



AMERICAN
ASSOCIATION FOR THE
ADVANCEMENT OF
SCIENCE

150 YEARS • 1848-1998

SCIENCE—FAR MORE THAN REQUIRED HIGH SCHOOL COURSEWORK

DESCRIPTION, DISCOVERY, AND A NATURAL ORDER

Most people think of science as something they have to learn to get through school. It isn't very important, just facts that they have to know to pass tests. These people miss the whole point of science. Science is about understanding the world around us, and understanding ourselves.

Science describes the world. It says how nature works, from our own bodies to tiny particles to the entire Earth and larger, and how each is connected. Even more, science gives us predictions of what will happen in certain circumstances. This is the true beauty of science; it lets us know in advance what will happen when a cell splits, or when two chemical substances react with each other.

Science is also about discovery. Every year, new theories are made to explain natural occurrences, some replacing older theories, some with completely new ideas and solutions to problems that hadn't been thought of before. All these are new ways of looking at our world. Science will always change, as people learn more and try to use that new knowledge to further mankind's understanding of the world, or to better the world. We will also always be able to draw on past discoveries to help us.

People today view themselves through science differently than before. I personally look at evolution as saying that we are all connected, all related, and this makes me feel strongly about the environment. Other people have different views, but this makes me feel the way I do.

Science affects me in other ways. Science makes me question things that I know, and keeps me from accepting anything simply because I am told it is the truth. After I learned about the concept of moles, I kept looking at objects, realizing that I could actually count how many molecules there were in it. I did this for about a week. Other things that I have learned have affected me, like reading about how the brain works, and knowing just how much information can be stored in my head, or realizing, just for a second, how very tiny I am compared to the universe.

I remember one of the biggest ways that science affected my thinking. When I was about 10 years old, I remember looking at a half-moon at sunset. I could see the whole moon, although part of it was in shadow. At that moment, it dawned on me that the moon really was what we were always taught—another world. I always knew it as a fact, but then I actually saw it for myself, and realized that these lights in the sky truly were there, faraway worlds and suns. The sky has seemed open to me ever since.

Science lets us see what is actually happening in our world. We see how everything fits together, and we learn what the world is truly made of. Science changes our lives by showing us the order of the natural world, and through that, its beauty.

—Robert Jackel

WHAT SCIENCE MEANS TO ME

One of my earliest childhood memories is that of the dinosaurs on display at the National Museum of Natural History in Washington, DC. From that day onward, my dreams and aspirations

The 150th anniversary committee asked the students of Holmdel High School in New Jersey about their thoughts on science and society. Here is what a few of them said.

have been centered on the idea that one day I would become a paleontologist, and discover dinosaurs on my own. Through science I am finding a way to chase those dreams.

Science, although shaky and disputed at times, has been the one constant thing in my life. From the mysterious giants that fascinated me early in life, to the inner workings of the tiniest cells, the knowledge I have learned

through science has given me a way to explain the things I could not only moments before. This knowledge of the universe, and of my own body, may seem insignificant on the surface, but to me it helps pull the world together into a concept that is much easier to grasp. That is, the concept of life.

The stars will always watch over me, the mysteries of the deep will always fascinate me, and the enigma of the dinosaurs will always thrill me. Without science these things would be unexplainable, and distant. But with the gift of insight and knowledge, these puzzles, one day, might be unlocked, and my life will be complete.

—Jennie Schweitzer

PRIORITIES?

A blessing which enhances the mind,
And yet a demon which erodes the spirit.

The knowledge, the power of Science:

As each advancement is made,

As each theory is proposed,

Man may become too strong, too intelligent.

While the door to practical explanation is opened,
We must be all too careful not to shut the door on Him.

We cannot sacrifice our beliefs,

Our ideals,

Our souls,

Religion.

—Melsa Clarke

SCIENCE AS SANCTUARY

Drowning out the shouting and the arguing with Beethoven and Wagner, I turn off all the lights in my ballet pink room except for one. Easing into the gold and white embroidered cushion of my desk chair, the back rests below my shoulders. Gone are the harsh, stinging words and accusations. Gone is the voice of my father's wife, telling me the only way to be a good person is to pray five times a day. Instead, I see only what brings a smile to my face.

The simple words of great men—Kepler, Newton, Hawking—give me the hope nothing else can. This is my sanctuary. By learning their thinking, I tell myself, I can shape my mind into a powerful tool. The feeling I get when I truly grasp something, be it quantum mechanics or how a zipper works, is what I want to give others. I want to teach them all the young, undeveloped ideas in my mind once they fully take form. Lifetime upon lifetime could be filled with the things I want to accomplish, and for me, science is my vehicle.

During our weekly visitation hours, my father has always had some intriguing article from one of the many science journals he subscribes to. The discussions they prompt create a welcome diversion from the senseless arguments over how I choose to live my life. Religion could dominate our battles for houses, both sides resting their basic premises on assumptions in no way concrete. They would go on for hours until one party gave in for the day—usually me. If I can prove something, see something, make something, I know and believe it is true. So, I put my faith in the science I make.

As we move toward the much-anticipated and unpredictable 21st century, the promises of science are clearly seen. But science is not some great, omniscient power, nor is it miraculously revealed to man by me. It comes from within man—the more we understand ourselves, the more science will progress. And since society is a direct product of man, it too will move forward, or sideways, or diagonally for that matter.

Ugly words slice through the air and hang there effortlessly. But they don't affect me so much anymore, because I have something to depend on and look forward to.

—Shaila Musharoff

SCIENCE

Light in the dark tunnel of ignorance
Forever thou shalt shine forth
Never let your brilliance be diminished
By those whose eyes cannot adjust
Those animals who thrive in the dark
Those who are scared of the truth
Because when they are gone
What will endure?
Science.

—Praveen Yalamanchili

SCIENCE AS IT RELATES TO SOCIETY

Advancing in the world of science is an extremely important thing, but at the same time it affects our society in a negative way. Advances in the medical field are important to our existence on this planet. New vaccines can save people's lives and help them to live longer and healthier lives. The life expectancy of humans around the world has soared thanks to discoveries to cure diseases and to surgeries, once thought to be impossible, that are now performed on a daily basis. This is a way in which science has definitely improved our society.

Mankind has made such amazing advances in the field of technology over the years. Machines do things that were never imaginable. They mass produce almost everything and make the lives of many people easier. At the same time, though, technology is forcing people out of work, and it is harder for someone who needs work to get a job. Also, society becomes so dependent on technology that when it fails them they panic and don't know what to do. All around the world people are becoming lazy, and it is only going to get worse. More people will be forced into poverty because a machine will have their jobs. Hopefully mankind will come to its senses and not let this happen.

Examples of machines that have taken jobs from people are the E-Z pass. These toll booths are not run by people, but by a computer that calculates the money you give. Assembly lines that mass produce anything from pens to cars take away hun-

dreds of jobs. Computers sort and store data so much more easily than file cabinets can, so people do not need a secretary to do all that work for them.

Science can either help society in an important way, or it can destroy society. It all depends on where people stand on the situation. If they are the ones making more money from it, then they love it. If they are the ones who are affected negatively by it, then they hate it. The people of today care more about money than about their morals. Science is an amazing thing, but sometimes it is taken too far.

—Vinnie McKeever

WHERE WOULD WE BE WITHOUT SCIENCE?

Science is the 4-year pursuit of knowledge that every high school teenager must live through. I often ask myself, when will I ever need to use this stuff when I grow up? The answer is clearly, probably never. I doubt that I will ever need to know the chemical formula of dichromate, or how to correctly identify a combustion reaction.

However, where would we be today, without science? Without the great minds of Einstein and Newton, where would we be?

How would I be able to write this essay on the computer, if there was no science? Would I be alive today? Would humankind survive through the years and still be around today? Or would dogs be the masters of humans? Would cows herd humans? Would we still be the dominant species on the Earth?

So many questions arise because the human race depends on the advancement of science. We are dependent on Nabisco to make that cookie you love, 99.99% fat free, that video game company to come out with the anniversary game cartridge you want to play so badly, and that car company to alter the headlights of the car and call it the "new" '98 car.

Where would we be without science? We depend on our researchers to make new vaccines and our doctors to make us the way we want ourselves to be. We depend on them to make us "prettier," to perform triple bypasses, to make sure nothing goes wrong when they operate upon us. Doctors depend on science just as much as we depend on science. Lawyers are constantly depending on doctors not knowing their

science so they can get rich quick. Just look how much our society depends on the advancement of science.

Science, in a way, keeps our society from falling apart. In our society, science is everywhere. We depend on the advancement of science to make it through our day. Could you wake up in the morning without your beloved coffee? Or could you make it through just 1 day without being able to communicate in any way to any other person? Science takes part in our everyday life more than we think. We need scientific progress so that we can simply make it through a day. When most people think of science, they think of it as a laboratory, white coats, and mixing all different-colored chemicals until something blows up. But the fact is that science is a way of life and our future.

—Michael Chu

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SEESAW OF THE SPIRIT

As science develops, religion declines,
Because religion begins where science ends.
As more and more knowledge fills our minds,
Religious influence lessens.
Religion was based on assumed claims,
Which through time have been proved wrong.
But the Church has been too strict to change,
Which has been its downfall all along.
Creation gives us an account
Of man and woman's first acts,
But evolution seems paramount,
Because it is supported by facts.
So now we are presented with a choice.
Scientific knowledge or conviction?
Everybody has a voice
In answering this controversial question.

—Brian Sze

WHAT SCIENCE MEANS TO SOCIETY

In a society where all aspects of our lives are dictated by scientific advances in technology, science is the essence of our existence. Without the vast advances made by chemists, physicists, biologists, geologists, and other diligent scientists, our standards of living would decline, our flourishing, wealthy nation might come to an economic depression, and our people would suffer from diseases that could not be cured. As a society we ignorantly take advantage of the amenities provided by science, yet our lives would be altered interminably without them.

Health care, one of the aspects of our society that separates us from our archaic ancestors, is founded exclusively on scientific discoveries and advances. Without the vaccines created by doctors, diseases such as polio, measles, hepatitis, and the flu would pose a threat to our citizens, for although some of these diseases may not be deadly, their side effects can be a vast detriment to an individual affected with the disease.

Yet another aspect of science, discoveries of the world beyond us, has increased our knowledge and contributed to our culture. Such discoveries were once viewed as an impossible task, but the technology brought to life by NASA employees has accomplished this aspiration, and numerous others. In addition, science has developed perhaps the most awe-inspiring, vital invention in the history of the world, the computer. Without the presence of this machine, our world could exist, but the conveniences brought into life by the computer are unparalleled.

Despite the greatness of present-day innovators and scientists and their revelations, it is requisite to examine the amenities of science that our culture so blatantly disregards. For instance, the light bulb, electricity, the telephone, running water, and the automobile are present-day staples of our society; however, they were not present until scientists discovered them.

Because of the contributions of scientists, our world is ever metamorphosing, and this metamorphosis economically and personally comprises our society, whether our society is cognizant of this or not.

—Megan McIlroy

THE GIFT OF SCIENCE

Constantly enhancing the mind
Letting us search until we find
The answer to our sudden birth
On this caring sanctuary we call Mother Earth
Or to become even more superior
And make those who challenge our existence inferior
The hunger to reach our goals is so extremely vast
Hoping science may be our holy repast
Come and observe our constant yearn
Of the knowledge that science offers us to learn
We often foolishly go to the edge
Yet science has saved us from jumping off the ledge
The more we come to know
The farther we may boldly go
Whatever scientific knowledge man may reap
Using common sense, he shall surely keep
For it may be the key that man can use
To unlock the secrets of a mythical muse
Science exists for the benefit of man
Waiting to be explored so one can reveal
the universe's master plan.

—Jonathan Woo

SCIENCE AS LIFESAVER

Science is everything to me. Wherever I go and whatever I do, my entire life is based upon and surrounded by science. In all my existence, science has led to one of the most important roles in my life. Science allowed my brother, as an infant, to develop normally to become a healthy baby. While growing up, science has been, and will continue to be, my favorite subject in school. Most recently and importantly to me, science has helped to save my father's life.

I was a completely healthy baby, but my younger brother was born with a hole in his heart. He could not eat, sleep, or make any sound when he cried. Within a few hours of surgery, the problem was fixed, all due to science. To this day, he is an avid sports fan and the doctor predicts that his adult height will be 6'3" (considering that my mother is only 5'2").

Ever since I was born, science has interested me the most out of all the subjects. As a baby, I was fascinated with animals. A few years ago, it was physical science. Now, I enjoy biology and chemistry. In the future,

I wish to enter a career that is heavily influenced by science.

A few months ago, my family experienced the greatest shock that has ever come upon us: My father needed a double coronary bypass operation. He seemed to be extremely fit, but the results from his catheterization told otherwise. Of the two major arteries, his right artery was 99 percent blocked and his left artery was 89 percent blocked, with blood clots lying just a few centimeters away. His only symptom was a slight tightness in his chest whenever he ran or quickly walked up a flight of stairs. Now, according to him, he is healthier than he has ever been before.

Science, especially medicine, has played a major role in my life, as well as in my family's. My father and brother might not still be alive. School would not be enjoyable for me. Life would be meaningless. In my opinion, Bill Nye: The Science Guy says it best as, "Science rules!"

—Jenitta Kwong

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WORLD. WE SEE HOW
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—ROBERT JACKEL