River Citizen
An Investigative Curriculum for Grades 5-8
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Welcome teachers to this exciting study known as “River Citizen”! This program aims to teach students about the Chicago River and its watershed* through independent discovery and on the scientific method. The program is designed to allow students to establish a personal connection to the Chicago River and its watershed, and in turn have the desire to take individual action to help. Students will learn to appreciate nature and the environment as a whole and at the end of the program will become a designated “River Citizen”.

The program is designed so that students are the investigators while the teachers are the facilitators. The students are referred to as the “Chicago River Study Team”. The teacher is referred to as the “Team Leader” to emphasize the teachers role in the team process. The students should really feel like this is THEIR project. It is up to them to analyze the facts, form hypotheses, collect data, analyze data, make decisions and take action.

The program, which is divided into six stages, is a scientific investigation guided by the scientific method. At each stage, students work individually and in teams to further their understanding of the history, ecology and hydrology of the Chicago River and its watershed. Along the way, students come to appreciate the Chicago River and its watershed and build a personal connection to them. This connection serves to further inspire their work. At each stage there are specific objectives that the students must meet. It is suggested that the included lessons and activities be completed to fulfill the objectives. However, if the teacher has a favorite activity that would help students meet the stated objectives or would like to add in extra things, he/she should feel free to do so. An assessment piece follows each lesson. As part of the program, classrooms will track their collective positive impact on the Chicago River and its watershed by listing all the activities the students (and teacher) have done to improve the health of the river and watershed.

The teacher manual contains all the background information, resources and lessons needed to complete the program. References used in producing sections in the curriculum are cited after that section. Students are required to have a notebook dedicated to River Citizen. Student pages found in this manual, called Investigator pages, can be photocopied and taped into the students, notebooks. Every new section and lesson (called “Explorations”) will be introduced to the students by the River Citizen Videotape. Teachers should play the introductions at the beginning of each section and each exploration for the students. Have a wonderful experience!!

* A watershed is the area of land that surrounds a body of water which drains into that body of water.
SECTION THREE:
WHAT IS SO INTERESTING
About our Chicago River anyway?

Overview and Purpose

This section not only aims to increase students' understanding of the history of the Chicago River, its watershed and the plants and animals that call it home, but to help students build an interest in these things. The students' own interest will help fuel their further investigations of the Chicago River and its watershed as well as their decision to help improve them. Personal interests makes for the best learning! Sharing the fascinating history of the area and how it came to be the place they live in now and letting students explore some of the amazing life forms found in the river and watershed are two ways this section builds a sense of wonder about the Chicago River system.

Objectives

- Students will establish a connection between themselves and the river and its watershed, begin to be interested and want to learn more.
- Students will understand the history of the Chicago River.
- Students will explore the microscopic organisms found in the river and the plants and animals that depend on the river.

The Program

Tell the Team: "Now that you have researched the various ecosystems of the Chicagoland area, and have become familiar with what a watershed is and how a river forms and functions, it is time to continue our research and background information gathering. We will now turn our attention to our local river and watershed, the Chicago River system, and the fascinating creatures that live there." Play the introduction to Section 3 on the River Citizen Videotape. Proceed with explorations to explore this topic.
Exploration 4:  
The History of Your Chicago River

Overview

In order to understand the problems facing the Chicago River and its watershed today, students must understand how the area came to be as it is now. By hearing and reflecting on the story of the Chicago River students will also start to become interested in this river and see it as not just another body of water but one of the main reasons they are here today.

State Standards

3.B.3a: Produce documents that convey a clear understanding and interpretation of ideas and information and display focus, organization, elaboration and coherence.
3.C.3a: Compose narrative, informative, and persuasive writings for a specified audience.
13.B.3d: Analyze the interaction of resource acquisition, technological development and ecosystem impact
16.D.3b: Describe characteristics of different kinds of families during the colonial/frontier periods and the 19th century.
16.E.3a: Describe how early settlers in Illinois and the United States adapted to, used and changed the environment prior to 1818.
16.E.3c: Describe the impact of urbanization and suburbanization, 1850-present, on the environment.

Materials

Option 1: Take students to a natural area next to the Chicago River.

- River Citizen Videotape
- A copy of the “On the Banks” story (for the teacher)
- Pens, markers, crayons
- Student data notebooks

Option 2: Stay in the classroom and use slides and sounds to recreate the feel of the Chicago River.

- River Citizen Videotape
- Slide projector or Power Point
- Slide or image of a wooded area next to the Chicago River (available from Friends)
- CD of river sounds (available from Friends)
- A copy of the “On the Banks” story (for the teacher)
- Pens, markers, crayons-
- Student data notebooks
Procedure

- This lesson can either be done outside, along the banks of the river, or in the classroom. By bringing the students to the river they will be able to better picture the river and its turbulent history. In addition, getting to see the river first hand early in their investigation will make the river more real to students. However, as there will be another field trip later on where students will be collecting data, this field trip can be replaced with a classroom experience if two field trips are not possible.

- Along the River: **Before the field trip, plays the introduction to Exploration 4 on the River Citizen Videotape.** On the field trip have students sit along the banks of the river. Give students a couple minutes of silence to observe the river today and get used to their new surroundings. Then begin reading the story, "On the Banks- The History of Your Chicago River."

- In the classroom: **Play the introduction to Exploration 4 on the River Citizen Videotape.** Display the slide or image of the Chicago River and begin playing the CD of Chicago River sounds. Then begin reading the story, "On the Banks-The History of Your Chicago River."

Reflection and Assessment

Students should think about the history of the river and create something that expresses the way they feel about it. (*They can write down any thoughts or feelings that come to mind during the story in their data notebooks.*) This reflection should be a poem, story, picture or even a song. Volunteers will share them with the class.

The following rubric can be used to assess the reflection piece:

<table>
<thead>
<tr>
<th>A work</th>
<th>B work</th>
<th>C work</th>
<th>D work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student’s piece reflected excellent understanding of historical time periods. (3 points)</td>
<td>Student’s piece reflected good understanding of historical time periods. (2.5 points)</td>
<td>Student’s piece reflected fair understanding of historical time periods. (2.25 points)</td>
<td>Student’s piece reflected poor understanding of historical time periods. (2 points)</td>
</tr>
<tr>
<td>Student’s piece made an excellent connection between the student’s feelings and an aspect of river history. (2 points)</td>
<td>Student’s piece made a good connection between the student’s feelings and an aspect of river history. (1.5 points)</td>
<td>Student’s piece made a fair connection between the student’s feelings and an aspect of river history. (1.25 points)</td>
<td>Student’s piece made a poor connection between the student’s feelings and an aspect of river history. (1 point)</td>
</tr>
</tbody>
</table>
On the Banks
the History of Your Chicago River

This is a very fascinating story that I am about to tell you, because it involves all of you. It involves you because of the place in which we all live—the Chicago area. Central to this story is the Chicago River. (If you are at the river—“The river is right before you now.” If not, “The river is right on the screen”.) What do you think of it? Is it beautiful or ugly? Is it scary or interesting?

What if I told you that the Chicago River saw much along its banks? The river has seen majestic bears and eagles catching food, brave Native American warriors hunting, European men dragging canoes to hunt beavers for their fur, fierce battles between Native Americans and whites for the very land you are sitting on right now. The river has witnessed the rise of industry in Chicago, the birth of the stockyards—the huge slaughterhouse where meat was both killed and packaged, the pollution of it’s waters with poisons, oil, chemicals and trash. Finally the river sighed relief when people began to try and restore its health. The river has seen much, and can tell you much.

Close your eyes right now. Listen to the birds, the water and the rustling leaves. Smell the wet earth and the river. Imagine that it is 300 hundred years ago, the early 1700’s, the time in which the United States was nothing more than thirteen British colonies. You are a Native American for just a moment. You are sitting next to the river and very much looking forward to the harvest festival tonight. This is one of the biggest parties of the year. You are very excited to eat all the wonderful fish, rice and berries and to dance all night with your friends. You love the smell of the fire smoke. You love the way the drumbeats echo in your chest. You have been sent to gather acorns for flour in the beautiful forest along the river. Beyond the river is the flowing prairie with millions of colorful flowers and grasses taller than you. There are elk, bears, eagles, fish and all types of birds wandering throughout the area. You must go back to the village now. Your mother is waiting for the acorns and you really don’t feel like getting in trouble today. Open your eyes. The river has seen such things. This could have happened right where you are sitting.

Let us close our eyes again. It is about 100 years later. It is the early 1800’s. Imagine that you are a fur trapper from France and you are sitting on the riverbank. You hunt animals for fur and then send the fur back to Europe to make your money. It is getting harder and harder to make a living because there are fewer and fewer animals around. So many people have gotten into the hunting business that the animals are disappearing. You hear some women crying in the distance. In the log cabin not far from here a white settler family has just found out that their father and brother were killed in a battle with the Native Americans. Yesterday, you sat around the fire with your Native American friends while they cried because five of their best warriors were killed in the same battle. You feel sick to your stomach. There is so much fighting! You remember when this area had many Native American villages. You would visit them often. Now, more and more people from Europe are coming, especially after the land was declared to be a country called The United States of America. You are going to visit some of your friends, a Native American family from the Potowatomi tribe, again tonight. You know that they will talk about how powerful people in the government have been tricking the Native Americans to sign papers and give the whites their land.
They will talk about how a huge group of Indians from many tribes are assembling to try and stop to whites from swallowing up so much land. You get confused yourself when you are trapping. You never know if you are in Native American territory or American territory because the borders keep changing. All you do know is that the Native Americans keep getting pushed further west.

The conversation at your friends' house will be sad. You wonder how the American government can keep lying to the Native Americans by telling them that they are not trying to take over and want to be friends. People in the American government call the government "The Great White Father" and call all of the Native American “red children”. You think this is insulting and ridiculous because the Native Americans are not all children, but men and women. You jump in your canoe and begin to paddle down the river. The sounds of birds and the lovely smell of the rich prairie beyond the forest along the river relaxes you. The river has seen this. Blood could have been spilled right where you are sitting.

Let us open our eyes again.

Close our eyes. We have moved forward 80 years from when we were the fur trapper. It is now the late 1800’s, about 15 years before the Titanic sunk. You are a person about your own age. You are sitting next to the river but feeling as if you might get sick because the river smells so terrible. Your family has come from Poland to Chicago on a big boat. They were looking for a better life here. They had heard about many jobs here in Chicago, especially in the Stockyards. The Chicago Stockyards are big factories where animals are slaughtered for meat. Your father and mother both work in the stockyards. They leave early in the morning and come home late at night. Your father’s clothes are always smelly and bloody from butchering the cows. Your mother looks very tired from her work packing the meat. Her fingers are usually so sore that she can hardly move them. You yourself must take care of the younger children. There is often little food at your table because your parents just don’t have a lot of money. You don’t understand this, because they work very hard. You feel so hungry right now, that your stomach hurts but you can’t even think about food because you feel sick from the smell of the river. The river is polluted with sewage all of the time. The sewers in Chicago just pour right into the river. Even worse, all of the blood, fat and guts from the Stockyards are also put into the river. You’ve seen the river catch on fire sometimes because of all of the waste floating on top! In addition, factories have been dumping chemicals into the river. You look at the river and see many dead fish floating by. One of your neighbor’s sons has just died from a terrible illness. Many people think that it’s from the smell of the river itself. You aren’t sure if a smell can make someone sick enough to die. You feel very sad for the family. You also feel angry, because you know that there are a lot of very rich people in Chicago that make a lot of money from owning the factories, stores and the Stockyards. You know that they eat more than the once a day that you do! Even if it is smelly, Chicago still is becoming a rich and large town. You’ve heard people talking in the streets about cleaning up the river and the city’s drinking water by turning the river around. It seems almost unbelievable that a river could be made to flow backwards, but they say that by building a canal from the southern tip of the river all the way to the Des Plaines river that the river water will be pulled away from the Lake, keeping the filthy river water out of Lake Michigan (the city’s drinking water source). At the same time, clean Lake Michigan water will flood into the river flushing the pollution away, far away - all the way to the Gulf of Mexico. You’ve never seen where the river goes after it leaves Chicago, but you imagine that it’s quite far. People are also talking about preserving some of the forests that are left along the river before they are all gone. The city is growing very quickly! You hope they do this soon! You would like to see a forest someday. The river has seen this happen.
Open your eyes. Look at the river now. How does it smell? How does it look? It is a whole lot cleaner now than it was. They were able to flush sewage out of it by digging the canal. Now there is also sewage treatment. Many people have worked on it for many years to allow it to become healthier. But there still are problems.

This area is so full of history! Did you know that Archer Avenue was once an Indian trail that was turned into a road? Did you know that a military fort called Fort Dearborn stood on Michigan Avenue when Chicago was nothing more than some cabins and a trading post? There are little bricks in the street that marks the spot and you can see it!

You are now part of the river's history because you live here and you affect the river every day, believe it or not!

References

1) Eckert, Alan W. Gateway to Empire. 1982, Little Brown and Co, Boston, MA.
Overview

Students can explore the history of the Chicago River by becoming familiar with various peoples’ opinions of it. A person over 50 may have a very different view of the Chicago River than a person under 30. For example, some grandparents can remember the strong stench of Bubbly Creek. Students will interview one person and ask them questions about what they know and how they feel about the Chicago River and its history.

State Standards

5.C.3c: Take notes, conduct interviews, organize and report information in oral, visual and electronic formats.
10.A.3a: Construct, read and interpret tables, graphs (including circle graphs) and charts to organize and represent data.

Materials

- River Citizen Videotape
- Copies of “Investigator Page-Interview Questions” (1 per student)
- Student data notebooks

Procedure

- Play the introduction to Exploration 5 on the River Citizen Videotape.
- Randomly assign students to interview a person over 50 (grandparent age), a person between 30-50 (parent age) or a person under 30 (sibling/cousin age).

Option 1

- As a class, students will come up with interview questions regarding the Chicago River and all students will use these questions to that they can compare answers effectively. (See Investigator Page for examples 30.)
- Students will type or write the questions and the interviewee’s answers on a separate piece of paper and glue it into their data notebooks.
- Students will then share their results with the class in order to get a sense of general opinion.
- A discussion of how opinions compare and contrast based on age group due to exposure to historical events will then take place.
Option 2

- All students will use the questions on the Investigator Page so that they can compare the answers that they receive effectively. **Copy the interview questions on the Investigator Page and distribute them to the students.**
- Students will type or write the questions and interviewee’s answers on a separate piece of paper and glue it into in their data notebooks.
- Students will then share their results with the class in order to get a sense of general opinion.
- A discussion of how opinions compare and contrast based on age group due to exposure to historical events will then take place.

Option 3

- Students will use the questions on the Investigator Page plus, as a class, come up with additional questions to ask.
- Students will type or write the questions and the interviewee’s answers on a separate piece of paper and glue it into in their data notebooks.
- Students will then share their results with the class in order to get a sense of general opinion.
- A discussion of how opinions compare and contrast based on age group due to exposure to historical events will then take place.

Reflection and Assessment

Discuss how the responses of the three age groups were both different and the same. Have students discuss why there might be differences based on age. Can they infer anything about the river based on peoples’ responses?
Because all students are asking the same questions of an interviewee, it is possible to compare data, graph the data or even to use simple statistics to analyze it.
1) Were you born in the Chicago Area? If not, when did you arrive here?

2) When did you first see the Chicago River?

3) What did you think of the Chicago River when you first saw it? How about today?

4) Have you ever heard people talk about the Chicago River and if so what were they saying about it?

5) Do you think of the Chicago River as a natural area?

6) Do you think any animals can live in the Chicago River?

7) Has your opinion of the River changed over time? If so, how?

8) Would you ever swim in the Chicago River?

9) Would you ever eat a fish from the Chicago River?

Type or write your interview questions and then the responses of the person you are interviewing on a separate piece of paper. Glue or tape it into your data notebook. Be sure to include the name and age of person you are interviewing.