

ADD IT UP!

OUTCOME: WHAT STUDENTS WILL LEARN

- A water utility is a business.
- How customers pay for water.
- How a water meter works.
- How to calculate a water bill.

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CORE CONTENT STANDARDS

Math

- MA-E-1.1.1 Whole numbers, fractions, mixed numbers and decimals through thousandths.
- MA-E-1.1.2 The operations of addition, subtraction, multiplication and division.
- MA-E-1.2.2 Add, subtract, multiply and divide whole numbers using a variety of methods.
- MA-E-3.1.3 The process of using data to answer questions.
- MA-E-3.2.1 Pose questions that can be answered by collecting data.
- MA-E-3.2.2 Construct and describe data.
- MA-E-3.2.3 Construct and interpret displays of data.
- MA-E-3.2.5 Make predictions and draw conclusions based on data.
- MA-E-3.3.1 How data is used to draw conclusions.

Social Studies

- SS-E-3.1.2 Consumers use goods and services to satisfy economic wants and needs.
- SS-E-3.4.1 Producers create goods and services; consumers make economic choices about which ones to purchase.

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Why a Meter?

A water **utility** is a **business**. It costs money to treat and deliver clean and safe drinking water to you, the **consumer**. The water utility collects money from you, the consumer, in order to cover these costs. That's why you pay a water bill.

When Louisville Water Company first began, the water bill was on the "honor system." An **assessor** would come to your home and count the number of faucets in your home, how many people lived in your house, and how many animals you owned. He'd **assess** a water rate, and you'd travel down to the main water office twice a year to pay it! You paid \$3.00 for the first room that had a faucet and then 60¢ for each additional room. If you owned a cow, you'd pay \$1.00!

In 1920 Louisville Water Company began installing water meters to measure how much water a customer actually used. It took some time to install the meters – World War I took away many of our employees. By the time water meters were finally installed in the '40's World War II took away our employees again. We only had enough employees to read the meters every other month. It's for that reason that you only receive a water bill every other month.

How Does It Work?

A water meter ensures equity. It measures **consumption**, the amount of water you use. The meter is located in a vault usually near the edge of your property. It will have a brown lid that says "Louisville Water Company." The meter is connected to the water main on the street and the service line on your property. The meter has a chamber inside. As water moves through this chamber, a magnetic dial starts turning, measuring the water you use.



Meter Readers

Louisville Water Company has **employees** whose job it is to read water meters. We have over 260,000 water meters in our system. Each **meter reader** will read about 500 meters a day! The employee uses a special key to lift the meter lid and reads a set of numbers. We read the meter every two months and then send you a bill. We also use radio signals to read water meters in rural areas. A special device attached to the meter sends a signal to a receiver in the meter reader's vehicle. The employee can drive by homes to get the reading. This saves time when the homes are far apart.

The Water Bill

You receive a bill from Louisville Water Company every two months. The bill includes charges for water and sewer. (We also bill for the Metropolitan Sewer District.) Everyone pays a **service charge** for having the water service. This is a **fixed expense**, it does not change.

You also pay for the amount of water you use. We bill in units of 1,000 gallons. The cost for the amount of water used is not a flat rate. It varies depending upon the total amount you use and the elevation of your home. The more you use, the more you pay (per 1,000 gallons). See the box below.



On average a household with four people (two adults, two children) will use 8,000 gallons per month. A national study found most of the water used at home is outdoors. Households with teenagers have a higher water usage!

BI-MONTHLY WATER CHARGES

For Jefferson County



You pay \$9.50 service charge

Each 1,000 gallons cost \$1.70 for 1,000-6,000 gallons

Each 1,000 gallons cost \$1.86 for 7,000-12,000 gallons

Each 1,000 gallons above 12,000 cost \$2.10

WATER WORDS

Assessor: Person who assesses.

Assess: to determine the rate or amount of.

Business: an activity that supplies a service to others.

Consumer: person who consumes or uses something.

Consumption: the process of using something.

Employees: people who work for someone, for money.

Fixed expense: a cost that does not change; it is not affected by how much product you use.

Meter reader: a person whose job it is to read water meters.

Service charge: a fee you pay for having a service.

Usage: the amount being used.

Utility: a service such as light, power or water provided by a public business.

Water meter: device that measures water usage.



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Activity #1: The Water Bill

Objective:

Students will understand how the water bill works.

Time:

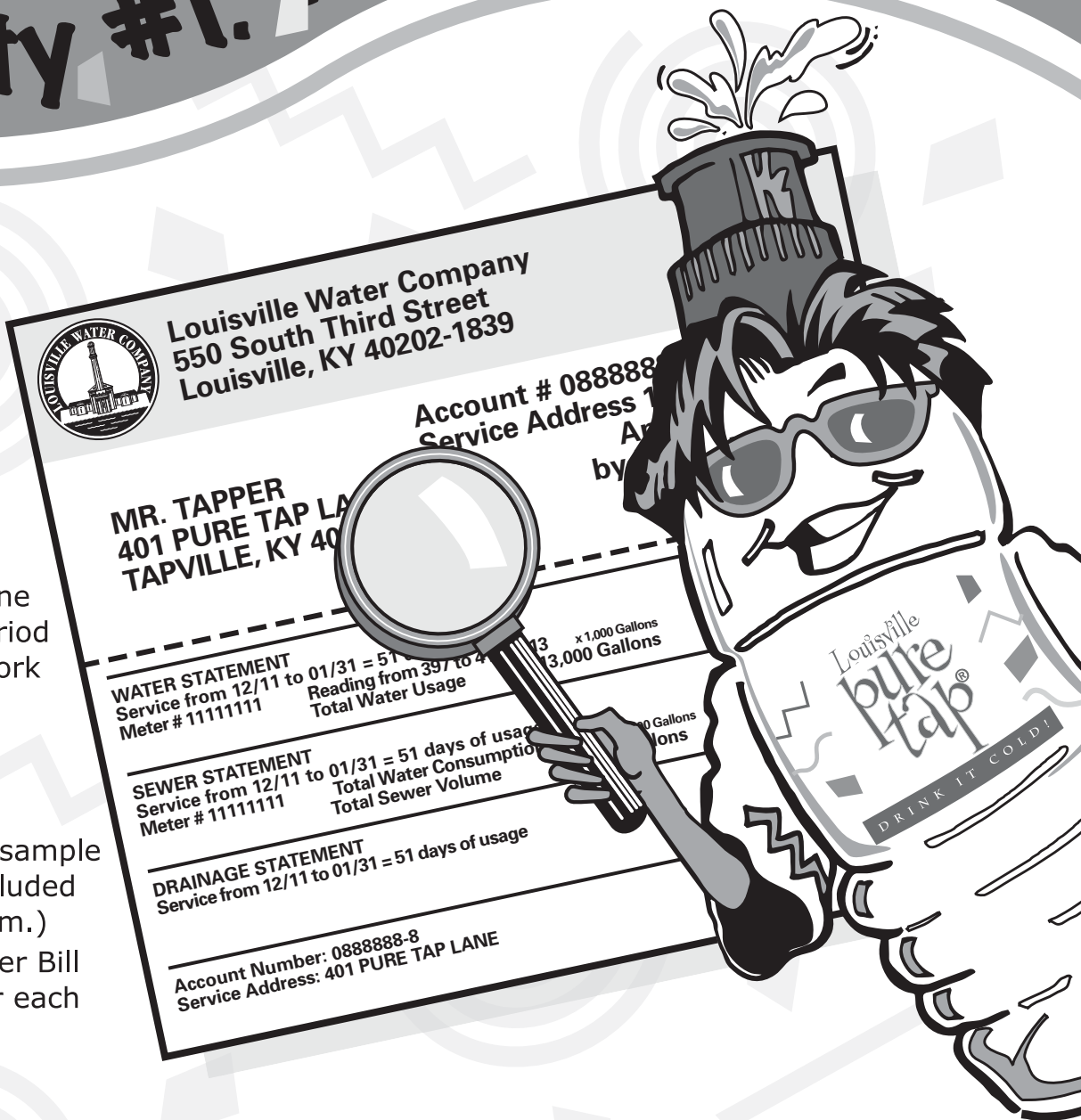
This can be done in one class period or as a homework assignment.

You'll need:

- Copies of the sample water bill (included with curriculum.)
- Copies of Water Bill Worksheet for each student.

Here's what to do...

1. Have students brainstorm what kinds of bills their families receive.
2. Explain how the water bill works: Louisville Water Company bills you for the water you use every two months. You pay a service charge for the water service, no matter how much water you use. The water company bills you based on every 1,000 gallons of water you use. Louisville Water Company also bills for the Metropolitan Sewer District. (The sewer charges are based on the water you use.)
3. Have students use the water bill to answer the questions on the worksheet.





Louisville Water Company
 550 South Third Street
 Louisville, KY 40202-1839

Account # *08211-03*

Service Address *521 Sunny Court*

Amount Due by 3/28
\$77.72

Amount Due after 3/28
\$81.60

To avoid late charges:

- Mail payment at least seven business days prior to the due date
- Pay at any Fifth Third Bank at least five business days prior to the due date.

AMOUNT PAID

*Kelley Minor
 521 Sunny Court
 Louisville, KY 40251*

LOUISVILLE WATER COMPANY
 PO BOX 32460
 LOUISVILLE KY 40232-2460

Return top portion with payment

WATER STATEMENT

Louisville Water Company (502) 583-6610

Service from 01/04 to 02/25 = 52 days of usage

Meter #74047751 Reading from 257 to 268 =11 x 1,000 Gallons
 Total Water Usage =11,000 Gallons

Item	Amount
Current Water	\$33.63
TOTAL WATER CHARGES	\$33.63

SEWER STATEMENT

Metropolitan Sewer District (502) 587-0603

Service from 01/04 to 02/25 = 52 days of usage

Total Water Consumption =11 x 1,000 Gallons
 Total Sewer Volume =11,000 Gallons

Item	Amount
Sewer Service Charge	\$14.04
Current Sewer	\$21.23
TOTAL SEWER CHARGES	\$35.27

DRAINAGE STATEMENT

Metropolitan Sewer District (502) 587-0603

Service from 12/29 to 02/25 = 58 days of usage

Item	Amount
Current Drainage-Bimonthly	\$8.82
TOTAL DRAINAGE CHARGES	\$8.82

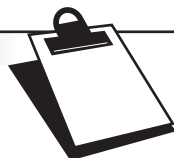
Account Number: 0841104-3

Service Address: 521 Sunny Court

Last payment of \$104.65 on 01/24/2005

Item	Amount
Total Current Charges	\$77.72
Previous Balance	\$.00
TOTAL STATEMENT CHARGES	
DUE BY 03/28/2005	\$77.72
DUE AFTER 03/28/2005	\$81.60

MESSAGES



FREE! Deduct future bills from your bank account on the day of your choosing. Need information? Contact Customer Service, 583-6610

Activity #1: The Water Bill

1. What is the name and address of the person receiving the bill?

2. How many days of water service does the bill include?

3. How many gallons of water did the household use? _____

What was the cost for the water? \$ _____

4. What is the total amount due? \$ _____

Is it different than your answer on line 3? _____

Why or why not? _____

5. Who does the family pay for the water? _____

6. When is the due date for the bill? _____

7. What happens if the bill is not paid on time? _____



ADD IT UP!

Check out these opportunities to keep the learning flowing!



Louisville Water Company Opportunities:

A LWC meter reader can describe what it's like to read 500 water meters every day! Call the Public Information Office at 569-3600 to schedule a visit.

www.tappersfunzone.com Click on "Teacher Tools" for a supplement to this section.

Extra, Extra!!!