyze	analyze, appraise, arrange, break, break down, calculate, categorize, classify, compare, conclude, contrast, correlate, criticize, debate, deduce, detect, diagnose, diagram, differentiate, diminish, discover, discriminate, dissect, distinguish, divide, evaluate, examine, experiment, explore, expose, express, factor, figure, figure out, graph, group, identify, illustrate, infer, inquire, inspect, interpret, inventory, investigate, layout, manage, maximize, minimize, optimize, order, organize, outline, plot, point out, predict, prioritize, probe, proofread, query, question, relate, scrutinize, select, separate, sequence, simulate, solve, subdivide, survey, tabulate, test, theorize, transcribe, transform Examples: “The examiners diagnosed the problem by inspecting the data and discovering failures”, “A better understanding was reached by subdividing and classifying the survey data to reveal trends”, “Only after scrutinizing, categorizing and interpreting the raw data, we can make solid inferences”, “We discovered that inventory expansion were correlated with diminishing sales”, “We made good progress after we prioritized our tasks, and thus, exposed previous bottlenecks”, “Based on test data and simulations, it was theorized that further great progress is feasible”, “Productivity optimization meant maximizing finance for some projects by minimizing general overhead”

Group	Action Verbs
Evaluate	appraise, argue, arrange, assemble, assess, attach, attribute, check, choose, compare, conclude, contrast, counsel, create, criticize, critique, decide, deduce, defend, describe, design, determine, devise, discriminate, estimate, evaluate, examine, explain, formulate, gather, grade, indicate, infer, interpret, judge, justify, manage, measure, mediate, operate, predict, prepare, prescribe, probe, propose, rank, rate, rearrange, recommend, reconcile, reflect, release, revise, rewrite, score, select, set up, suggest, summarize, supervise, support, suppose, surmise, synthesize, test, urge, validate, value, verify, weigh Examples: “The evaluator contrasted our project’s expenses against some industry benchmarks”, “The government prob conclusions clearly validated our company reporting practices”, “The engineers managed to formulate a new plan to release designs faster, and management approved it”, “After some revisions, the difference between measurements and simulations were reconciled”, “After weighing the various options, management released a revised plan that can be justified”, “A better assessment can be made after ranking projects based on their revenue estimates vs costs”

Group	Action Verbs
Create/ Synthesize	appraise, abstract, animate, argue, arrange, assemble, assess, budget, calculate, categorize, choose, code , collect, combine, compare, compile, compose, conclude, concoct, construct, contrive, coordinate, cope, correspond, create, cultivate, debug, depict, design, develop, devise, divide, do, enhance, estimate, evaluate, explain, facilitate, format, formulate, generalize, generate, handle, hypothesize, imagine, import, improve, incorporate, integrate, intend, interface, interpret, invent, join, judge, justify, lecture, make, manage, measure, model, modify, network, organize, originate, outline, overhaul, plan, portray, predict, prepare, prescribe, produce, program, propose, rate, rearrange, reconstruct, relate, reorganize, revise, rewrite, role-play, score, select, set up, specify, streamline, summarize, support, synthesize, systematize, tell/tell why, theorize, value, write Examples: “Scientists frequently imagine, hypothesize, and generalize in order to develop new theories”, “The business appraiser examined the budget, assessed the assets, and estimated future revenues”, “Engineers often experiment, code and integrate new functionalities to create new inventions”, “The manager reorganized the work environment to streamline activities, interfaces, and designs”, “Often new clients are cultivated from business fairs, exhibitions, and advertisements”, “Our company improved its stocks by overhauling the business and inventing new products”, “Our engineers examined the experimental data, interpreted them, and improved the design”

Appendix VI: Sample Works of Writings and Presentations

Sample Composition

Assignment: to write a description of a short Summer trip.

Phase	Contents
Planning Brainstorming	Departure from NYC (date), headache at the airport , sleeping on plane , arrival next day , going to the hotel ; visit to piazza Venezia, the museums around it, walking in via del Corso, help from italians , arriving at 3 fountains, throwing a coin and making a wish, pizza dinner near wall. 2 nd day, visiting the Vatican and the castle of the angels, and walking along the Tibre river, taxi, Spanish steps, (add) help from italians , dinner at Piazza Navona. 3 rd day, short trip to the Pantheon, eating pasta, taking taxi to the airport, passing by piazza Venezia, traffic jam , airport headache , taking the plane back, sleeping on the plane with a smile, arrival to NY Back to work the following day.
Planning Work subdivision	-Introduction: wanting to go Rome to escape NYC daily monotony, trip reservation&planning - Parts: day1, day2, day3 and trip back - (conclusion) my feelings after waking up back in NYC
Beginner's Level Writing (only part of 1 st day, introduction, and conclusion) showing (1) initial writing , (2) revisions , and (3) proof reading and checking	(part of the 1 st day) I woke up in Rome and had breakfast and a true espresso at my charming small hotel. I asked to the hotel owner about some sight seeing touring tips. She did not know English well, but tried hard to help, which made my day. I walked to the beautiful Piazza (square) Venezia. The view at the top, was equally majestic. From there, I could see Via del Corso that passes through out old Rome. Also, on the right , I could see the Colosseum, the Roman ruins of the f Forum and the Circus Massimo. After resting for a while , I walked toward the nearby museums. The museums were not as big large as Manhattan's Metropolitan museum. But However , their collections of many periods of Italian history were wonderful. Afterwards, I walked through the via del Corso (the introduction part) My alarm clock rang, and I wished it did not. Daily life seemed like running on a treadmill; working late most days till exhaustion, then coming home, and crashing into bed. Long gone was the initial excitement about Manhattan skyscrapers and central park. I felt, that I needed to get away few few days to charge my batteries. I decided on Rome after watching the classic movie "Roman Holiday". In about a month, my vacation day arrived. That morning , I went to work with my luggage, and flew in the late evening. I se pt slept most of the flight, and crashed on my bed in my small hotel. (the conclusion part) Again, my alarm rang and I reached to silence it. I open ed my eyes and said: "No, Not again". But eventually , I dragged my feet to prepare for my work routine life, but this time, I was smiling every time I thought of Rome.

Beginner's Level Final Version	(the introduction part) My alarm clock rang, and I wished it did not. Daily life seemed like running on a treadmill; working late most days till exhaustion, then coming home, and crashing into bed. Long gone was the initial excitement about Manhattan skyscrapers and central park. I felt, that I needed to get away few days to charge my batteries. I decided on Rome after watching the classic movie "Roman Holiday". In about a month, my vacation day arrived. That morning, I went to work with my luggage, and flew in the late evening. I slept most of the flight, and crashed on my bed in my small hotel. (part of the 1st day) I woke up in Rome and had breakfast and a true espresso at my charming small hotel. I asked the hotel owner about some sightseeing tips. She did not know English well, but tried hard to help, which made my day. I walked to the beautiful Piazza (square) Venezia. The view at the top, was equally majestic. From there, I could see via del Corso that passes throughout old Rome. Also, on the right, I could see the Colosseum, the Roman ruins of the Forum and the Circus Massimo. After resting for a while, I walked toward the nearby museums. The museums were not as large as Manhattan's Metropolitan museum. However, their collections of many periods of Italian history were wonderful. Afterwards, I walked through the via del Corso (the conclusion part) Again, my alarm rang and I reached to silence it. I opened my eyes and said: "No, Not again". But eventually, I dragged my feet to prepare for my work routine life, but this time, I was smiling every time I thought of Rome.
Advanced Level Writing (only part of 1st day, introduction, and conclusion) showing (1) initial writing, (2) revisions, and (3) proof reading and checking	(part of the 1st day) I woke up in Rome. I slept well, so I had energy of anticipation and rest, I had breakfast and a true espresso at my charming small hotel. Hearing Italian instead of Manhattan noises was music to my ears. I asked to the hotel owner about some sightseeing touring tips. She did not know English well, but her sign language, and an especially, her outpouring wish of wanting to help, made my day. I walked the short route to Piazza (square) Venezia, and my jaw dropped at its beauty. I walked up its white marble steps. The and the view at the top, was equally majestic. The Piazza monuments and columns were beautiful, and the view of Rome was fantastic. From there, I could see the famous Via del Corso that meanders throughout the old heart of Rome. Also, on the right, I could see the infamous Colosseum, the Roman ruins of the Forum and the Circus Massimo. I sat on the steps for a while, and felt the noises of Manhattan leaving my ears.... After resting for a while, I decides to go indoor before Rome's bright sun made it very hot. So, I walked toward the nearby museums, and drank from the nearby beautiful water fountain. The museums were not as big large as Manhattan's Metropolitan museum, I guess perhaps because they only contained Italian art works. But However, their collections of many periods of Italian history were a wonder to see.

	Afterwards, I walked through the via del Corso (the introduction part) My alarm clock rang, and I wished it did not. I was having a nice dream of escaping Mahattan daily hustle and bustle. Daily life seemed like running on a treadmill, or more accurately, like a hamster running on a wheel in a cage; struggling but remaining trapped in the daily routine of work till exhaustion, then coming home, and crashing into bed. The allure of my early days in Manhattan at the sight of its majestic skyscrapers and beautiful central park, have has long gone. lost the allure that I felt on my fist visit to I felt when i first came into the city. I felt, that I needed to get away for few few days to charge my batteries. But I was not sure where to go to. I have already been to Disney's in its Florida and California versions, to Boston, to Chicago, and some cities in Canada and Mexico. As I sat on the couch after a hectic day, I decided to watch a classic movie to escape the madness of violence and special effects of recent movies. And here it was: "Roman Holiday", a black and white old movie, starring the queen of elegance and cuteness "Audrey Hepburn" and the unforgettable gentleman "Gregory Peck". I guess that I must have watched the movie more than once, since I woke up the next day on the couch. I rushed to work, and kept thinking all day about escaping to Rome for a vacation. That evening, I booked my flight and accommodations, and started enjoying the feeling that I will be going soon to the eternal city. A month, or so, passed before my three days long weekend finally arrived. That morning, I went to work with my luggage, and flew in the late evening. Out of exhaustion, I sept slept most of the flight, and upon arrival, I went to my small hotel and crashed in bed. (the conclusion part) Again, my alarm rang and I reached to silence it. I opened my eyes and said: "No, Not again". My heart was still in Rome, and its memories still roamed in my head. But eventually, I dragged my feet to prepare for my paid slavery called work, and returned to run again on my daily routine cage wheel. But this time, I was smiling every time I thought of Rome.
Advanced Level Final Version	(the introduction part) My alarm clock rang, and I wished it did not. I was having a nice dream of escaping Manhattan's daily hustle and bustle. Daily life seemed like running on a treadmill. Or more accurately, like a hamster running on a wheel in a cage; struggling but remaining trapped in the daily routine of work till exhaustion, then coming home, and crashing into bed. The allure of my early days in Manhattan at the sight of its majestic skyscrapers and beautiful central park, has long gone. I felt, that I needed to get away for few days to charge my batteries. But I was not sure where to go to. As I sat on the couch after a hectic day, I decided to watch a classic movie to escape the madness of violence and special effects of recent movies. And here it was: "Roman Holiday", a black and white old movie, starring the queen of elegance and cuteness "Audrey Hepburn" and the unforgettable gentleman "Gregory Peck".

I guess, that I must have watched the movie more than once, since I woke up the next day on the couch. I rushed to work, and kept thinking all day about escaping to Rome for a vacation. That evening, I booked my flight and accommodations, and started enjoying the feeling that I will be going soon to the eternal city.

A month, or so, passed before my three days long weekend finally arrived. That morning, I went to work with my luggage, and flew in the late evening. Out of exhaustion, I slept most of the flight, and upon arrival, I went to my small hotel and crashed in bed.

(part of the 1st day)

I woke up in Rome. I slept well, so I had energy of anticipation and rest, I had breakfast and a true espresso at my charming small hotel. Hearing Italian instead of Manhattan noises was music to my ears.

I asked the hotel owner about some sightseeing tips. She did not know English well, but her sign language, and especially, her outpouring wish of wanting to help, made my day.

I walked the short route to Piazza (square) Venezia, and my jaw dropped at its beauty. I walked up its white marble steps, and the view at the top, was equally majestic. The Piazza monuments and columns were beautiful, and the view of Rome was fantastic.

From there, I could see the famous Via del Corso that meanders throughout the old heart of Rome. Also, on the right, I could see the infamous Colosseum, the Roman ruins of the Forum and the Circus Massimo.

I sat on the steps for a while, and felt the noises of Manhattan leaving my ears....

After resting for a while, I decided to go indoor before Rome's bright sun made it very hot. So, I walked toward the nearby museums, and drank from the nearby beautiful water fountain.

The museums were not as large as Manhattan's Metropolitan museum, perhaps because they only contained Italian art works. However, their collections of many periods of Italian history were a wonder to see.

Afterwards, I walked through the Via del Corso

(the conclusion part)

Again, my alarm rang and I reached to silence it. I opened my eyes and said: "No, Not again".

My heart was still in Rome, and its memories still roamed in my head.

But eventually, I dragged my feet to prepare for my paid slavery called work, and returned to run again on my daily routine cage wheel. But this time, I was smiling every time I thought of Rome.

Business Letters and Emails

Assignment: a short business letter summarizing a construction service offer

Phase	Contents												
Planning Brainstorming	reference to the quote request, timetable of construction activities, overall cost , costs of major construction activities (separate), discounts for A-Z combined services, discount for delaying construction activities, timeline for response to the offer												
Planning Work subdivision	-Greetings and references to quote request -Costs of major construction activities (separate) -Discounts for A-Z construction and delayed construction with justifications -timeline for response to the offer												
Writing Final Version (after optimization and proof-reading)	[Date] Dear Mr John Doe, [position] Thank you for considering the services of our construction company in your request for bid quotes #1234 of Jan 1st, 2023. Based on the construction plans that you have provided, we are glad to offer you the following <table><tr><td>Subproject</td><td>Cost</td><td>Duration estimate</td></tr><tr><td>Building 1 including landscaping</td><td>\$300,000</td><td>1.5 months</td></tr><tr><td>Building 2</td><td>\$200,000</td><td>1.2 months</td></tr><tr><td>Building 3 including landscaping</td><td>\$400,000</td><td>2 months</td></tr></table> We also like to point out that these costs and timelines assumes starting the constuction in early April and that our company will be awarded a contract for one of the buildings. Should your company decide to award us a contract for two buildings or the whole project, then we can offer 7% and 15% respectively, due to savings on logistics and manpower, that we can pass to you. Moreover, the present starting date of early April, will require our company to hire more manpower since our staff are presently working on other projects. Should you consider delaying the start of the project until mid May, then we will be able to work on the project with our existing staff. Thus, we can offer you an additional 5% discount. Furthermore, regarding potential changes to the project, we reaffirm our agreement with the change process and cost adjustments that you have outlined in your request for bid document. We estimate that we need at least a month notice before project start to manage the required legal and logistical works. Therefore, we appreciate to get your response as soon as possible. In summary, should you decide to award our company the whole project and to allow us to start in mid May, then we can pass to you 20% discount and project completion will be within 3 months. We await you response to our bid, and we hope to gain your business. Sincerely, Jim Doe, [position] [signature]	Subproject	Cost	Duration estimate	Building 1 including landscaping	\$300,000	1.5 months	Building 2	\$200,000	1.2 months	Building 3 including landscaping	\$400,000	2 months
Subproject	Cost	Duration estimate											
Building 1 including landscaping	\$300,000	1.5 months											
Building 2	\$200,000	1.2 months											
Building 3 including landscaping	\$400,000	2 months											

Assignment: a short email regarding an unpaid debt instalment

Note: usually, a business email is less formal than a business letter.

Phase	Contents
Planning Brainstorming	subject: car purchase loan, reference to loan document , submission time passed, 30 45 days, amount \$5000 \$5200, new deadline, reference to loan document , penalties and exemption , future penalties, other measures as per contract, reminder about the next payment
Planning Work subdivision	-Greeting, and subject -Details of the issue -Expectations
Writing Final Version (after optimization and proof-reading)	Subject: Car loan #1234 Dear Ms. Doe We like to remind you that your 3rd installment payment of \$5200 on the car loan has not been made, and that it is now, 45 days overdue. Since this is the first time such incident takes place, we wish to waive the penalties of \$200/month, as per the terms of the loan, provided that the payment is made within 30 days. Also, please remember that the loan installments are due every three months, and failures to make future payments before their deadline, will automatically subject you to the agreed to fines of \$200/month for each unpaid instalment. Please feel free to contact us about this matter if you have any questions, or if you like to reschedule the loan. Sincerely [name],[position]

A Scientific Paper

Note: the paper is about a theoretical model and a verification simulation

Phase	Contents
Planning Brainstorming	objective, list of assumptions, previous work in the area, list of references, description of the model, building the model, description of the verification simulation, its assumptions, simulation run, verification the model accuracy against simulation results , extent of the model utility, advantage vs previous works , other results, concluding remarks, future work, application to other areas
Planning Work subdivision	-abstract (goal, the approach, and a plan outline) -problem definition and previous work -Model objective and assumptions -Building the model -Description of the verification simulation -verification runs (model vs simulation), discussion of model accuracy - application of the model to other cases -Conclusion (overview of work and main results, future work) -References
Writing Final Version (only the abstract, one section, and the conclusion)	(Title and Abstract) A Simple Internet Traffic Model [Authors] Abstract The paper introduces an analytical model for characterizing the flow of internet traffic and its average delay. The accuracy of the model will be established by comparing its predictions to simulation results. The model is an evolution of the model of our previous work [1]. The new model generalizes the previous model and improves its accuracy. (verification runs (model vs simulation), discussion of model accuracy) Model Verification In this section comparative experiments of the model prediction versus simulation will be made. The comparison shall be made based on the traffic rate and the average packet delay. The experiment shall use the network configuration described earlier, with the incoming traffic entering from point 1 and exiting from point 2. Out of point 2, there are two traffic streams. The first will be from the injected traffic into point 1, while the second is independent of it, and is due to traffic streams from nodes other than node 1. The range of incoming traffic levels to point 1 will be 10 Mbps to 1000 Mbps which is quite wide. Thus, the comparison is an extensive, and therefore, it serves to establish the model validity over a wide range of traffic levels. To make a valid comparison, the characteristic of incoming traffic will be same for both of the analytical model and the simulation.

Figure 1 depicts the outgoing traffic rate from point 2 for both the model and the simulation, while Figure 2 depicts the average packet delay of the outgoing traffic from point 2 for both of the model and the simulation.

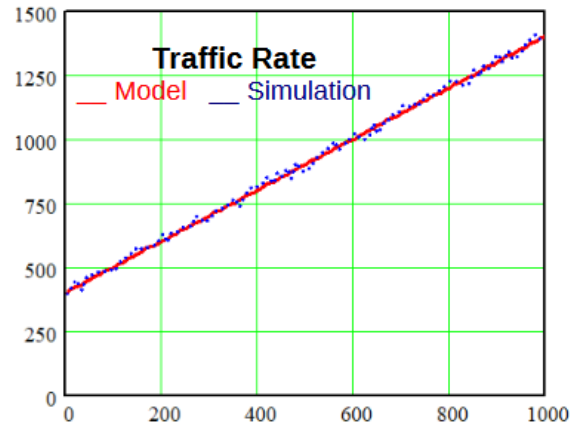


Figure 1: Output traffic rate (Mbps) vs incoming traffic rate (Mbps)

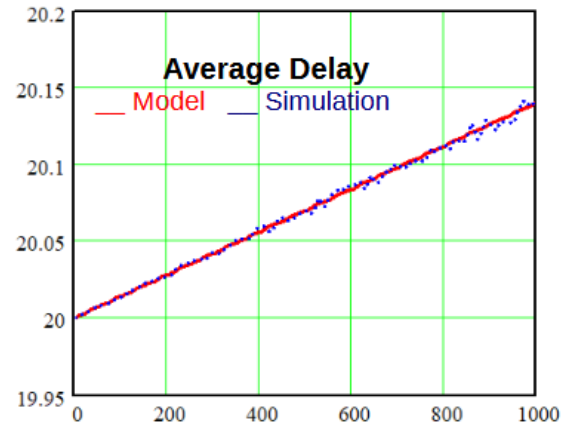


Figure 2: Average delay of output traffic (ms) vs incoming traffic rate (Mbps)

As it can be seen from Fig 1, the model predictions are very close to the measurements of the simulation. In fact, the gap between the two predictions is less than 2%.

Similarly, Fig 2 shows to the maximum gap between the predictions of the model and simulation measurements is less than 3%. However, the general gap is close to 1% for most traffic levels.

[another experiment]

We conclude this section by noting that both experiments have shown a close match between the predictions of the analytical model and the measurements of the simulations. In both cases, the error in traffic levels were less than 2%, and that the average packet delay is less than 3% at maximum, but is less than 1% for most traffic levels.

(conclusion)

Conclusion

The paper has successfully introduced a new simple, but accurate, analytical internet traffic model and has established its accuracy by comparing its predictions to simulation measurements.

In the future, the authors plan to develop a more general model that can be used for larger scale networks.

A hybrid Exposition and Persuasive Paper

Note: this paper is followed by a presentation on the same subject. **The idea here is to show a presentation about a document and vice versa.** Also, it is important to notice **the separation of facts/data from interpretation or opinions** in both.

Phase	Contents
Planning Brainstorming	Relating atmospheric heat entrapment to abnormal weather patterns, relating atmospheric pollution levels to atmospheric heat entrapment, Debunking myths about the invalidity of global warming, troubling trends and legislation, Asking some long-term questions; overview of Air Pollutants, overview of atmospheric heat trapping, mechanisms, factors, effects, other pollutants, fossil fuel power plants, other types of environment contamination, global warming levels, abnormal weather (excessive rain and floods, snow in the desert, increased tornadoes/hurricanes, their causes, frequency, and effects), arguments of global warming deniers (tiny concentrations, food for plants, not all places warmed up), popular pressure , car size growth, longer daily commuting , telecom effects , protection legislation troubles, societal-state planning potential solutions, more long-term questions
Planning Work subdivision	-Introduction (objective, approach, and a plan outline) -Overview of Air Pollutants -Overview of atmospheric heat entrapment: mechanisms, factors, and effects -Global warming levels -Abnormal weather patterns: causes, frequency, and effects -Debunking arguments of global warming deniers -More long-term questions -Conclusion (overview of subject and call for change of policies) -References
Writing Final Version (only the introduction, one section, and the conclusion)	(Title and Introduction) Global Warming and Abnormal Weather Patterns A techno-societal study John Doe, Ph.D. Introduction Global warming is perhaps the biggest global challenge for future generations but its roots are in our present and most recent past. Global warming not only affects the planet green cover, but has recently resulted in strife ranging from increased drought, desertification, conflicts about resources, and thus, forced human migrations. The paper explores the facets of global warming, its cause mechanisms, and links to the recent rise of abnormal weather patterns. Furthermore, it explores the invalidity of the main arguments of global warming deniers, makes observation of some troubling present trends, calls for policy changes and more government role in urban planning. (Debunking arguments of global warming deniers) Arguments of Global Warming Deniers This section shall examine three principal arguments of global warming deniers. (1) Recent “local” temperatures do not support global warming (2) Atmospheric Carbon Dioxide CO₂ levels are tiny (3) Carbon Dioxide CO₂ is food for plants

The first argument takes advantage of the temperature variations across geography. It is true that in some regions, the average temperature has dropped slightly. However, this argument focuses on a minority of forested Nordic geographical regions.

This narrow focus does not reflect the overall picture **since the majority of geographical regions have experienced a sharper increase in temperature.**

Moreover, the geographical regions where the temperature has risen are either fragile semi-dry areas and this has led to increased desertification, or around the polar ice caps, has led to accelerated ice melting.

These developments are very troubling. The first leads to shrinking of the green area on earth, people migration, or possibly social unrest and regional wars. The prime reason is that when temperature increases, plants get stressed (i.e., with more evaporation they require more water irrigation to survive), and thus, die due to the unavailability of the needed extra water.

The the second leads to rising sea levels which threatens many coastal cities like the iconic Venice and even the country of the Netherlands. This threat also has presented itself lately in the more than ever inundations of coastal cities. These inundations are caused by a combination of the more frequent storms and hurricanes that abnormal weather patterns bring, and rising sea levels. Prime examples are New Orleans, New York City, etc.

Also, higher temperatures lead to dryness of forests and woods. This leads to increased frequency and extent of forest fires. Prime examples are the recent Los Angeles fires, the huge forest fires of Eastern and Western Canada. Such fires not only destroy major green areas and habitation, but also emit huge volumes of CO₂ and tiny ash particles. While the first one causes global warming, the second causes cloud seeding, and thus, unusual increase of snow and rain storms. This was evident in early 2025 where snow fell over southern U.S. regions and floods have devastated the Canadian and U.S. northeast in very unusual heavy rainfall levels.

The second argument of global warming deniers is that the concentration of Carbon Dioxide (CO₂) in the atmosphere is very tiny.

While this is true (i.e., it is 422.7 ppm (part per million) in 2025 which is a 32% increase from 320 ppm in 1960 [1]), **this tiny concentration level still causes global warming.**

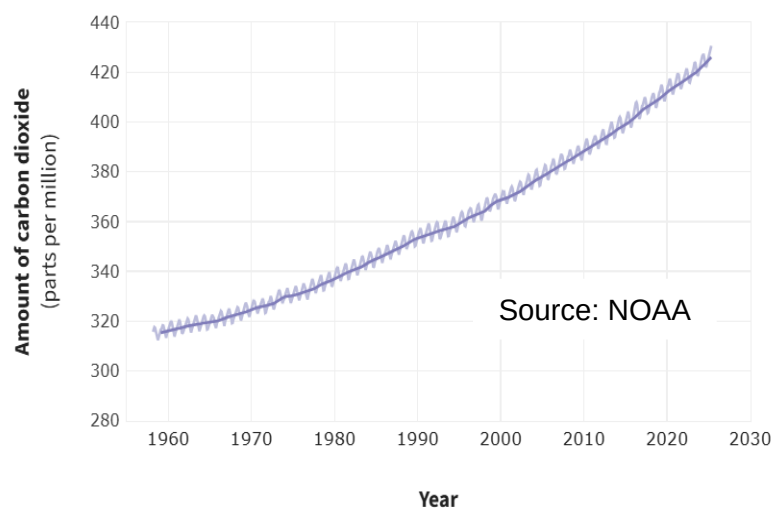


Fig 1: The variation of CO₂ concentration in the atmosphere across the years [1]

Technically speaking, global warming is caused by sunlight energy heat absorption and trapping, which is proportional to (i) the concentration of CO₂, and (ii) the thickness of the earth atmosphere.

Therefore, the main reason that such low concentration levels still cause global warming is the thickness of the vast atmosphere that reaches 100,000 km, and in particular, that the lower 16 km of it are dense and contains 90% of the earth atmosphere.

If we take 100 m thick layers, then the atmosphere has so many layers stacked one above the other. So, while each layer does little heat absorption, their cumulative heat absorption is significant even at low CO₂ concentration levels.

Moreover, this cumulative effect increases with the increased of CO₂ concentration (i.e., a 32% increase from the 1960 or a 50% increase since the beginning of the industrial age).

Fig 2 demonstrates this effect using the analogy of layering transparent plastic sheets using 1, 2, and 10 sheets. The analogy clearly shows that opaqueness increases with (1) the number of layers, and with (2) the increase of tint (i.e., color concentration) in each layer.

Therefore, **the tiny CO₂ concentration argument completely misses this crucial layering effect.**

Furthermore, it also misses that the concentration of the thick atmosphere in the lower 16 km plays a crucial role of concentrating heat warming in it. This takes place in two stages

- (1) when the atmosphere absorbs the infrared component (i.e., heat) of the incoming sunshine, but more importantly,
- (2) **the ground absorbs the sunshine total spectrum energy**, and then, **re-radiates substantial portion of its energy as infrared waves (i.e., heat)** back particularly into the thick lower atmosphere. This component causes most of the global warming effect.

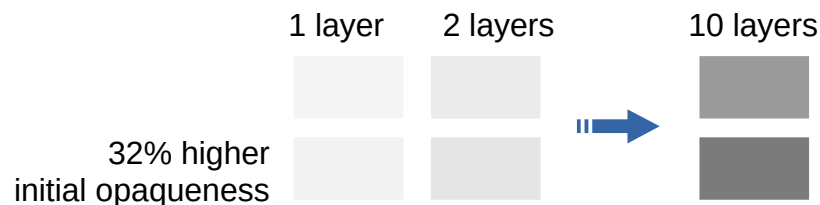


Fig 2: demonstration of the cumulative effect of CO₂ in the atmosphere by the analogy of layering transparent plastic sheets

The third argument of global warming deniers is that Carbon Dioxide (CO₂) is food for plants. This argument is true, but **it is irrelevant to global warming.**

This argument is largely based by the success of promoting plants growth by pumping CO₂ to green/glass houses during the sunshine hours of the day (usually from fossil fuel electricity generation plants).

The main reason for the irrelevancy of this true argument, is that plants only benefit from CO₂ in its vicinity (i.e., 0-30 meters above ground), while the thick atmosphere is a vast 16 km high (i.e., 0-16 km above ground).

So, while higher CO₂ concentration may bring some marginal plant growth benefits, higher CO₂ concentration brings far more harm to them.

This takes place since warming the air around plants stresses the plants. Thus, they will need more water to survive, which is not available in dry regions. This translates into increased desertification in

	already dry areas like in Southern U.S., Meso-America, North Africa, Southern Europe, Central Asia, Australia, etc. and will even extend eventually to semi-dry regions worldwide. (conclusion) Conclusion The paper presented most of the issues about global warming and its contribution to recent increased abnormal weather patterns. Moreover, the paper showed the total invalidity of several major arguments put forward by global warming deniers. Furthermore, it explored recent troubling societal and legislation trends in N. America, and argued for course reversal before global warming intensifies any further and enters crisis modes of runaway scenarios.
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Global Warming and Abnormal Weather Patterns A Techno-Societal Study John Doe, Ph.D.	Objectives 2 • Relating atmospheric pollution levels to atmospheric heat entrapment • Relating atmospheric heat entrapment to abnormal weather patterns • Debunking myths about the invalidity of global warming • Asking some long-term questions
Outline 3 • Overview of Air Pollutants • Overview of Atmospheric Heat Trapment: mechanisms, factors, and effects • Global Warming Levels • Abnormal Weather Patterns: causes, frequency, and effects • Arguments of Global Warming Deniers • More Long-Term Questions	Arguments of Global Warming Deniers (1/4) 14 • Recent "local" temperatures do not support global warming • Atmospheric Carbon Dioxide CO₂ levels are tiny • Carbon Dioxide CO₂ is food for plants
Arguments of Global Warming Deniers (2/4) 15 Recent "local" temperatures do not support global warming • Partially True (but not in the long-term): - Some places, especially forested areas in Nordic areas, temperature dropped slightly - Global warming does not mean uniform temperature effects • Some places may get mildly colder, but • But, other places got much hotter --> desertification and ice melting --> rising sea levels --> drowning/inundating coastal cities during storms • Also, the geographic heat pattern changes with time - Reasons: • Global warming increases abnormal weather patterns • Global warming disproportionately affects dry areas --> desertification and further warming - Plants get stressed (need more water to grow) --> - Bigger deserts --> ground radiates more sunlight energy as infrared waves --> more heat is trapped --> higher temperature --> runaway scenarios - Forests get drier --> more and bigger fires (e.g., Los Angeles fires) --> more pollution and ash based cloud seeding --> abnormal weather --> floods	Arguments of Global Warming Deniers (2/4) 15 Recent "local" temperatures do not support global warming • Partially True (but not in the long-term): - Some places, especially forested areas in Nordic areas, temperature dropped slightly - Global warming does not mean uniform temperature effects • Some places may get mildly colder, but • But, other places got much hotter • Also, the geographic heat pattern changes with time - Reasons: • Global warming increases abnormal weather patterns • Global warming disproportionately affects dry areas --> desertification and further warming

Arguments of Global Warming Deniers (3/4)

16

Atmospheric Carbon Dioxide CO₂ levels are tiny

True: 422.7 ppm (part per million) in 2025 (32% increase from 320 ppm in 1960), but it still causes global warming

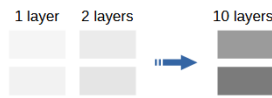
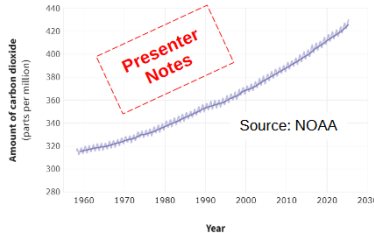
[Global warming is proportional to CO₂ concentration and the atmosphere thickness]

Reason: the dense atmosphere is 16 km thick (i.e. so many layers)

- Atmosphere is 100,000 Km but 90% is within 16km
- It can absorb a good portion of the incoming sun rays infrared energy
- Earth surface absorbs (whole spectrum) of sun rays energy and radiates as infrared toward space → atmosphere absorbs a good portion of it [this is the major part]

- And, atmospheric **heat absorption** increases with higher CO₂ concentration

- Analogy:** the progressive opaqueness of 1/2/10 layers transparent plastic sheets



Arguments of Global Warming Deniers (3/4)

16

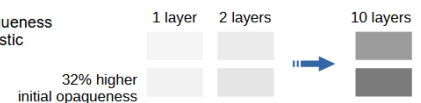
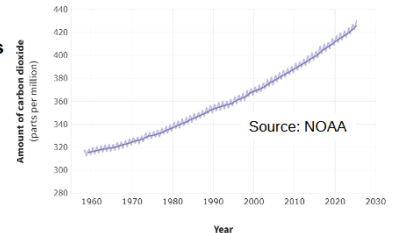
Atmospheric Carbon Dioxide CO₂ levels are tiny

- True: 422.7 ppm (part per million) in 2025 (32% increase from 320 ppm in 1960), but it still causes global warming

Reason: the dense atmosphere is 16 km thick (i.e. so many layers)

- And, atmospheric **heat absorption** increases with higher CO₂ concentration

- Analogy:** the progressive opaqueness of 1/2/10 layers transparent plastic sheets



Arguments of Global Warming Deniers (4/4)

17

Carbon Dioxide CO₂ is food for plants

True but is "Irrelevant".

Reasons:

- Plants only benefit from CO₂ in their vicinity (i.e., 0-30 m above ground)
- But, the atmosphere is >16 km thick** and atmospheric CO₂ is spread within it
- Also, **plants do not need CO₂ in the absence of sunlight**
- So, higher atmospheric CO₂ concentration levels bring:
 - more harm** (i.e., global warming) → **stressing plants**
 - than good** (i.e., negligible faster plant growth).

Note:

- Sometimes plant growth is enhanced by pumping CO₂ (e.g., from electricity generation power plants) into the **glass/green house** (of 0.5-10m above ground) during the peak sunshine hours
- This accelerates photo-synthesis during sunshine hours → enhanced growth

Presenter Notes

Arguments of Global Warming Deniers (4/4)

17

Carbon Dioxide CO₂ is food for plants

True but is "Irrelevant".

Reasons:

- Plants only benefit from CO₂ in their vicinity (i.e., 0-30 m above ground)
- But, the atmosphere is >16 km thick** and atmospheric CO₂ is spread within it
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 - more harm** (i.e., global warming)
 - than good** (i.e., negligible faster plant growth).

Note:

- Sometimes plant growth is enhanced by pumping CO₂ into the **glass/green house** during the peak sunshine hours
- This accelerates photo-synthesis during sunshine hours → enhanced growth

Appendix VII: Frequent Word Derivation Rules

Word Derivation from Nouns

<prefix><noun> → modified <noun> (1/2)		
prefix	meaning	examples
semi(-)	half	circle → semicircle, semiconductor, semi-finals, semi-solid, semi-truck
pre(-)	before	birth → pre-birth, prehistory, preschool, pre-surgery, pre-1960
post(-)	after	birth → post-birth, post-graduation, post-infection, post-surgery, post-trial
co(-)	like/inter	existence → coexistence, collaboration, cooperation, co-payment, copilot
im	lacking inside	balance → imbalance, impatience, imperfection, implication, impurity plant → implant, imprint, impulse, improvement
in(-)	in/ not	box → inbox, incoming, influx, ingestion, injunction, in-laws, inlet, inquest, input, in-house, inroad, insight, inspiration, instead, insemination, information efficiency → inefficiency, inequality, ingratitude, inhumanity, insanity, instability
out	out(going)	break → outbreak, outbox, outburst, outdoors, outcast, outclass, outcome, outcry, outdoor, outfulx, outgoing, outlay, outlaw, outlet, outline, outlook, outpatient, outpost, output, outrage, outset
sub(-)	below/ part of	branch → subbranch, sub-activity, sub-channel, subcommittee, subconscience, subcontinent, subcontract, subculture, subdivision, subgroup, subheading, submarine, submission, subordinate, sub-project, subroutine, subsection, subset, sub-specialty, substandard, substream, substructure, subterrain, suburb, suburbia, subway, sub-zero
di	twice	dichotomy (a division/cut between 2 different things)
bi	twice	cycle → bicycle (2 wheels), bicarbonate, biconcave, biconvex, bilaterism, binoculars, bi-weekly (twice a week)
tri	trice (3 times)	tricycle (3 wheels), tripartite, triplex, triplet, triplicate, tripod, trisect, trisection
bio	biological	chemistry → biochemistry, bioengineering, biodiversity, biochemist, biosphere, biosystem, biotechnology Note: words like biology/biologist/biopsy possibly originate from latin nouns Exceptions: biographer, biography
agri-	agricultural	economy → agri-economy, agri-development, agri-project, agri-solution
ex	trade / previous	change → exchange, ex-boss, ex-company, ex-country, ex-employer, ex-employee, ex-fiance, ex-neighbour, ex-colleague, ex-husband, ex-partner, ex-wife, ex-job

<prefix><noun> → modified <noun> (2/2)		
prefix	meaning	examples
dis	no/ opposite	ability → disability, disadvantage, disagreement, disappointment, disaramamenet, disarray, disbelief, disclosure, discomfort, discord, discount, discourse, discretion, disease, disgrace, disguise, disgust, dishonesty, disillusion, disinfection, dislike, dislocation, dismemberment, disobedience, disorder, disownership, disparity, dispensation, dispenser, display, displeasure, disposition, disqualification, disquiet, disregard, disrepute, disrespect, dissatisfaction, disservice, distraction
poly	many / several	clinic → polyclinic, polycarbonate, polycrisis, polydome, polyethelyn, polyexpertise, polyfamily, polygamy, polygone, polymarket, polymath, polymorphism, polynomial, polytopia
proto(-)	initial/ primitive	development → proto-development, proto-language, prototype, proto-script, proto-system
tele(-)	to/from far	communications → telecommunications, telecommuter, telephone, telegram, telemeter, telemarketing, telepathy, telesales, telescope, telework, teleworker
intra(-)	within	agreement → intra-agreement, intra-check, intra-deal, intra-exchange, intranet, intra-taskforce
inter(-)	across	agreement → inter-agreement, inter-deal, inter-exchange, internet, inter-panel inter-taskforce
endo	internal	dentist → endodontist, endocrinologist, endourology, endoscope, endotoxin
un	not	kindness → unkindness, unemployment, unfairness, unrest, unsuitability, untruth
anti(-)	opposite	aging → anti-aging, antimatter, antiparticle
under	under	arm → underarm, underground, underbelly, undercarriage, underclass, undercurrent, underdog, underestimate, undergrowth, underpass, underfloor, underhand, underpants, undershirt, underside, undertone, underwater, underwear, underworld Exceptions: understanding, undertaking, underwriter
tele(-)	from a far	conference → teleconference, telecommunication, telecommuter, telegram, telemarketing, tele-observer, telepathy, telephone, tele-system, television, teleworker
over	too much* / in totality	draft → overdraft, overestimate, overflow, overkill, overlap, overshoot, overtime oversight, overview, overhaul, overall Exceptions: overtone, overture
non(-)	no	aggression → non-aggression, non-combatant, nonentity, non-event, non-intervention, non-member, non-proliferation, nonresident, nonsense, nonstarter, non-stop

* or beyond normal limits

<noun><suffix> → modified <noun>		
suffix	meaning	examples
ive	have	object → objective, perspective, prospective
ist*	person of	piano → pianist, violinist, trumpist, extremist, metallurgist, scientist, pharmacist

* the noun ending may change slightly before adding “ist”

<prefix><noun> → <adjective>		
prefix	meaning	examples
out	beyond	achieved → outachieved, outblown, outdated, outgrown, outlived, outshined, outsold, outspent
anti(-)	against	discrimination → anti-discrimination, anti-labour, anti-peace, anti-pollution, antisocial, anti-technology, anti-union, antiwar
under	under/before	cover → undercover, undergraduate, underground, underhill
sub	below	conscience → subconscience, subordinate, substandard, subway, subsystem
over	too much	all → overall, overcast, overhead, overweight

<noun><suffix> → <adjective>		
suffix	meaning	examples
y	has	greed → greedy, needy, reedy, speedy, weedy
full	full of	colour → colourful, eventful, flowerful, plentiful, powerful, wonderful, regretful
less	without/ beyond limit	age → ageless, endless, fearless, flawless, helpless, homeless, limitless, peerless. powerless. priceless. selfless. senseless. shameless, speechless, tireless, useless
ive	has	object → objective, defective, defensive, effective, expensive, explosive, offensive, reflexive, responsive, subjective
al	has/full of	analysis → analytical, herbal, incidental, normal, typical, verbal, viral
able	can be	exception → exceptionable, impressionable, objectionable, questionable, reputable
wise-	according to	philosophy → philosophy-wise, policy-wise, process-wise, routine-wise, science-wise
ic*	has	basil → basilic, Arabic, Atlantic, Pacific, hydrophilic, hydrophobic, Nordic, symmetric, Gallic, Britanic, Icelandic, Asiatic
ous*/ eous*/ ious*	has	arbor → arboreous, continuous, disastrous, furious, glamorous, glorious, harmonious, laborious, lustrous, marvelous/marvellous, nervous, oblivious, rebellious, synchronous, victorious

* sometimes the ending is changed slightly before adding “ic/ous/eous/ious”

<prefix><noun> → <verb>		
prefix	meaning	examples
in	to make/ inside	cline → incline, increase, induce, infest, inflame, inform, infringe, ingest, ingrain, inspect, inspire, instruct, insure, install, instill, invent, invest
en	to make	case → encase, enchant, encircle, enclave, encompass, encode, encourage, endanger, engulf, enlist, enslave, entrench, entrust, envision
im		merse → immerse (put in the marsh/merse .. Scottish), impact, impart, impede, impel, imperil, implant, imply, import, impose, imprint, imprison
ex		claim → exclaim, excite, exort, exact
dis	not	credit → discredit, discuss, disgrace, disguise, disgust, dismember, disorder, displace, disregard, disrepute, dissect, dissent, dissociate, distaste, distort, disturb, disuse

<noun><suffix> → <verb>		
suffix	meaning	examples
ize*/ise	to make	agonize, cannonise, cannibalize, capsize, demonize, downsize, emphasize, energize
ify**	to make	acid → acidify, aurify, amplify, beautify, certify, classify, codify, glorify, horrify, magnify, modify, signify, solidify, typify

* “ize” in American English and ‘ise” in British English

* sometimes the ending is changed slightly before adding “ic”

Word Derivation from Verbs

<prefix><verb> → modified <verb> (1/2)		
prefix	meaning	examples
dis	undo/divert	affect → disaffect, disagree, disappoint, disapprove, disarm, disassemble, disband, disbelieve, discard, discharge, disclose, discourage, discover, disengage, disfavour, disconnect, discontinue, discredit, disembark, disenchant, disentangle, disfigure, disgrace, disguise, disgust, dishearten, dishonour, disillusion, disinfect, disjoint, dislocate, dismantle, dismay, dismember, dismiss, dismount, disobey, disorder, disorient, dispense, disperse, displace, dissipate, dispirit, disqualify, disregard, disrepute, disrespect, dissatisfy, dissect, disseminate, disserve, dissociate, dissolve, distaste, distil, distort, distract, distrust, disuse
re(-)	repeat	act → react, reassure, rebound, rebuild, recast, recall, re-collect, re-create, redeploy, redo, redress, redevelop, redial, re-elect, refill, reform, regain, regenerate, regroup, rehash, reimburse, reinstate, rejoin, rekindle, relapse, remarry, renew, replay, repay, rephrase, repossess, reproduce, rerun, reschedule, recede, resend, restudy, reset, retry, reunite, reuse, rewrite Exception: receive, reconcile, recover, recruit, refer, refine, reflect, reflex, refrain, refresh, refuse, refute, regards, regress, regret, reject, relate, relay, release, relent, remember, remind, remove, renounce, repeat, report, repair, represent, reply, repulse, remand, request, require, reserve, resent, rescue, research, resemble, revive, reside, respond, restore, resume, retire, retract, retreat, revamp, reveal, return, revere, reverse, revise, revolve, revolt
out	exceed	bid → outbid, outclass, outdate, outdo, outflank, outfox, outgrow, outlast, outline, outmanoeuvre, outnumber, outplay, outperform, outweigh, outwit
over(-)	too much/ over	cook → overcook, overdose, overcharge, overcompensate, overcomplicate, overdo, overeat, overestimate, overindulge, overhaul, overhear, overheat, overlap, overload, overpower, overrate, overreact, overrule, overshadow, overshoot, oversimplify, oversleep, overspend, overstay, overtalk, overtake, overstep, overthink, overturn, overvalue, overwait, overwhelm, overwrite, overworry, overwork Exceptions: overlook (miss noticing), overcome, override, overrun, oversee, overview
sub(-)		divide → subdivide, subdue, submerge, submit, subscribe, subside
under	not enough/ below	act → underact, undercook, underdo, underestimate, underfund, underlie, underweigh, underwork Exceptions: undercut, undergo, undermine, understand, undertake
pre/ pre-	prior/ initial	approve → pre-approve, pre-classify, pre-cool, predate, precede, predetermine, pre-examine, pre-group, preheat, prejudge, pre-load, pre-order, pre-stress, pre-study Exception: preach, prepare, prescribe, pretense, pre-empt
en		act → enact, encapsulate, encase, enchant, enclose, encounter, enforce, enlighten, enliven

<prefix><verb> → modified <verb> (2/2)		
prefix	meaning	examples
im		personate → impersonate, import, impose, impress, improve Exceptions: impair, impart, implode, imply, impoverish
in	inside/not	fuse → infuse, inhabit, inhale, innovate, intolerate
un	not/opposite	approve → unapprove, uncover, unearth, unfold, unforgive, unload, unlock, unmask, unroll, unscrew, unveil, unzip
ex	outward	change → exchange, excite, exclaim, exhale, explain, export, expound, expose, express, extend, exterminate Exceptions: exclaim, exclude
tele(-)	to/from far	phone → telephone, telenetwork, teleport, telescope, televise, telework

<prefix><verb> → <noun>		
prefix	meaning	examples
in	into	put → input, income
out	out of	cast → outcast, outbreak, outburst, outcome, outcrop, outcry, outlay, outlook, output, outrage

<verb><suffix> → <adjective>		
suffix	meaning	examples
able	capable of	admire → admirable, approachable, addressable, adorable, affordable, assessable, breakable, comparable, computable, controllable, cultivatable, debatable, decomposable, deductible, denotable, deployable, diffusable, disposable, enjoyable, favourable, floatable, foldable, imaginable, increaseable, inflatable, honorable/honourable, moldable, notable, negotiable, operable, opposable, pullable, quotable, recognizable, refutable, regrettable, rotatable, searchable, sizable, shrinkable, speakable, squeezable, stretchable, supposable, swimmable, teachable, thinkable, tolerable, translatable, transposable, walkable, winnable
ible	capable of	access → accessible, compressible, deducible, enviable, expressible, producible, impressible, inducible, reducible, reproducible
ive	has	attract → attractive, corrective, deflective, decisive, detective, directive, immersive, infective, injective, overprotective, perfective, projective, protective, recollective, reflective, rejective, selective, subjective
ed*	had	bias → biased, broken, brought, bought, driven, educated, experienced, flown, goneimagined, learned, overpaid, overworked, retired, shrunk, sold, spent, spoken

* or the past participle of irregular verbs

<prefix><verb> → <adjective>		
prefix	meaning	examples
ex		press → express

<verb><suffix> → <noun>		
suffix	meaning	examples
er	actor	advertise → advertiser, abstracter, analyzer, appetizer, atomizer, breathalyzer, camper, compromiser, digitizer, doer, enterpriser, equalizer, exerciser, fertilizer, fighter, giver, harmonizer, immobilizer, improviser, liquidizer, merchanner, moisturizer, performer, printer, nebulizer, neutralizer, organizer, oxidizer, reader, server, scrutinizer, singer, stabilizer, sympathizer, tantalizer, tranquilizer, visualizer, writer
or	actor	act → actor, administrator, attactor, advisor, benefactor, cofactor, collector, compactor, conductor, contractor, divisor, extrator, facilitator, initiator, operator, professor, supervisor, survivor, transactor
tion	act of	affiliate → affiliation, calculation, combination, depreciation, evaluation, imagination, implication, intention, initiation, organization, relation, revolution, rotation, synchronization
sion	act of	apprehend → apprehension, ascension, collision, cohesion, condescension, extension, pretension/tion, reversion, revision, suspension, tension
ment	act of	align → alignment, appointment, argument, assignment, building, confinement, consignment, development, deferment, detriment, endorsement, enforcement, establishment, entanglement, envelopment, impediment, indorsement, misalignment, refinement, reinforcement, resettlement, settlement
ing*	act of	ask → asking, climbing, coherence, complaining deterrence, developing driving,, , falling, revolving, riding, running**, seeing, studying, swimming**, talking, taking***, walking
ance/ ence	act of	adhere → adherence, appearance, assurance, clearance, conference, disappearance, endurance, incurrance, interference, occurrence, perseverance, ponderance, recurrence, relevance, resonance, tolerance, transference
tude	state of	amplify → amplitude, certitude, claritude, fortitude, gratitude, habitude, magnitude, servitude
out	place/state	bail → bailout, blackout, blowout, breakout, brownout, burnout, buyout, checkout, closeout, dropout, hideout, knockout, cookout, handout, hangout, holdout, layout, lookout, sellout, stakeout, standout, strikeout, takeout, walkout, workout

* adding the suffix “ing” to a verb makes a special noun called **gerund** that expresses an action state

** last letter was doubled because it was preceded by a **single vowel**

*** last letter was omitted because it was an “e” that was preceded by a **consonant**

Word Derivation from Adjectives

<prefix><adjective> → modified <adjective> (1/2)		
prefix	meaning	examples
a	not	normal → abnormal*, asymmetric, asynchronous
semi(-)	halfway, unfinished	annual → semi-annual, semi-broken, semi-cooked, semi-conscious, semi-elongated, semi-finished, semi-functional, semi-furnished, semi-loaded, semi-polished, semi-purified, semi-stretched
un	not/ opposite	accountable → unaccountable, unaided, unaware, unbiased, unbroken, unbreakable, uncertain, uncommon, uncomplicated, uncompromising, unconcerned, unconditional, unconfirmed, unconnected, uncontrolled, uncountable, unconventional, undiscovered, undone, unending, unequal, uneven, unexplained, unfastened, unfinished, unfounded, unhealthy, unimaginable, uninformed, uninterested, unintentional, unjust, unkind, unknown, unlimited, unlikely, unlucky, unnatural, unnecessary, unorganized, unparalleled, unravelled, unruly, unsatisfactory, unusual, unwell, unwritten
il	not	legal → illegal, illegitimate, illogical, illiterate Exceptions: illuminated, illusionary, illustrated, illustrious
ill(-)	badly	advised → ill-advised, ill-conceived, ill-equipped, ill-fated, ill-fitted, ill-gotten, ill-informed, ill-mannered, ill-treated,
in	not/ limitless	inapplicable, inappropriate, inconsistent, incredible, incurable, indescribable, indifferent, indirect, indiscriminant, indistinguishable, indispensable, ineffectual, inefficient, ineligible, inescapable, inexcusable, inexhaustable, inexperienced, inexplicable, infamous, inflexible, informal, ingenious, inhospitable, inhumane, inefficiency, insensitivem, insignificant, insincere, insoluble, insubstantial, intangible, intelligible, invaluable
im	not	mature → immature, immaterial, immeasurable, immobile, immoral, immovable, impeccable, impersonal, implausible, impenetrable, imperfect, implacable, impatient, impolite, impregnable, impossible, impotent, impractical, imprecise Exceptions: impertinent, impetuous
ir	not	rational → irrational, irreconcilable, irregular, irrelevant, irreplaceable, irreparable, irresistible, irresponsible, irrevocable
bio	biological	biochemical, biodiverse, bioengineered, bioenhanced, biograded, biogrouped
en	bring in	capsulated → encapsulated, endangered, endeared, enforced, engaged, enrolled, entangled
endo	inward	dermic → endodermic, endothermic
exo	outward	thermic → exothermic
electro	electric	chemical → electrochemical, electrodriven, electroplated, electropotential

<prefix><adjective> → modified <adjective> (2/2)		
prefix	meaning	examples
over(-)	excessive**	bearing → overbearing, overblown, overcompensated, over-complicated, over-concentrated, overcrowded, over-debated, overdestroyed, over-dilluted, over-discussed, overdone, overdue, over-educated, over-explored, over-exposed, over-fertilized, overgrown, overhauled, over-imagined, overjoyed, overprotected, over-qualified, overrated, overriding, overruled, overseas, oversimplified, overtreated, overturn, overused, overvalued, over-watered, overwhelmed Exceptions: overall
non(-)	not	abrasive → nonabrasive, nonaddictive, nonbeligerent, non-flammable, non-standard, nonstarter
poly	many	morphic → polymorphic, polygonic, polynomic, polytechnical
ultra(-)	too/very much	clean → ultraclean, ultracold, ultracool, ultracut, ultra-expensive, ultrafine, ultrahot, ultra-noisy, ultrasoft, ultrasmart, ultrasonic, ultrastrong, ultrathin
sub(-)	below	adequate → sub-adequate, subconscious, sub-effective, sub-freezing, sub-human, sub-linear, sub-normal, sub-slow, subsequent, subsonic, substandard, suburban Exception: submissive, subtle, subversive

* “b” is added since the adjective starts with “n”

** or beyond normal limits

<adjective><suffix> → modified <adjective>		
prefix	meaning	examples
er*	more/less	deep → deeper, finer, greener, nearer, poorer, richer, simpler, stronger, weaker
est*	most	deep → deepest, finest, greenest, nearest, poorest, richest, simplest, strongest, weakest

* These make the comparative and superlative forms of regular adjectives of Appendix III

<prefix><adjective> → <verb>		
prefix	meaning	examples
en	to make	able → enable, endear, endure, enlarge, enrich
in	in(side)	hale → inhale
ex	out(side)	hale → exhale

<adjective><suffix> → <verb>		
suffix	meaning	examples
en	to make	beat → beaten, deepen, eaten, neaten, sweeten

<prefix><adjective> → <noun>		
suffix	meaning	examples
di	two	electric → dielectric

<adjective><suffix> → <noun>		
suffix	meaning	examples
ness	state of	clever → cleverness, governess, handsomeness, preparedness, randomness, sadness
ce*	state of	arrogant → arrogance, dominance, elegance, importance, relevance
ty*	state of	active → activity, affinity, infinity, nobility, proximity, vicinity
ity	state of	lethal → lethality, morality, mortality, normality

* with modification to the ending of the adjective

<adjective><suffix> → <adverb>		
suffix	meaning	examples
ly	being	easy → easily*, essentially, eventually, financially, freely, gently, quickly, seriously, slowly

* since the last letter in the adjective is “y”, it is replaced by “i” before adding the “ly” suffix