

Objectives:

Students will use water quality data to learn to calculate percentages.

Materials:

- Copies of “Water Quality Data” Sheets
- Calculators

Anticipatory Set:

- Discuss with students the need for testing the quality of water in streams and rivers. (Many of these streams and rivers are used for our drinking water, many streams and rivers provide food for humans, streams and rivers are used by wildlife which require clean water to survive. Poor water quality can lead to a degradation of wildlife and human health.)

Procedure:

- Give each student a copy of the “Water Quality Data” Sheet.
- Ask students to use the data provided to answer the questions.

Water Quality Data

Trends in Streams and Rivers Nitrogen Levels, 2004-2005

Sample Site	Spring 2004	Fall 2004	Spring 2005	Fall 2006
Lincoln Stream	18 ppm	8 ppm	17 ppm	5 ppm
Adams River	12 ppm	4 ppm	14 ppm	9 ppm
Wood River	22 ppm	12 ppm	24 ppm	13 ppm
Wind River	9 ppm	4 ppm	8 ppm	3 ppm
Crane Creek	20 ppm	12 ppm	28 ppm	12 ppm
Monarch Creek	19 ppm	11 ppm	15 ppm	9 ppm
Maple River	8 ppm	7 ppm	9 ppm	7 ppm
Red Oak River	20 ppm	19 ppm	18 ppm	17 ppm
Douglas Stream	9 ppm	2 ppm	7 ppm	4 ppm
Sunday Creek	11 ppm	6 ppm	13 ppm	4 ppm

Questions:

1. What percentage of Sample Sites had a decrease in nitrogen levels from spring 2004 to fall 2004?
2. What percentage of Sample Sites had an increase in nitrogen levels from spring 2004 to spring 2005?
3. What percentage of Sample sites had an increase in nitrogen levels from fall 2004 to fall 2005?
4. Calculate the percent decrease from Spring 2004 to Fall 2005 for Sunday Creek.
5. Calculate the percent increase from Spring 2004 to Spring 2005 for Crane Creek.
- 6 Calculate the percent decrease from Fall 2004 to Fall 2005 for Lincoln Stream.
7. Calculate the percent difference in the Wood River and Douglas Stream nitrogen levels for Spring 2005.
8. Calculate the percent difference in the Adams River and Red Oak River nitrogen levels for Fall 2004.