

Chapitre 4 : Scientific English Grammar

Introduction

Scientific English is used in research papers, laboratory reports, theses, and academic presentations. It must be clear, objective, precise, and formal.

A. Present Simple Tense

Used for scientific facts, general truths, and accepted knowledge.

Examples: Water boils at 100°C.

Cells contain genetic material.

This article explains the results.

B. Past Simple Tense

Used to describe methods, experiments, and completed actions.

Examples: Samples were collected from patients.

C. Present Perfect Tense

Used for previous studies and recent findings.

Examples: Many researchers have studied this disease.

Several experiments have shown positive results.

D. Passive Voice

Very common in scientific writing because it focuses on the action.

Structure: **Object + be + past participle**

Examples: DNA was extracted from blood samples.

The data were analyzed statistically.

The bacteria were incubated overnight.

E. Modal Verbs

Used for possibility and cautious conclusions.

Examples: This result may indicate infection.

The treatment could improve recovery.

These findings might be significant.

F. Linking Words

Addition: Furthermore , Moreover , In addition

Contrast: However, Nevertheless, Although

Cause / Effect:

Therefore, Thus, As a result, Because

G. Formal Scientific Style

Use objective language.

Incorrect:

I think the experiment was good.

Correct:

The experiment showed positive results.

Incorrect:

We saw many changes.

Correct:

Significant changes were observed.

2. Is punctuation important?

Punctuation is crucial in scientific writing as it helps to convey the writer's intended meaning and tone. Incorrect punctuation can lead to ambiguity, which can be detrimental to the clarity and credibility of the text. Scientific writing often involves the use of complex sentence structures and technical terms, so it is essential to use punctuation correctly to ensure readers can fully understand the text. In addition, proper use of punctuation can enhance the overall readability of the writing.

- **Period (.):**
 - Use periods to end sentences.
 - Use a single space after a period.

E.g. Pollution not only affects the environment but also introduces diseases that could kill all living organisms.

- **Comma (,):**

Use commas to separate items in a list, such as variables or parameters in a study.

- E.g. In our investigation of air pollution, we considered several key parameters, including temperature, humidity, wind speed, pollutant concentration, and air quality index.

Use commas to set off non-essential clauses or phrases within a sentence.

- E.g. The air quality in urban areas, especially during rush hours, is a significant concern for public health.

Use commas to separate multiple adjectives modifying a noun (e.g., "The large, green leaf").

- E.g. The city implemented a comprehensive, long-term strategy to combat air pollution.

Use a comma before a coordinating conjunction (and, but, or, nor, for, so, yet) to join independent clauses.

- E.g. The air quality index in the city reached a hazardous level, and local authorities issued public health advisories.

- **Semicolon (;):**

- Use semicolons to separate closely related but independent clauses within a sentence.
- Use semicolons to separate items in a list if those items contain internal commas.
- Additional: use with moreover and nevertheless if they come in the middle of a sentence.

- **Colon (:):**

- Use colons to introduce lists, explanations, or examples.
- Use a colon before a block quotation or an indented quote.

- **Hyphen (-):**

- Use hyphens to link compound words (e.g., "well-defined").
- Use hyphens in compound adjectives (e.g., "data-driven analysis").
- Use hyphens to avoid ambiguity, such as in "re-cover" (to cover again) vs. "recover" (to regain).

- **Forward Slash (/):**

- Use a forward slash sparingly to indicate alternatives (e.g., "and/or").

Read these sentences and complete the correct punctuations:

Toxic compounds including carcinogens mutagens and neurotoxins can have severe health Implications

The causes of water pollution, are multifaceted and include several factors industrial discharges agricultural runoff sewage contamination and natural processes.

Toxic contaminants, often infiltrate aquatic environments, impacting aquatic life, this has devastating implications for both: local and global biodiversity. Addressing these issues requires a multifaceted approach; reducing emissions, improving waste management, and implementing cleaner technologies

2. Prepositions for Time, Place, and Introducing Objects:

A preposition is a word or group of words used before a noun, pronoun, or noun phrase to show direction, time, place, location, spatial relationships, or to introduce an object. Some examples of prepositions are words like "in," "at," "on," "of," and "to."

Note :

- Prepositions indicate relationships between other words in a sentence.
- Many prepositions tell you where something is or when something happened.
- Most prepositions have several definitions, so the meaning changes quite a bit in different contexts.

Ending a sentence with a preposition is not a grammatical error

3. Scribbr list of regular verbs

<https://www.scribbr.com/wp-content/uploads/2023/09/List-of-Regular-Verbs.pdf>

4. Types of sentences

There are four types of sentences:

4.1. Simple sentences : A simple sentence contains a subject and a verb, and it may also have an object and modifiers. However, it contains only one independent clause. E.g. Some students like to study in the mornings.

4.2. Compound sentences : A compound sentence contains at least two independent clauses. These two independent clauses can be combined with a comma and a coordinating conjunction or with a semicolon. The coordinators are as follows: for, and, nor, but, or, yet, so.

I tried to speak Spanish, and my friend tried to speak English.

Sami played football, so Maria went shopping.

Sami played football, for Maria went shopping.

4.3. Complex sentences : A complex sentence contains at least one independent clause and at least one dependent clause. Dependent clauses can refer to the subject (who, which) the sequence/time (since, while), or the causal elements (because, if) of the independent clause.

If a sentence begins with a dependent clause, note the comma after this clause. If, on the other hand, the sentence begins with an independent clause, there is not a comma separating the two clauses.

- The students are studying because they have a test tomorrow.
- After they finished studying, Juan and Maria went to the movies
- Compound-complex sentences: Sentence types can also be combined. A compound-complex sentence contains at least two independent clauses and at least one dependent clause.
- Laura forgot her friend's birthday, so she sent her a card when she finally remembered.

5. The Comparative and the Superlative

One of the most common things we do in our everyday language is to compare things. It might be comparing restaurants, candidates for a job position, or results in an experiment. So how do we make comparatives and superlatives in English? Read on to find out all the information you need about comparing. **What are comparatives and superlatives?**

We use comparatives and superlatives to say how people or things are different. We use a comparative adjective to express how two people or things are different, and we use a

superlative adjective to show how one person or thing is different to all the others of its kind.

For example,

- Mick is taller than Jack.
- Mick is the tallest person in the family.
- To say that someone or something has a superior quality, size, or characteristic, you need to use **'more'**. Instead, when you want to say that someone or something has an inferior quality, size, or characteristic, you must use **'less'**.

More

The way we make a comparative with 'more' depends on the length of the word. There are three different cases:

A) More for long adjectives.

If an adjective has two or more syllables, we add the word 'more' in front to create the comparative form. For example:

This hotel is more expensive **than** the last hotel we stayed at.

B) -er for short adjectives

If an adjective has one syllable, or two syllables with -y as the second syllable, we add -er to create the comparative. For example: Your house is bigger than mine.

C) Irregular comparatives

As is often the case in English, there are some adjectives that are irregular and don't follow these rules. Here are the irregular comparatives:

good – better
bad – worse
far – further (U.K. English) farther (US English)
fun – fun

For example,

- Your cooking is better than my cooking.
- Arriving late is worse than arriving early.

Less

We use 'less' to say that someone or something has an inferior quality, size or characteristic. It's easy to use because you simply put 'less' in front of any adjective. For example:

- Walking is less tiring than running.
- Australia is less populated than China

D). Superlatives

We use superlatives to compare one person or thing to several others. For example,

Paris is the most beautiful city I've ever seen.

This means that I've seen several cities and I consider Paris as the number one in terms of being beautiful.

In a similar way to comparatives, there are two ways to use superlatives. When you want to say that one person or thing is superior to all others in that group, you need to use 'the most'. When you want to say that one person or thing is inferior to all others in that group, you need to use 'the least'.

The most

Similarly to comparatives, we use 'the most' in different ways according to the length of the adjectives:

1) The most for long adjectives.

If an adjective has two or more syllables, we add 'the most' in front to create the superlative form.

For example:

She's the most determined candidate we've seen today.

It's the most difficult part of my job.

This is the most successful year the company's ever had.

2) -est for short adjectives

If an adjective has one syllable, or two syllables with -y as the second syllable, we add -est to create

The superlative. For example:

- It's the shortest route to the stadium.
- What's the longest flight you've ever taken?
- He's the nicest guy I've met here.

As with comparatives, if an adjective ends in a vowel and consonant (e.g. sad) you need to double the final consonant. For example, saddest, fittest, hottest.

3) Irregular superlatives

The same adjectives that are irregular for comparatives are also irregular for the superlative form:

good – best
bad – worst
far – furthest (U.K. English) farthest (US English)
fun – fun

Here are some examples:

- Is this the best place to eat in town?
- Yesterday's performance was my worst ever.
- Alaska is the furthest state from Florida.