

## CS1 Unit 4 Japanese Scientist 4 Ken-ichi Fukui (p. 49)

- Asking the meaning of a word or phrase you don't know
- Explaining the meaning of a word or phrase in English
- Adding the part-of-speech information

A: What does the word X mean?

B: The {noun | verb | adjective | adverb} X means ....

A: Can you tell me what the word X means?

B: Yes. The {noun | verb | adjective | adverb} X means ....

A: I don't know what the word X means.

B: Shall I tell you what it means?

A: Yes, please.

B: The {noun | verb | adjective | adverb} X means ....

chemical reaction

chemistry

equation

investigation

mechanics

organic chemistry

quantum mechanics

1. the branch of chemistry that deals with substances that contain carbon
2. the scientific study of the structure of substances, how they react when combined, and how they behave under different conditions
3. the branch of mechanics that deals with movement and force in pieces of matter smaller than atoms
4. the science of movement and force
5. a statement that the values of two mathematical expressions are equal, for example,  $2x + 3y = 1$
6. a process that involves rearrangement of the molecular or ionic structure of a substance
7. a scientific or academic examination of the facts of a subject or problem

**[pair work: restrictive relative clause]**

Combine two sentences by turning the second into a (restrictive) relative clause.

A: Read two sentences.

B: Combine them using a relative pronoun.

1. The Japanese scientist was born in Nara in 1918. He won the Nobel Prize in Chemistry in 1981.
2. The 1981 Nobel Prize in Chemistry was awarded to the Japanese scientist. His favorite subject was not chemistry in his high school days.
3. The student studied fuel chemistry. His interest was in quantum mechanics.
4. The 1981 Nobel Prize in Chemistry was awarded the Japanese scientist. He was professor of physical chemistry at Kyoto University.
5. The Japanese scientist died in 1998 at the age of 79. He was awarded the Nobel Prize in Chemistry in 1981.

**[non-restrictive relative clause]**

Example Waseda University was founded by Shigenobu Okuma. He was born in Saga in 1838.

→ Waseda University was founded by Shigenobu Okuma, who was born in Saga in 1838.

6. Ken-ichi Fukui was appointed lecturer in fuel chemistry there. He graduated from Kyoto Imperial University in 1941.
7. Ken-ichi Fukui began his career as an experimental organic chemist. He was appointed lecturer in fuel chemistry at Kyoto Imperial University.
8. Ken-ichi Fukui's prize-winning work is called "frontier orbital theory." It is about the role of frontier orbitals in chemical reactions.