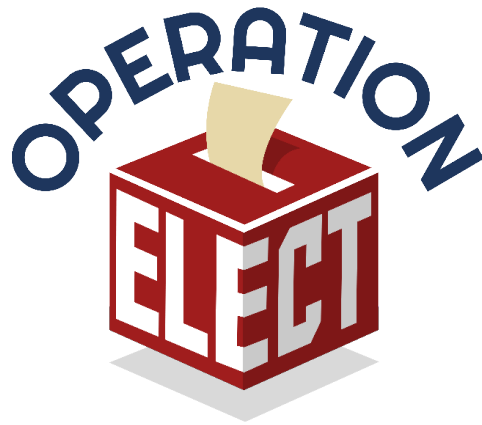Operation: ELECT (Election Lesson Encompassing Computational Thinking) is a game-based learning application that aims to teach election vocabulary, the electoral process, and computational thinking to high school students.

Operation: ELECT is a strategic social studies game of politics, press, and the electoral process. Students take on the role of campaign manager and compute their way through five levels of government elections to help their candidate secure a spot in the history books. Students are in control—from fundraisers to smear campaigns, and from the humble city council to the United States presidency. Secure votes, outwit opponents, and tackle the Electoral College head-on in this engrossing game of candidates and computational thinking.

In Operation: ELECT, students face elections at every level of government up to and including the presidency. Throughout, students learn the ins and outs of the Electoral College system and its unique mechanics within the electoral process.

Operation: ELECT features a dynamic press system where breaking news can shape the political landscape in new and unexpected ways. Students manage campaign funds, delegate their candidate's public appearances, and activate targeted campaign strategies to outmaneuver political opponents, capitalize on important issues, or work around the news cycle—all before election day

Concepts within the game connect with instruction and extended learning activities. This helps students ground their understanding of the electoral process and apply their computational thinking skills further. By playing Operation: ELECT, students build and maintain a vocabulary of complex political science terms, gain a deep understanding of the electoral process, and garner computational thinking skills for application in the computer sciences and beyond.
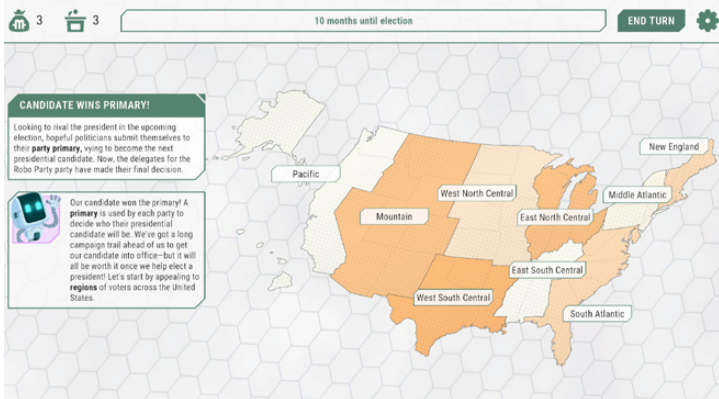
To access all K20 educational games at no cost to your school, go to k20center.ou.edu/getgames

What Is Computational Thinking?

Computational thinking (CT) is a cognitive process characterized by "solving problems, designing systems, and understanding human behavior by drawing on the concepts fundamental to computer science" (Wing, 2006). In other words, it involves thinking like a computer scientist to solve real-world problems. This makes CT applicable to many different fields. Jeannette Wing, researcher and computer science professor at Columbia University, envisions that CT will become a worldwide fundamental skill by the mid-21st century (2006). With our growing reliance on computers and other technologies, CT is gaining endorsement as an indispensable skill in modern-day society (Wing, 2006). The Computer Science Teachers Association and the International Society for Technology in Education collaborated with scholars and industry leaders to develop a definition of CT that provides a framework and common vocabulary for K-12 educators (CTSA, 2017):

- formulating problems in a way that allows students to use digital tools to solve them (i.e. decomposition)

- logically organizing and analyzing data (i.e. pattern recognition)

- representing data through abstractions such as models and simulations automating solutions through algorithmic thinking

- identifying, analyzing, and implementing possible solutions with the goal of achieving the most efficient and effective combination of steps and resources (i.e. evaluation)

- generalizing and transferring this problem-solving process to a wide variety of problems

Standards

Operation ELECT is aligned with the following U.S. Government standards for the Oklahoma Academic Standards from social studies.

- **USG.5.4**: Analyze factors affecting the political process and their role in government, including the role of political parties, interest groups, mass media, public opinion, and campaign funding.

- **USG.5.5**: Explain the steps of the electoral process including the components of local and national campaigns, the nominative process, and the Electoral College.

Computer Science Teachers Association (2017). CSTA K–12 Computer Science Standards, Revised 2017. https://csteachers.org/k12standards/

Wing, Jeannette M. (2006). Computational Thinking. Viewpoint. Communications of the ACM. https://www.cs.cmu.edu/~15110-s13/Wing06-ct.pdf