Name: Answer Key Date:

Your Drinking Water From the Source to Your Tap Video
Middle School Worksheet

Instructions: Watch the video to help you answer the below questions. Questions will cover concepts from the video as well as from class.

Question 1: How do you use water at home?

Possible Answers: drinking/hydrating, showering, bathing, cooking, cleaning dishes, washing hands, laundry, watering plants, washing car, going to the bathroom.

Question 2: What is a watershed?

Answer: An area where all the rain or water drains to the same place. This water could drain to a stream, river, lake, or ocean. It is similar to a bowl that collects water.

Question 3: The City of Raleigh has a Watershed Protection Program to contribute funds to conservation easements and conservation projects that protect our drinking water source. These projects conserve land to make sure the land around the streams, creeks, and lakes stay in a natural condition. These projects occur within our water supply watersheds. How does conserving land improve water quality?

Possible Answers:
- Improves/creates riparian buffers
- Reduces the amount of pollution from runoff entering streams.
- Reduces erosion of streams, as a result of vegetation slowing down runoff
- Creates habitat for aquatic life
- Trees create shade in streams and help keep temperatures down in the water, thus improving water conditions and conditions for aquatic life

Question 4: What organization created, owns, and operates Falls Lake?

Answer: The Army Corps of Engineers

Question 5: Which of the following is **not** a reason the reservoir Falls Lake was created?

- ☐ Wildlife habitat
- ☐ Recreation
- ☐ Flood control
- ☑ Hydroelectric power plant
- ☐ Water Quality
- ☐ Water Supply

Question 6: How does Falls Lake help prevent flooding of downstream communities?

Answer: During storms such as tropical storms and hurricanes, the water that comes into the lake during the storm can be held at the lake to help prevent flooding along the Neuse River downstream of the lake.

Question 7: Falls Lake provides 80% of Raleigh Water's drinking water. What is the other source of water?

- ☐ Lake Raleigh
- ☐ Lake Johnson
- ☐ Lake Lynn
- ☑ Lake Benson

Question 8: Do you think Falls Lake contains freshwater or saltwater?

Answer: Freshwater

Question 9: How many gallons of water a day does Raleigh Water provide to the City of Raleigh and surrounding areas?

- ☐ 10,000 gallons
- ☑ 52 million gallons
- ☐ 100 million gallons
- ☐ 500 million gallons

Question 10: What are the steps of water treatment used by Raleigh Water?

Step 1: Coagulation

Step 2: Flocculation

Step 3: Sedimentation

Step 4: Ozonation

Step 5: Filtration

Step 6: Disinfection

Question 11: Why is water treatment necessary?

Possible Answer: To remove suspended solids, viruses, bacteria, algae, minerals, pollutants, and other harmful substances that could be in the water. This ensures that the water is safe to drink.

Question 12: The pH of Raleigh Water's finished water (the water that has been cleaned at the water treatment plant and is ready to drink) is 8.42. Is this pH acidic or basic?

Answer: Basic

Question 13: Which has higher turbidity: lake water or drinking water?

Answer: Lake water

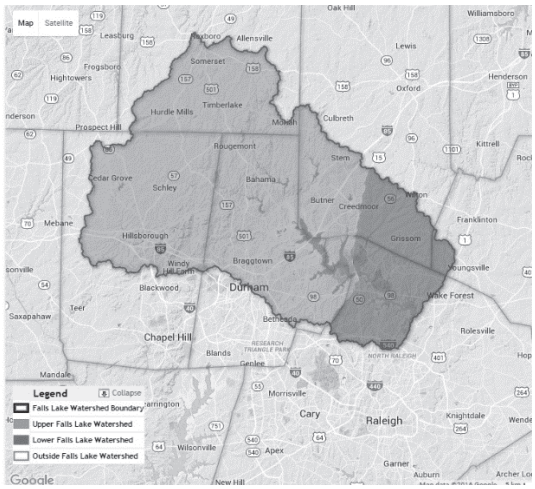
Question 14: What is something interesting you learned from the video?

Answer: Open-ended

Additional Information

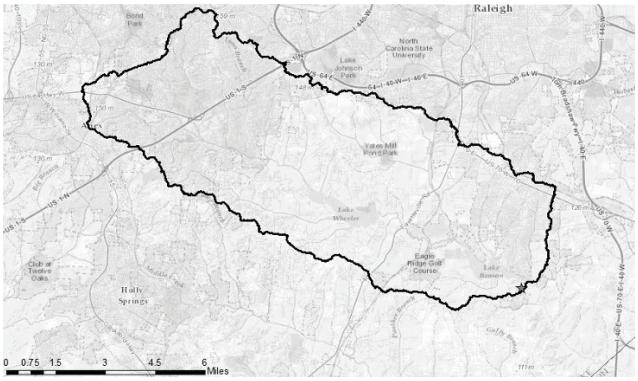
Maps:

Falls Lake Watershed Map:
Water within the shaded areas drains to Falls Lake.



Map of Falls Lake Watershed. Digital image. North Carolina Department of Environmental Quality, n.d. Web. <http://portal.ncdenr.org/web/fallslake/map>.

Swift Creek Watershed Map:
The Swift Creek Watershed can also be referred to as the Lake Benson Watershed.
The area within the bold line drains to Lake Benson.



Glossary:

- **Conservation Easement**: Land that is permanently protected from being developed. A land trust or government will hold the conservation easement.
- **Finished water**: Finished water, also known as treated water, is water that has been cleaned at the water treatment plant. This water is ready for customers to drink!
- **Water Distribution System**: Just as the name sounds, a water distribution system is how treated water is distributed to customers. Distribution systems include pipes, storage tanks, fire hydrants, water valves. Through Raleigh Water's distribution system, water is provided to Garner, Raleigh, Knightdale, Rolesville, Wake Forest, Wendell, and Zebulon.
- **Watershed:** An area where all the rain or water drains to the same place. The water could drain to a stream, river, lake, or ocean. The watershed is typically named after the waterbody where the water drains. It is similar to a bowl that collects water. The term watershed is synonymous with the term basin.