

A Watershed by the Numbers

Essential Question: What is a Watershed?

Objective: At the end of the lesson, the students will be able to explain “the numbers” as they relate to the Hillsborough River, using A Watershed by the Numbers reading sheet.

Standard(s):

MAFS.6.NS.2.2

Fluently divide multi-digit numbers using the standard algorithm.

MAFS.6.NS.2.3

Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

Materials:

- A Watershed by the Numbers reading sheet
- Bell work questions (found at the end of this lesson)
- 2 sheets of loose leaf notebook paper
- Pen or Pencil

Setup: None

Prep time: None

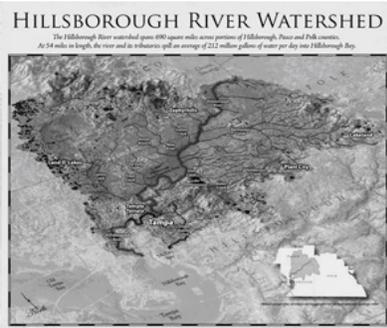
Lesson Duration: 50 minutes/ 1 class period

Directions:

1. The students fold notebook paper 3 times to make 8 sections.
2. Write one of the following numbers in each section (Use 850; 30 million; 14; 40; 57; 4; 6 million; and 32).
3. Students should make note of how each number applies to the watershed as they review A Watershed by the Numbers sheet, either individually or as a class.

Assessment: Completion of bell work.

A Watershed by the Numbers



The Watershed

Source: SWFWMD

The Hillsborough River flows 57 miles from its origin to Tampa Bay. The main channel of the Hillsborough River originates in the area water managers call the **Green Swamp**.

The Swamp

When people say the Green Swamp is “authentic Florida,” they mean that the Green Swamp looks like what they think Florida should look like. The Green Swamp is located about 40 miles northeast of Tampa Bay. It is one of Florida’s most important **wetlands**.



The Green Swamp

Source:

The Green Swamp is an area of 850 square miles of special beauty where we can study Florida’s **environment**. Like other wetland areas, the Green Swamp provides a home and food for fish and wildlife. Among the animals living there are storks, eagles, alligators and bears. These are species that are in danger of dying out if they are not protected.

The Green Swamp helps us manage our water supplies in many ways. It helps to hold back flood waters. It also stops soil from being washed away. Water quality is improved in the Green Swamp because it helps get rid of floating dirt, chemicals and pollution.



Green Swamp

But the Green Swamp is important to us for another reason. Rainwater drains across the surface to create the **headwaters** of four major rivers in our area. Rainwater also trickles down through the soil to replenish the **Floridian aquifer** system, the primary source of drinking water for most Floridians. Because the Green Swamp region is elevated above outlying areas and the underground **aquifer** rises very close to the land surface, the region functions as the pressure head for the aquifer. Protecting the Green Swamp is vital to protecting the quality and quantity of Hillsborough County’s water supply. Scientists say that, next to rainfall, the Green Swamp is our most important source of water.



Crystal Springs

Source: SWFWMD

Land, like the Green Swamp in Florida, has been disappearing. Since about 1955, more than six million acres of wetlands have been dried out and used for building or farming.

Crystal Springs

Just south of CR 39 in Pasco County, the swamp flow of the river is joined by approximately 30 million gallons of water a day which comes out of the aquifer at Crystal Springs.

The Creeks

The river collects water of lesser quality from a large area through its **tributary** creeks. Blackwater Creek drains the eastern portion of the **watershed**. Flint Creek collects water, including treated wastewater, from Plant City then passes through Lake Thonotosassa and flows into the river.



Trout Creek

Trout Creek collects storm water runoff from the fast growing area in the northern portion of the watershed. Human activities at the very edges of the watershed have had an impact on the water quality within the river.

Nature's Classroom

This outstanding outdoor environmental education classroom is located 32 miles downstream from the Green Swamp.

The Tampa Bypass Canal

The Tampa Bypass Canal (TBC) is a 14-mile waterway that connects the Lower Hillsborough River Preserve with McKay Bay. The canal provides flood protection for the cities of Temple Terrace and Tampa by diverting floodwaters from the Hillsborough River. The canal is also a water supply source for the city of Tampa.



Bypass Canal

Source: SWFWMD

**Bell Work**

Directions: Solve the following problems. Show your work.

1. The Hillsborough River is 57 miles long. Nature's Classroom lies 32 miles downstream from its origin in the Green Swamp. Express the distance from Nature's Classroom to the Mouth of the River as a decimal and a fraction.
2. Scientists from the Southwest Florida Water Management District have installed a stream gauge at Nature's Classroom. On June 9, the river level at the gauge was 19.50 ft. above sea level. On July 9, the level was 22.20 ft. above sea level. Show the change in the level of the river during this 30 day period as a percent of the June 9th level.