

# Douglas County 25<sup>th</sup> Annual Kids' Groundwater Festival

**May 2, 2018**

The Kids' Groundwater Festival is an annual event for 4<sup>th</sup> grade students from Douglas County, Parkers Prairie, and West Central Elementary Schools. Students have an opportunity for hands-on learning at 20 different learning stations covering all aspects of the water cycle. Presenters are volunteers and represent many of the area businesses and government agencies.

## **Teacher Resources:** (External Links)

**Drinking Water & Groundwater kid's stuff** – Classroom Lessons for Grades 4-8 (EPA)

**Water Sourcebook** -324 activities for K-12 (EPA)

**MPCA Kid's Page**

**DNR Teacher's Resources**

**SEEK** – Minnesota's interactive directory of environmental education (EE) Resources

**Prairie Wetlands Learning Center** – US Fish and Wildlife Service, Fergus Falls

**Pictionary (See Below)**

**Water Jeopardy (See Below)**



## Pictionary Words

Acid Rain

Aquifer

Bass

Bath

Boat

Bridge

Canoe

Carp

Cloudburst

Condensation

Conservation

Could

Crappie

Dam

Drink

Drip

Drought

Erosion

Evaporation

Faucet

Feedlot

Fire Hydrant

Fish

Fish House

Flood

Fresh Water

Frog

Gallons

Groundwater

Hail

Ice

Ice Fishing

Irrigation

Jet Ski

Lake

Lake Le Homme Dieu

Landfill

Liquid

Long Prairie River

Milfoil

Mist

Moisture

Northern Pike

Ocean

Pond

Rain

Rain Drop

Rain Gauge

River

Runoff

Salt Water

Septic System

Shower

Skating

Skiing

Snail

Snow

Snowmobile

Soil

Splash

Sprinkler

Stream

Sunfish

Swamp

Swimming

Thunderstorm

Walleye

Wash

Water

Water fowl

Water Heater

Water Pipe

Waterbed

Water Bug

Waterfall

Watermelon

Watershed

Wave

Well

Wetland

Windmill

Zebra Mussel



## Jeopardy Questions and Answers

### Kids Groundwater Festival

#### Ground Water Questions

- 100 Water in the Ground is called this (Groundwater)
- 200 Soil or Rock Containing usable quantities of water (Aquifer)
- 300 Not a piece of furniture, but the top of an aquifer (Water table)
- 400 Water that seeps through the land surface adding to groundwater (recharge)
- 500 An open space below the surface that water can create (a cave)

#### Surface Water

- 100 Water in puddles, Lakes or rivers (Surface water)
- 200 Overflowing rivers cause this to happen (Flood)
- 300 Dumping waste into the water causes this (Pollution)
- 400 This process causes river banks to wear away (Erosion)
- 500 This is the name of the area that water travels from mountains to rivers (Watershed)

#### Hydrologic Geography

- 100 This Arizona Natural Wonder and National Park was formed by the Colorado River (Grand Canyon)
- 200 This famous geyser is located in Yellowstone National Park (Old Faithful)
- 300 This river runs through South Dakota, meeting the Mississippi and flowing into the Gulf of Mexico (Missouri River)
- 400 Glaciers helped form this system of lakes located on the US/Canada Border (Great Lakes)
- 500 This National Park Service Cave in South Dakota was formed by the dissolving action of water (Jewel Cave)

#### Hydrological Cycle/ Water Use

- 100 Doing this while brushing your teeth saves water (Turning off the water)
- 200 Placing this in your toilet tank saves water (A jug of water or a brick)
- 300 Release of rain or snow from a cloud (Precipitation)
- 400 Water turns into vapor when this happens (Evaporation)
- 500 This fan-like structure is sometimes used for pumping water in rural areas (windmill)



## General Hydrology

- 100 This solid is formed when water freezes (Ice)
- 200 This is the chemical abbreviation for water (H<sub>2</sub>O)
- 300 Two of the three physical states water can take (Gas, Liquid, or Solid)
- 400 The study of water (Hydrology)
- 500 Water mixed with carbon-dioxide forms this acid (Carbonic Acid)

## Fill in the Blank

- 100 A hole in the ground used to extract water (well)
- 200 A wind-driven water pump (Windmill)
- 300 An artificial lake used to collect and store water (Reservoir)
- 400 A level below which the ground is saturated with water (Water table)
- 500 The electricity produced using the force of falling water (Hydroelectricity)

## Definitions

- 100 The Moisture on leaves and flowers in the morning (Dew)
- 200 Natural Disaster with tornado like features on an ocean (Cyclone, Typhoon, Hurican Tsunami)
- 300 Small streams that join larger rivers (Tributary)
- 400 A flowing well (Artesian well)
- 500 the land that is next to water (Riparian Land)

## Lakes

- 100 Name 3 lakes in Douglas County (Answers will Vary: Cowdry, Brophy, Ida, Moses, Aaron, Chip, Latoka, Le Homme Dieu, Darling, Carlos, Miltona, Oscar, Tayler, Victoria, Geneva, Mud, Long, Jesse...)
- 200 What is the smallest of the Great Lakes (Lake Ontario)
- 300 What percent of Douglas County is covered by lakes (10%)
- 400 How many lakes are in Douglas County (662)
- 500 How many lakes are there in the state of Minnesota (15,291)



## History

- 100 What did the Titanic hit before it sank (Iceberg)
- 200 What state claims to have invented water skiing (Lake City, Minnesota)
- 300 What were the first water pipes made from (Logs)
- 400 What was the name of the glacial lake that existed in Northwest Minnesota 1,000 + years ago (Agassiz)
- 500 What year did Charles Lindbergh fly over the Atlantic Ocean (1927)

## Rivers

- 100 Where does the Mississippi River Start – Headquarters (Lake Itasca State Park)
- 200 What river drains the eastern 2/3 of the US (Mississippi)
- 300 Name one river in Douglas County (long Prairie, Sauk, Chippewa)
- 400 A major river or body of water and the land area that it drains is called what (Watershed)
- 500 How many miles of rivers, streams and ditches are there in Minnesota (92,000 miles)

## Properties

- 100 What are the three forms of water (Solid, Liquid, Gas)
- 200 What is the change of water to gas called (Evaporation)
- 300 The change of water vapor to liquid is called what (Condensation)
- 400 What temperature does water boil (212°F)
- 500 How much does a gallon of water weigh (8 1/3 lbs)

## How big is it?

- 100 Air Largest inland Salt lake is (Great Salt Lake)
- 200 What is the largest lake in Douglas County (Lake Miliona)
- 300 What is the world's largest aquifer (Ogallala)
- 400 Which is the biggest lake contained entirely in Minnesota (Red Lake)
- 500 What lake in Douglas County has the most miles of shoreline (Lobster Lake, 17 miles)



### Name that...

100 What does the H<sub>2</sub> and O stand for (2 parts Hydrogen to 1 part Oxygen)

200 True or False. Water is a good conductor of heat (False)

300 When is the best time of the day to water your lawn (Early Morning)

400 How can wetlands improve ground water (Filter and Purify)

500 What percent of the human body is water (66%)

### Miscellaneous

100 Spanish word for Water (Aqua)

200 How many personal floatation devices are required to be carried on your boat (one per person on the boat or watercraft)

300 Why does precipitation run off rather than soak in the cities (most areas are impervious)

400 How many seas are there (7)

500 From what point in western MN does water flow in N and S (Browns Valley)

### It's Alive

100 How long can a person live without water (about 1 week depending on the Person. Most say 3 days)

200 What is one crop grown in water (Rice, Fish)

300 Name two types of vegetation that grows in water (Cattails, reeds, milfoil, duckweed)

400 What insect needs water to survive (Mosquito)

500 What aquatic plant is invading MN lakes (Eurasian Water milfoil, Curlyleaf Pondweed, Starry Stonewort)

### Pollution

100 What is the most common contaminator of water (sediment)

200 How many gallons of gasoline does it take to contaminate the water supply for a community of 50,000 people (1 gallon)

300 Name two sources of groundwater pollution (Landfill, septic, underground gas tank, sedimentation)

400 Once water is contaminated, how long does it stay contaminated (Thousands of years)

500 A Single Identifiable source of contamination is called what (Point Source Pollution)



## Usage

- 100 What is the average amount of water used by a person daily (87 gallons)
- 200 How much water is used to wash your hands (2 gallons)
- 300 How much water is used to get a drink of water (1-4 gallons)
- 400 How many gallons of water is used to take a bath (30 gallons)
- 500 How much water is used to make a loaf of bread – In a store, keep in mind the entire process (150-300 Gallons)

## Wasting Water

- 100 How much water does it take for a shower per minute (5 gallons/minute)
- 200 How much water is used to flush a toilet (2-7 gallons)
- 300 How many gallons of water are used to wash a load of clothes (25-30 gallons)
- 400 How many gallons of water are wasted if the facet is left running (2-5 gallons/day)
- 500 How many gallons of water are used in a dishwasher (15 gallons)

## Water Testing

- 100 How can you tell if water is hard or soft (Test it)
- 200 What makes Water hard (Minerals)
- 300 What type of water causes a bathtub ring (Hard Water)
- 400 What is used in water softeners to soften water (Salt)
- 500 Name a Common minerals found in hard water (Calcium, iron, magnesium)

## Aquatic Invasive Species

- 100 Name one body of water in Douglas County Infested with AIS (Answers will vary)
- 200 Name 2 different invasive currently in Douglas County Water (Zebra Mussels, Curlyleaf Pondweed, Purple Loosestrife, Eurasian Milfoil)
- 300 What are some prevention ways to prevent the spread of AIS (Clean, Drain, Dry, Dispose)
- 400 What percentage of Minnesota Body Waters are currently infested with some form of AIS (5%)
- 500 What was the first body of water in Douglas County infested with AIS (2003 Lake Le Homme Dieu)

