



Lesson Descriptions and Lesson Plans

Below are descriptions of the lessons to be used in conjunction with this website. Each lesson is organized under this website's project objective described in the "project overview" page. For each lesson, a printable lesson plan (Adobe pdf file) can be opened via an adjacent link. These lesson plans have been developed using the *State of Ohio Content Standards* and contain their own goals and objectives as well as teaching procedures, web resource links, and student handouts (web resources and student handouts can also be found within the teacher resource page).

Objective 1 Lessons:

Lesson 1- Environmental History of the Cuyahoga River (part I)

Food Chain Game/Food Web: students utilize interactive websites to learn about food chains and food webs. Students will then predict an outcome if they change something in food web- i.e. what happens when you take away one or several different species and how are other species effected/ how is the environment effected?

Lesson 2- Environmental History of the Cuyahoga River (part II)

"Species Cards": students will utilize several links to outside websites in order to locate information about the various forms of life in and around the Cuyahoga River then transfer the information onto cards that can be cut out from a printable template.

Lesson 3- Social/Economic History along the Cuyahoga River (part I)

Settlement History: Students will complete a timeline of human settlement patterns as well as social/economic activities along the river utilizing various web sites.

Lesson 4- Social/Economic History of the Cuyahoga River (part II)

Settlement Today: Utilize an interactive Flash-based map of the Cuyahoga River containing major tributaries, protected areas, counties, and cities with corresponding data (population, elevation, and land cover) in order to fill-out a printable matrix.

Lesson 5- Social/Economic History of the Cuyahoga River (part III)

“Lord of the River” is a printable, paper-based game which requires students to predict how land cover influences water quality and how this in turn influences the organisms that live in and around the watershed. Students choose from several options in order to see results.

Objective 2 Lessons:

Lesson 1- Basics of scientific research

Students will learn vocabulary as well as various chemical formulas relating to the science of water testing.

Students will study the methodology (scientific method) in order to answer several questions relating to water testing including “what are we testing?” “What is in the water that should or should not be in the water?” “What’s not in the water that should be in the water?” “What does this (my findings/data) mean?”

Students will analyze data that has already been collected by scientists along the Cuyahoga River and its Tributaries.

Lesson 2- Environmental Investigation and Analysis

-Students will collect samples from a specific location along the Cuyahoga River or one of its major tributaries.

-Students will analyze and chart the data they discover and collect.

- Teachers will post the data collected by their students onto a database in order for their students to analyze, share, and compare results with other schools within their community.

Objective 3 Lessons:

Lesson 1- Raise Community Awareness and/or Elicit Social Action

-Students will synthesize all the data they collected during the course of the project to create a community action project. The students will design a poster, a power point presentation, or shoot and edit a video in order to raise local community awareness. This can be used as a final assessment piece.