



STEPHEN HAWKING:  
A NONSPEAKING HERO TO NONSPEAKING HEROES  
By Judy Chinitz  
Adult

All people have things they excel at and things that are CHALLENGING for them. For those with disabilities though, certain tasks that other people take for granted may be extremely difficult: learning to read and type BRAILLE for someone who is blind; learning to speak with sign language for someone who is deaf; learning to walk for someone with CEREBRAL PALSY; and communicating through spelling for someone with autism or severe motor DYSFUNCTION, to name just a few. A golden rule to live by though, for everyone – not just those with disabilities: “...however difficult life may seem, there is always something you can do, and succeed at. It matters that you don’t just give up.”

Spell: DISABILITIES                      CEREBRAL                      DYSFUNCTION

What modality is available to those who are blind to read and write?  
BRAILLE

According to this lesson, how do some people who are deaf speak and converse?  
SIGN LANGUAGE

What part of the body do people use to read Braille?  
FINGERS

What is an action that is extremely challenging for most people, disabled or not?

The author of that quote is Dr. STEPHEN HAWKING, the famous English THEORETICAL PHYSICIST, who many consider the most brilliant human being since Albert Einstein. He authored 15 books (including 5 for younger readers), and countless scientific papers and lectures. He conducted REVOLUTIONARY research, acted in TV shows, lived a life full of friends, family, ACHIEVEMENT and adventure. And Dr. Hawking did all this while confined to a wheelchair, unable to speak or move almost his entire body, crippled by a disease called AMYOTROPHIC LATERAL SCLEROSIS ( ALS) with which he was diagnosed at 21 years of age.

Spell: REVOLUTIONARY                      ACHIEVEMENT                      PHYSICIST

What is Dr. Hawking's nationality? ENGLISH

From what disease did Dr. Hawking suffer (full name)? AMYOTROPHIC LATERAL SCLEROSIS

In what branch of science did Dr. Hawking work? PHYSICS, THEORETICAL PHYSICS

Name one thing Dr. Hawking accomplished in his life-time: AUTHORED 15 BOOKS, AUTHORED MANY SCIENTIFIC PAPERS, CONDUCTED REVOLUTIONARY RESEARCH, ACTED IN TV SHOWS, LIVE A LIFE OF ACHIEVEMENT AND ADVENTURE

What limitations were placed upon Dr. Hawking by his disease? CONFINED TO A WHEELCHAIR, UNABLE TO SPEAK, UNABLE TO MOVE HIS BODY, PARALYZED

How many books did Dr. Hawking write? 15 BOOKS

By what other name is ALS commonly known in the United States? LOU GEHRIG'S DISEASE



**DR. STEPHEN HAWKING – A NONSPEAKING HERO**

According to the National Institute of Health, ALS is a group of NEUROLOGICAL diseases – also called motor NEURON diseases - that cause progressive DEGENERATION of motor neurons. It is rare, it is typically seen in people between the ages of 55 and 75, and no one knows the cause. Ordinarily, messages from the brain pass through nerves to communicate with different parts of the body: motor neurons control the

movements of the muscles. As the neurons stop sending messages to the muscles, the muscles weaken and ATROPHY [waste away]. Eventually, the person can no longer control VOLUNTARY movements of the body and then, even the muscles which control actions like chewing, swallowing, and breathing are affected.

Spell: NEUROLOGICAL                      DEGENERATION                      ATROPHY

What kind of neurons degenerate in the disease, ALS? MOTOR

What word in this paragraph means “to waste away”? ATROPHY

Eventually what kinds of actions does ALS affect? CHEWING, SWALLOWING, BREATHING

Between what ages is ALS typically first diagnosed? 55 and 75

Name a voluntary motor movement? WRITING, SPELLING TO COMMUNICATE, SPEAKING, DRIVING, JUMPING, ETC.

Name an involuntary motor movement? REFLEX, HEART BEAT, PERISTALSIS

Neurons are a part of what system in the body? CENTRAL NERVOUS SYSTEM

Dr. Hawking was remarkable in so many ways. He was truly a GENIUS of epic proportions. In spite of his disability, he still lived a life full of PROFESSIONAL accomplishment. And another fact that made him a true ANOMALY [deviation from the norm]: most people diagnosed with ALS die of RESPIRATORY failure within 3 to 5 years of the appearance of their first symptoms. Only 10 percent of people live for more than 10 years with ALS: Dr. Hawking lived with the disease for 55 years. And in spite of his ever-growing disability, he did not let it stop him from living the life he chose to live.

Spell: PROFESSIONAL                      REMARKABLE                      GENIUS

What kind of failure leads to death in most people with ALS?

RESPIRATORY

What word means “do deviate from the norm”? ANOMALY

Name one of the things that made Stephen Hawking remarkable. HE WAS A GENIUS, HE LIVED A LIFE OF ACCOMPLISHMENT, HE LIVED WITH ALS FOR 55 YEARS

If Dr. Hawking was diagnosed at age 21 with ALS and lived with the disease for 55 years, how old was he when he died? 76 (21 + 55 = 76)

He studied physics at OXFORD University in the UK, and then got his PhD at CAMBRIDGE University in 1966, 3 years after first being diagnosed with ALS. He continued as a researcher and full professor at Cambridge for over 3 decades, and continued to direct the school's Center for Theoretical COSMOLOGY [the study of the origin and development of the universe] for nearly the rest of his life. Dr. Hawking made considerable contributions to the field of physics and cosmology. He is perhaps best known for his work in the study of black holes: CELESTIAL bodies with essentially infinite GRAVITY from which not even light can escape. They are thought to be created by the collapse of a star. Dr. Hawking proposed that black holes actually emit a kind of energy, now called HAWKING RADIATION, until they use up all their energy and explode. This was radical thinking, and forever transformed the field of cosmology and the study of black holes.

Spell: OXFORD CAMBRIDGE GRAVITY

At what university did Dr. Hawking spend over 3 decades involved in research and teaching? CAMBRIDGE

What center did he head up for most of his career? CENTER FOR THEORETICAL COSMOLOGY

For the study of what celestial body is Dr. Hawking perhaps best known? BLACK HOLES

What kind of energy do black holes emit? HAWKING RADIATION

What is a black hole? CELESTIAL BODY OF INFINITE GRAVITY

In what year did Dr. Hawking start at Cambridge? 1963 (1966 – 3 YEARS TO GET HIS PhD)

What is the name of our sun? SOL

What scientist first formulated the original theory of gravity? SIR ISAAC NEWTON

Name another celestial body? STARS, SUN, PLANETS, ASTEROIDS, COMETS, QUASARS, ETC.

Being disabled never held Dr. Hawking back. In 2007, he was able to have an experience normally limited to only ASTRONAUTS in outer space: he was gifted with the ride of a lifetime, in zero gravity. He starred in television shows, ranging from The Simpsons to Star Trek to The Big Bang Theory. He traveled the world, visited the president of the United States at the White House, married and had 3 children, wrote his books and papers, all while making mind-blowing contributions to the field of physics. He was BESTOWED with a laundry list of honors, ACCOLADES [an acknowledgement of merit] and awards to prove it: everything from 13 honorary degrees to being the recipient of one of the United Kingdom's highest honors, the Commander of the Order of the British Empire (CBE), to one of the United States' highest honors, the Presidential Medal of Freedom.



DR. HAWKING FLOATS IN ZERO GRAVITY

Spell: ASTRONAUTS                      BESTOWED                      ACCOLADES  
What word used in this paragraph means an acknowledgement of merit?  
ACCOLADE  
Where did Dr. Hawking meet the president of the United States? WHITE  
HOUSE  
What award was Dr. Hawking granted in the United Kingdom?  
COMMANDER OF THE ORDER OF THE BRITISH EMPIRE, CBE

Name one TV show on which Dr. Hawking appeared: THE SIMPSONS, STAR TREK, THE BIG BANG THEORY

What adventure did Dr. Hawking get to experience that is usually reserved for only astronauts? WEIGHTLESS FLIGHT, ZERO GRAVITY

How many honorary degrees was Dr. Hawking given? 13

In what year did Dr. Hawking experience zero gravity? 2007

Experiencing zero gravity was Dr. Hawking's dream of a lifetime. What dream would you love to experience in your lifetime?

But wait, there's more. Much more. His book, *A Brief History of Time*, had sold more than 10 million copies at the time of Dr. Hawking's death, in 2018. More than that, his REMARKABLE life was depicted in the 2014 movie, *The Theory of Everything*. The movie starred Eddie REDMAYNE as Dr. Hawking, and he won an ACADEMY AWARD for best actor for the role. The movie itself was NOMINATED for best picture of the year. How many people have major award winning motion pictures made about them?!

Spell: REMARKABLE          REDMAYNE          NOMINATED

Which of Dr. Hawking's books sold over 10 million copies? A BRIEF HISTORY OF TIME

What was the name of the movie about Dr. Hawking's life? THE THEORY OF EVERYTHING

What Academy Award did Eddie Redmayne win? BEST ACTOR

What is another name for an Academy Award? OSCAR

In what year did Dr. Hawking pass away? 2018

If you were to write a best-selling book, what would it be entitled?



What is the name of the surgery in which a breathing tube is inserted into the windpipe? TRACHEOTOMY

What kind of beam could detect movement in Dr. Hawking's cheek?  
INFRARED

What alternative communication device did Dr. Hawking use? SPELLING CARD, COMPUTER SYSTEM

Since what year had Dr. Hawking been unable to speak? 1985

If you had a movie made about you, what would it be called? Describe the plot.

Here is a great brief video about Dr. Hawking:

<https://www.youtube.com/watch?v=kcW-YG9Nu4E>

Don't miss out on looking at his website, [www.hawking.org](http://www.hawking.org). There are wonderful videos for you to check out!

*Judy Chinitz, MS, MS is the Director of Hand to Mouth Therapy. She is a New York State Licensed, Special Educator and Certified S2C Practitioner. Judy has been actively involved in the world of autism, both biomedically and educationally, since her son, Alex, was diagnosed 26 years ago. With a Master's degree in nutrition, she has worked with many of the top physicians in the field, authoring numerous book chapters, articles and her own book on diet (We Band of Mothers: Autism, My Son and the Specific Carbohydrate Diet) and other biomedical treatments. In July of 2019, when she was introduced to Spelling to Communicate (S2C), everything changed for both Judy and Alex. He went on to pass the GED exam with distinction, and was recently accepted to the State University of New York, Purchase. Once she saw what spelling/typing for communication could do, Judy changed her entire career path, and in May of 2020, opened up the Mouth to Hand Learning Center, where she teaches many other nonspeaking students.*

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