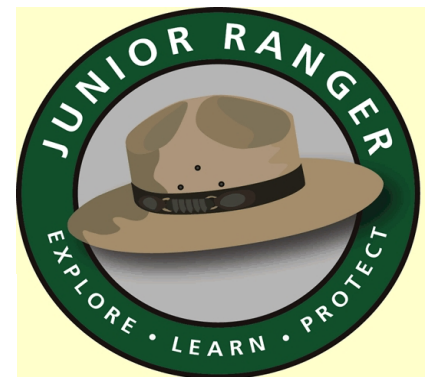
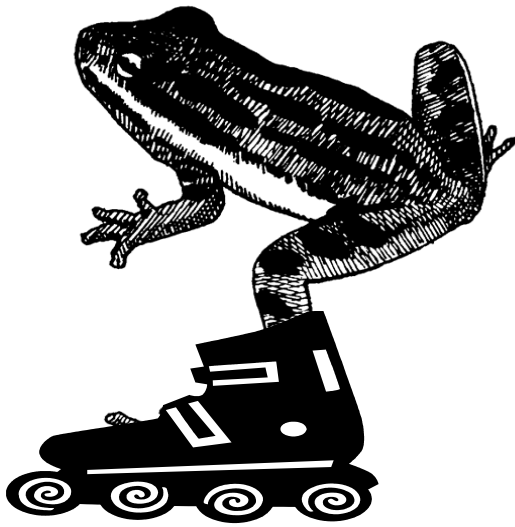




Anacostia Park and Kenilworth Aquatic Gardens



An Activity Guide to
Explore Anacostia Park
including the Aquatic
Gardens



Anacostia Park Junior Ranger Program

An urban flood plain park

Anacostia Park is several miles long on both sides of the Anacostia River. There are natural areas, and developed recreational areas, all surrounded by urban development.

Building Watershed Terms

Take the paper provided and fold as directed. Notice the valley and ridges. Trace with your finger from the top of one ridge down the valley and up the next ridge. The area you just traced is called a watershed. The water runs down one side of each ridge into the river at the bottom between them. The flood plain would be the flattest part of the valley between the ridges, and wetlands would form in the flattest part of the flood plain.

Terms to know are defined in the glossary section under Learn.

Use this page for building a watershed terms

2 Fold this fold the opposite direction of the first fold –away from you

1 Fold paper in half toward you

3 Fold this fold away from you like fold 2

Explore

Use the map provided, and see if you can find where you are on the map. A park employee may be able to help you. There are several aspects of Anacostia/Kenilworth Park that you may find of interest. Follow the steps below to explore your park and map the things of interest to you.

The River:

Looking at the map (Anacostia brochure map) the darker green along the Anacostia River is the *flood plain*. This is the area that is most likely to flood in a heavy rain or very high tide. Exploring different areas of Anacostia Park will help you understand the role of a flood plain park in an urban area. Bring your map to show locations where you stop and answer the following questions

Observe:

-Walk, or drive and stop, along the Anacostia River at different places from the Park Headquarters to the Kenilworth Aquatic Gardens. Suggested stops: Skating pavilion, the area between Benning Road and East Capital Street, Kenilworth Aquatic Gardens.

≈ What changes do you notice in the vegetation and slope of the banks of the river? _____ Is it a sharp drop off in some areas and muddy gentle slopes in others? _____

≈ Is the vegetation shrubby or is some not woody? _____
Do shrubby areas seem associated with the steep drop offs or the gentle slopes?

_____ ≈Where do the slopes look built and where do they look natural?

_____ ≈ How are people using the river? _____
≈ Are there structures here to be damaged by flood? _____
≈ Do the plants here look flexible enough to be flooded and survive? _____

Describe:

Use a stick or the heel of your shoe and dig a shallow hole (less than an inch deep) into the dirt next to the river and at least 200 paces away from the river. Describe the soil at each site. Some descriptors are on the left.

Next to river

Away from river

Gritty
Slick
Color is uniform
Color is mostly
Smell
Smooth
Rocks
Leaf parts
Pale
Wet

Moist
Dry

The Wetlands

A wetland is an area of low lying land that may be wet often in a year, sometimes with each high tide, and where specialized plants grow. They are buffers between the land and water. They are often home to many kinds of wildlife people like to watch. They also provide a safe place for baby fish to hatch and grow. Wetlands used to be on each side of the river sometimes as deep as a half mile. Mark approximate places on your map where you still see wetlands. There may be grassy fields that are wet. Wetlands are usually not mowed by the park.

Observe

-Write down where you see the most trash? Is it on the land, the river, or the wetland areas? _____

-What impact might wetland areas have on the river? _____

Describe

-Wetland areas are **most** likely to flood of all the places in the flood plain. By leaving them along the river, floods have a place to go without damaging anything. Looking at your map where you marked the wetlands, which places would not be good to build housing or businesses? Use ///marks to show which areas you would not want to build on.

-Imagine if you were the first person to take a canoe along the Anacostia River. Which part of the park most looks like what you would expect? _____

Trees are one of the things people expect to see in parks. Some have been here for a very long time. We call these native trees. Their ancestors were the ones here before Columbus arrived. Others are planted from other countries, and still others were developed by people through a process called hybridization. Trees make shade which cools things down, their roots hold the soil, and their falling leaves, twigs and branches help make soil. Because they are green plants, trees take in carbon dioxide and release oxygen in a process called photosynthesis that makes sugar for the tree.

Observe

▼ Are there trees here? _____

▼ Do they look like they were planted or grew on their own? _____

A *climax forest* is one where the tall trees are the same species of trees as the young trees coming up under them.

Describe

▼ Do you see young trees growing under the big trees? If you do, compare their leaf shape and bark to those of the tall trees. _____

▼ Draw a leaf shape of a big tree and a small tree. Do they look the same except for size?

▼ Trees like people get more wrinkles and creases in their skin (bark) as they age. Pick two trees you think are the same type except for age. Both must be at least 1 foot in diameter. Use the paper provided, and lay the paper as tight as you can on the bark of the big tree. Rub the side of a lead pencil over upper half the paper against the bark. Now do the same with the smaller tree. Are they the same?

Use for making tree bark rubbings. Using the side of the pencil lead against the paper try and make a rubbing of the bark of a big tree

Using the side of the pencil lead against the paper try and make a rubbing of the bark of a smaller tree

▼ Is the area a climax forest?

Finishing your map:

Where might you be able to have fun in Anacostia Park? Mark on your map where you could do things you enjoy.

Learn

Observing, and describing what you see are important in discovery. Now is a chance to dig a little deeper and understand what you have found.

First you need to know what is dangerous.

Animals in the park, unless they are someone's pet are wild. That means they are unpredictable and will want to run away from you for the most part. If you don't get in their way, they won't have to hurt you to escape from you. Wild animals make really bad pets. They grumble about being caged, complain about the food, and miss their friends. Don't try and touch animals unless they are a pet and the owner says you may pet their animal.

Get to know the plant on the next page. Poison ivy is a plant that can cause skin irritation on many people. Learn to recognize it and avoid it.

RECOGNIZING POISON IVY

National Capital Parks East
National Park Service
U.S. Department of Interior



Poison ivy is a competitive plant with a chameleon like nature. It can have a wavy leaf margin or a smooth one. The leaves can be shiny or dull. It can be a vine or small shrub. In winter it loses its leaves and the only way to tell the vine is by the multiple hair roots that give it a furry appearance.

Some terminology is in order here. Each leaf of a poison ivy plant has three leaflets. The actual leaf will break easily from the plant, but the leaflets will tear. There are many three leaflet plants that are not poisonous. To be safe, avoid them all. However, there are some characteristics that you can use to separate poison ivy from similar plants.

Young hickory trees can look like poison ivy, but the poison ivy will have a smooth leaf surface and no teeth on the leaf margin.

Jack in the pulpit also has three leaflets, but the leaves grow from a common base, while poison ivy leaves come off a main stem.

Blackberry and raspberries may have a three leaflet leaf, but the center leaflet is larger than the others and both blackberries and most raspberries have noticeable thorns.



Poison ivy as it may appear in summer



In winter look for brown vines with a furry appearance

It is the oils in the sap that can be in the leaves, stem, or roots that causes irritation. If you know you've been exposed, you can wash with soap and warm water as soon as possible to get rid of the sap and prevent a rash.

You can also get poison ivy sap off the coat of a pet that has been walking through it.

Glossary:

Flood plain: the flat land along a body of water (usually a river or stream) that is covered by water when the body of water floods from heavy rain, snow, or abnormally high tides.

Climax Forest: The species and proportion of species in the *upper canopy* or mature trees is about the same as the species and proportion of species in the *lower canopy* of immature trees.

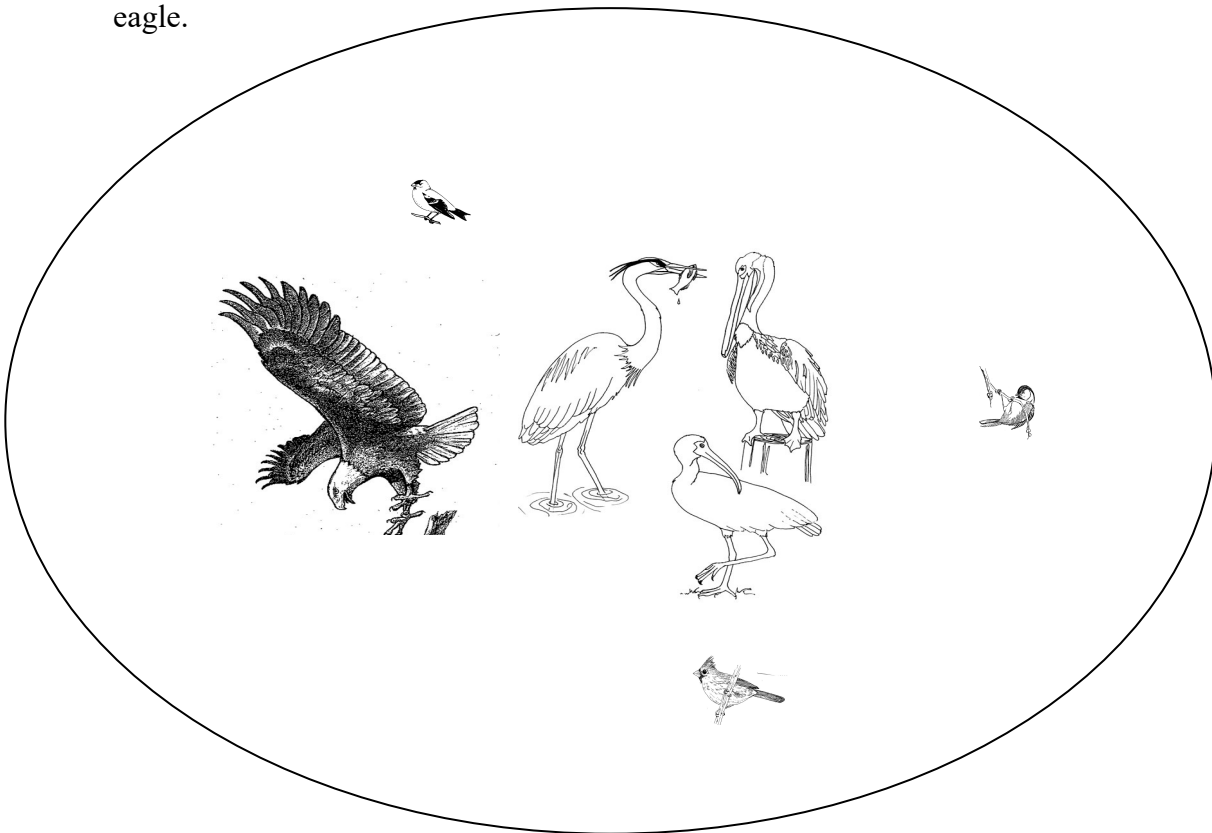
Upper Canopy: The leafy branches of the tallest layer of trees in a forest

Lower Canopy: The leafy branches of immature trees, shrubs, and non woody plants in a forest

Forest Floor: The ground level of a forest. Where tall trees begin.

Habitat: the neighborhood that provides what a species needs to survive and raise young.

Species: a plant, animal or life form that is different enough from others like it that it gets its own name. Birds is a big class of animals. Birds with big wing spans would be a smaller group of birds. Scavenger birds with big wings would be a still smaller group. Eagles would be a smaller group. Bald Eagles would be a species. They are birds as are many animals. Like the great blue heron or egret, they have a big wing span. Like vultures or condors they are scavengers. They are eagles like golden eagles, but they are different enough from golden eagles to get their own name. The big circle encloses the set of birds. Draw one around the set of birds with big wings. Draw one around the bald eagle.



Bald eagles are one of many water loving birds that hunt and live along the Anacostia River. Others are osprey, egrets, great blue herons, green herons, night crown herons. and there are many others. All of the birds listed eat fish. They wade in the water, or sit in big, dead or open trees to wait for fish floating down the river. Water with fish in it, big trees near the water, and shallow places for wading are *habitat* for these birds.

Wildlife:

◀ Wait at least ten minutes in an area where you can see the river, and count the different **types** or **species** of birds you see. These birds indicate good habitat, or a healthy environment. They tell us about our world, since their habitat overlaps ours. We use the river and eat fish also.

◀ The most common kind of wildlife in the park, and, in fact, on Earth, are the insects. Look at the ground and see if you see signs of insects. Look at leaves of trees and other plants on the ground or on the trees and see if they do not show signs of insects eating them. You may find insects living in tree bark. Some insects inject plants with a chemical to make the plant grow a home for the insect's eggs. These are called galls. They may be on leaves, stems, or twigs. Write down or draw signs of insects you found

Plants:

Plants are needed for survival of most of the species on Earth. Green plants make the oxygen we need and they convert the sun's energy into energy we and other animals can use as food. Some are pretty. Some are pretty, and fun to play with.

Look for these plants and check off which you find.:



Alder is a shrub that blooms with tiny pollen catkins in winter. In summer the female cones look like tiny pine cones. The summer leaves are green, tooth with regular veins going from a central vein to the teeth along the edge of the leaf. Bark may be brown or green.



Pickerel weed had blue/lavender flower spikes in summer and an elongated heart shaped leaf. It dies back and completely disappears in winter, so you will only get to see it in late spring through early fall.



There are native willows along the Anacostia River. Unlike the weeping willow, the native black and yellow willows are shrubby, with green or yellow twigs and the long narrow leaves alternating along the stems.



Just checking....Did you read about this plant earlier?



If you got exposed to poison ivy, you wash right away if you can. If not, look for this plant, Jewel Weed. It has juicy stems, and soft green leaves. In summer it has bright orange flowers. Many naturalists say if you got exposed to poison ivy and rub the sap of jewel weed on the area right away, you won't break out. However, most rush off right away to wash with soap and water anyway.

The seeds form in late summer and fall and are fun to play with. Touch the ripe ones, and they pop scattering seeds.



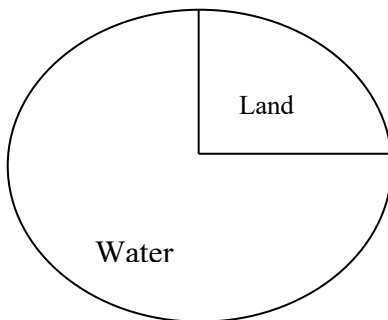
Wild rice grows over four feet tall and blooms in August. The seed heads are green with the male flowers often being mistaken for seeds. The birds aren't fooled. They know the seeds form in the tight bundle of stems at the top of the flower.



Cattails are probably one of the most useful plants in North America. The green/yellow pollen that forms at the top of the flower in spring is edible, the seeds are edible, the fuzzy brown part of the flower has anti-bacterial properties, the shoots are edible part of the year, and the roots are edible. The leaves can be woven to make fish catch traps, baskets, shelters, and layered for a bed. The colonists used the brown fuzzy part, the hot dog on a stick, to dip in pine sap to make a torch. Don't eat them, though. The land they are growing in may contain heavy metals which the plants absorb.

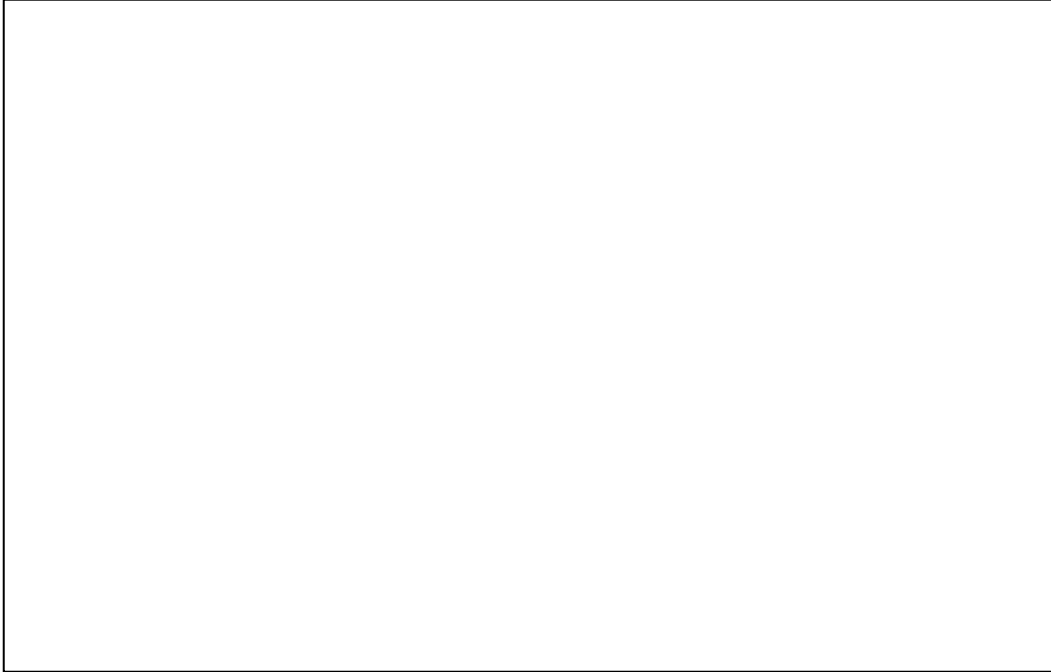
If you checked off all of these plants, you may have noticed all but one have something in common. They all grow in wet areas. These plants are specially adapted to survive having their roots wet part of the time and dry the rest of the time. This is unusual in the plant world where oxygen is usually needed in the soil for survival.

Most plants root in soil and take water and nutrients from the soil and carbon dioxide from the air to make sugars using the sun's energy in a complicated process called photosynthesis. We may not think of soil, water, and air as part of our habitat, but think about where we would be without them. How important is water?



About $\frac{3}{4}$ of the Earth is water. About 75% of it is salt water in the ocean. About 99% of the fresh water on Earth is in glaciers and locked in rocks where we can't get it. There's about 1% of the water on Earth that we can use, but it is a big part of everything we eat, and even ourselves.

Take a look around you, and see if you can imagine a world that has no water. Draw what you think it would like.

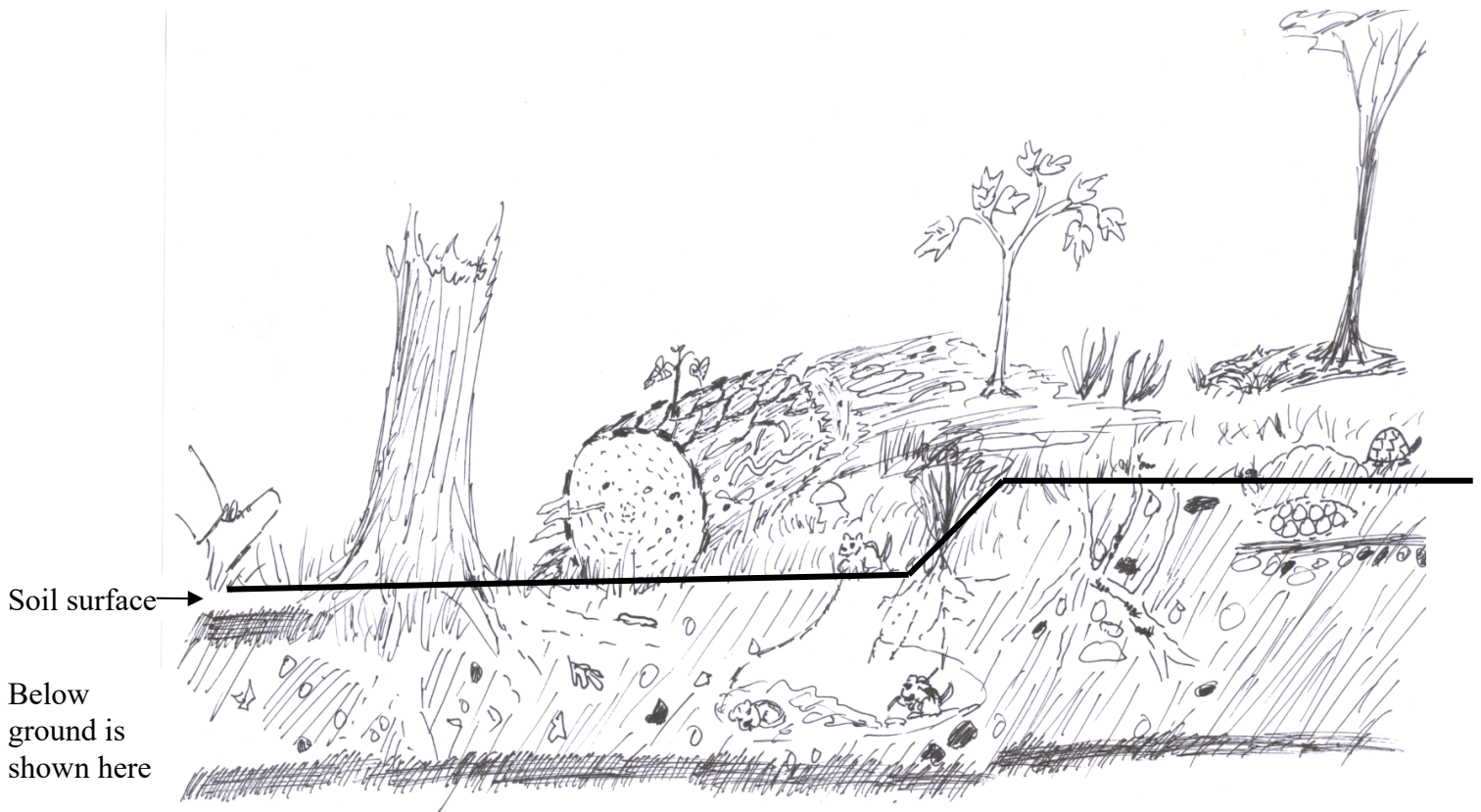


Your drawing here

If your drawing looks like Mars or the Moon, you've done a good job imagining. There would be no people, no plants or animals. Bacteria might survive. If that doesn't sound like a fun place to live, be glad for the $\frac{3}{4}$ of the Earth we can't live on, but can't live without.

Dirt or soil is another thing we seldom think to include in our world, but would have a hard time living without. Soil comes from ground up rock of eroded mountains and continents, from sea shells, from decaying things like trees and dinosaurs, and from minerals that give it characteristic color and feel. For soil to support life it needs to be able to trap air and water in the soil particles. Animals like chipmunks and ants live in the soil and create air pockets that let oxygen in to help plants grow. Other animals like turtles lay their eggs in holes they did in the ground and let air in and leave mineral rich egg shells behind to enrich the soil and help plants grow. Plants in turn, fall to the ground and decay through fungi and recycler species to become soil again to grow more plants. It's a big recycling plan that keeps returning over and over unless something happens to stop it.

The picture below is a cross section of the soil. It shows the soil as if we had sliced through a piece of land and were looking at it from the side, instead of from above. It lets us see what is under our feet. In the picture below, what would happen if a road came through to cover the ground where the person is headed? What would no longer be able to live or get recycled?



How many living things that depend on the soil do you see in the picture?

Did you count the person?

What would this person walk on without soil?

Look around you where you are in the park. Draw or list the many living things you see here that depend on soil? Did you include yourself and family?

Protect:

Some things take a very long time to decay. Plastics may never return to their original molecules. Look at any food you brought with you and see how much of it is wrapped in plastic. Think of some alternatives and suggest them to your family to use when going out again.

Invasive plants are a real problem in parks. They take up nutrients in the soil and water that native plants need. At the Kenilworth Aquatic Gardens in late spring or summer, you can help control one invasive plant. Ask a park ranger for a plastic bag and to show you the yellow flag iris seed pods. Collect a bag full and turn them in to a staff person.

Trash comes into the park from the surrounding land in the watershed and ends up in the river, the wetlands, and even on the grass when the park floods. Ask a park staff person for a bag and pick up trash you can easily reach. Leave it by a trash can or turn it in to a staff person.

Explain to a friend what you learned at Anacostia Park about flood plains. Explain how the park helps protect homes and the river.

Tell a friend what areas and things you liked about the park. Would you bring a friend to the park?