A Memorized Speech Prepared About Albert Einstein

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Albert Einstein was born on March 4th, 1879 in the south German city of Ulm. A year later his family moved to Munich, the capital of Bavaria, which is in Germany. When Albert was small he hardly ever laughed, never said a word more than necessary and didn't like games. He was so solemn, so grave - what odd ideas must have passed through his mind. He was impressed however by a compass which was given to him by his father when he was 5. For the first time he was so happy. Perhaps his parents thought the worrying about him had been needless.

Yes, from now on the worst was over for Albert. But the worst was really only beginning. Soon he had to attend school, and school proved one of the greatest torments of life. Often his marks were poor. He was called a lazy student, a stupid, or an indifferent one. He did poorly at school because he felt a deep resentment against the cruel teachers. In class they were beaten, humiliated, and shouted at. They had to leap to their feet like soldiers, to answer questions. Albert hated this military atmosphere.

As he grew older, he spent many hours in his father's library. Albert's father read the German classics and poems of Schiller and Heine. Albert's mother played the piano very well. She insisted that Albert learn to play the violin. So he began taking lessons at six.

After the Einsteins had been in Munich for five years, they moved to a house with a garden behind it, where Albert loved to spend his leisure time in the pleasant weather. As Albert grew older he slowly sensed what his life interest would be. He felt he wanted to study higher mathematics and the most advanced physics, so one day, with this knowledge he would be able to examine for himself the physical laws that govern the universe.

His father was in debt and had to sell the house and they moved to Milan to try to make better business there and rent a factory. They moved and left Albert by himself in Munich so he could finish high school there. Munich seemed a terrible place to him. He had to move into a rooming house. He ate meals with strangers. He was not permitted to play his violin in his room since he had no other place to play it.

So he decided to go to the doctor, a friend of his father. On one cold morning, instead of setting off for school, he went to see the doctor. He explained to the doctor how miserable he was in Munich and asked the doctor to certify that he was sick - to say that he was going to have a nervous breakdown - so that he could leave school and join his family in Italy. The doctor's heart was touched by Albert's request and said yes. So Albert went to Italy. He liked it more in Italy. The people were nice and the climate was warm. Everything here seemed more livelier than in Munich.

Later he asked his parents permission if he could renounce his German citizenship. His father said he could if he really made up his mind. Albert insisted and at 16 he was no longer a German. He was a citizen of no country. But

in his own mind he had become something finer - a citizen of the world.

After Albert graduated from high school, he entered the Polytechnic School in Zurich to study for his graduate degree. After he received his graduate degree, he got a job in a Swiss patent office. When he was 26 he published his Special Theory of Relativity.

This theory is called the special theory because it refers to a special kind of motion. This is uniform motion in a straight line, that is, with constant velocity or speed. If we're riding in a smooth running train, our activities can be carried on in much the same way, with the same results on the ground outside the train. But if the train runs jerky, we can't do everything we do on the ground outside the train, in the train.

Before the relativity theory was put forward, physicists did not believe fully in the relativity principle. Einstein restored the physicist's faith in the relativity principle and this is how he did it.

Suppose we have a long train much like the one in the previous example. But instead of rolling 75 miles an hours, it will be moving uniformly at 20,000 miles a second. We will have a flashlight sending out light signals. On the ground we will also have a flashlight sending out light signals. And observers measuring the speed of the signals given off. Are the light waves the same for men on the ground as it is for those on the train? If we asked this question to a physicist in the late 1800s, he would have said no. He would have said the light waves travel through ether at a velocity of about 186,000 miles per second. Ether is a weightless substance which covers the entire universe. The physicist would have said that the stars, sun, planets, and our imaginary moving train move through the ether at different speeds. Therefore, the speed of light will be different for an observer on the sun, on the earth, and on the train.

Just as the earth changes its velocity during the year in which it completes its journey around the sun, the speed of light for the observer should change too, they said. Among the many experiments which helped destroy this ether theory, the most famous is that of Michelson and Morley in 1887. Their measurements of the speed of light showed that the motion of the earth in regard to the sun had no influence upon the velocity of light. Einstein's theory that the speed of light travels at the same speed regardless of anything was true.

The basic ideas of the special relativity theory are found in a mathematical formulation of two postulates.

The first is that the relativity principle is valid for all phenomena. The second postulate is that the velocity of electromagnetic waves, or light, in empty space is constant, and furthermore is independent of the speed of its source or observer.

The following deductions have been made from these postulates by mathematical means.

According to the special relativity theory, no material body can move with a velocity greater than that of light.

If a man on a fast-moving train compared his clock with the many clocks in the stations he passed, he would find that the rhythm of his clock is slower that the rhythm of the clocks on the ground. This effect is small, and would be detected only if the speed of one clock which passes many others was not very small compared with the speed of light. If a clock could be moved at a speed approaching that of light, it would run slower than one in a fixed position.

Two events judged as taking place at the same time by the observer in the train are not simultaneous for the observer on the ground.

The length of every object resting in the train appears to the observer outside to be shortened in the direction in which the train is moving. A stick one foot long at rest would be 6 inches long if it could be moved at 90% of the speed of light.

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Grade 7 Speech

Given to the class in the afternoon around 1 pm.
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References: Encyclopedia and Library Books