Essential Question: How do we come to know and appreciate the river environment and our place in it?

Content Questions: What is a river? What lives in and around a river? How can we classify the living things that depend on a river?
Kindergarten Exploring Rivers Overview

**Content Question 1:** What is a river?

LESSON 1: What Is a River?
- Students listen to the sounds of a river
- Students watch a video about rivers
- Students draw pictures of a river

LESSON 2: Let's Make a River
- Students experiment with water and sound to learn how rivers flow and form

**Content Question 2:** How can we classify the living things that depend on a river?

LESSON 3: Who Depends on the River?
- Students listen to and discuss stories about rivers
- Students list and classify river plants and animals

**Content Question 3:** What lives in and around a river?

LESSON 4: Helping the River by Cleaning Up Trash
- Students investigate the effects of trash in the environment
- Students clean up their schoolyard
- Students measure the amount of trash collected

LESSON 5: Re-Using Trash to Create River Animals
- Students use clean trash to create realistic models of river animals

LESSON 6: River Field Trip
- Students observe the river environment using their senses
- Students build a deeper understanding and connection to their local river

**Culminating Activity**
LESSON 4 helping the river by cleaning up trash

Essential Question: How do we come to know and appreciate the river environment and our place in it?

Content Questions: What lives in and around a river?

Lesson Question: How can we help the living things that depend on rivers?

Goals
- Students will be able to articulate why it is important to dispose of trash properly.
- Students will understand the effect trash has on the river environment.

Vocabulary
- **Garbage**: Things that people don't want and throw away
- **Litter**: Garbage thrown in the environment
- **Recycle**: To reprocess raw materials and make them into something new
- **Reuse**: To use something again for a new purpose

Materials
- Large Rivers of Illinois poster, laminated, 1 or 2 OR make your own poster of a clean river environment complete with plants and animals and another poster of the same environment littered with trash (see hook) (posters available free of charge, though you will need to laminate them, from the Illinois Department of Natural Resources, http://dnr.state.il.us/lands/education/classr/edcarts02.htm, IDNR Division of Education, One Natural Resources Way, Springfield, IL 62702-1271; (217)524-4126; teachkids@dnrmail.state.il.us)
- Clean trash from your home, such as pop cans, plastic bags, paper, packaging, etc. (if using Large Rivers of Illinois poster)
- Masking tape
- Trash bags
- Gloves
- Scale
Background Information

Unfortunately, litter continues to be a problem in the environment. Each year Friends of the Chicago River organizes a river clean-up. In 2002, 35 tons of trash were removed from the river and its banks!

Litter is not only unsightly, but it can be a hazard to animals. Animals often ingest trash thinking it is food. Their stomach is then filled with unhealthy, undigestible material. They then eat less and their internal organs can be damaged by sharp objects. In addition, animals can get caught in six pack rings and fish lines. Further, some garbage pulled out of rivers can be toxic, such as car batteries, entire cars and discarded cleaners and paints.

Procedure

Hook

Students will be comparing a picture of the river with and without litter. There are several options for how to do this. One, draw your own two posters of a river scene, one with litter the other without. Two, order two Large Rivers of Illinois posters and before class tape clean trash from your home over much of one of the posters (but still keeping the river and some of the plants and animals visible). Three, order one Large Rivers of Illinois poster and after the students view the original tape clean trash on to it. The directions are written up for the last option, but all work well.

Show students the Large Rivers of Illinois poster. What do they see? How does the picture make them feel? How would they describe the scene – nice, ugly, scary? Is it some place they would like to visit?

Now have students close their eyes as you change the poster by taping on a bunch of the trash you brought from home. Ask the students the same questions and compare their answers. Ask students how they think all that trash got there? How do they think the litter affects the plants and animals?

Ask the students what they can do to help keep a river clean. Focus on picking up trash, throwing trash in the correct places and reusing and reducing the amount of trash we create.

Activity

1) Tell students that today they will help the animals and plants in their school area by picking up trash. Group students into pairs. Have each pair share one trash bag and have both students wear gloves. Caution students to not pick up broken glass. If they see it, they should tell the teacher, who will pick it up.

2) Have students go out to playground, garden or other outdoor area to pick up trash.

3) When you return to the classroom, put all the trash in one container and weigh it. Compare the weight of the trash with the weight of a student.
Reflection & Assessment

Have students journal about their experience picking up trash and why it is important. Students may use a combination of pictures, their own writing or dictation.

Assessment Rubric

1 pt. Students tell what they did.
2 pts. Students tell what they did and why they did it.
3 pts. Students tell what they did, why they did it and how they felt about it.

Reinforcement & Enrichment

Talk about how we can not only make sure to throw away trash properly but also re-use what some people would call trash. Ask students to bring in clean trash (cans, boxes, paper, bags, packaging) from home and bring in some yourself. They will be using these items in the next lesson to create river plants and animals.

State Standards

Illinois

7.A.1a Measure length, volume and weight/mass using rulers, scales and other appropriate measuring instruments in the customary and metric systems

Indiana

Math K.5.1 Make direct comparisons of length, capacity, weight and temperature of objects and recognize which object is shorter, longer heavier, warmer, cooler or holds more

Social Science K.3.6 Recommend ways that people can help keep their environment clean
LESSON

5

re-using trash to create river animals

Essential Question

How do we come to know and appreciate the river environment and our place in it?

Content Questions

What lives in and around a river?

Goals

- Students will develop their observation skills
- Students will gain a deeper understanding of one river animal and be able to articulate that understanding

Vocabulary

Student generated list

Materials

- Books about river animals (see Resource section under rivers and river plants and animals for suggestions or visit your school or local library)
- Journals
- "I Love Trash" by Steven Tyler from Aerosmith’s Elmo in Grouchland, optional
- Crayons and/or colored pencils
- Clean trash, such as packaging, wrappers, containers, plastic bottles, plastic silverware, etc.
- Newspapers
- Paper mache paste (flour and warm water)
- Glue and making tape
- Tempera paints

Background Information

See lesson 3 for some information on river animals. For additional information see the Resource section under rivers and river plants and animals.
**Procedure**

**Hook**

Children get to create an animal out of clean trash.

**Activity**

1) Have students take out their journals and turn them to the page of their drawing of a river animal. Let students know that they will be making a model – like a stuffed animal, only made out of re-used trash and paper mache – and that these models should look as true to life as possible. It is important that they observe the animals very closely, noticing all the details of their appearance.

2) Help students find their animal in a reference book.

3) Have students redraw their animal paying close attention to details. Instruct students to look closely:
   - Does your animal have legs? How many?
   - Does your animal have antennae? How about wings?
   - What is the shape of its body?
   - What color is it?
   - Does it have fur? Feathers? Scales? Or smooth skin?

4) As students are redrawing go around the room, helping students see the details.

5) As students finish their drawing invite them to the trash area to select trash to use to build their animal. There should only be 2-4 students in this area at a time. Work with them to talk through their selections and how they plan to use and put together the different trash pieces to make their animal.

6) As the students work you can play the song “I Love Trash” by Steven Tyler from Aerosmith’s *Eminem in Grouchland*.

7) Once students have selected their pieces, allow them to build their animal with tape and glue.

8) Once students have prepared their animal, direct them to the paper mache area where they will cover their animal in paper mache.

9) Let the animals dry over night and then have students paint them.

**Reflection & Assessment**

Use the following rubric to assess students’ models and understanding of their animal:

1 pt. Animal is somewhat realistic in its shape and color
2 pts. Animal is mostly realistic in its shape and color; student can tell you one thing about their animal
3 pts. Animal is very realistic in its shape and color; student can tell you more than one thing about their animal
After the paint has dried, pass out the students' completed animal models. Give students time to come up with one thing they would like to share about their animal – either something about the way it looks, what it does or where it lives.

Ask students to share in front of class.

Pick up some of the students' animal models to observe and compare. Ask students: How are they similar in appearance? How about in the way they move? Where they live? What they eat? Why do you think the animals are different? Discuss how the different animals depend on the river.

**State Standards**

**Illinois**

4.A.1c Follow oral instructions accurately

12.A.1a Identify and describe the components of living things and their major functions

13.B.1e Demonstrate ways to reduce, reuse and recycle materials

26.B.1d Demonstrate knowledge and skills to create visual works or art using manipulation, hand-eye coordination, building and imagination

**Indiana**

**English K.7.1** Understand and follow 1 and 2 step spoken directions

**English K.7.2** Share information and ideas, speaking in complete, coherent sentences

**Science K.4.1** Give examples of plants and animals

**Science K.4.2** Observe plants and animals, describing how they are alike and how they are different in the way they look and in the things they do
Essential Question: How do we come to know and appreciate the river environment and our place in it?

Content Questions: What lives in and around a river?

Goals
- Students will become familiar with some of the plants and animals living near their local river.
- Students will develop a connection with their local river.

Vocabulary
- **Track**: the footprint of an animal
- **Garbage**: things people don’t want and throw away

Materials
- Clipboards or something hard to write on, one per student
- Copies of Field Trip Worksheets:
  - **Quiet time**, one per group
  - **Nature Walk**, one per student
  - **Clean-up**, one per group
  - **Making memories**, one per student
- Crayons
- Cameras (If your students are unfamiliar with how to use these have them use them in the classroom or out in the schoolyard before going on the field trip.)
- Gloves
- Garbage bags
- Name tags for students, coded according to group
- Hand sanitizer
- First aid kit
- Chaperones

What you and your students discover at the river depends on the site you visit, the time of year, how quiet and careful you are with your observations and some luck. But, the fact that every visit
promises something new and different is part of what makes the outdoors such a fun and magical place.

During the spring migration, the more forested areas along the river are amazing places to watch birds. Encourage your students to be quiet.

It is often hard to see animals because they are really quite frightened of us. However, they often leave signs behind. Tree trunks cut off in a way that resembles the tip of a pencil means that beavers have been in the area. Branches and bark that have been scraped indicate that deer are around (male deer rub their antlers on branches and trunks). Muddy areas are good places to look for tracks, as are areas covered in fresh snow. Birds often move fast or are hidden in the foliage, but if you sit and listen, their calls often come through loud and clear. Scat (feces) is another indicator that animals have been in the area. Scat that looks like that of a small dog, but with fur in it could be that of a coyote. Three-eighth inch pellets are the scat of deer.

Preparing for a river field trip takes advance preparation, so start planning early. During this field trip, students will be divided into small groups and participate in four different activities. You can organize the field trip in two ways. One, have the chaperones of each of the student groups be responsible for leading the students through the four activities. In this case each group of students will need their own set of supplies for all four activities and all chaperones will need to be comfortable leading the four activities. Two, you can set up the activities in different locations by the river and have each of the activity stations led by a teacher, outside expert or parent. The students and their chaperones would then rotate in their small groups to the different activity stations. In this case you will need just one set of supplies for each activity and only a select group of parents will need to be comfortable leading the activities.

No matter how you organize the field trip you will need parent volunteers. Ideally you want to have two parent volunteers for every small (under 10) group of students. If possible, prepare your parents ahead of time for the field trip, especially those responsible for leading the activities. At the very least prepare an information sheet about the field trip for the parent volunteers. Describe the basic set-up of the field trip, the four different activities (see Activity section for details) and outline the responsibilities of the parents. Make sure the parents understand what the students are to do during each of the activities and what their role is. In addition, give each parent a list of the students in his/her group and a timetable for the day.
Procedure

Hook

Let students know that this is the day they have all been waiting for – the day they get to see a real river! In order for this to be a fun and safe experience for everyone, there are some rules everyone must follow.

Go over safety rules with students:
• Stay in view of teacher or chaperone at all times
• No eating or drinking while doing work
• Hands should be kept away from face and washed before eating
• No picking of flowers, plants or leaves

Assign students to their groups. Pass out coded name tags, Field Trip Pages and clipboards.

Activity

1) At the river organize students into their groups with their chaperones.
2) Pass out materials for the different activities.
3) Review safety rules.
4) Invite students to enjoy the wonders of the river.
5) Students will participate in four different activities. See end of background section for options on how to organize activities.

QUIET TIME

• Have students sit on the ground at least arm’s length apart. Have students close their eyes and just listen. After a few minutes have students open their eyes and share what they heard.

NATURE WALK

• Take students on a short nature treasure walk. Before you begin let students know that they are going on a treasure hunt to find out the secrets of the river. Remind them to be quiet and attentive and to use all their senses (except taste!) so they can discover the most treasures at the river. Also remind students that they are not to pick anything and that everything they find has to be left at the river.

• Stop at different places along the way and ask students to find certain things. Make sure to ask them to find things that will engage their sense of smell, touch, hearing and sight. Here are some suggestions:
  • Who can find something smaller than their hand?
  • Who can find something with more than two colors in it?
  • Who can find a bug?
  • Who can hear a bird?
  • Who can find an animal track?
  • Who can find a cloud that looks like a river?
  • Who can find something soft? How about scratchy?
  • Who smells something good?
CLEAN-UP

- Discuss with students how it is everyone’s responsibility to help keep the environment clean. Discuss why litter is a problem for people, plants and animals.
- Pass out garbage bags and gloves and have students pick up the trash they find along the river.
- Remind students not to pick up anything sharp.

MAKING MEMORIES

- Students will explore a small area to find an object or scene that is special to them that they would like to record. Walk around a small area near the river and let students explore. Have students make a drawing of their object or scene and write or dictate why it is special to them and how seeing it makes them feel.
- As students are drawing and writing, pass the camera around and let students take a photograph of their object or scene. Make sure to record which picture was taken by what child.

Reflection & Assessment

Back in the classroom, have students share their observations as well as how they felt during their trip to the river.

Continue with the culminating activity, or if there is not enough time begin the culminating activity the next day.

Assessment note: The assessment of the students’ participation in the field trip and their reflection on it is included in the culminating activity.

Reinforcement & Enrichment

Encourage students to share their field trip worksheets and their experiences with members of their family.
State Standards

Illinois

4.A.1c  Follow oral instructions accurately
4.B.1a  Participate in discussions around a common topic
12.A.1a Identify and describe the component parts of living things and their major functions

Indiana

English K.5.1  Draw pictures and write words for a specific reason
English K.7.1  Understand and follow one- and two-step spoken directions
English K.7.3  Describe people, places, things (including their size, color and shape), locations and actions
Science K.4.1  Give examples of plants and animals
Science K.4.2  Observe plants and animals, describing how they are alike and how they are different in the way they look and in the things they do
Group members:

Directions:
1) Have students sit on the ground at least arm’s length apart.
2) Instruct students to close their eyes and listen to the sounds at the river.
3) Have students open their eyes and discuss what they heard.
4) Record the groups’ observations on this sheet to be shared later with the entire class.

Note: You may wish to repeat this activity at this same location after discussion or move to another location and do it again.

What we heard:
Name:

Record what you find on your walk in words or pictures:
Group members:

Directions:
1) Discuss with students how it is everyone’s responsibility to keep the environment clean.
2) Discuss why litter is a problem
3) Hand out gloves and trash bags.
4) Remind students not to pick up anything sharp.

Record what the group picked up and how this will help the river environment to be shared with the class back at school:
Name:

This is a drawing of:

It makes me feel:

It is special to me because:
culminating activity

Students will reflect on their field trip and add their observations to the class river mural.

Have students think back to their field trip and take a look at the class river mural. Ask students if there is anything missing from the river mural or anything that needs to be subtracted from the mural. (One thing to make sure that gets mentioned is that the students themselves are missing from the mural!) You can make adjustments to the landscape and sky to make it look more like the river they visited, but do not add any new plants, animals or people as that will be the students’ job.

Have each student make a drawing of a plant or animal that they saw at the river and a drawing of themselves at the river. On the plant/animal drawing the students should write or dictate one sentence about the animal or plant. On the drawing of themselves they should write or dictate at least one sentence about how they felt on the field trip and what was special to them about the field trip.

After students have finished their drawings and writing have them place the plant/animal and themselves in an appropriate location on the mural.

You can assess the students’ performance on the culminating activity and during field trip yourself using the Teacher Reflection or work with each student to have them assess themselves using the Student Reflection.
# Teacher Reflection

**Culminating Activity and Field Trip Assessment**

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginner</strong></td>
</tr>
<tr>
<td>Trip</td>
</tr>
<tr>
<td>• Immature questioning and sharing.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Mural: plant or animal addition</td>
</tr>
<tr>
<td>• Plant or animal is inappropriate.</td>
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<tr>
<td>• No description is included.</td>
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<tr>
<td>• Plant or animal is inaccurately placed on mural.</td>
</tr>
<tr>
<td>Mural: addition of themselves</td>
</tr>
<tr>
<td>• Drawing is sketchy in detail.</td>
</tr>
<tr>
<td>• No description is included.</td>
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</tbody>
</table>

**Comments:**
## Student Reflection

**Culminating Activity and Field Trip Assessment**

**Name**

Do this evaluation with the student:

<table>
<thead>
<tr>
<th>Trip</th>
<th>Beginner</th>
<th>Explorer</th>
<th>River Expert</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OOPS, I forgot to ask questions and share.</td>
<td>I asked a few questions.</td>
<td>I asked great questions.</td>
</tr>
<tr>
<td>Mural: plant</td>
<td>My entry is incomplete.</td>
<td>I shared some ideas.</td>
<td>I shared a lot of ideas.</td>
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<tr>
<td>or animal</td>
<td>I did not place it correctly on the mural.</td>
<td></td>
<td></td>
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<tr>
<td>addition</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>I drew a river plant or animal but I may not have included very many</td>
<td>I drew a river plant or animal and described it in detail.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>details in my description.</td>
<td>I placed my plant or animal correctly on the mural.</td>
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<tr>
<td></td>
<td></td>
<td>I don't think I quite placed my plant or animal in the correct location</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>on the mural.</td>
<td></td>
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<tr>
<td>Mural:</td>
<td>I drew myself at the river but I forgot to write about my experience.</td>
<td>I drew a good picture of myself at the river and wrote a little bit about</td>
<td>I drew a great picture of myself</td>
</tr>
<tr>
<td>addition of</td>
<td></td>
<td>my experience.</td>
<td>I wrote a lot about how I felt during the field trip.</td>
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<tr>
<td>themselves</td>
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<tr>
<td>Comments:</td>
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