

Eastern Iowa Water Quality



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Conservation

Part I: Overview of Workplace

The Johnson County Conservation Board was founded in 1964. Since its inception, the Board has acquired 1437 acres of land for public use. Most of this land is located at Kent Park in Oxford, IA. This land is maintained daily by a variety of experienced mechanics, naturalists, conservationists, and park rangers all across the Johnson County area.

Part II: Workplace Focus

- As part of the natural resources department, daily responsibilities include (but are not limited to):
- Weekly lake water quality testing
 - Maintaining prairies by managing invasive flora
 - Planting aquatic plants to mitigate phosphate and ammonia levels

Part III: Introduce the Problem

Blue-green algae is popping up in lakes all across the midwest. Students in North Liberty will work as local limnologists to determine the health of their local watershed to learn if any areas in their city are susceptible to this problem. After determining the health of the local watershed, students will create a variety of unique ways to display and share their findings with the school and community.

Part IV: Background

- Prior to this investigation, students will need to understand the following:
- How to carefully gather and collect multiple types of aquatic data (phosphate levels, pH, nitrates/nitrites, and dissolved oxygen).
 - How to utilize professional spreadsheet programs (Microsoft Excel or Google Sheets) for inputting scientific data.
 - How to read and interpret topographic maps.
 - The impact of runoff on a local watershed.
 - How to use and maintain care for scientific tools being used in our investigation.

Part V: Workplace Solution

1. Drained lake and dredged soil to clear out existing nutrients.
2. Constructed “catch basins” to help filter phosphates, nitrates, and nitrites prior to entering the lake system.
3. Carefully refilled lake to previous water level.
4. Planted thousands of aquatic plants within the lake to help reduce phosphate levels.

Part VI: Educational Pathways

- Students can:
- Research native Iowa plants and plant these near / within water sources to help mitigate phosphates and unwanted runoff.
 - Regularly inform the local government regarding the health of their watershed.
 - Create engaging ways to inform the public regarding the importance of maintaining the health of our watershed.