

BCTC for Windows

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Abstract

BCTC for Windows was originally published by *JCE Software* in 1992 (1) in Series B for PC-compatible (MS-DOS) computers. *JCE Software* is now re-releasing BCTC for Windows as issue 9903W in order to make it more accessible to Windows users—especially those running Windows 95 and Windows 98—while we continue to phase out Series B (DOS) issues. Aside from a new Windows compatible installation program, BCTC is unchanged.

BCTC is an environmental simulation that is modeled after the dioxin controversy (2). In the simulation, students are involved in the investigation of a suspected carcinogen called BCTC, which has been found in a river below a chemical plant and above the water supply of a nearby city. The students have the options of taking water samples, analyzing the water (for BCTC, oxygen, metals, and pesticides), determining LD₅₀s in an animal lab, visiting a library, making economic analyses, and conferring with colleagues, all using the computer.

BCTC gives students experience with science in the context of a larger social and political problem. It can serve as the basis for a scientific report, class discussion, or a role-playing exercise (3). Because it requires no previous laboratory experience, this simulation can be used by students in middle and high school science classes, or in college courses for non-science majors. It also has been used in introductory chemistry courses for science majors.



Screen from BCTC showing location of the entry of the effluent in the river, the city, and the city water supply.

One of the intentions of BCTC is to involve students in an exercise (2) that closely approximates what scientists do. The realistic pictures, many of them captured with a video camera, create an atmosphere which furthers this goal. BCTC also reflects the comments of teachers who have used the program (4) and accounts of dioxin research (5).

Instructor Notes

BCTC has been used as part of a two-week exercise aimed at involving students with the scientific method through microcomputer simulation integrated with class discussion. The module has three goals.

1. To present the student with a realistic problem that requires a solution and is best approached by the scientific method.
2. To allow the student to plan and conduct a series of experiments to obtain information from which a hypothesis can be formulated.
3. To present the conflict of ideas inherent in science and to allow controlled tests of the hypotheses to resolve the conflict.

As the students work toward these goals, the simulation attempts to allow them as many decisions as possible in order to increase their sense of participation in the process. The User Directions provides a role-playing exercise like the one described in reference 1.

BCTC.INI

The BCTC.INI file for BCTC is located in the Windows directory and has the following format:

```
(print)
print = True
pSetup = True
(settings)
changeNames=True
```

The (print) section in the .INI file is used to control whether the Print Setup dialog is available and/or whether the student can print at all.

If print is set to False, then no Print buttons will show up in the program and Print Setup... will not appear in the File menu.

If pSetup is set to False, then the print dialog box that appears before anything is printed is eliminated and the Print Setup... option is removed from the File menu.



Note: If print is set to False, then it does not matter what pSetup is set to since printing is not available anyway.

The (settings) section of the .INI file can contain the following:

changeNames=True allows the students to change their name at any point during the program. This avoids the problem of having to restart BCTC if they happened to type their names incorrectly.

Acknowledgment

Support for this project was provided by NSF Grant USE-9151873 and by a BellSouth Foundation Grant.

Citations

1. Whisnant, D. M.; McCormick, J. A. BCTC for Windows. *J. Chem. Educ. Software* **1992**, 5B2.
2. Whisnant, D. M. *J. Chem. Educ.* **1984**, 61, 627–629.
3. Whisnant, D.M. *J. Chem. Educ.* **1992**, 69, 42.
4. Camille and Henry Dreyfus Institute on the Chemistry of Water, 1990; Institute for Chemical Education Summer Workshops, University of Wisconsin-Madison, 1991.
5. Roberts, L. *Science* **1991**, 251, 624–626; 254, 377.