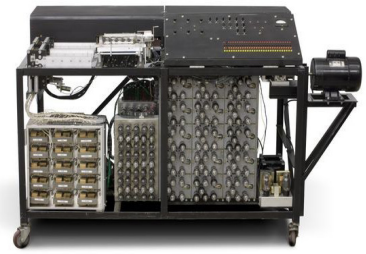
Innovative Iowans: John Atanasoff

Activity Overview: Did you know that Iowa was home to one of the very first early computers? This Innovative Iowans activity will highlight the careers and important work of John Atanasoff and Berry Clifford while at Iowa State College (now Iowa State University). This month's activity has young historians creating mazes and experimenting with making coding like a computer program. Can you escape the maze?

Connection to Iowa History

The first electronic digital computer was invented in the 1930s at Iowa State College (now Iowa State University). John Atanasoff received his master's degree in mathematics from Iowa State College in 1926 and returned as an assistant professor upon completion of his doctorate. In 1939, following receiving a $650 grant, Atanasoff and his graduate student, Clifford Berry, developed the Atanasoff-Berry Computer (also called the ABC). The early computer used vacuum tubes for digital computation.



Following a court case in 1973, Atanasoff was legally ruled the inventor of the computer. In 1990, Atansoff was awarded the United States National Medal of Technology by President George H. W. Bush.

Instructions (Video Instructions Available)

1. **Prep.** Grab a sheet of graph paper to begin creating your coding maze. If you do not have graph paper, draw even lines vertically and horizontally across a sheet of printer paper to create squares.
2. **Create.** Using the grids of the graph paper, begin to plan your maze route. The maze route should be simple and only move up, down, left, or right on the graph paper. No diagonal or curved paths allowed.
3. **Label.** Begin by labeling one square on the paper as the "start" square and find another square on the paper to label as the "finish" point. In the next step, you will begin to write the steps to connect the two squares together.

Materials

- Graph Paper or Printer Paper
- Ruler
- Pencil

4. **Write.** Imagine that you are a person walking through your maze starting at the "start" square. On a separate piece of paper write directions, one step at a time, explaining how you would walk through the maze. For example, use steps like "Begin at the start square", "move forward two squares", "turn left" and "turn right". Continue writing directions until you have enough to reach the predetermined maze's "finish" mark and connect the start to the finish.
5. **Test.** Share your maze and directions with a partner. Instruct them to follow the written directions exactly as they try to go through the paper maze. Even if they see a mistake, they are not allowed to change directions.
6. **Edit.** If your partner followed the instructions and made it all the way to the finish line, then your program writing did not have any issues. If the maze could not be completed, make corrections to the instructions and try again.

Instructions continued on next page

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Instructions continued

7 **Go Bigger.** Once you have created a successful maze, try to create even larger mazes with more steps.

8 **Share!** After you complete your mazes, share your work with the State Historical Museum of Iowa. Email a photo to museum.education@iowa.gov. We want to share your creation with others!

9 **Questions to Spark Learning**

- How do you think the invention of the Atanasoff Berry Computer (ABC) changed mathematics?
- How is the ABC different than the computers we use everday?
- The ABC is an invention created by Atanasoff and Berry. Do you have any ideas for inventions that might change the world like the ABC? If so, what is it?

10 **Additional Resources**

If your young historian would like to learn more about this topic, explore these additional resources below.

- AP News - Who Invented the Computer? It Depends on Whether You Count the Abacus
- Iowa State University - Atanasoff-Berry Computer
- Columbia University - John Vincent Atanasoff: The Father of the Computer
- Iowa State University - Clifford Berry Biography