Unit 10: Cybersecurity and Global Impact

Content Area: **Mathematics**
Course(s): **Generic Course, AP Comp Sci A**
Time Period: **Semester 2**
Length: **3 weeks**
Status: **Published**

Standards

IC	Impacts of Computing
	The design and use of computing technologies and artifacts can positively or negatively affect equitable access to information and opportunities.
	Decisions to develop new technology are driven by societal and cultural opinions and demands that differ from culture to culture.
	Changes caused by the introduction and use of a new technology can range from gradual to rapid and from subtle to obvious, and can change over time. These changes may vary from society to society as a result of differences in a society's economy, politics, and culture.
8.2.12.ITH.3	Analyze the impact that globalization, social media, and access to open source technologies has had on innovation and on a society's economy, politics, and culture.
ETW	Effects of Technology on the Natural World
	The ability to ethically integrate new technologies requires deciding whether to introduce a technology, taking into consideration local resources and the role of culture in acceptance. Consequences of technological use may be different for different groups of people and may change over time. Since technological decisions can have ethical implications, it is essential that individuals analyze issues by gathering evidence from multiple perspectives and conceiving of alternative possibilities before proposing solutions.
8.2.12.EC.1	Analyze controversial technological issues and determine the degree to which individuals, businesses, and governments have an ethical role in decisions that are made.
8.2.12.EC.2	Assess the positive and negative impacts of emerging technologies on developing countries and evaluate how individuals, non-profit organizations, and governments have responded.

Essential Questions

What are the beneficial and harmful effects of computing?

How can we practice safe computing?

Enduring Undersatnding

- While computing innovations are typically designed to achieve a specific purpose, they may have unintended consequences.
- The use of computing innovations may involve risks to your personal safety and identity.

Knowledge and Skills

Students research and debate current events at the intersection of data, public policy, law, ethics, and societal impact in the final unit of the course. This unit is built around a simulated "future school" conference in which students must take on the persona of a stakeholder in a school setting and propose and debate technological innovations that could improve schools. Throughout the unit, students learn about the privacy and security risks of many computing innovations, and learn about the ways some of these risks can be mitigated. Students complete their Explore Curricular Requirement as part of this project as they investigate at least three computing innovations, then discuss and debate many others with their classmates. At the conclusion of the unit, the class holds a conference in which teams present their overall vision for a school of the future and the computing innovations that would power it.

Transfer Goals

There are ways to keep ourselves safe online.

Public Key Encryption is unbreakable.

Most hacks occur due to human error.

Resources

1. Various YouTube videos that visually explain concepts and ideas.

2. Various widgets found on code.org.

3. Test banks created on Edulastic and code.org

4. Use of Google Classroom, Google Slides, Google Docs and Google Sheets