

## Mouse Maze

**Abstract:** This activity might be used to consolidate knowledge of computer-based information processing by introducing students to CSIRAC, Australia's first computer. Students may animate an image or diagram of CSIRAC to illustrate the flow of data through the computer and its eventual conversion into useful information. Alternatively, students might produce a presentation or poster that illustrates the same concept.

**Prerequisites:** An understanding of the information processing steps of – gathering data, data input, validation, manipulation, storage, retrieval, output, communication and disposal. Sufficient knowledge and skill with software to create an animation sequence such as *Kahootz*, *Macromedia Flash* or *Movie Maker* is needed. It would be desirable that students are familiar with a real life process, such as weather forecasting or home loan repayments, to provide a concrete example in the animation. CSIRAC ran similar programs.

**Resources Needed:** A photographic image or schematic diagram of CSIRAC should be used as the basis for the animation. Museum Victoria's CSIRAC website has information about the function of each CSIRAC component, see [www.museum.vic.gov.au/csirac/show/](http://www.museum.vic.gov.au/csirac/show/). It would be useful to provide a flowchart illustrating the information process model.

### Activity:

1. Students investigate the flow of data through the CSIRAC computer system— where and how the data is entered into the computer and validated for accuracy, where and how the data is manipulated and turned into information, where the data and/or results are stored and how the information comes out of the computer and is then communicated.
2. Students present the results of their investigations in the form of an animation that identifies the key stages of the data-to-information process using an image or diagram of CSIRAC as a backdrop. Small flashing or moving lights may represent the data flow. To explain each stage, students could use text bubbles or voice enclosures.
3. Students could extend this activity by illustrating their animation with the equivalent hardware and/or software used to perform the same task by computers today.
4. Students could extend the function of their animation by depicting a real life situation such as home loan repayment plan, where the data input is real loan data—length of loan, amount of loan, interest rate and repayment plan. In this case the data manipulation is the normal compound interest calculation, while the output would be the repayment schedule that results from the calculation. CSIRAC was used to perform similar calculations.

**Learning Outcomes:** The activity provides a range of themes that might appeal to different learning styles and allows for the individual construction of knowledge about the development of the modern computer. Animation is used to communicate knowledge about using a computer to convert data to information.

## Mouse Maze - Student worksheet

Conduct an investigation of the flow of data through the CSIRAC computer system. Prepare an animation of the CSIRAC to communicate knowledge about using the first modern computer to convert data to information.

To answer the following focus questions, you may find it useful to explore the CSIRAC website, in particular [www.museum.vic.gov.au/csirac/show/](http://www.museum.vic.gov.au/csirac/show/).

Q1 Where and how is data entered into the computer?

Q2 How would this data be validated for accuracy? Hint: include the activities performed off-line and the monitoring carried out at the console during the running of a program.

Q3 Where and how is the data manipulated and turned into information?

Q4 Where is this information stored while the program is running?

Q5 How does the information come out of the computer?

Q6 List some of the key stages of information processing.

Q7 Suggest what software might be used to help animate the process you described above.