

ADJECTIVE CLAUSES:
GRACE HOPPER AND THE FIRST COMPUTER LANGUAGE

Adjective clauses function in a sentence the same way as adjectives. They explain or modify nouns or indefinite pronouns such as someone and everyone. Unlike adjectives, however, adjective clauses come after the noun or pronoun they describe. A typical adjective clause has a relative pronoun such as who/whom/which/that + subject and verb. For example:

Cell phones, which are more like computers than phones, are an important part of daily life.

Adjective clauses are used when using an adjective creates an awkward sentence structure. For example:

I am a chocolate-loving person is an awkward sentence structure. Therefore, we use an adjective clause to make the sentence easier to understand. For example: *I am a person who loves chocolate.*

Adjective clauses are not used when one adjective can be used to effectively express an idea. For example:

She is an intelligent person. **Not** *She is a person who is intelligent.*

Many textbook exercises have students combine sentences using adjective clauses. In this week's Teacher's Corner we'll use a different approach by having the students deconstruct adjective clauses into two separate sentences. This approach gives students the opportunity to understand the relationship between two simple sentences and how they come together through the use of adjective clauses.

This week we'll practice adjective clauses by learning about Grace Hopper, who was one of the world's first computer scientists. Her early work on computers led to the development of the first computer programming language and helped create much of the software we use today.

LEVEL

Intermediate and above

LANGUAGE FOCUS

- Reading, writing (primary focus)
- Speaking (secondary focus)

GOAL

Students practice deconstructing sentences with adjective clauses

MATERIALS

- Teacher: whiteboard or chalkboard; markers or chalk

- Students: pencils or pens, writing paper

PREPARATION

- Print enough My Hero: Grace Hopper readings for each student in class.
- Print enough Adjective Clauses – Sentence Deconstruction worksheets for each student in class
- Print out a copy of the Adjective Clauses – Sentence Deconstruction Answer Key

PROCEDURES

Warm Up

1. Begin the activity by asking the class: What is one item you cannot live without?
 - a. Have the students call out their answers and write them down on the board.
2. If no students answer “cell phone” (unlikely!), elicit the idea from the students.
3. Next ask the students: Why can’t you live without your cell phone?
 - a. Tell the students to write down all the ways they use their cell phone.
4. Once students have made a list of all the ways they use a cell phone,
 - a. On the board write: I can’t live without my cell phone, which I use to _____.
5. Have students add their ideas to the sentence to create adjective clauses. Once they have created sentences, have the students form pairs/small groups and share their idea with their partner(s).
6. After the pairs/small groups have shared their ideas, encourage them to share their ideas with the class to see which students have the most creative or unique ideas.

Reading Practice: Adjective Clauses

1. Begin this part of the activity by asking the students: Do you have a hero?
 - a. Elicit answers from the students about their heroes
2. Tell the students that today they will learn about a woman who is a hero to many people. She helped to develop the technology that is used in computers and cell phones. Without her ideas, we would not have the technology we have today.
3. Next, pass out the My Hero: Grace Hopper Reading Activity. Give the students several minutes to read the information.
 - a. If time permits, have students take turns reading the information out loud to the class.
4. Once students have finished reading, check their comprehension by asking:
 - a. What computer did Grace Hopper help program? – (Mark I)
 - b. What is the name of the computer programming language she created? – (COBOL)
 - c. Do people still remember her? – (Yes, each year there is a conference celebrating her work)
5. Have students read through the information again. This time have them underline each example of an adjective clause they can find.
 - a. Once finished, have them check their answers with a partner or review as a class.
6. Next, give each student a copy of the Adjective Clauses: Sentence Deconstructing worksheet.
7. Have the students read each sentence and form two smaller sentences.
 - a. Once the students have finished, review the answers as a class.
8. Finally, have the students use the adjective clauses from the worksheet as examples to write their own descriptive sentences about someone they consider to be their hero.
9. Once the students have completed their sentences, have students take turns reading their sentences out loud with the subject missing.

- a. One student should read his/her sentences while the rest of the class guesses his/her hero.
 - i. For example: He is a famous football star who played for Real Madrid and LA Galaxy. – (Who is David Beckham?)
- b. The first student to guess correctly now reads his/her sentences aloud to the class.

Encourage students to visit the following websites and learn to code:

<https://code.org/>

<https://csedweek.org/>

MY HERO: GRACE HOPPER – READING ACTIVITY

Directions: Read the information below about the work of Grace Hopper. Grace was a computer scientist who created the first computer programming language. Circle or underline the adjective clauses in the paragraphs.



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Technology is a part of everyday life. We use computers to do many things to make life easier and faster. Even our cell phones are a type of computer that we can use to call friends, write messages, and play games. Have you ever thought about the origins of computers? There were many early researchers who helped create the first computers, but one of the most interesting people was Grace Hopper.

Grace Hopper was a university professor who quit her job to join the Navy during World War II. She joined the Navy to serve her country by helping to develop new technology. She joined the Navy during an interesting time when computers were beginning to be built.

Grace joined a team which built one of the first computers. She was responsible for programming this computer called the Mark I. She understood how complicated it was to program a computer which required lots of math at the time. She invented a programming language that made it easier for people to program computers. Her programming language was called COBOL. Thanks to her early work, computers became easier to use. In only a few decades, computers moved from big machines the size of rooms to smaller devices that could be used by individuals. These personal computers, which were programmed using Grace Hopper's ideas, became a part of everyday life.

Grace Hopper is my hero because she played an important role in the development of technology we use every day. Some people may think that computers and math are only for boys, but they are wrong! Grace Hopper is proof that anyone can excel in math and science. Each year, the Computer Science Education Week is held around December 9th, which is Grace's birthday. Her work is also celebrated every year at the Grace Hopper Celebration. This conference, which celebrates the work of women in science, is attended by people from all over the world. Each year they discuss new ideas and technology that carries on the work started by Grace Hopper.

ADJECTIVE CLAUSES - SENTENCE DECONSTRUCTING

The following sentences are from the reading My Hero: Grace Hopper. Change each of the sentences into two separate smaller sentences by making the adjective clause a separate sentence.

1. There were many early researchers who helped create the first computers.

2. Grace Hopper was a university professor, who quit her job to join the Navy during World War II.

3. She joined the Navy during an interesting time when computers were beginning to be built.

4. Grace joined a team which built one of the first computers.

5. She understood how complicated it was to program a computer which required lots of math at the time.

6. She invented a programming language that made it easier for people to program computers.

7. These personal computers, which were programmed using Grace Hopper's ideas, became a part of everyday life.

8. This conference, which celebrates the work of women in science, is attended by people from all over the world.

ADJECTIVE CLAUSES: SENTENCE DECONSTRUCTING – ANSWER KEY

The following sentences are from the reading My Hero: Grace Hopper. Change each of the sentences into two separate smaller sentences by making the adjective clause a separate sentence.

1. There were many people who helped create the first computers.

There were many people. They helped create the first computers.

2. Grace Hopper was a university professor, who quit her job to join the Navy during World War II.

Grace Hopper was a university professor. She quit her job to join the Navy during World War II.

3. She joined the Navy during an interesting time when computers were beginning to be built.

She joined the Navy during an interesting time. During this time, computers were beginning to be built.

4. Grace joined a team which built one of the first computers.

Grace joined a team. The team built one of the first computers.

5. She understood how complicated it was to program a computer which required lots of math at the time.

She understood how complicated it was to program a computer. Programming a computer required lots of math at the time.

6. She invented a programming language that made it easier for people to program computers.

She invented a programming language. The programming language made it easier for people to program computers.

7. These personal computers, which were programmed using Grace Hopper's ideas, became a part of everyday life.

These personal computers became a part of everyday life. They were programmed using Grace Hopper's ideas.

8. This conference, which celebrates the work of women in science, is attended by people from all over the world.

The conference is attended by people from all over the world. It celebrates the work of women in science.