### Essential Questions:
- How have ancient Chinese inventions impacted the past and present?
- How has the Coronavirus impacted your life?
- How has technology helped to overcome difficulties that have arisen during the Coronavirus pandemic?

### Procedures:
- **Assignment #1** Read the text “Chinese Invention: Gunpowder.” Complete the Before, During, and After questions using information from the text.
- **Assignment #2** Read the article about the 17 year old and the website he created.
- Read the journal entry prompt and construct a journal entry that answers the questions in the prompt.

### Work to Be Returned:
- Before, During and After questions about Gunpowder.
- Primary source/Journal Entry for Week #10

### Resources:
- Text, “Chinese Invention: Gunpowder”
- Writing prompt for Diary/Journal Entry for Week #10; News article

### Time Allocated:
- 2 (30) minute Assignments

---

**Assignment #1**
**Directions:** While reading the text, complete the Before, During, and After Reading questions about the Chinese invention of gun powder.

**BEFORE:** Why do you think the invention of gun powder was one of the most important inventions of ancient China?

----

**Chinese Invention: Gunpowder**

One of the four great inventions of Ancient China was gunpowder. Gunpowder was the first explosive creation that mankind had created, and it all began by accident in ancient China. Like all four of the great inventions that the Chinese created, gunpowder is still being used today in the 21st Century. Gunpowder however may be the one invention that has had the most widespread effect on the world. Every nation has gone to war at some point and this invention changed the weapons they used to fight in drastic ways. Swords and arrows were no longer used, but instead guns and creations based off of guns ruled the battlefield.

At first, gunpowder was used recreationally. The first emperors would use gunpowder in order to create firework displays (the Chinese believed that fireworks would scare away evil spirits). But how did gunpowder become discovered? The idea of gunpowder was first documented in 142 AD. The earliest chemical formulas were noted in the Wujing Zongyao, which was a Chinese collection of military information. In this information there were notes about a mixture of three different powders that would cause explosions. The document described in vivid language that the combination of these powders would “fly and dance”. It is unknown if they were actually trying to create gunpowder, but it was thought to be an accidental discovery. Instead it is written that that they were attempting to make an elixir of immortality (a potion that would help someone live forever). Nonetheless, this creation led to the first ever mention of the concoction. In the Chin dynasty, a scientist by the name of Ge Hong wrote down the actual mixture that created gunpowder, which was sulfur, charcoal, and saltpeter. He was able to figure out the majority of the science behind early gunpowder.
DURING: Besides weapons, what was another way the Chinese used gunpowder?

DURING: Explain how the Chinese discovered gunpowder.

Around 904AD when Chinese inventors realized that gunpowder could be used to create weapons. These weapons were originally used against one of China’s most famous enemies, the Mongols. Chinese soldiers would attach tubes filled with gunpowder to the tops of arrows, which would cause flaming explosions; this would strike fear into the hearts of the warriors and horses by the color of the flames, apparently it looked like magic.

The first primitive versions of weapons created by gunpowder explosions were rockets. Chinese would put small stones inside bamboo tubes and then light gunpowder in order to fire it off, similar to its usage in the movie Mulan. By the mid 14th century, the explosive potential of gunpowder was perfected by increasing the amount of nitrate in the chemical formula. These improvements were used by the Chinese to develop the round shot (an explosive projectile that can be fired from a cannon) by packing hollow shells with their perfected gunpowder. Jiao Yu documented these military applications of gunpowder in his book Huolongjing.

DURING: What types of early weapons did the Chinese create with gunpowder?

At first, China attempted to keep this development secret. In the mid eleventh century, the government attempted to make gunpowder hard to create, by banning the sales of saltpeter to foreigners. But by the 1100AD’s the substances had been shipped from the Silk Road all the way to India, the Middle East, and Europe. Pretty soon after, Europeans and other nations were picking up on how to create gunpowder. The Islamic empire and the Roman Empire began to understand how to use gunpowder. Eventually Europeans learned of gunpowder and used it effectively to conquer countries that had no experience with the new development.

DURING: Why did the Chinese attempt to keep the invention of gunpowder a secret?
AFTER: Do you think the invention of gunpowder has done more good or more evil for mankind? State your claim and support your answer with evidence from the text and your own personal knowledge.

ASSIGNMENT #2

Creating a Primary Source Document

Remember over the next few weeks, you will be asked to write a diary/journal entry once a week about “Life during the Great Pandemic of 2020.”

Source Information: This article was created and published by iGeneration Youth and later adapted by the Newsela staff. iGeneration Youth is a talent incubator located in Pittsburgh, PA. They provide training, publishing opportunities, and work experience to talented youth writers, visual artists, and entrepreneurs. Information and interviews are gathered from young individuals who are aspiring to be a publisher or news reporters, but are still in high school or younger. The youth are assisted by adults who have studied publishing and news reporting to provide guidance. Information for the article was gathered through internet research and interviews.

A 17-year-old creates coronavirus-tracking website; has over 40 million views

By iGeneration Youth, adapted by Newsela staff on April 16, 2020

He coded a website with stick figures in the third grade. In middle school, he coded video games. Now, at age 17, Avi Schiffmann has coded a highly-trafficked website that tracks cases of COVID-19, also known as the coronavirus.

COVID-19 is a flu-like illness that first emerged in December 2019 in Wuhan, China. Avi, who lives in Seattle, Washington, coded the coronavirus tracking website ncov2019.live when there were fewer than 1,000 cases in China. Since then, it has spread to more than 165 countries, with more than a million cases. On March 11, the World Health Organization officially called coronavirus a pandemic. A pandemic is when a disease has spread all over a country or the world. "I think this is the first big world event for our generation," Avi said. "It's kind of crazy how this is
such a big world event that's completely changed everything from the economy to football games." However, despite the increase in COVID-19 cases, finding reliable, current numbers for the disease was difficult. "I noticed it was just really hard to find anything that was happening," Avi said. "I thought I could make something better than what the governments were doing, so I made a website." His website provides the latest data on the number of confirmed cases, serious cases, deaths, and people who have recovered. It reports numbers worldwide and by country. The site also includes travel advisories and information on the disease and its prevention. He uses reliable sources like the World Health Organization and the U.S. Centers for Disease Control and Prevention for the site's data. However, Avi said that these sources don't always present information in an easy-to-understand way.

Avi, who also competes in ski races, is a self-taught coder. "Everything I know is from watching YouTube videos and reading things online," he said. Avi uses web scraping to get the data for his website. By scraping, he can download data from government websites and automatically update his site every couple of minutes. "You have to sort through all the complicated scientific things and look over a whole report," Avi said. "I just want to see the numbers easily on my phone." Being able to view coronavirus numbers easily is especially helpful for young students. Jody Wong, a student at the University of Buffalo in New York, said that she refers to the website sometimes. "It's particularly useful for researchers like myself who study risk and science communication," Wong said.

The site has gotten more attention than Avi expected. As of March 2020, over 40 million people have visited his website. On March 16, he posted on his Twitter account that he relocated the site to a larger computer server to handle all the traffic. "It has been visited by every single country on the planet by now," he said. Avi said that before his school was shut down because of the pandemic, he saw students and teachers using it. He also said a lot of news organizations use it to get their numbers. "I'm only a teenager, but I'm able to provide a data source that millions of adults and massive places use," he said. To help the site improve, Avi welcomes emails from people who have suggestions. Sometimes he receives over 1,000 emails a day. Lila Shroff, 18 years old, met Avi in early March during an interview for their school's radio station. She was impressed by his hard work but could tell he was busy because of the popularity of the site. So she offered to help him with media-related tasks. "Avi has done everything to make the site happen, and it's so impressive to see it unfold from behind the scenes," Shroff said. "He is hardworking, passionate, and genuinely cares about making the world a better place." Technology professionals have offered help, Avi said, but he prefers to work solo. "To be honest, a lot of the things I can do myself," he said. "But it's great that I have the opportunity to connect with them." Although he has been offered job opportunities, Avi said he codes simply because he likes it. "If you like art, you would use a paintbrush. I like making things. Instead of painting, I can type a bunch of random words and bam, there's a coronavirus website," he said. For other teens who are interested in learning to code, he recommends simple projects to start. "If you just put your mind to it, you can make something like what I did," Avi said. "You just have to have the motivation to want to change the world."

Read the writing prompt and complete your journal entry on your own paper.

**TO DO**

You have read the article about a 17-year-old who created an online tracking system for the coronavirus. Use the information gathered from the article to write your journal entry.

**PROMPT:** More and more, technology is allowing us to do things we were never able to do before. In the article, a 17-year-old used his knowledge of technology and computer programming to create a coding system that tracks the coronavirus through a website. Think about all the ways technology is being used now during this pandemic. Everyone from doctors to nurses to teachers to students are using technology in various ways.

- Discuss as many ways as you can think of for how technology is being used during the Coronavirus pandemic.
- Who is using the technology and how are they using it?
- Explain at least three ways technology can be used to better the situation we are in right now. You can discuss everything from the finding the cure, keeping up with your distance learning, to keeping yourself entertained while the stay-at-home order is still in effect.

Be thoughtful and reflective. It should take you at least 2-3 paragraphs to address this prompt completely.