**Lower Elementary:**

*Question:* Susan and her parents are making a disaster survival kit. Each of them needs 2 gallons of water per day. How much water does Susan’s family need in a survival kit to last 5 days?

**Upper Elementary:**

*Question:* Women in Gambia often need to transport large containers of water over great distances so that their families have safe water to drink. Siabatou has a container that holds 5 gallons of water. Each gallon weighs 8½ pounds. The container itself weighs 2½ pounds. How much does Siabatou’s container weigh when it’s full?



**Middle School:**

*Question:* A bathroom sink runs at 2.25 gallons per minute. Daisy uses a cup of water total each time she brushes her teeth. Jack leaves the faucet running for the full 3 minutes it takes him to brush and rinse. How much more water does Jack use each day if both of them brush their teeth 3 times a day?

**Algebra and Up:**

*Question:* In Sunnydale, the price of water is $1.50 per thousand gallons. Residents of Rainwood are charged a base fee of $9.90 and an additional $0.25 per thousand gallons of water used. Write an equation to find the amount of water that will cost the same amount in both Sunnydale and Rainwood.

**Lower Elementary:**

*Question:* Susan and her parents are making a disaster survival kit. Each of them needs 2 gallons of water per day. How much water does Susan’s family need in a survival kit to last 5 days?

*Answer:* 30 gallons

*Solution:* Each person needs 2 gallons of water, five times. That’s 2 × 5 = 10 gallons of water each. Since there are 3 people in Susan’s family, they need 10 gallons, three times. That’s 10 × 3 = 30 gallons of water altogether.

**Upper Elementary:**

*Question:* Women in Gambia often need to transport large containers of water over great distances so that their families have safe water to drink. Siabatou has a container that holds 5 gallons of water. Each gallon weighs 8½ pounds. The container itself weighs 2½ pounds. How much does Siabatou’s container weigh when it’s full?

*Answer:* 45 pounds

*Solution:* First, we need to find out how much 5 gallons of water weighs. If each gallon weighs 8½ pounds, then 5 gallons weighs 8½ × 5 = 42½ pounds. Next, we need to add the weight of the container itself: 42½ + 2½ = 45 pounds altogether.



**Middle School:**

*Question:* A bathroom sink runs at 2.25 gallons per minute. Daisy uses a cup of water total each time she brushes her teeth. Jack leaves the faucet running for the full 3 minutes it takes him to brush and rinse. How much more water does Jack use each day if both of them brush their teeth 3 times a day?

*Answer:* 321 cups of water, or 20 gallons and 1 cup

*Solution:* Jack leaves the faucet running for 3 minutes, 3 times a day. That’s 9 minutes. That means he uses 2¼ × 9 = 21¼ gallons of water to brush his teeth each day. Next, we need to know how many cups that is. There are 16 cups in a gallon, so Jack uses 20¼ × 16 = 324 cups of water. That’s 324 – 3 = 321 more than Daisy.

**Algebra and Up:**

*Question:* In Sunnydale, the price of water is $1.50 per thousand gallons. Residents of Rainwood are charged a base fee of $9.90 and an additional $0.25 per thousand gallons of water used. Write an equation to find the amount of water that will cost the same amount in both Sunnydale and Rainwood.

*Answer:* 1.5(***w*** /1,000) = 9.90 + 0.25(***w*** /1,000), ***w*** =7,920 gallons of water

*Solution:* We can use the expression 1.5(***w*** /1,000) to represent the price of water in Sunnydale and 9.90 + 0.25(***w*** /1,000) to represent the price of water in Rainwood. If we set them equal to each other and solve for ***w***, we find that 7,920 gallons of water costs the same amount ($11.88) in both places.