Drought in Georgia
Quiz for Students 2007-08

LESSON 1

Question	Answer	Explanation
1. If all the water on Earth measured 100 mls, how many mls would be available, usable water?	**1**	1 ml represents available usable water. 2 ml represents the fresh water that is frozen in glaciers. 97 ml represents the saltwater in the world.
2. During times of drought, a greater percentage than normal of available usable water is contained as a gas in the atmosphere instead of in liquid form where it would be part of lakes, streams, rivers and underground water sources that people could use.	**True**	
3. What is a farmer most concerned about a drought affecting?	**crops**	To a farmer, a drought is a period of moisture deficiency that affects the crops under cultivation. Even two weeks without rainfall can stress many crops during certain periods of the growing cycle.
4. To a meteorologist a drought is an extended period of decreased streamflow.	**False**	To a meteorologist, a drought is a prolonged period when precipitation is less than normal. To a hydrologist, a drought is an extended period of decreased precipitation and streamflow.
5. What do you call the group of people who make sure that drinkable water is available to you when you turn on your faucet?	**Water Managers**	A water manager coordinates decisions about water use and allocation through a proactive outreach and planning process with many kinds of water user groups. A water manager might work in state or local government or in private business.
6. Drought affects crops, drinking water supplies and streamflows.	**True**	Drought is a period of drier than normal conditions that results in water-related problems.

100% = 6 correct
83% = 5 correct
67% = 4 correct
50% = 3 correct
34% = 2 correct
17% = 1 correct

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LESSON 2

Question	Answer	Explanation
1. After reading the selection below, determine which part of the water cycle is indicated by the letter "B" on the map above.	**Precipitation**	
2. Simply defined, a drought is a significant deficit in moisture availability due to greater than normal sunlight.	**False**	A drought is simply a significant deficit in moisture availability due to lower than normal rainfall. http://www.ncdc.noaa.gov/paleo/drought/drght_what.html
3. According to the map of average annual precipitation in Georgia, the majority of the state receives _____ inches of precipitation each year.	**46-50**	http://www.srh.noaa.gov/ffc/images/gapcpn7.gif
4. According to the map below, some areas of the state of Georgia are experiencing exceptional drought.	**True**	The map indicates that some areas of the state are experiencing exceptional drought conditions. According to state climatologist, David Stooksbury on August 8, 2007, 37 out of 159 counties in Georgia were experiencing exceptional drought conditions (http://georgiafaces.caes.uga.edu/viewtext.cfm?id=3189).
5. How did a recent drought affect the survival of endemic striped bass, *Morone saxatilis,* in Lake Blackshear?	**Die offs occurred when the cold springs ceased to flow causing the lake temperature to rise.**	Endemic striped bass *Morone saxatilis* (Walbaum) populations in Gulf Coast rivers have declined since the 1940s as a result of adversely affected cool-water springs. Drought conditions based on rainfall and groundwater withdrawals caused some cool-water springs in Lake Blackshear to stop flowing.
6. Trees have developed methods of surviving long periods with little available water. Name the type of tree that drops its leaves in order to conserve water.	**Deciduous**	Trees have developed a series of prioritized strategies for reacting to drought conditions including the shedding of leaves. http://warnell.forestry.uga.edu/service/library/for99-010/index.html
7. For farmers, why isn't irrigation a good, permanent solution to drought?	**Both**	Both cost and water availability make irrigation an unrealistic permanent solution to drought.
8. Some scientists estimate that the drought in Australia is the worst that the country has seen in how many years?	**1,000 years**	

100% = 8 correct
87% = 7 correct
75% = 6 correct
62% = 5 correct
50% = 4 correct
37% = 3 correct
25% = 2 correct
12% = 1 correct

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LESSON 3

Question	Answer	Explanation
1. A scientist who studies the prevailing weather conditions of a place, including climate data, the analysis of causes of the differences in climate, and the application of climate data to the solution of specific problems is a/an	**Climatologist**	
2. Based on the severity of drought reflected by indicators of moisture, including groundwater levels, streamflows, reservoir levels, rainfall in the last 3, 6, and 12 months and expected precipitation in the next 90 days, the Georgia Department of Agriculture makes a decision to (or not to) put water-use restrictions in place.	**False**	This is the responsibility of the Environmental Protection Division (EPD) of the Georgia Department of Natural Resources.
3. What is it called when a scientist makes an "educated guess" to answer a research question such as, "How do we determine if Georgia is in a drought situation?"	**Hypothesis**	
4. The scientific inquiry process is complete when a scientist shares the research question and a hypothesis with the world?	**False**	After formulating a research question and hypothesis, a scientist develops a research plan or design to test the hypothesis, makes measurements or conducts tests to collect data under controlled conditions, analyzes and interprets data and finally communicates conclusions based on the data.
5. Scientists use a piezometer to read _____ and _____ within a soil sample.	**Water pressures and groundwater elevations**	Piezometers are tools that read water pressures and groundwater elevations within a soil sample.

100% = 5 correct
80% = 4 correct
60% = 3 correct
40% = 2 correct
20% = 1 correct

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LESSON 4

Question	Answer	Explanation
1. A water _____ is a term used by water managers to describe an accounting of where water originates and where and how it is used.	**Budget**	One of the most important steps in planning ahead is researching and understanding how much water is in a river system at any given time. Water budgets help managers understand if the river system is in balance (i.e., meeting the needs of humans and plants and animals) or if the river system is out of balance (i.e., too much water is being taken out for humans at the times critical for plant and wildlife survival).
2. Most Georgians get the water they use at home from a river system.	**True**	For nearly 81% of Georgia's population, the water we use at our homes is piped from a river system (including all lakes and reservoirs).
3. Water use can increase ____during the summer months as the result of outdoor watering.	**60%**	Daily household water use can increase 60% in summer months as the result of outdoor watering.
4. The water utility determines how much water your family uses by estimating how many people are in your house and the number of toilets.	**False**	Water meters allow water utilities to measure the amount of water the homes use for indoor and outdoor purposes.
5. Read the following selection from an expository composition. What organizational pattern did the writer use?	**Explanation**	The purpose of the exposition is to explain how to maintain healthy plants. "Explanation" is the organizational pattern used.
6. Estimate how much the household would pay for water in one year.	**$192.36**	1. 1750 gallons per week x 4 weeks in a month = **7000** gallons per month. 2. $2.29 per thousand gallons per month divided by 1,000 gallons = **$.00229** per gallon per month. 3. 7000 gallons per month x $.00229 per gallon per month = **$16.03** per month. 4. $16.03 per month x 12 months per year = **$192.36** per year.
7. The best time to water plants is in the heat of the day. That is when the water will reach the plants most effectively and efficiently.	**False**	You will only lose water to evaporation in the heat of the day.
8. Using pine straw, bark chips or ground hardwood mulch on the roots of plants and trees helps the soil retain _____.	**Water**	Organic mulches, such as pine straw, pine bark mulch, or shredded hardwood mulch, conserve water. These fine-textured mulches hold moisture in the soil, yet they are porous enough to allow water to infiltrate into the soil. http://www.conservewatergeorgia.net/pdf/medc_managing_water_wise_landscape.pdf

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