

Scientific Style

Scientific writing requires grammatical and stylistic approaches that differ from those preferred in other academic disciplines. Lab reports, literature reviews, and theses will be most successful when they are consistent with these conventions of the field.

Tone

Scientific writing is straightforward, specific, and concise. Balance jargon and discipline-specific vocabulary with simple, precise word choices. Readers will draw conclusions based on the strength of the data, not the beauty of the writing.

Clarity is more important than poetry. Observations should be reported using concrete adjectives rather than figures of speech: for example, the colour of a mixture should be described “bright green,” not “the shade of new spring leaves.” A writing style that is direct and uncluttered will reduce the chance that readers will misunderstand or become confused.

Passive Voice

In active voice, the subject of the sentence is active: the subject performs the action expressed by the *verb*.

Examples:

My lab partner and I **diluted** each sample with 100 mL of water.

We **diluted** the samples, causing them to change from bright green to pale green.

Active voice emphasizes the people who are doing the experiment, rather than the procedures or results themselves. Science, however, is universal—anyone should be able to do a particular experiment and get the same results. In scientific writing, therefore, the emphasis should be on facts and data, not the researcher. This requires use of passive voice.

In passive voice, the subject is inactive, receiving the action expressed by the verb. In other words, the subject is acted upon by an unseen party.

Examples:

Samples were **diluted** with 100 mL of water.

Diluting samples caused them to change from bright green to pale green.

In addition to changing the emphasis of the sentence, passive voice removes unnecessary detail, making the sentence more concise.

Using the Literature

Scientific Style

It is extremely rare to include a direct quotation in a scientific paper; in most cases, the facts are more important than the specific wording previous authors used to state them. In general, quotes are only appropriate if the original wording is so powerful and precise that it is impossible to improve.

Information paraphrased from research sources must be cited.

Examples:

A new method for developing fingerprints on spent cartridge casings was discovered in 2009 (Bond and Heidel).

Bond and Heidel (2009) discovered a new method for developing fingerprints on spent cartridges.

A new method for developing fingerprints on cartridge casings takes advantage of corrosion reactions between skin oils and brass (Bond and Heidel 2009).

All sources that appear in the text of the paper must also appear in the reference list.

Practice: Active and Passive Voice

Underline the subjects, circle the verbs/verb phrases in the following sentences, and decide whether the sentence is in the passive voice or the active voice. Rewrite passive voice sentences in the active voice and active voice sentences in the passive voice.

1. Passive/Active Matthew changed his login password.

2. Passive/Active I checked the mail when I got home.

3. Passive/Active The toys have been pulled out of the box.

4. Passive/Active The professor gave Jamie his paper back.

5. Passive/Active Posters were left here for you to hang up.

6. Passive/Active I found this wallet on the ground.

7. Passive/Active The elephant sneezed all over the audience.

Scientific Style

8. Passive/Active An episode of Bill Nye the Science Guy was watched by the students.

9. Passive/Active Gilbert the Goldfish was removed from his old tank

Passive/Active This picture was painted by my three year old niece.

Answers:

1. Passive/**Active** Matthew changed his login password.
The password was changed by Matthew.
2. Passive/**Active** I checked the mail when I got home.
The mail was checked.
3. **Passive**/Active The toys have been pulled out of the box.
The teenagers pulled the toys out of the box.
4. Passive/**Active** The professor gave Jamie his paper back.
The paper was given back to Jamie.
5. **Passive**/Active Posters were left here for you to hang up.
She left posters here for you to hang up.
6. Passive/**Active** I found this wallet on the ground.
This wallet was found on the ground.
7. Passive/**Active** The elephant sneezed all over the crowd.
The crowd was sneezed on by the elephant.
8. **Passive**/Active An episode of Bill Nye the Science Guy was watched by the students.
The students watched an episode of Bill Nye.
9. **Passive**/Active Gilbert the Goldfish was removed from his old tank.
Jeffery removed Gilbert the Goldfish from his old tank.
10. **Passive**/Active This picture was painted by my three year old niece.
My three year old niece painted this picture.