

GRADES 3-5

# THE ADVENTURES OF THE SWFWMD HYDROFORCE

## IN "FLORIDA'S BURIED TREASURE"

Southwest Florida  
Water Management District

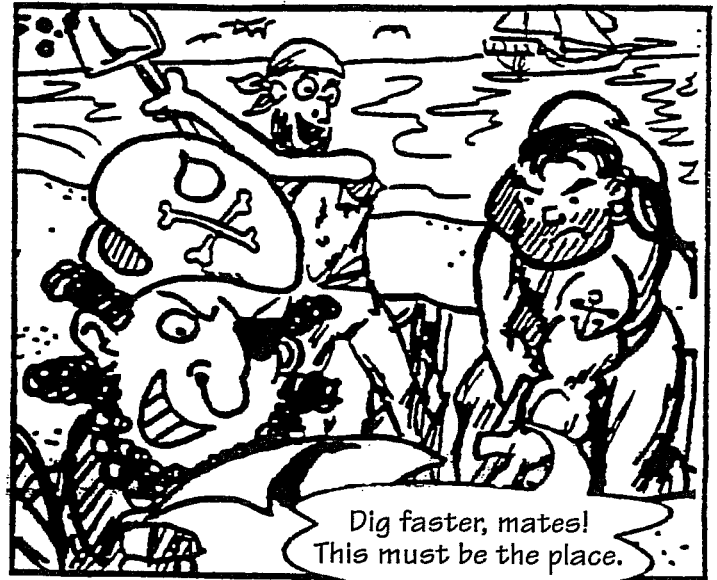
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One day the SWFWMD Hydroforce saw something strange on the beach...

Look! Those guys look like pirates!

What are they doing?



Dig faster, mates! This must be the place.

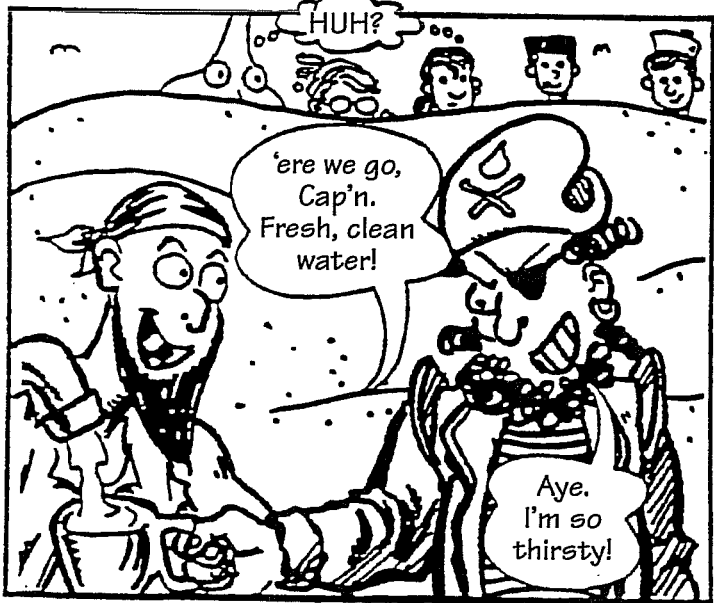
They must be digging for buried treasure.

What should we do?



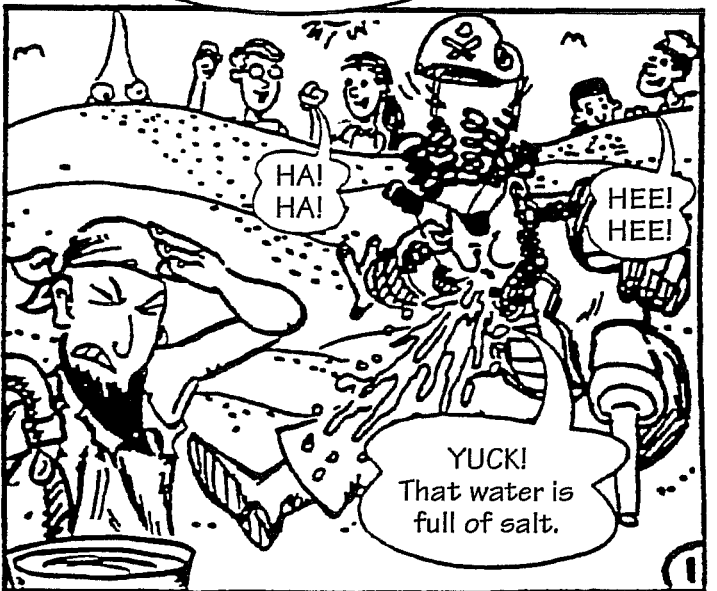
HOORAY! We found it.

Good work. Now quickly, set up the pump.



'ere we go, Cap'n. Fresh, clean water!

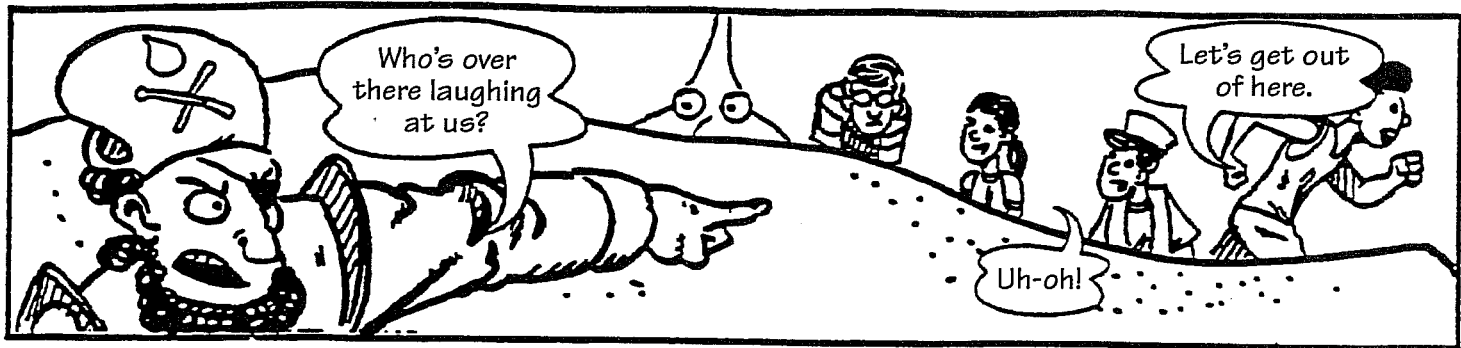
Aye. I'm so thirsty!



HA! HA!

HEE! HEE!

YUCK! That water is full of salt.



Follow the SWFWMD Hydroforce through their neighborhood. Notice some of the ways water is used. Name 10 more.



**FAUCETS**  
3 gallons per minute

**HOSES**  
10 gallons per minute

**FIRE HYDRANTS**  
500-3,000 gallons per minute

**WASHING MACHINES**  
55 gallons per load

**CAR RADIATOR**  
5-10 gallons

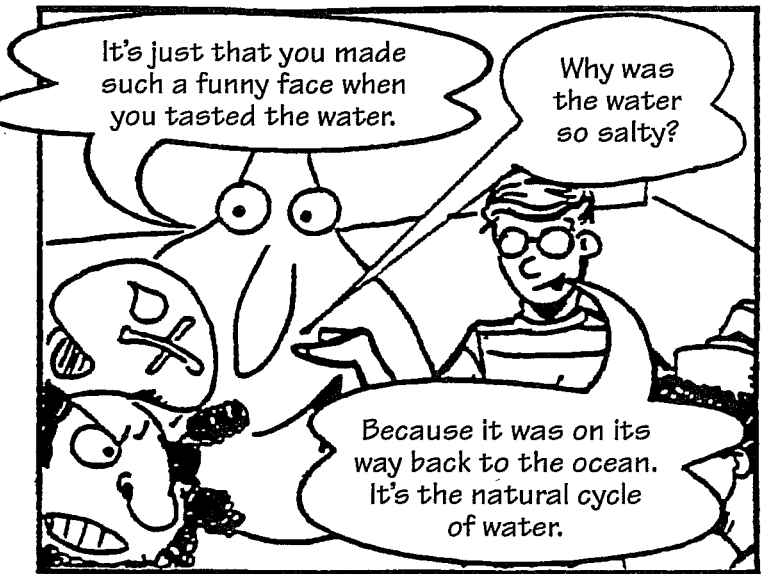
**CAR WASHES**  
10-40 gallons per wash

**DRINKING**  
8 glasses per day

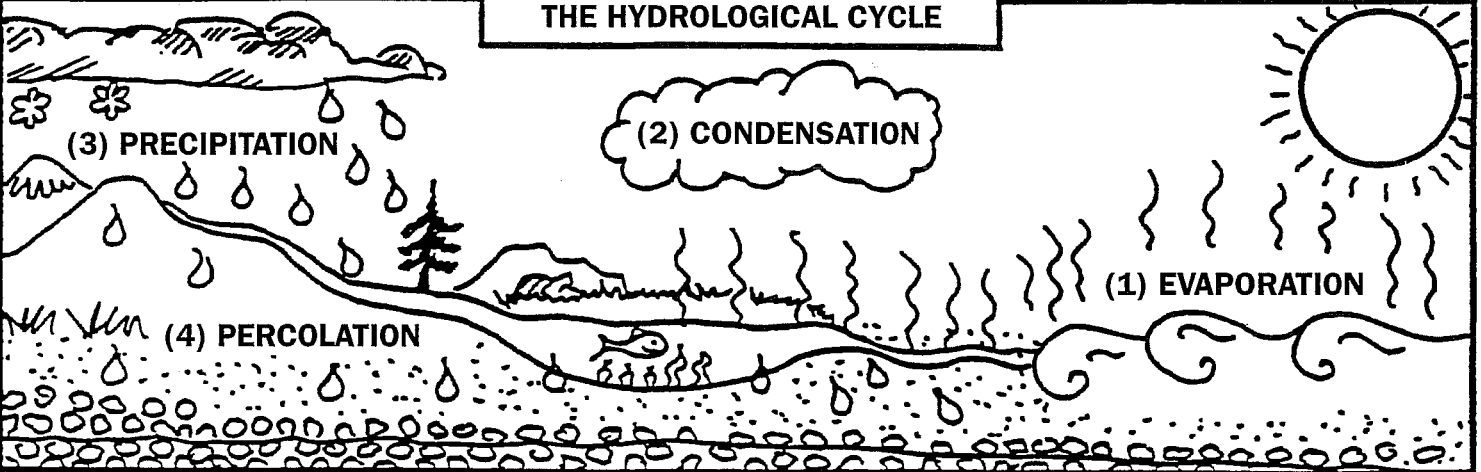
**POWER PLANT**  
3/4 gallon per kilowatt hour

**SWIMMING POOLS**  
15,000 gallons

**HYDROFORCE H.Q.**

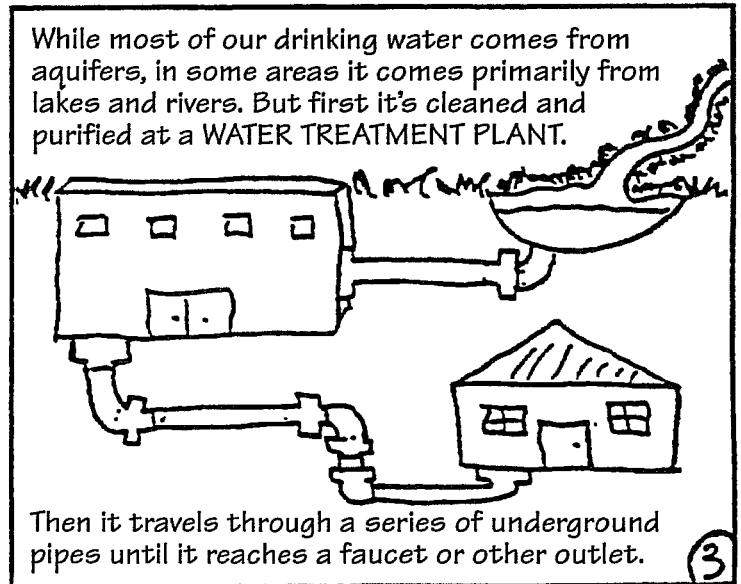
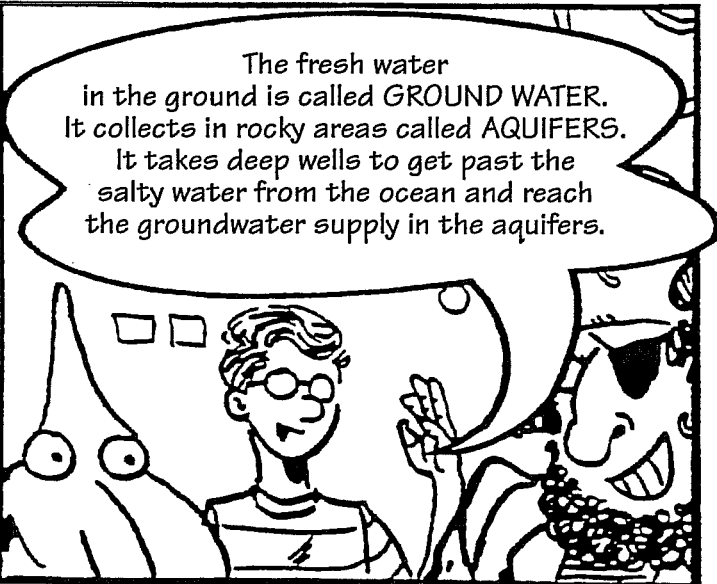


**THE HYDROLOGICAL CYCLE**



Number the correct step to its definition.

- \_\_\_\_\_ As water vapor rises, it cools and condenses into tiny droplets that cling together.
- \_\_\_\_\_ The sun heats the water and changes it from a liquid into a gas called water vapor.
- \_\_\_\_\_ All water flows downhill and slowly seeps into the ground wherever it is porous.
- \_\_\_\_\_ When droplets connect, they grow into drops and are pulled down by the Earth's gravity.



Then it travels through a series of underground pipes until it reaches a faucet or other outlet. **3**

This map shows Florida with lots of freshwater lakes and swamps and rivers. What happened?

That's an old map. Florida has changed. Nowadays we have a huge population. Many of the wetlands were drained and filled in to make room for houses, schools, stores, streets, parking lots and sidewalks.

**Unjumble the letters to form the names of seven bodies of water.**

- skale \_\_\_\_\_
- esrrvi \_\_\_\_\_
- raessiteu \_\_\_\_\_
- ascone \_\_\_\_\_
- passmw \_\_\_\_\_
- trewasferh  
serhmas \_\_\_\_\_
- wstaarelt  
samhers \_\_\_\_\_

**Place the number of the body of water on the map of Florida where you might find this type of water.**

Answers  
1. lakes 2. rivers 3. estuaries 4. oceans 5. swamps 6. freshwater marshes 7. saltwater marshes

The materials used for these structures prevent our rainfall from seeping into the ground. Most of our 53 inches of rainfall a year either evaporates or runs off into the ocean.

That's one reason why our groundwater supply is so low. And, if we keep pumping water out of an aquifer that's too low, the ocean water can move in and ruin that supply of fresh water for years!

That's why we started a water saver's club. It's called the SWFWMD Hydroforce! We like to save water and teach others how to do the same. We even have a secret code word, SWA SWA.

SWA SWA? What does it mean?

4



Well, Lefty left the faucet running whenever he brushed his teeth!  
 (1) 5 mins. X 3 gpm = \_\_\_\_\_

Silly washed only one pair of pants at a time!  
 (3) 55 gal. x 1 pair of pants = \_\_\_\_\_

Goofy took long showers!  
 (2) 7 gpm x 1 hr. = \_\_\_\_\_

Hazy watered the garden for 30 min. in the hot sun and 1/3 evaporated!

Glutton filled the bathtub too full!  
 (4) 1 tub x 36 gal. = \_\_\_\_\_

Lazy never fixed his leaky faucet!  
 (6) 20 gpd x 1 week = \_\_\_\_\_

Piggy took too much to drink and threw half of it away!  
 (7) 8 oz. ÷ 2 = \_\_\_\_\_

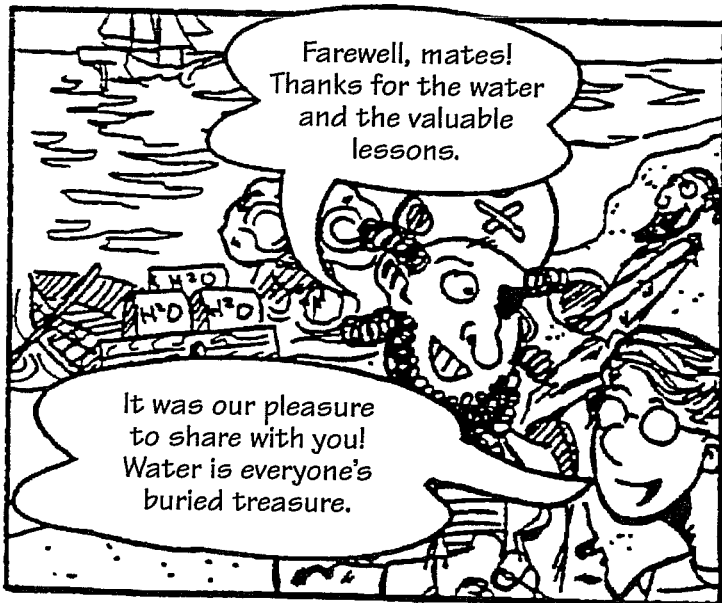
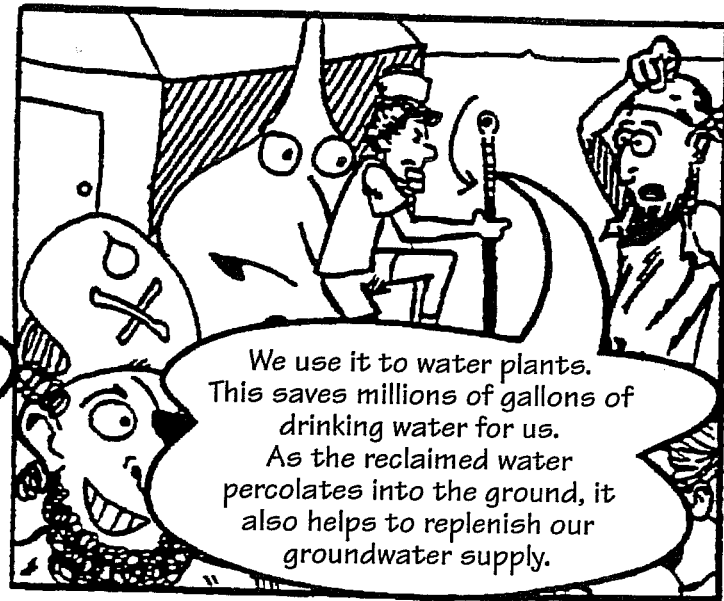
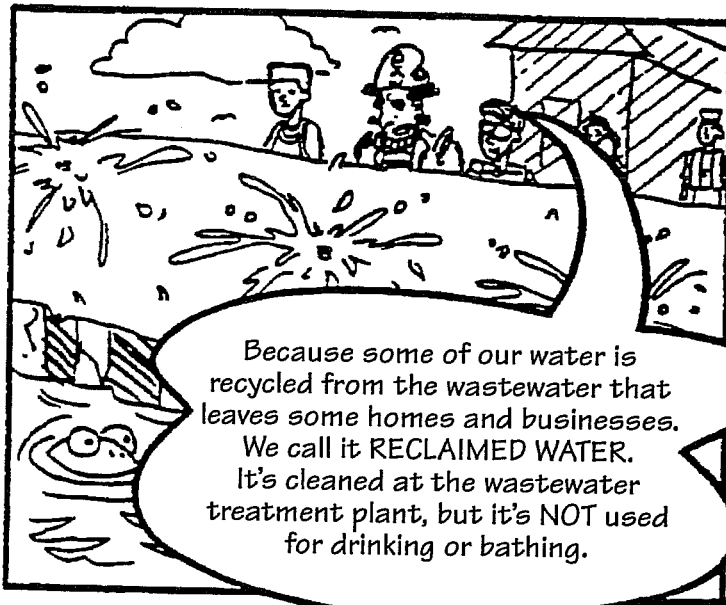
Waster threw his trash in the toilet instead of in a trash can!  
 (8) 6 gal. per flush x 3 flushes = \_\_\_\_\_

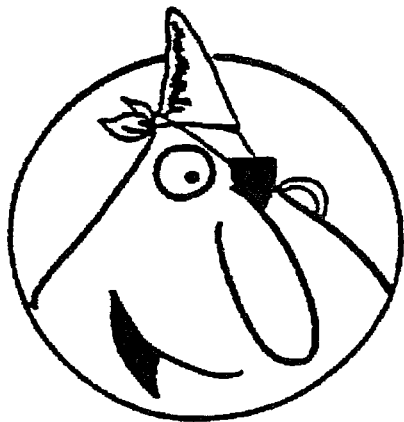
Scruffy always forgot to turn off the hose!

(9) 600 gph x 8 hrs. = \_\_\_\_\_

gpm = gal. per min.  
 gpd = gal. per day  
 gph = gal. per hr.

Answers (1) 15 gal. (2) 420 gal. (3) 55 gal. (4) 36 gal. (5a) 300 gal. (5b) 100 gal. (6) 140 gal. (7) 4 oz. (8) 18 gal. (9) 4,800 gal.





Saving water is a family job.  
Take the SWFWMD Hydroforce Quiz  
with your family and friends.  
Circle all the answers that help save water.

**1. When I brush my teeth, I should:**

- (a) leave the faucet running
- (b) fill a cup with water to rinse
- (c) turn the faucet off while brushing
- (d) brush my teeth in the shower

**2. When I take a bath, I should:**

- (a) fill the bathtub half full
- (b) wear my clothes to wash them
- (c) throw the used water on the plants
- (d) play with my rubber ducky

**3. When I get a drink of water, I should:**

- (a) let the water run until it gets cold
- (b) keep a jug of water in the fridge
- (c) take more than I can drink
- (d) not swallow

**4. When I take a shower, I should:**

- (a) get clean in 5 minutes or less
- (b) let the water run an hour to get hot
- (c) share my shower with my dog
- (d) use a low-flow showerhead

**5. I should flush the toilet:**

- (a) to get rid of bugs
- (b) only when I need to
- (c) to get rid of trash
- (d) to waste 6 gallons of water

**6. When toilets, faucets or pipes leak, I should:**

- (a) ask my parents to move to a new house
- (b) ask my parents to fix them
- (c) count the drops wasted
- (d) ignore it

**7. When the dishwasher or washing machine is running, I should make sure:**

- (a) the machine has a full load
- (b) I am nowhere to be found
- (c) the items are really dirty
- (d) the soap is safe for the environment

**8. When I clean the driveway, I should:**

- (a) use a broom
- (b) use the hose
- (c) use the toothbrush
- (d) use a lawn and leaf blower

**9. When I wash my parents' car, I should:**

- (a) leave the hose running
- (b) use a bucket and sponge
- (c) wash it on the grass
- (d) use a hose with a shutoff spray nozzle to wet and rinse

**10. In the swimming pool, I should:**

- (a) cover it to stop evaporation
- (b) splash water out on the pool deck
- (c) overfill it with the hose
- (d) remind my parents to clean the filter often

Answers: (1) b, c (2) a, c (3) b (4) a, d (5) b (6) b (7) a, c, d (8) a, d (9) b, c, d (10) a, d

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