Imagine if you lost a hand. Wouldn't you wish for an artificial hand that could hold, touch, and feel just like the hand you lost? If you became blind or deaf, you would probably wish you had an implant that could help you see or hear again. And what if you were paralyzed? You might wish you could control objects with your mind.

These ideas may sound like science fiction, but some of them are becoming possible through the science of bionics. A combination of **bi**ology and elect**ronics**, bionics studies how living organisms function, in order to build electronic devices that imitate, or copy, these functions. Bionic parts are artificial robotic body parts that work like the parts that they are made to replace.
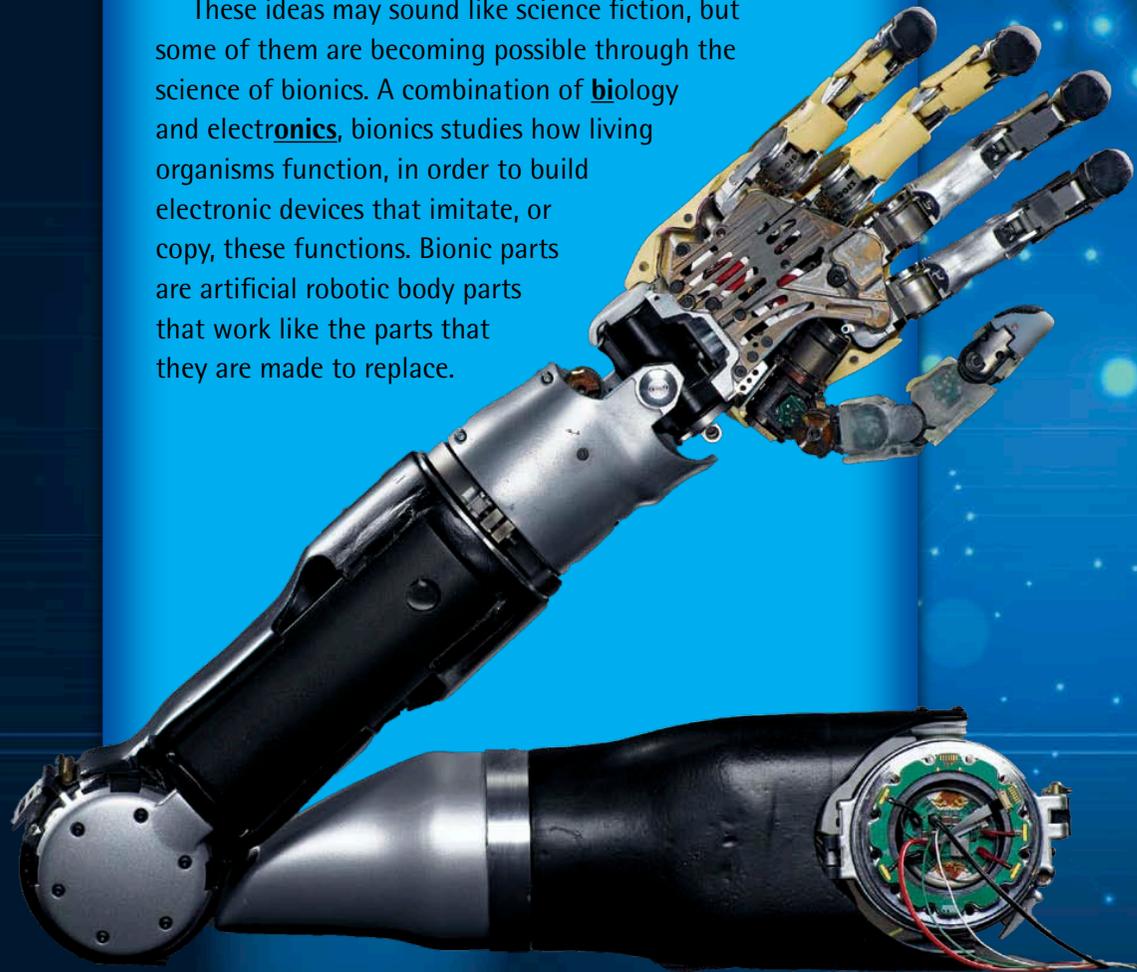
Like machines, our bodies work with electrical impulses. Our nervous system sends electrical signals to the brain from body parts such as our hands, our legs, our ears, and our eyes. Our nervous system also carries signals back from our brain to our body parts to control our body's movement and functions. Scientists are now able to create machines that work like our own body parts. These machines can be commanded to move and to function using signals from our brain!

Bringing the world to the classroom and the classroom to life

Facts About Technology and Disabilities

Most people can read e-mails, type messages on computers, and speak to others. They don't think twice about being able to communicate in these ways. Yet people with disabilities may have trouble doing these things. Fortunately, there are technologies that can help.

People who are blind can not see a screen. But they can still get e-mail. How? Special programs have been created that change the text on a computer screen into speech so that a blind person can hear the information on a computer screen instead of having to see it.

In order to send a message, the person can use a speech recognition program. With this technology, as a person speaks into a microphone, his or her words appear on the computer screen. This technology is also extremely helpful for people who have disabilities that make it impossible for them to use their hands to type.

But what if a person doesn't have use of their hands or their voice? Technologies have been developed that allow people with severe disabilities to control a computer with only a slight movement of a part of the body like the head, a thumb, or even just by blinking or sniffing. A video camera above the person's monitor replaces a mouse and a keyboard. It picks up these slight movements, allowing the person to communicate through his or her computer!

Stephen Hawking, one of the most famous scientists in the world, communicates with a computer by moving a muscle in his cheek.