



# How If Statements Help Computers Make Decisions

KS3 Ages 11-14 ⌚ 3 min read

## What Are If Statements?

When you write computer code, you need to tell the computer what to do. But sometimes you want the computer to make different choices depending on what happens. That's where **if statements** come in. An **if statement** is a piece of code that lets a computer check if something is **true** or **false**, and then decides what to do based on that answer.

Think of it like this: if you're deciding whether to wear a coat when you go outside, you first check if it's cold. If it's cold, you wear a coat. If it's not cold, you don't. Your brain is making a decision based on a condition—just like a computer does with an **if statement**.

Think of it like: A vending machine that checks your money. If you have enough money, it gives you a snack. If you don't, it says "Not enough money." The machine is using an if statement to decide what happens next.

## How Do If Statements Work?

An **if statement** follows a simple pattern. First, the computer checks a **condition**—a question that has a yes or no answer. For example: "Is the player's score higher than **100** points?" or "Is the user logged in?" The condition uses special symbols like **=** (equals), **>** (greater than), or **<** (less than) to compare things.

If the condition is true, the computer runs one set of instructions. If the condition is false, it either skips those instructions or runs a different set instead. This is called an **else statement**—it means "otherwise, do this instead."

Think of it like: A traffic light checking if a car is approaching. If a car is coming, the light turns red (one action). If no car is coming, the light turns green (different action). The light is constantly checking conditions and making decisions.

## Real-World Examples

If statements are everywhere in the programs you use every day. When you play a video game, **if statements** check if your character has hit an enemy, fallen off a cliff, or reached the finish line. If any of these things are true, something happens—maybe you lose a life or win the level.

Your phone also uses **if statements** constantly. When you unlock it with your fingerprint, the phone checks if your fingerprint matches the one stored inside. If it does, your phone unlocks. If it doesn't, it stays locked. Music apps check if you've pressed the play button, and social media apps check if someone has liked your post.

## Why Are If Statements Important?

**If statements** are one of the most important tools in programming because they let computers respond to different situations. Without them, every program would do exactly the same thing every time you used it, no matter what. With **if statements**, computers can be smart and flexible, adapting to what you do and what's happening around them. This is what makes computers truly useful and interactive.