**WATERSHED**

Water is life. Every living thing depends on water: people, plants, animals and trees. Water is easy for most of us to get in this country. We turn on the faucet and out comes water and it is (for the most part) safe to drink. We are truly blessed because approximately 1.1 billion people on earth do not have clean water.

We use water in many ways. Farmers use water for their crops. Ranchers use water for their animals. In our daily lives, we use water for a variety of things including drinking, washing hands, brushing our teeth, cooking, and bathing. We also use water for recreation (swimming pools, water slides).

The average American uses about 100 gallons of water a day. (Show a gallon of water). How do you use water?

- Bath 50 gallons

- Shower – 2 gallons per minute, so a 10-minute shower = 20 gallons

- Dishwasher – 7+ gallons of water

- Toilet – 1 ½ to 3 gallons per flush (5 times a day = 7 ½ to 15 gallons)

- Teeth brushing – one gallon per minute that the faucet runs

- car wash – 50 gallons per minute

- washing clothes – about 10 gallons per load

- water yard – about 10 gallons per minute

- drinking (8 glasses a day ☺ or ½ a gallon)

**Show pie chart showing ¾ water**

Water covers three-fourths or 75 percent of the earth. Most of this is in the oceans and ocean water is too salty for us to use.

All living things need **fresh** water. Only about three percent of the water on Earth is fresh water. Since some of that fresh water is frozen in the ice caps and some is too far underground to use, only about one percent of the fresh water on earth is available to us. Therefore, water is limited and precious. **(Show the all the water in the world visual).**

The earth has the same amount of water. No new water is being created. This water keeps going around and around in the water cycle. **(Show water cycle chart)**

2. The cycle is made of a few main parts:

a. **Evaporation** - Occurs when the sun heats up water in rivers, lakes or the ocean and turns it into vapor or steam, which rises into the atmosphere.

b. **Condensation** - Occurs when water vapor in the air gets cold and changes back into liquid, thus forming clouds.

c. **Precipitation** - Occurs when so much water has condensed that the clouds cannot hold anymore and the water falls back to earth in the form of rain, hail, sleet or snow.

d. **Accumulation/Collection -** When the water falls as precipitation, it may fall on land and soak into theearth becoming ground water or it may fall back into the rivers, lakes or oceanwhere the cycle starts all over again.

**Definition of a Watershed**

All the water from rain, melting snow or ice drains downhill into a body of water like a funnel. This is called runoff. As the water drains downhill, it carries sediment and other materials with it to its final destination. To get to its final destination, water travels through tributaries, creeks, ponds, streams, rivers, lakes, and bays. So the definition of a watershed is:

All the land that drains into a given waterway. It includes the rivers that convey the water as well as the land surfaces from which water drains. Each watershed is separated from each other by a geographic barrier like a ridge, hill or mountain. Watersheds come in all shapes and sizes; they cross county, state and national boundaries.

**Buckingham and Cumberland Counties are part of a watershed called the James River Watershed**

Both Buckingham and Cumberland Counties are part of the James River watershed. The James River is Virginia’s largest river. It is 450 miles long and more than 10,000 square miles of the state’s land empty into it. That 10,000 square miles, the land from which runoff enters the James River when it rains, is called a watershed.

**We are also part of a bigger watershed called the Chesapeake Bay Watershed**

**Geography**

* The Chesapeake Bay is an estuary: a body of water where fresh and salt water mix. It is the largest of more than 100 estuaries in the United States.
* The Bay is about 200 miles long, stretching from Havre de Grace, Maryland, to Virginia Beach, Virginia.
* The Bay's width ranges from 4 miles near Aberdeen, Maryland, to 30 miles near Cape Charles, Virginia.
* The Bay is surprisingly shallow. Its average depth, including all tidal tributaries, is about 21 feet. A person who is 6 feet tall could wade through more than 700,000 acres of the Bay and never get his or her hat wet.
* A few deep troughs run along much of the Bay's length. Some of these troughs are as much as 174 feet deep. The troughs are believed to be remnants of the ancient Susquehanna River.
* The Bay and its tidal tributaries have 11,684 miles of shoreline – more than the entire U.S. west coast.
* The surface area of the Bay and its tidal tributaries is approximately 4,480 square miles.
* Two of the United States’ five major North Atlantic ports – Baltimore and Hampton Roads – are on the Bay.
* The Chesapeake Bay holds more than 18 trillion gallons of water.
* The Bay receives about half its water volume from the Atlantic Ocean. The rest drains into the Bay from an enormous 64,000-square-mile watershed.
* The Chesapeake Bay watershed includes parts of six states – Delaware, Maryland, New York, Pennsylvania, Virginia and West Virginia – and the entire District of Columbia.
* About 150 streams, creeks and rivers drain to the Chesapeake Bay watershed.
* Approximately 51 billion gallons of water flow into the Bay each day from its freshwater tributaries.
* Collectively, the Chesapeake’s three largest rivers – the Susquehanna, Potomac and James rivers – provide more than 80 percent of the fresh water to the Bay.
* The Susquehanna River is the Bay’s largest river. It provides nearly 50 percent of the fresh water coming into the Bay – an average of 19 million gallons of water per minute.
* The Chesapeake Bay watershed is home to more than 17 million people. About 150,000 new people move into the Bay watershed each year.
* More than 100,000 streams, creeks and rivers thread through the Chesapeake Bay watershed. Everyone in the watershed lives within a few miles of one of these tributaries, which are like pipelines from our communities to the Bay.
* There are nearly 1,800 local governments in the Bay watershed, including towns, cities, counties and townships.
* The Chesapeake Bay watershed contains three distinct geologic regions: the Atlantic coastal plain, the Piedmont plateau and the Appalachian province.
* Approximately 8 million acres of land in the Bay watershed are permanently protected from development.
* There are more than 700 public access points on the Chesapeake Bay and its tributaries.
* The Chesapeake Bay was the first estuary in the nation to be targeted for restoration as an integrated watershed and ecosystem.

**Flora and Fauna**

* The Bay supports more than 2,700 species of plants and animals, including 348 species of finfish and 173 species of shellfish.
* The Bay produces about 500 million pounds of seafood per year.
* The Chesapeake region is home to at least 29 species of waterfowl. Nearly one million waterfowl winter on the Bay – approximately one-third of the Atlantic coast’s migratory population. The birds stop to feed and rest on the Bay during their annual migration along the Atlantic Flyway.
* Nearly 80,000 acres of bay grasses grow in the shallows of the Chesapeake Bay and its tributaries. Young and molting blue crabs rely on bay grass beds for protection from predators.
* Approximately 284,000 acres of tidal wetlands grow the Chesapeake Bay region. Wetlands provide critical habitat for fish, birds, crabs and many other species.
* Forests cover 58 percent of the Chesapeake Bay watershed. The region loses about 100 acres of forest each day to development.

Ways to reduce water pollution and promote water conservation:

1. Don’t litter. Place all trash in bags and store in a trashcan with a secure lid. Don’t throw loose trash into the bed of a pickup. Cover the load.

2. Wash your cars at a commercial carwash that handles waste water properly. Do not wash your car at home on the driveway or other paved surfaces. Waste water from washing your car may contain oil, grease, road grime, and detergents. If you have to wash your car at home, wash it less often and on the grass so the water can soak into the ground.

3. If your family’s car is leaking, get if fixed promptly. Recycle waste oil.

4. Don’t pour anything down a storm drain.

5. Pick up after your pets; bag it and throw it away in the trash.

6. When your family uses fertilizers and pesticides, use them according to the directions. Do not over apply and do not apply to paved areas.

7. Compost yard waste (leaves, grass, etc.). Don’t blow waste into the street or storm drains.

8. If your family’s home is on a septic system, maintain the system according to regulations.

9. If watering is allowed outdoors, check the sprinklers often and adjust so only the lawn is watered and not the sidewalk or street.

10. Turn the water off when you shampoo your hair, then turn it back on to rinse.

11. Turn the water off when brushing your teeth. (We all know this one by now.)

12. Use mulch around plants to reduce evaporation.

13. Take short showers instead of baths.

14. Throw trash in a trash can and do not flush it down the toilet.

15. Run the washing machine or dishwasher only when the loads are full.

16. If washing by hand, don’t let the water run while washing and rinsing. Fill one sink with wash water and one with rinse water.