Water is the only substance found on Earth naturally in three forms. Name the three forms	**At what temperature does water vaporize?** ___degrees Fahrenheit ___degrees Celsius	**What percentage of the Earth's surface is water?** a. 80% b. 73% c. 78% d. 70%
Does water regulate the earth's temperature? Yes or No	**How long can a person live without water?** a. A day b. A week c. A month d. A Year	**How much water must a person consume per day to maintain health?** a. 1 quart b. 1.5 quarts c. 2 quarts d. 2.5 quarts
At what temperature does water freeze? __degrees Fahrenheit/ __degrees Celsius	**What percentage of the human body is water?** a. 46% b. 56% c. 66% d. 76%	**Of all the earth's water, how much is ocean or seas? (salt water)** a. 53% b. 79% c. 86% d. 97%

The Earth's surface is **80%** water

Water turns to steam at **212 degrees Fahrenheit** or **100 degrees Celsius**.

Water exists in three forms: **solid, liquid and gas**.

A person must consume **2.5 quarts** of water from all sources (i.e. plain water, other beverages, food) per day to maintain health. **Yes,** the Earth's water serves as the planet's natural insulator.

A person can live without food for more than a month, but can only survive for approximately **one week** without water, depending upon conditions.

Yes, the Earth's water serves as the planet's natural insulator.

Ninety-seven percent (97%) of Earth's Water is ocean or seas (salty). Water freezes at **32 degrees Fahrenheit or 0 degrees Celsius**.

The human body is **66%**, or two-thirds, water.

Water freezes at **32 degrees Fahrenheit or 0 degrees Celsius**.

What percentage of the world's water is frozen and therefore unusable? a. 1% b. 2% c. 3% d. 4%	**How much water does the average residence use during a year?** a. Over 50,000 gal b. Over 100,000 gal c. Over 200,000 gal d. Over 500,000 gal	**Where was the first municipal water filtration works opened and when?** a. Kalmar, Sweden - 1805 b. Dunhuang, China - 1888 c. Lyon, France - 1905 d. Paisley, Scotland - 1832
What is the most common substance found on earth?	**How many miles of pipeline and aqueducts are in the United States and Canada?** a. 600,000 b. 1,000,000 c. 2,000,000 d. 3,000,000	**How many households use private wells for their water supply?** a. Over 5,000,000 b. Over 8,000,000 c. Over 10,000,000 d. Over 13,000,000
What percent of the Earth's water is suitable for drinking? a. .75% b. 1.0% c. 2.23% d. 3.0% e. 5.1%	**What were the first water pipes made from in the US?** a. Copper b. Iron c. Fire charred bored logs d. Ceramic e. None of the above	**How much water is used to flush a toilet?**

The first municipal water filtration works opened in **Paisley, Scotland in 1832.**

The average household uses over **100,000 gallons** of water (indoors and outside) in one year.

Two percent (2%) of the world's water is frozen and unusable.

More than **13 million** households use private wells for their water supply.

Approximately **one million miles** of pipeline and aqueducts span the United States and Canada, enough to circle the Earth 40 times.

Water is the most common substance found on Earth.

Flushing a toilet uses **2-7 gallons** of water per flush.

The first American made water pipes were **fire charred bored logs**.

Only 1% of Earth's water is suitable for drinking.

How much water is used in the average five-minute shower? a. 5-15 gallons b. 15-25 gallons c. 20-30 gallons d. Over 30 gallons	**How much does one gallon of water weigh?** a. 4.25 lbs b. 5.68 lbs c. 6.45 lbs d. 7.21 lbs e. 8.34 lbs	**How much water does it take to produce one ton of steel?** a. 62,600 gallons b. 68,400 gallons c. 72,800 gallons d. 86, 800 gallons e. Over 100,000 gallons
How much water is used on the average for an automatic dishwasher? a. 5-8 gallons b. 9-12 gallons c. 15-18 gallons d. 20-23 gallons e. Over 25 gallons	**What is the weight of water in one cubic foot?** a. 24.6 lbs b. 35.6 lbs c. 46.4 lbs d. 57.2 lbs e. 62.4 lbs	**How much water is used to produce a single day's supply of U.S. newsprint?** a. 50 million gallons b. 100 million gallons c. 200 million gallons d. 300 million gallons e. Over 500 million gallons
On the average, how much is used to hand-wash dishes? a. 5-15 gallons b. 10-20 gallons c. 15-25 gallons d. 25-35 gallons e. Over 35 gallons	**How much water drops with an inch of rain on one acre of ground?** a. 165 gallons b. 1, 856 gallons c. 8, 953 gallons d. 18, 842 gallons e. 27,154 gallons	**What is the total amount of water used to manufacture a new car, including new tires?** a. 19,524 gallons b. 29,178 gallons c. 39,090 gallons d. 49,252 gallons

To produce one ton of steel takes **62,600 gallons** of water.

One gallon of water weighs **8.34 pounds.**

The average five-minute shower uses **15-25 gallons** of water.

To produce a single day's supply of U.S. newsprint takes **300 million gallons** of water.

One cubic foot of water weighs **62.4 pounds**.

On average, an automatic dishwasher uses **9-12 gallons** of water.

To manufacture a new car, including new tires, takes **39,090 gallons** of water.

One inch of rain falling on one acre of ground equals: **27,154 gallons, which weighs 113 tons.**

On average, hand-washing dishes uses **10-20 gallons**.

How many gallons of water must a dairy cow drink to produce one gallon of milk?

a. 2 gallons
b. 3 gallons
c. 4 gallons
d. 6 gallons

How much water is used to produce French fries?

a. 2 gallons
b. 4 gallons
c. 6 gallons
d. 8 gallons
e. Over 10 gallons

How much water is used to produce one loaf of bread?

a. 10 gallons
b. 20 gallons
c. 50 gallons
d. 100 gallons
e. Over 100 gallons

How much water is used to grow/produce one chicken?

a. 100 gallons
b. 200 gallons
c. 300 gallons
d. 400 gallons
e. Over 500 gallons

How much water is used to grow/produce one orange?

a. 12.3 gallons
b. 13.8 gallons
c. 14.5 gallons
d. 14.9 gallons
e. Over 15 gallons

How much water is used to grow/ produce a tomato?

a. 3.0 gallons
b. 5.8 gallons
c. 9.4 gallons
d. 10.5 gallons
e. Over 15 gallons

How much water is used to grow/ produce almonds?

a. 4.0 gallons
b. 6.5 gallons
c. 9.5 gallons
d. 12.0 gallons
e. Over 15 gallons

How much water is used to grow/produce one watermelon?

a. 15 gallons
b. 55 gallons
c. 100 gallons
d. 125 gallons
e. Over 150 gallons

How much water is used to grow/ produce rice?

a. 15 gallons
b. 20 gallons
c. 25 gallons
d. 35 gallons
e. Over 35 gallons

To make a loaf of bread, from field to table, uses **150 gallons** of water.

To create French fries takes **6 gallons** of water.

To produce one gallon of milk, a dairy cow drinks **4 gallons** of water.

To grow/produce ONE tomato requires **3 gallons** of water.

To grow/produce a single orange takes **13.8 gallons** of water.

To grow/produce ONE chicken requires **400 gallons** of water.

It takes **35 gallons** of water to grow/produce rice.

One watermelon requires **100 gallons** of water to grow/produce.

To grow/produce almonds takes **12 gallons** of water.

How much water is used to produce one egg?

a. 35 gallons
b. 50 gallons
c. 100 gallons
d. 120 gallons
e. Over 150 gallons

What is another name for a watershed?

a. Estuary
b. Delta
c. Flood Plain
d. Drainage basin
e. Headwaters

The _____ are the places where streams begin.

a. Estuary
b. Deltas
c. Flood Plains
d. Drainage basins
e. Headwaters

Do the math:
A leaky faucet with 15 drips/minute = 3 gallons of water wasted/day

How many gallons wasted per month (30 days)? _____
Per year?_____

The Clean Water Act set the goals that waters of the United States should be _____?

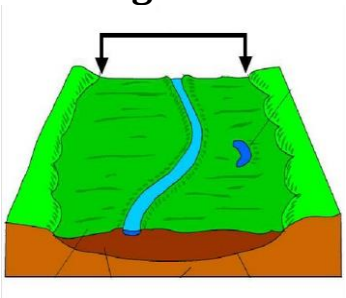
a. Drinkable
b. Swimable & Fishable
c. Drinkable & Fishable
d. Fishable
e. Swimable

Small _____ streams join to make larger streams. Larger streams join to form rivers.

a. Tributary
b. Creek
c. Source
d. Strait
e. Headwater

What is a watershed?

What is the area called in the figure below?



A _____ is an area that can become flooded when a river or stream overflows.

a. Estuary
b. Delta
c. Flood Plain
d. Drainage basin
e. Headwater

The **HEADWATERS** are the places where streams begin.

A **Drainage basin**

You need **120 gallons** to produce ONE egg.

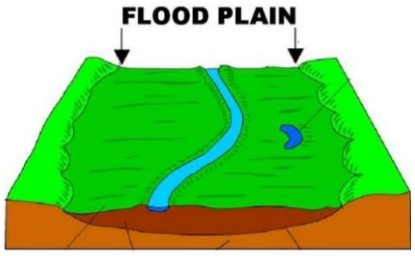
Small **TRIBUTARY** streams join to make larger streams. Larger streams join to form rivers.

Fishable and swimmable

Do the math:
15 drips/minute
= 3 gallons of water wasted/day
= 90 gallons wasted/month
= 1080 gallons wasted/ year

A **FLOODPLAIN** is an area that can become flooded when a river or stream overflows.

Flood Plain



A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place.

A/An _____ is the area where the river meets the ocean. Fresh water from the river and salt water from the ocean mix here.

a. Estuary
b. Deltas
c. Flood Plains
d. Drainage basins
e. Headwaters

Which Pollutants are commonly found in our lakes, rivers, streams and ponds:

a. Pet Waste
b. Sediment
c. Pesticides and fertilizers
d. Oil and antifreeze
e.Toxic chemicals
f. All of the above

Which of the following <u>are not</u> examples of best management practices?

a. Rain Barrel
b. Log Jam
c. Grass Waterways
d. Buffer strips

Brenda & Justin are camping in the forest. After eating a meal, they realize they have trash that they need to throw away, but there are no trash cans nearby. What should they do with their trash?

a. Take the trash with them when they leave and throw it away in a trash can.
b. Burn the trash in the campfire, so the campsite will be left clean, and they won't have to pack out the trash.
c. Bury the trash in the ground, so the campsite will be left clean, and they won't have to pack out the trash.
d. Leave the trash at the campsite. What harm could a little trash have?

Is the water we use today the same water the dinosaurs used?

What Best management Practice (BMP) is pictured below?

This egg farm has hundreds of chickens. The chickens create a lot of manure that could pollute nearby streams. What should be done to prevent the manure from polluting nearby streams?

a. Carry the manure away in trucks and take it to the county dump.
b. Leave the manure. It will biodegrade naturally.
c. Compost the manure and allow nearby farmers to spread it out on their fields to fertilize their crops.
d. Keep the chickens away from streams, so that the manure doesn't flow into the water.

What Best management Practice (BMP) is pictured below?

What Best management Practice (BMP) is pictured below?

Log Jams are not an example of best management practices

Which Pollutants are commonly found in our lakes, rivers, streams and ponds include:
ALL OF THE ABOVE

An **ESTUARY** is the area where the river meets the ocean. Fresh water from the river and salt water from the ocean mix here.

Buffer Strips - A buffer strip is an area of land maintained in permanent vegetation. Buffer strips trap sediment, and enhance filtration of nutrients and pesticides by slowing down runoff that could enter the local surface waters.

Yes - We cannot create new water. For millions of years, the water we have has been used again and again. We have been able to do this because there are natural cycles that clean the water each time we use it.

A -The best way for Brenda & Justin to deal with their trash is to take it with them when they leave and throw it away in a trash can. Packing the trash and throwing it away later will ensure that the campsite is left clean for the next people who use it. It also ensures that the trash won't get eaten by wildlife or pollute a nearby stream or lake. *(Although burning some of the trash like paper would do little harm, burning plastics can release toxic fumes into the atmosphere. Even though the campsite would appear clean if Brenda and Justin buried their trash, the trash could be dug up by wildlife and strewn about the area. Even if the trash remains buried, it could take many years to break down into soil.)*

Grassed Waterway- Grass waterways are a type of conservation buffer, designed to prevent soil erosion while draining runoff water from adjacent cropland. As water travels down the waterway, the grass vegetation prevents erosion that would otherwise result from concentrated flows. Grass waterways also help prevent gully erosion in areas of concentrated flow.

Rain Barrels - Rain barrels reduce the amount of stormwater runoff flowing to an area by collecting roof runoff and storing the water for future use.

C - If the manure is composted first, using it as fertilizer for crops is a good way to recycle waste from chickens. *(Manure provides farmers with a natural alternative to synthetic fertilizers. It is also much cheaper to give manure to nearby farmers then to pay to get rid of it at the county dump. Raw manure often contains harmful bacteria. Composting the manure before spreading it out on the fields kills harmful bacteria that could contaminate streams. Although keeping the chickens away from streams and other water bodies is helpful in preventing pollution from the manure, rain can still wash manure into streams in the form of runoff.)*

_____ is water that flows overland to surface streams, rivers and lakes.

a. Erosion
b. Riffle
c. Sediment
d. Runoff
e. Slope

Is the following True or False

<u>Topography</u> is the variation in elevation across a given landscape

Is the following True or False

<u>A Waterway</u> is a stream, creek, or river

Is the following True or False

<u>A Watershed</u> is a small building that holds water

Is the following True or False

<u>Macroinvertebrates</u> are invertebrate animals (animals without backbones), so small you can only see them using magnification

What word best describes the river pictured below?

a. Channel
b. Oxbow Lake
c. Meandering
d. Reservoir

Is the following True or False

<u>Erosion</u> is the wearing down or washing away of the soil or land surface by the action of wind or water

Pollutants discharged from any identifiable point, including pipes, ditches, channels, sewers, tunnels and containers of various types are known as _____.

a. Non-point source Pollution
b. Point Source Pollution
c. Pesticides
d. Runoff

Trees and woody debris that accumulates and blocks the flow of water is known as a _____.

a. Wetland
b. Habitat
c. Logjam
d. Riffle

True-
A Waterway is a stream, creek, or river

True -
Topography is the variation in elevation across a given landscape

Runoff is water that flows overland to surface streams, rivers and lakes.


Meandering – winding, twisting; an indirect pathway

False –
Macroinvertebrates are invertebrate animals (animals without backbones), **LARGE** enough to be observed without the aid of magnification

False –
A Watershed is the area of land where all of the water that is under it or drains off of it goes into the same place

Trees and woody debris that accumulates and blocks the flow of water is known as a **Logjam.**

Pollutants discharged from any identifiable point, including pipes, ditches, channels, sewers, tunnels and containers of various types are known as **Point Source Pollution.**

True –
Erosion is the wearing down or washing away of the soil or land surface by the action of wind or water

Each watershed identified by a unique HUC consisting of two to twelve digits. What does HUC stand for?

The boundary between watersheds is defined as the _____ dividing line from which water flows in two different directions.

a. Aerial
b. Topographic
c. Geometric
d. Latitudinal
e. Longitudinal

Is the following True or False

A watershed may be small and represent a single tributary within a larger system, or be quite large and cover thousands of miles

Is the following True or False

Combined sewers are pipes that carry both storm water and household sewage to sewage treatment plants. During a big storm, they may overflow and dump untreated sewage into streams, rivers, and lakes.

What is a Pervious surface?

a. A surface which allows water to soak into it.
b. A surface that does not allow water to soak into it.
c. A paved or other hard surface.
d. A rough or rolling surface

What is an Algal bloom?

a. A measure of the amount of particles suspended in water.
b. A nutrient that is essential to plants and animals.
c. A sudden, excessive growth of algae in a waterbody.
d. A poisonous substance produced within living cells or organisms

Is the following True or False

Watersheds are located mainly in mountainous regions with high rainfall.

Is the following True or False

Leaves should be raked down a storm drain so they can decompose in the stream and provide food for the fish.

Which of the following organizations monitor the quality of our waters?

a. Volunteer organizations
b. State, local and tribal agencies
c. The federal government
d. All of the above

True-
A watershed may be small and represent a single tributary within a larger system, or be quite large and cover thousands of miles

The boundary between watersheds is defined as the **Topographic** dividing line from which water flows in two different directions.

Each watershed is identified by a unique **hydrologic unit code (HUC)** consisting of two to twelve digits

Algal bloom: A sudden, excessive growth of algae in a waterbody.

Pervious surface:
A surface which allows water to soak into it.

True –
Combined sewers are pipes that carry both storm water and household sewage to sewage treatment plants. During a big storm, they may overflow and dump untreated sewage into streams, rivers, and lakes. These overflows are called combined sewer overflows or CSOs.

All of the above -
Volunteer organizations, state, local, tribal agencies, and the federal government all the quality of our waters

False-
Check town and state ordinances, then decide how to dispose of those leaves you've raked or blown into piles.

False –
Watersheds are located everywhere

You decided to install a permeable driveway. In doing so, you allow water to flow through your driveway into the ground instead of flowing to the drain. Advance one space and roll again.	You divert water from your gutters to a small rain garden in your backyard. By diverting some of the water from your roof to a small garden you decrease the amount of water to the sewer drain and filter the water from your roof. Advance one space.	You propose to your neighbor to split a bag of fertilizer to cover both lawns. By splitting the bag instead of both using to a full bag of fertilizer, you apply enough nutrients for the lawn, and reduce nutrient overload to local streams and ground water. Advance one space.
You help your neighbor install a fence at his farm separating his cattle from a small ditch in their grazing pasture. The fence will prevent the cattle's waste from direct contact to the ditch, minimizing the waste contaminating the stream. Advance one space.	You help organize a local river clean up in your neighborhood. You help the river by removing trash and debris that can contaminate the water. Advance one space.	Your neighbor calls in your failing septic system. Your failing septic system allowed you to unknowingly contaminate the creek by your house causing the stream to have elevated levels of E.coli. and make it unsafe. Back one space.
While visiting a local park walking your dog, someone calls you out not picking up your dog's waste. The waste is likely to washing into the parks stream, causing contamination. Back one space.	To gain an advantage in yields on your soybean crop, you apply two years worth of fertilizer in one application. By applying double amount of nutrients to your field, unnecessary amounts of nitrogen and phosphorus are a factor in an algae bloom in a local reservoir. Back one space.	You cut down all the trees between your crop field and a ditch and expand your field to the ditch. You create more farmable land, but eliminate a buffer and distance of vegetation acting as a natural filter to the ditch elevating nutrient levels in the stream. Back one space.

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You drive your car onto the front lawn and wash it. By washing your car in the yard and not the street, the run off from washing the car filters into the ground instead of going directly into the storm drain. Advance one space.	You participate in a local Hoosier River Watch program to monitor the quality of water in a stream in your neighborhood. By monitoring the stream, you are able to recognize any elevated contamination of the stream. Advance one space.	You attend a local Soil and Water Conservation meeting. By attending and participating, you give valued input and support to conservation practices that benefit the county watersheds. Advance one space.
You get caught dumping your cars old motor oil down the street drain in front of your house. The oil goes into the river by your house, contaminating the water. Go back one space.	You dedicate a ten-acre section of your crop field that constantly floods to wetland restoration. Restoring this land to a wetland will benefit of wildlife, reduce flooding, provide offsite water quality benefits, and increase groundwater recharge. Advance one space and Roll again.	You plant cover crops on your fields. By doing this, the cover crops will help control erosion, add fertility and organic material to the soil, and increase infiltration of the soil. Advance one space.
You clean your trashcan by the storm drain instead of in the grass. The dirty run-off goes directly into the nearest stream instead of filtering into the ground. Back one space.	In the fall, you blow all your leaves into the creek bordering your property. By doing so, allow decomposers to feed off the debris and consume oxygen that other organisms need. This depletes the oxygen in the stream and narrows the amount of diversity in the stream's life forms. Back one space.	You notice your car has a small oil leak, but you decide not to get it fixed or even to put down a liner in your driveway to collect oil and other materials. These leaks and drips contribute to stormwater pollution. Back one space.

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