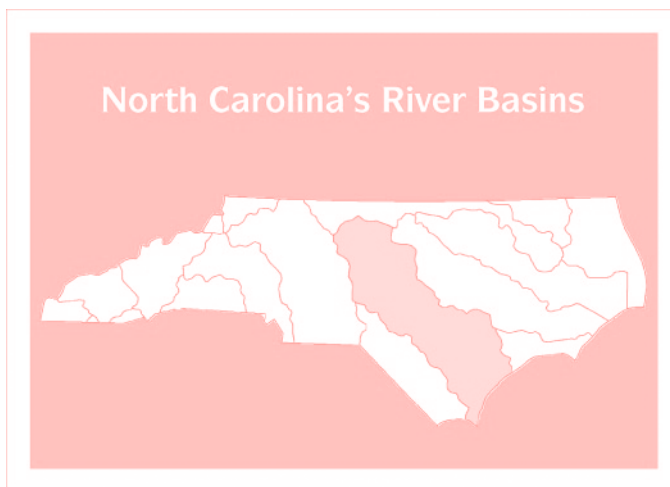


River Basin Riddler:

Discover Your Ecological Address by Learning about your River Basin!

Teacher:

This is a trivia-type fact game designed to use with your Love-A-Tree kit's **River Basin Cards** and **River Basin Poster**. To play, give one river basin card to each student. The pack has two cards for each basin (a total of 34 cards). Shuffle the cards if you wish, but make sure that the group has at least one card from all 17 basins (you may want to give students more than one card in smaller classes.)



Read out a clue to the class. The clues that follow are in alphabetical order by river basin, so you may want to mix up the order of the questions. The answer to each clue can be found on the cards, but students will have to read their facts and pay attention to deduce if it is their river basin. The corresponding fact or facts that answers the question are written below the clue, in case you need to give the class a few extra hints. Feel free to reword your clue/question to fit the ability of the class.

After a student answers the question correctly, have him/her read out the full fact that corresponds to the clue. Then let the student point out the river basin to the class on your "North Carolina's River Basins" poster. You may also want

to use this opportunity to discuss the fact on the card in more detail with the class.

NOTE; We recommend using the **North Carolina River Basin Map** as an introductory activity before you play River Basin Riddler with your class. Have students color the river basins and add in major features, such as Lake Norman, Lake Mattamuskeet, and other major bodies of water. They can also draw in mountains, other geological features, and major cities. The students can then refer to their maps when answering the questions.

All card facts and clues are modified from the Office of Environmental Education publication "Discover North Carolina's River Basins" and the corresponding 17 river basin environmental education inserts. If you do not already have these publications, you can request them from the Office of Environmental Education at 1-800-482-8724. You and your students can also learn more about your Ecological Address and river basins at our Web site: www.ee.enr.state.nc.us.

Extension:

Once students become more familiar with the river basins, the cards can be used as "flash cards," allowing them to quiz each other in pairs or small groups. The front of the card could be shown to see if the student can identify the river basin by location, or the facts could be read to see if the student can identify the correct basin by the information listed on the card.

Glossary of Terms

Ecological Address	An individual or group's unique place in the environment. Just as a Street Address is made up of parts like a Street Number, the City, and the Zip Code, an Ecological Address is made up of: River Basin, Topography, Wetlands, Ground Water, Biodiversity, Soil, Air, and Climate. "Knowing your Ecological Address" also means you understand how your local environment affects you, and how you affect your local environment.
river basin	A river basin is the land that is drained by a river and its tributaries. It includes all of the land surface divided and drained by many streams and creeks that carry water downhill into one another, and eventually into one river. The final destination of the water is an estuary or an ocean.
endemic	Refers to a plant or animal that lives only in one location or region--it does not live naturally in any other part of the world.
gneiss	A type of rock formed from sedimentary rock, such as sandstone or shale, that has been under powerful heat and pressure. It is commonly gray or pinkish and has dark streaks or layers.
estuary	A partly-enclosed coastal body of water. It has a free connection with the open sea but its salty sea water is diluted with fresh water from inland rivers and creeks.
carnivorous plant	A type of plant that is adapted to feed on insects and other small creatures. In North Carolina, they are often found in wetland areas. Feeding on the insects helps the plants get nutrients that the soil they grow in often lacks.
mollusk	Invertebrate (having no backbone) animals, such as snails, clams, or squids, that have a soft body usually enclosed in a shell.
wetland	A wetland is an area where water stands on, near, or above the land surface long enough during the year to support the growth of water-dependent plants. Wetlands control water flow, and protect us from floods. They act as giant sponges, soaking up water when it rains, and slowly releasing it into the ground or surface water. They also provide homes for wildlife and act as nurseries for both freshwater and ocean fish and shellfish.
gorge	A narrow canyon with steep sides.

Clues

A feature in this basin sounds like a super-hero's hide-out, but it really is home to a rare flying mammal.
(Broad - *Contains the "Bat Cave," the largest granite fissure cave in North America, which provides a home for the endangered Indiana Bat.*)

People love to visit this basin's 900 foot gneissic ('nl-sik) rock tower.
(Broad - *Home of the popular tourist destinations Chimney Rock Park and Lake Lure.*)

This basin has more businesses and factories than any other basin, and has more people living in it than any other NC basin. *(Cape Fear--North Carolina's most industrialized river basin; Contains 1/4 of the state's population.)*

This basin is home to an endangered minnow that is endemic to the basin.
(Cape Fear-- Home of the Cape Fear Shiner, an endangered species that lives no where else in the world.)

This basin has the largest man-made lake in the state.
(Catawba-- Home of Lake Norman, the largest man-made lake in NC.)

The main river in this basin was named for Native Americans that have lived in the area for more than 10,000 years.
(Catawba-- The Catawba River was named for the Catawba Indians.)

This basin contains a city founded by Europeans in 1655. *(Chowan- Contains Edenton, the first permanent European settlement in NC.)*

This basin contains Merchant's Millpond, which has lots of Spanish moss, two alligators, some very old "knees" and a really big tree. *(Chowan--Has a grove of 800-year old bald cypress trees and the state's largest known water tupelo tree.-Cypress knees are parts of the roots that extend above the water or ground.)*

The tallest mountain east of the Mississippi River is in this basin.
(French Broad--Home of the 6,684-foot high Mount Mitchell.)

A 9-inch aquatic salamander and a very unusual turtle call this basin home. *(French Broad-- Only NC river basin that is home to the common mudpuppy, an aquatic salamander, and the "not so common" Eastern spiny softshell, a rare turtle.)*

This basin is home to an endemic freshwater mollusk, and contains the remains of an ancient Native American village.
(Hiwassee--Home of the endangered knotty elimia, a freshwater mollusk that lives no where else in the world; Contains Peachtree Mound, one of the most important Cherokee ancestral sites.)

The Cullasaja Gorge is on the National Forest Scenic Byway and is located in this basin. You can see several waterfalls from the road--and there is one that you can see very closely.
(Little Tennessee--Home of Bridal Veil Falls, a waterfall that you can drive a car under.)

Native aquatic mammals were released into this basin, which has made its streams healthier.
(Little Tennessee--River Otters were reintroduced into streams in the basin, which helps the basin keep a natural balance of native aquatic animal life.)

This basin contains large swamps and the unusual Carolina bays that contain many different species of plants.
(Lumber contains Lake Waccamaw, the most biologically diverse lake in North Carolina; Lake Waccamaw is the largest permanent water-filled Carolina bay in NC; Contains a large portion of the Green Swamp, which has highest density of small plant species in North America.)

This basin is home to a unique "dog" that was named after the river it lives in. It's also home to a rare fish and mollusk.
(Neuse--Home to the Neuse River waterdog (a large aquatic salamander), the rare Carolina madtom fish, and the pan-handle pebblesnail.)

A feature that would usually only be found in the mountains is located in this eastern basin.
(Neuse--Contains an unusual feature for the coastal plain; a 100-foot canyon carved by the Neuse River, located near Goldsboro.)

The river for which this basin was named has a very misleading name.

(New--The "New" River is actually thought to be one of the oldest rivers in the world, estimated at 300 million years-old.)

Many rare, tiny turtles can be found in this basin.

(New--More bog turtles live in the basin than in any other basin in NC. This rare and threatened turtle weighs only 4 ounces.)

Orville and Wilber Wright traveled to this basin to practice flying and today people hang glide from its tall sand-dunes.

(Pasquotank--Home of Jockey's Ridge, the tallest natural sand-dune system in the eastern US.)



In this basin, you can find ancient artifacts made from cypress logs and go on a "howling" with your friends at one of its many wildlife refuges.

(Pasquotank--The basin has the most national wildlife refuges of any other basin, and has the fewest number of people than any other basin; Home of Lake Phelps, the second largest natural lake in NC. It has crystal clear water, and over thirty ancient dugout canoes have been found on its bottom; In 1987, red wolves were reintroduced into the Alligator River National Wildlife Refuge.)

This basin contains only 4 % of the state's people, but you could still say it is the most densely populated river basin in North Carolina.

(Roanoke--Contains the densest population of white-tailed deer, wild turkey, and black bear, and has at least 214 bird species.)

The river for which this basin was named once had a bad reputation and a spooky nickname.

(Roanoke--The Roanoke River was once called "the river of death" because its spring floods claimed so many lives.)

There is something missing in this basin that makes its name seem rather strange.

(Savannah--This river basin contains no part of the Savannah River for which it was named. It contains the Chattaooga, Horesepasture, Toxaway, Whitewater, and Thompson Rivers that are the sources for the water that becomes the Savannah River.)

This basin's only state park contains three endemic fish.

(Savannah--Three fish, the turquoise darter, redeye bass, and rosyface chub, are found only in the basin's Gorges State Park.)

This basin is named for two rivers, which are really just two different parts of the same river.

(Tar-Pamlico--The Tar and Pamlico rivers are actually two ecologically distinct pieces of one river. The Tar is a freshwater river, and becomes the brackish (fresh and seawater mixed together) Pamlico River at Washington, NC.)

This basin is a big producer of several farm products and commercial fish.

(Tar-Pamlico--90% of all commercial seafood caught in NC is born in the Albemarle-Pamlico estuary; NC's largest producer of tobacco (Pitt) and producer of corn, wheat, and sorghum (Beaufort) is located in the basin.)

This basin contains a famous mountain that you may have heard of. It has a mile-high swinging bridge and a weather station that reports to TV stations across NC. *(And it was once the home of "Mildred the Bear." Some of her cubs still live there).*

(Watauga--Grandfather Mountain, the highest peak in the Blue Ridge Mountains, is located in the basin. On top of the mountain is a nature preserve and nature museum that is very popular with visitors.)

This basin is home to several rare animals, including two flying mammals (one actually just glides). However, trout are not rare in its rivers and streams.

(Watauga--Its rare animal residents include the peregrine falcon, the Carolina northern flying squirrel, Virginia big-eared bat, and the spruce-fir moss spider; The basin is "trout country"--fishermen fish for native brook trout, as well as farm raised rainbow and brook trout.)

This basin's many wetlands are the few places in the world that several rare carnivorous plants can be found.

(White Oak--Insect eating plants like the Venus flytrap, pitcher plants, bladderworts, butterworts, and sundews, as well as several other rare plants and wildflowers, can be found in the basin; The basin is filled with coastal and freshwater wetlands, and is made up of four river systems, or subbasins.)

Even though this basin is far from the ocean, it has a group of ancient islands in it.

(Yadkin-PeeDee--The basin's Uwharrie Mountains are the remains of an ancient chain of volcanic islands that were pushed upwards during the collision of the African and North American continents.)

This basin is filled with history. It was home to ancient Native American culture and was the scene of North Carolina's own Gold Rush.

(Yadkin-PeeDee--The basin is called the cradle of civilization of the Carolinas. The area has artifacts of Native American culture that date back 12,000 years; The basin was the location of the United States' first documented gold discovery, after it was discovered that a stone found by a 12-year old boy was gold. His family had used it as a doorstep for three years.)

North Carolina River Basins

