

Reading Comprehension: STEM Celebs

About This Activity

Introduction

In this activity, learners will read a short passage about pioneers in computer science and then answer questions to show their understanding of the content. There are 18 different variations of this activity so that learners can read about lots of pioneers.

Objective

Upon completion of this activity, learners will:

- know how a wide variety of computer science pioneers have changed the world

What You Need

This activity requires a low level of facilitator participation.

Each reading comprehension sheet will take about 20 minutes to complete.

You will need the following supplies:

- Pencil

Facilitator's Instructions

1. Print out the Learner's Sheet pages.
2. Gather your supplies.
3. Give your learner one of the reading comprehension sheets.
4. Tell your learner about this activity: "Today, you're going to do a reading comprehension activity to learn about STEM celebs! Read through the passage on this sheet and then answer the questions at the bottom. When you're done, we'll see how many you got right."
5. Ask your learner to tell you when they are all done.
6. When they are done, check their work against the answer key.
7. Congratulate your learner on a job well done!

Reading Comprehension: STEM Celebs

Standards Addressed

CSTA

1A-IC-16, Impacts of Computing, Culture: Compare how people live and work before and after the implementation or adoption of new computing technology.

1B-IC-18, Impacts of Computing, Culture: Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.

Common Core

RI.3.1: Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

RI.3.2: Determine the main idea of a text; recount the key details and explain how they support the main idea.

RI.3.3: Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

Reading Comprehension: STEM Celebs

Answer Keys

Answer Key #1

1. What is Ismail al-Jazari best known for?
Answer: He is best known for inventing early robots called automatons.
2. Why did Ismail al-Jazari like to build machines?
Answer: He wanted his machines to make life easier for people.
3. What is so special about Ismail al-Jazari's work?
Answer: His inventions were created very early in tech history. They were quite advanced for his time period.

Answer Key #2

1. Why did Joseph Marie Jacquard begin looking at looms that other inventors created?
Answer: The looms that he invented were unsuccessful because they were too hard to use. Instead he looked for ways to make looms better.
2. What did punched cards do that helped weavers?
Answer: Punched cards helped weavers produce cloth faster.
3. How did Joseph Marie Jacquard's invention advance technology?
Answer: Punched cards were used by other inventors in new ways. They were even used in early computers.

Answer Key #3

1. Why did Charles Babbage want to create a machine to do math?
Answer: In Charles's time, people did math by hand. Charles knew that people make mistakes. He wanted to make a machine to do math so it could be done without any mistakes.
2. What invention did Charles Babbage use in a new way in his machine?
Answer: Charles used punched cards in his machine. Punched cards were first used in weaving looms.
3. Why is Charles Babbage called the father of the computer?
Answer: Charles is called the father of the computer because he was the first person to invent a device that did calculations.

Reading Comprehension: STEM Celebs

Answer Key #4

1. Why is Ada Lovelace called the world's first computer programmer?

Answer: Ada wrote her notes down as she translated the paper about the Analytical Engine. These notes created the first computer algorithm.

2. How were Charles Babbage's and Ada Lovelace's ideas about computers different?

Answer: Charles thought machines would only be capable of calculations. Ada thought machines could be programmed to do much more than just calculations.

3. How did Ada Lovelace's ideas help shape our computers today?

Answer: She was the first person who imagined that computers could do more than calculations.

Answer Key #5

1. How did Alan Turing help the Allies win World War II?

Answer: He worked as a codebreaker and learned ways to break enemy codes faster.

2. When Alan Turing wrote about "Turing machines," he imagined machines could do any calculations, as long as something happened? What was it?

Answer: He thought that machines could do any calculations if they were written as an algorithm.

3. How was Alan Turing's Automatic Computing Engine different than earlier computers?

Answer: The Automatic Computing Engine was the first stored-program computer.

Answer Key #6

1. What important job is Mavis Batey known for?

Answer: Mavis Batey was a codebreaker during World War II.

2. In December 1941, what did Mavis Batey do that had not been done before?

Answer: She cracked a code from a machine that no one else had been able to crack before.

3. Why couldn't Mavis Batey talk about her job?

Answer: She had worked with secret information, so she wasn't allowed to talk about it.

Reading Comprehension: STEM Celebs

Answer Key #7

1. What was Hedy Lamarr's job?
Answer: She was a Hollywood movie star.
2. What did Hedy Lamarr invent during World War II?
Answer: She invented an untraceable radio signal, called a frequency-hopping signal system.
3. How did Hedy Lamarr's invention influence today's technology?
Answer: We use her technique in our Bluetooth technology today.

Answer Key #8

1. How did the term debugging come about?
Answer: When Grace Hopper took apart her computer to figure out why it wasn't working, she found a moth inside it. After that, she called fixing computer problems debugging.
2. Why did Grace Hopper want to create a new programming language?
Answer: She thought that programming should be easier to do for everyone. The math codes that people used were hard to learn.
3. What made COBOL different than other programming languages?
Answer: COBOL used words instead of math codes. This made it easier for people to learn.

Answer Key #9

1. What was Evelyn Boyd Granville's job at IBM?
Answer: She designed software to study satellite orbits.
2. How did Evelyn Boyd Granville's math skills help a man land on the moon?
Answer: She calculated orbits and trajectories for the engineers at NASA.
3. What does Evelyn Boyd Granville do today?
Answer: She encourages children to study STEM topics by speaking and creating school math programs.

Reading Comprehension: STEM Celebs

Answer Key #10

1. What did Mary Jackson do as a human computer?
Answer: She did calculations that helped the space program at NASA.
2. What did Mary Jackson have to do to become an engineer?
Answer: She took classes at night to learn the skills to become an engineer.
3. After Mary Jackson became the top engineer at NASA, what did she do?
Answer: She moved to another department and helped women and minorities find STEM jobs.

Answer Key #11

1. What did Katherine Johnson first do as a human computer?
Answer: She analyzed data from planes to find out why some crashed.
2. Why did Katherine Johnson's life change when she began working for NASA?
Answer: She began to do work for the space program. Her work allowed America to send a man into space. She worked on other space missions after that.
3. How has Katherine Johnson been honored for her work?
Answer: She received the Presidential Medal of Freedom and a movie was made about her work.

Answer Key #12

1. What did Dorothy Vaughn do when she first started working for NASA?
Answer: She was a human computer who did difficult math that helped the US space program.
2. Why was Dorothy Vaughn's promotion to the head of her team so important?
Answer: She was NASA's first African-American supervisor.
3. How was Dorothy's part in NASA's first mission to the moon honored?
Answer: A crater on the moon was named after her in October 2019.

Reading Comprehension:

STEM Celebs

Answer Key #13

1. What important task was Margaret Hamilton asked to do in 1963?
Answer: She was asked to write software for a space mission to the moon.
2. How did Margaret Hamilton's software help the astronauts land on the moon?
Answer: Her software allowed the computer to prioritize landing over fixing the mistake.
3. How does Margaret Hamilton's idea about teaching others to write software affect us today?
Answer: Margaret wanted others to learn computer programming in college. Because of her idea, people can study software engineering all over the world.

Answer Key #14

1. What was unique about Carol's job at Atari?
Answer: She was the first female game designer at the company.
2. Why did other programmers go to Carol Shaw with questions?
Answer: Carol was very good at her job and could figure out how to do tricky parts of programming.
3. Where can Carol Shaw's game designs and source codes be seen today?
Answer: Carol's game designs and source codes can be found at the Strong National Museum of Play in Rochester, New York.

Answer Key #15

1. What company did Steve Wozniak open with his friend, Steve Jobs?
Answer: They opened the Apple Computer Company in 1976.
2. Why was the Apple II important?
Answer: The Apple II was the first personal computer with color graphics. It was one of the first successful personal computers in the world.
3. After Steve Wozniak opened the CL 9 company, what new invention did he design?
Answer: He created the first universal remote control. It was very successful.
4. How is Steve Wozniak helping the technological world today?
Answer: He opened an online educational service called Woz U in 2017. Adults and children can learn about computers there.

Reading Comprehension:

STEM Celebs

Answer Key #16

1. What was Mark Dean's contribution to IBM's personal computer in 1981?
Answer: He owned three of the computer's nine patents and he developed a color monitor.
2. Why was it special when Mark Dean became an IBM Fellow in 1996?
Answer: Becoming an IBM Fellow was the company's top honor. It was special for Mark because he was the first African-American to achieve that honor.
3. What was Mark Dean's greatest success?
Answer: He and his team created the world's first gigahertz processing chip.
4. How did Mark Dean's chip allow technology to advance?
Answer: His chip allowed the power of a full computer to be placed into small devices. Smartphones and tablets used this technology to bring people information no matter where they are.

Answer Key #17

1. What did Tim Berners-Lee repurpose into a computer when he was in college?
Answer: He created a computer out of an old television set.
2. What inspired Tim Berners-Lee to create hyperlinks?
Answer: He noticed that it was hard for researchers to share information with each other. He thought that hyperlinks would allow them to share their information quickly.
3. How did Tim Berners-Lee's hyperlinks lead to the World Wide Web?
Answer: He combined his experience in computer networking with hyperlinks. This allowed people to access the same information from any computer instead of just one.

Answer Key #18


1. What did Larry Page and Sergey Brin research together at Stanford?
Answer: They both studied computer science at Stanford and researched computer search engines.
2. How did Larry Page and Sergey Brin create an improved search engine that gave better results?
Answer: They created new computer algorithms that gave better search results.
3. Where was Google first released?
Answer: Google was first released on Stanford's website and grew over time. Now it is the most popular search engine in the world.

Reading Comprehension: STEM Celebs #1

Directions

Read the passage below to learn how Ismail al-Jazari changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Ismail al-Jazari

Ismail al-Jazari was born in 1136 in Mesopotamia. We do not know much about his early life. We do know that his father was the chief engineer of the palace. It is likely that Ismail learned engineering skills from his dad.

Ismail took over his father's job as chief engineer. He liked building machines to make life easier for people. Many of his machines were beautiful. They were also very useful.

Ismail is best known for inventing early robots. These robots are called automatons. One of Ismail's robots was a waitress. First a drink dripped from a bucket to a cup. Then the robot waitress took the drink to a person.

Another of Ismail's creations was made to entertain guests at the palace. It was a band. The four robotic band members were on a boat. When the boat floated past guests, the band played music.

Ismail al-Jazari was an expert engineer, inventor, and artist. He wrote and illustrated a book about how he made his inventions. All that we know about him was found in this book. He died in 1206, leaving behind his wonderful inventions for people to enjoy.

Reading Comprehension:

STEM Celebs #1

Questions


1. What is Ismail al-Jazari best known for?
2. Why did Ismail al-Jazari like to build machines?
3. What is so special about Ismail al-Jazari's work?

Reading Comprehension: STEM Celebs #2

Directions

Read the passage below to learn how Joseph Marie Jacquard changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Joseph Marie Jacquard

Joseph Marie Jacquard was born in France in 1752. He did not go to school. When he was 13, his brother-in-law taught him to read and write. Joseph's father tried to teach him how to weave cloth, but it was too hard. Joseph was sent to work with a bookbinder. He learned math from an old clerk there.

In 1800, Joseph began inventing things. He created looms to make weaving easier, but they were too hard to use. Joseph did not give up. He looked at looms that other inventors created. He found a way to make them better. He used punched cards to change the way the loom wove fabric. The arrangement of holes punched into the cards created patterns in the fabric. This loom was named the Jacquard loom, after its inventor. It was very successful. Joseph died a rich man in 1834.

Joseph Marie Jacquard improved what other people created and made looms better. His invention helped weavers produce cloth faster. Later, other inventors used Jacquard's punched cards in new ways. Punched cards were even used in early computers. Joseph Marie Jacquard would be proud to see how his invention affects us today.

Reading Comprehension: STEM Celebs #3

Directions

Read the passage below to learn how Charles Babbage changed the world with computer science. Then, answer the questions at the bottom.

What You Need

✓ Pencil

Charles Babbage

Charles Babbage was born in England in 1791. He studied math with tutors when he was too ill to go to school. He graduated from college as the top math student.

In Charles' day, people did important math by hand. Sometimes they made mistakes, which caused big problems. Charles wanted to fix that. He dreamed of creating a machine to do math. He knew a device would not make mistakes in the same way people did.

In 1822, Charles began to build a device. He called it the Difference Engine. It was made to do calculations. It was very expensive to build, so Charles gave up. It was never finished.

Charles' next idea was to create a more complex machine. He called it the Analytical Engine. It did math using punched cards. These punched cards were first made for weaving cloth. Charles used them in a new way in his machine. But he never finished the Analytical Engine. He tinkered with it until his death in 1871.


Charles Babbage has been called the father of the computer. Punched cards were used in computers for many years. Charles also inspired people to find new ways to use technology. That allowed computers to become even better.

Reading Comprehension: STEM Celebs #4

Directions

Read the passage below to learn how Ada Lovelace changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Ada Lovelace

Ada Lovelace was born in England in 1815. She was very ill as a child. Her mother hired tutors to teach Ada math and science at home. Ada loved math!

As she grew, Ada became friends with one tutor, Mary Somerville. Mary helped Ada's love of math grow. She introduced Ada to many mathematicians, like Charles Babbage. Everyone enjoyed Ada's bright mind.

Ada's interest in math continued to grow. In 1842, Ada began to translate a paper. It was about a machine that her friend Charles Babbage had imagined. His machine was called the Analytical Engine. Ada thought about the machine. Mr. Babbage wanted it to do calculations, but Ada thought it could do much more. She wrote down her ideas about the machine. Her notes created the first computer algorithm. Ada studied math until she died in 1852.

Ada Lovelace is seen as the world's first computer programmer. She was also the first person to imagine how much machines could do. Without Ada's ideas, we would not have the computers that we do today.

Reading Comprehension: STEM Celebs #5

Directions

Read the passage below to learn how Alan Turing changed the world with computer science. Then, answer the questions at the bottom.

What You Need

✓ Pencil

Alan Turing

Alan Turing was born in England in 1912. Even as a child, people could tell that he was a genius. Math was easy for Alan to understand. He could solve hard problems, even before he took advanced classes. He graduated from college with honors in math.

In 1936, Alan wrote an important paper. In it, he described devices that could do any calculation if it was in an algorithm. These devices became known as "Turing machines". People still study Turing machines today.

During World War II, Alan worked as a codebreaker for Great Britain. He studied the coding machines that Germany was using. He learned ways to break enemy codes faster. Alan and his team cracked many codes. This helped the Allies win the war.

After the war, Alan worked on designing computers. He designed the Automatic Computing Engine. This was the first stored-program computer. It ran its first program in 1950. Alan continued his work until he died in 1954.


Alan Turing is called the father of computer science. His Turing machines led to the computers we use today. If you like using computers, thank Alan Turing!

Reading Comprehension: STEM Celebs #6

Directions

Read the passage below to learn how Mavis Batey changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Mavis Batey

Mavis Batey was born in 1921 in England. When World War II began in 1939, Mavis was studying German in college. She wanted to help her country. She stopped school and applied to be a nurse. She was not accepted. But she found another way to help.

Mavis was hired to look for coded messages in newspaper ads. She was very good at her job. Soon she was helping professional codebreakers. At age 19, Mavis was an expert at breaking codes.

Mavis was asked to crack codes sent by an Italian coding machine. She worked hard. In March 1941, she decoded a message about plans for an attack. That December, Mavis cracked a code from a machine that no one had been able to crack before.

Mavis's codebreaking skills were part of the reason D-Day was successful. But after the war, she was not allowed to talk about her job because she had worked with secret information. Instead, Mavis chose a new job. She became a garden historian. She worked to save historic parks and gardens.

Mavis Batey passed away in 2013. She is not only remembered for gardening, but for helping the Allied forces win World War II.

Reading Comprehension: STEM Celebs #7

Directions

Read the passage below to learn how Hedy Lamarr changed the world with computer science. Then, answer the questions at the bottom.

What You Need

✓ Pencil

Hedy Lamarr

Hedy Lamarr was born in Vienna, Austria in 1914. She was interested in acting. In 1932, she had her first lead role in a film. Hedy performed in more lead roles before moving to London in 1937.

There, Hedy met Louis B. Mayer. He was the head of MGM Studios. He brought Hedy to Hollywood in 1938. She quickly became a movie star. But Hedy did not see herself as a star. She saw herself as an inventor.

During World War II, Hedy wanted to help her country. She learned that radio-controlled weapons could be jammed easily. Hedy had an idea. She wanted to create an untraceable radio signal. She and her friend George Antheil created a frequency-hopping signal system.

The Navy liked her idea. But they did not use it during World War II. In 1962, a new version of her invention was placed on Navy ships. Hedy lost interest in inventing and acting. She settled for a quiet life instead.

Many people learned that Hedy Lamarr was an inventor after she died in 2000. Her inventions were seen on science shows and in movies. Today, Hedy's invention lives on. We use it in Bluetooth technology.

Reading Comprehension: STEM Celebs #7

Questions


1. What was Hedy Lamarr's job?
2. What did Hedy Lamarr invent during World War II?
3. How did Hedy Lamarr's invention influence today's technology?

Reading Comprehension: STEM Celebs #8

Directions

Read the passage below to learn how Grace Hopper changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Grace Hopper

Grace Hopper was born in New York City in 1906. She was a curious child who liked to see how things worked. She was very good at math. She taught math at Vassar College in 1931 and earned a PhD in math from Yale in 1934.

Grace was not accepted into the Navy, so she joined the US Naval Reserve in 1943. She worked with computers there. Once, Grace's computer stopped working. She took it apart. A moth was inside. Grace removed it and her computer worked again. After that, Grace called fixing computer problems debugging.

In 1949, Grace joined a new team. They created the first computer language compilers. Compilers change math codes that people write into binary code for computers. The math codes were hard to learn.

Grace thought programming should be easier. She wanted to create a new programming language that used words instead of math codes. Everyone said it wasn't possible. But Grace didn't give up.

In 1959, Grace introduced a new programming language. She called it COBOL. It was easy to learn. By the 1970s, COBOL was the most popular computer language in the world.

Grace Hopper passed away in 1992. In 2016 she was given the Presidential Medal of Freedom by President Obama. This great award honors all she did for computer science.

Reading Comprehension: STEM Celebs #8

Questions


1. How did the term debugging come about?
2. Why did Grace Hopper want to create a new programming language?
3. What made COBOL different than other programming languages?

Reading Comprehension: STEM Celebs #9

Directions

Read the passage below to learn how Evelyn Boyd Granville changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Evelyn Boyd Granville

Evelyn Boyd Granville was born in Washington DC in 1924. She was raised by her mother and her aunt. She graduated from high school at the top of her class. She went to Smith College to study math and astronomy. She went on to earn a Ph.D. from Yale in 1949. She is the second African-American woman to earn a Ph.D. in math.

After college, Evelyn taught at Fisk University. She left that job in 1952 to work in a lab. Four years later, she became a computer programmer at IBM. Evelyn's job was to design software to study satellite orbits.

In 1960, Evelyn moved to California. She began working on NASA's Apollo program in 1962. Her job was to calculate orbits and trajectories for the engineers. Her math skills helped the US space program send a man to the moon.

Evelyn returned to teaching in 1967. She taught math at California State University until 1984. When she moved to Texas, she taught there, too.


Today, Evelyn Boyd Granville speaks to schools and parents. She tells them how important it is to learn math. She has created school math programs. Evelyn has never stopped inspiring kids to study STEM topics.

Reading Comprehension: STEM Celebs #10

Directions

Read the passage below to learn how Mary Jackson changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Mary Jackson

Mary Jackson was born in Virginia in 1921. She graduated from high school with highest honors. In 1942, Mary received math and science degrees from Hampton College. She taught high school math for one year, then became a bookkeeper.

In 1951, Mary was invited to join NASA. She accepted and began work as a human computer. She did math to help the space program. In 1953, an engineer asked Mary if she would like to work on a wind tunnel. She liked that idea. Mary took classes at night to learn new skills for the job. After she finished the classes, she became NASA's first female African-American engineer.

By 1979, Mary was a top engineer. She wanted to try something new. She moved to another department. In her new job, she helped women and minorities find STEM jobs. She continued to work at NASA until she retired in 1985.

Mary Jackson died in 2005, but she has not been forgotten. In 2012 a movie called *Hidden Figures* depicted some of Mary's experiences at NASA. Many people learned about her fascinating life. In 2018, a Utah school voted to name itself after her. Even today, Mary Jackson is an inspiration.

Reading Comprehension: STEM Celebs #10

Questions


1. What did Mary Jackson do as a human computer?
2. What did Mary Jackson have to do to become an engineer?
3. After Mary Jackson became the top engineer at NASA, what did she do?

Reading Comprehension: STEM Celebs #11

Directions

Read the passage below to learn how Katherine Johnson changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Katherine Johnson

Katherine Johnson was born in West Virginia in 1918. She was very smart. She finished high school when she was 14. In college, Katherine took all the math courses, so more were added. She graduated from college in 1937 at age 18.

In 1952, Katherine was hired to be a human computer. She analyzed data from planes. She did hard math to find out why some planes crashed. Katherine was well respected by her team.

Katherine's life changed when countries began to explore space. She did complex math for NASA. Her work allowed Alan Shepard to be the first American to go into space in 1961.

Katherine worked on many other space missions. She did math that helped astronauts go to the moon. She checked math that computers did to make sure it was correct. She even worked on plans for a mission to Mars!

Katherine Johnson retired in 1986. She received many awards, including the Presidential Medal of Freedom. A movie that featured her work was released in 2012. It was called *Hidden Figures*. Katherine was proud of what she had done. She encouraged children to study STEM topics until she passed away at age 101 in 2020.

Reading Comprehension: STEM Celebs #11

Questions


1. What did Katherine Johnson first do as a human computer?
2. Why did Katherine Johnson's life change when she began working for NASA?
3. How has Katherine Johnson been honored for her work?

Reading Comprehension: STEM Celebs #12

Directions

Read the passage below to learn how Dorothy Vaughn changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Dorothy Vaughn

Dorothy Vaughan was born in Missouri in 1910. She finished high school first in her class. She went to Wilberforce University. In 1929, she graduated with a degree in math.

Dorothy first worked as a high school math teacher. After 14 years, she began working for NASA. Her team was made up of African-American women. They worked as human computers. They did difficult math to help the US space program.

In 1949, Dorothy became the head of her team. She was NASA's first African-American supervisor. She taught them new skills to prepare them for electronic computers. She also taught them computer languages. Dorothy liked her job very much.

Dorothy worked for NASA until 1971. After that, she did mission work for her church until her death in 2008. She was 98 years old.


Dorothy Vaughan has been honored for all she did. She is one of the women depicted in the 2012 movie, *Hidden Figures*. In October 2019, a crater on the moon was named after Dorothy. It honors her part in NASA's mission to the moon. In November 2019, Dorothy was given the Congressional Gold Medal of Honor. She will always be remembered for her amazing work.

Reading Comprehension: STEM Celebs #13

Directions

Read the passage below to learn how Margaret Hamilton changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Margaret Hamilton

Margaret Hamilton was born in Paoli, Indiana in 1936. She was a good student. She graduated from college with a math degree. In 1959, Margaret began working at MIT. Her job was writing software.

Margaret received a new project in 1963. She was to write software for space missions. At that time, no one had ever walked on the moon. Margaret's software would help astronauts get there for the first time.

The Apollo 11 mission to the moon was launched in 1969. As the astronauts prepared to land, they heard an alarm. One of them made a mistake. He forgot to flip a switch.

But Margaret had been smart when she wrote the program. Her software helped the computer decide how important tasks were. During the mission, the computer decided that landing was more important than fixing the switch. It permitted them to land. They became the first people to land on the moon.

Margaret Hamilton knew her work was important. She called it software engineering. She wanted others to be able to study it, too. At first, people thought that was silly. But over time, others agreed with her. Now people study software engineering all over the world.

Reading Comprehension: STEM Celebs #13

Questions

1. What important task was Margaret Hamilton asked to do in 1963?
2. How did Margaret Hamilton's software help the astronauts land on the moon?
3. How does Margaret Hamilton's idea about teaching others to write software affect us today?

Reading Comprehension: STEM Celebs #14

Directions

Read the passage below to learn how Carol Shaw changed the world with computer science. Then, answer the questions at the bottom.

What You Need

Pencil

Carol Shaw

Carol Shaw was born in Palo Alto, California in 1955. As a child, she liked to build model railroads. She used a computer for the first time in high school. She loved text-based computer games.

Carol finished her Master's degree at Berkeley, then got a job at Atari. She was the first female game designer there. She programmed games for the Atari 2600 game system. Carol thought it was the best job in the world!

Carol programmed some games alone. The first games she made were 3-D Tic Tac Toe and Video Checkers. She also designed games with others. Carol was very good at her job. She was known as the go-to gal for tricky programming.

In 1982, Carol joined a game company called Activision. She became known for designing River Raid. Players flew planes over a river. They won points for destroying enemy targets. The game was a big hit.


The success of River Raid allowed Carol to retire early. She stopped working in 1990. In 2017 she received the Industry Icon Award at The Game Awards. Carol's game designs and source codes can be seen at the Strong National Museum of Play in Rochester, New York.

Reading Comprehension: STEM Celebs #15

Directions

Read the passage below to learn how Steve Wozniak changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Steve Wozniak

Steve Wozniak was born in San Jose, California in 1950. He liked tinkering with electronics and playing pranks. Steve built his first computer with a friend in college. They named it Cream Soda, after their favorite drink.

That summer, Steve met a man named Steve Jobs. The two Steves became friends. They both liked electronics and playing pranks. In 1976, Steve Wozniak and Steve Jobs opened the Apple Computer Company. The first computer they made was the Apple I. People liked it very much.

But Steve Wozniak wanted to make a better computer. He built the Apple II. It was the first personal computer with color graphics. It was released in April, 1977. It was one of the first successful personal computers in the world.

In 1985, Steve opened a new company called CL 9. He designed the first universal remote control. It was released in 1987. It was also very successful.

Steve liked his work, but he had always wanted to be a teacher. He began teaching computer classes. In 2017 he started an online educational service. He called it Woz U. It became a school in 2018. Steve Wozniak continues to teach others about computers to this day.

Reading Comprehension: STEM Celebs #15

Questions

1. What company did Steve Wozniak open with his friend, Steve Jobs?
2. Why was the Apple II important?
3. After Steve Wozniak opened the CL 9 company, what new invention did he design?
4. How is Steve Wozniak helping the technological world today?

Reading Comprehension: STEM Celebs #16

Directions

Read the passage below to learn how Mark Dean changed the world with computer science. Then, answer the questions at the bottom.

What You Need

✓ Pencil

Mark Dean

Mark Dean was born in Tennessee in 1951. As a child, he loved to see how things worked. His teachers noticed he learned science and math easily. In 1979, he graduated from the University of Tennessee. He earned a degree in engineering. He began working, but continued his education, too. He earned a Master's degree in 1982, then a PhD in 1992.

Mark worked as an engineer for IBM. His job was to improve personal computers. When IBM released its personal computer in 1981, Mark owned three of its nine patents. He also developed a color monitor.

In 1996, Mark was given the company's highest honor. He was made an IBM Fellow. He was the first African-American to achieve this honor. In 1997, he was inducted into the National Inventors Hall of Fame.

But Mark's biggest success was in 1999. He and his team created the world's first gigahertz processing chip. It did one billion calculations in one second. Mark's chip gave small devices the power of a whole computer.

Today, Mark Dean is an honored professor at the University of Tennessee. He encourages students to imagine and create, just as he did.

Reading Comprehension: STEM Celebs #16

Questions


1. What was Mark Dean's contribution to IBM's personal computer in 1981?
2. Why was it special when Mark Dean became an IBM Fellow in 1996?
3. What was Mark Dean's greatest success?
4. How did Mark Dean's chip allow technology to advance?

Reading Comprehension: STEM Celebs #17

Directions

Read the passage below to learn how Tim Berners-Lee changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Tim Berners-Lee

Tim Berners-Lee was born in London, England in 1955. As a child he loved trains. He learned about electronics by playing with model railroads. In college, Tim built a computer out of an old TV. He graduated from Queen's College in 1976.

Tim first worked as an engineer. In 1980, he began working at CERN. He saw a problem there. It was hard for researchers to share information with each other. That gave Tim a great idea. He wanted to create hyperlinks. Hyperlinks could help researchers find what they needed. Tim built a prototype, but then he left CERN.

Tim worked at another company for three years. He gained experience in computer networking. He went back to CERN with a new idea. He wanted to blend computer networking and hyperlinks. That way, users on different computers could find the same information. Tim called it the World Wide Web. He shared it with the world in 1989.

Tim Berners-Lee has been celebrated for his work. In 2004, he was knighted by Queen Elizabeth II. He was honored during the 2012 Summer Olympics. In 2017, he received the Turing award for inventing the WWW. Tim Berners-Lee continues to work with technology today.

Reading Comprehension: STEM Celebs #17

Questions


1. What did Tim Berners-Lee repurpose into a computer when he was in college?
2. What inspired Tim Berners-Lee to create hyperlinks?
3. How did Tim Berners-Lee's hyperlinks lead to the World Wide Web?

Reading Comprehension: STEM Celebs #18

Directions

Read the passage below to learn how Larry Page and Sergey Brin changed the world with computer science. Then, answer the questions at the bottom.

What You Need

 Pencil

Larry Page and Sergey Brin

Together, Larry Page and Sergey Brin are the team that brought Google to life. Google is well-known today, but it wouldn't have existed without Larry and Sergey's work.

Larry Page was born in Michigan in 1973. He liked reading, music, and computers. Larry liked to take things apart to see how they worked. He wanted to invent things. He went to college at the University of Michigan. Later he went to Stanford.

Sergey Brin was born in Moscow, Soviet Union in 1973. His family moved to the United States in 1979. Sergey's father was a math professor. He encouraged Sergey to study math. Sergey studied math and computer science at the University of Maryland. He later enrolled at Stanford to learn more.

Larry and Sergey met during their first days at Stanford. They became very good friends. Together, they researched computer search engines. Larry and Sergey created new algorithms that gave better search results. This led to an early form of Google.

They launched the first version of Google on Stanford's website in 1996. It was very successful. Google grew over time. It is now the most popular search engine in the world.

Reading Comprehension: STEM Celebs #18

Questions

1. What did Larry Page and Sergey Brin research together at Stanford?
2. How did Larry Page and Sergey Brin create an improved search engine that gave better results?
3. Where was Google first released?