



The below activities are designed to be adaptable to all ages. Families should feel welcome to complete the activities with their students. Each topic has an activity series that can be completed in order and to the depth that the student and adult would like to be involved.

**Contents:**

[Nature Journal](#)

[Tree Identification](#)

[What is the Water Cycle?](#)

[What is a Watershed?](#)

[River Observations](#)

[River Wildlife Investigations](#)

[What is a Riparian Buffer?](#)

[Track a River](#)

**Nature Journal:** Find a space outside or inside with a view of outside, take 15-20 minutes and write or draw what you observe. Consider doing this each day.

- Examples/ Ideas of what to observe:
  - What do you see/ hear/ smell?
  - Is there any wildlife out? If so, what is it, what does it look like?
  - Are there any plants/ trees?
  - Are any plants/ trees in bloom?
  - What is the weather like? Do you notice any seasonal changes?

**Tree Identification:** What trees are outside of or nearby your house?

- Activity 1: Look at the trees and record your observations:
  - Do you notice any leaves, flowers, fruits?
  - What is the location of the tree, what features are surrounding this tree?
    - Make a list of features surrounding this tree (Which are nature? Which are man-made?)
  - Estimate the height of the tree?
  - Describe the bark.
  - Are there other trees beside this one (what are they? Are there any similarities or differences?)
  - If the trees have leaves, sketch the shape of the leaf.
    - If there are no leaves on the tree look on the ground below the tree. Is this leaf from the tree you are studying or another.
- Activity 2: Identify the trees, near you
  - Below are links for identification:
    - <https://www.inaturalist.org/guides/3190>
    - <http://www.dof.virginia.gov/tree/index.htm>

- [http://www.dof.virginia.gov/infopubs/Native-Tree-ID-spreads\\_2016\\_pub.pdf](http://www.dof.virginia.gov/infopubs/Native-Tree-ID-spreads_2016_pub.pdf)
- Activity 3: Leaf Pressing
  - Collect leaves off nearby trees or if there are none on the tree, collect whole leaves off the ground nearby.
  - Follow the instructions in the link: <https://learning-center.homesciencetools.com/article/how-to-preserve-leaves/>

### **What is the Water Cycle?**

- Definition(s):
  - The water cycle can be described as:
    - The path that all water follows as it moves around the Earth in different states.
    - The continuous process by which water is circulated throughout the earth and the atmosphere through evaporation, condensation, precipitation, and transpiration of plants and animals.
    - The cycle of processes by which water circulates between the earth's oceans, atmosphere and land, involving precipitation as rain and snow, drainage in streams and rivers, and return to the atmosphere by evaporation and transpiration
- Water Cycle Activity Series:
- Activity 1: Learn about the water cycle
  - View what the water cycle looks like here:
    - Simple Diagram- <https://pmm.nasa.gov/education/water-cycle>
    - More Complex Diagram- <https://pmm.nasa.gov/education/images/usgs-water-cycle-diagram>
  - Draw and label your idea of the water cycle
- Activity 2: Now let's learn more about the parts of the water cycle
  - Check out the link: [https://www.usgs.gov/special-topic/water-science-school/science/fundamentals-water-cycle?qt-science\\_center\\_objects=0#qt-science\\_center\\_objects](https://www.usgs.gov/special-topic/water-science-school/science/fundamentals-water-cycle?qt-science_center_objects=0#qt-science_center_objects)
- Activity 3: Follow a water molecule on its journey
  - Write a story pretending you are a water molecule. You can also act out your journey as a play.
    - Where would you start? What state/ phase are you in?
    - Where would you go?
    - Would you change states/ phases?

### **What is a Watershed?**

- Definition(s):
  - A watershed can be described as:
    - An area or ridge of land that separates waters flowing to different rivers, basins, or seas.
    - A dividing ridge between drainage areas.

- A land area that channels rainfall and snowmelt to creeks, streams, and rivers, and eventually to outflow points such as reservoirs, bays, and the ocean.
- Watershed Activity Series:
- Activity 1: What is a Watershed Address?
  - A watershed address is the watershed, sub-watershed, sub-sub watershed etc. that you live in.
    - Example: North Fork Shenandoah River - Main Stem Shenandoah River – Potomac River – Chesapeake Bay – Atlantic Ocean
    - Link to watershed resources: <https://fnfsr.org/watershed-resources-and-references/>
- Activity 2: Write down your watershed address.
  - Find a stream or river located near you, look up what watershed it is in, track its path to a bigger body of water. Use the example above as reference.

**River Observations:** If possible, take a walk to a nearby water source (preferably a stream or river), make observations every day for 2 weeks.

- River Observations Activity Series:
- Activity 1: Write down observations about what you notice about the river or stream. Use the questions below as a guideline.
  - Estimate the water level?
  - Are there any tracks on the water sources bank? If so, sketch what they look like.
  - Are there plants present? Sketch what they look like? Can you identify them
- Activity 2: Compare your observations every few days.
  - What changes did you notice?
  - Did anything you observe stay the same?

**River Wildlife Investigations:** Research through the internet or through books you find in your home wildlife found in or near rivers.

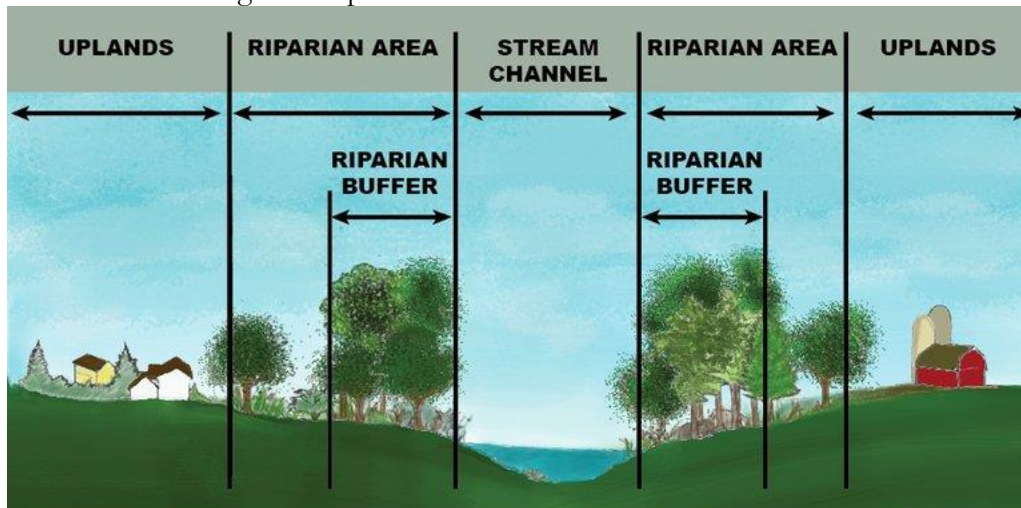
- River Wildlife Activity Series:
- Activity 1: List 3-6 animals in the following categories that you would find in or near the river:
  - Mammals
  - Birds
  - Amphibians
  - Fish
- Activity 2: Pick a favorite animal from each of the categories above or a favorite overall and look up the following, write down your findings:
  - Where does your animal(s) live/ what is their habitat?
  - What does your animal(s) eat?
  - Where is your animal(s) in the food web?
  - How does your animal(s) effect the watershed?
- Activity 2: Make a drawing or build your animal(s) habitat
  - Using a variety of art materials sketch or draw what your animal(s) habitat looks like.

Or,

- With natural materials you would find around your house build your animal(s) habitat. \*Note- if collecting materials from outside make sure not to disturb any animals or habitat that is present.
- Activity 3: Create a story or play about your animal
  - Include the following in your story or play:
    - What your animal looks like.
    - Where does your animal live?
    - What is your animal doing?
  - If you create a play, perform your play for your family.
- Activity 4: Walk outside and see if you can find an area that resembles where your animal(s) live.
  - Did you find your animal or evidence of your animal?

### **What is a Riparian Buffer?**

- Definition:
  - A riparian buffer can be described as a vegetated area of land near a river or stream, it usually is forested and helps shade and partially protect the river or stream from adjacent land uses.
- Learn the importance of a riparian:
  - They serve as a buffer to pollutants entering a stream from runoff
  - Controls erosion
  - Provides habitat and nutrient input into the river or stream
- Find below an image of a riparian buffer:



- Riparian Buffer Activity Series:
- Activity 1: Research online plants found in a riparian buffer. Write down your findings.
  - List 4-5 examples of plants you would find in a riparian buffer.
  - Why do you think these plants are found near a water source?
  - Take a walk to a stream or river, observe what plants are near it.
    - Are any plants you see ones you found on your online search.
- Activity 2: Plant seedlings of plants you would find in a riparian buffer.

### **Track a River:**

- River Tracking Activity Series:
- Activity 1: Follow a stream or river from its source to its mouth.
  - Pick a stream or river near your house
  - Look up where it starts, track what other streams it combines with, where it ends up.
    - Use the link below to help find a streams source and track it:  
<https://streamstats.usgs.gov/ss/>
  - Check out the North Fork of the Shenandoah Rivers source:  
<https://fnfsr.org/source-north-fork/>
- Activity 2: Sketch or paint your stream or rivers path from the source to its mouth.
  - Label all names and any towns it is located near.