**Lower Elementary:**

*Question:* Susan and her parents are making a disaster survival kit. Each of them needs 8 litres 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 20 litres of water. Each litre weighs 1 kilogram. The container itself weighs 1½ kilograms. How much does Siabatou’s container weigh when it’s full?



**Middle School:**

*Question:* A bathroom sink runs at 8½ litres per minute. Daisy uses 250 millilitres 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 litres. Residents of Rainwood are charged a base fee of $9.90 and an additional $0.25 per thousand litres 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 8 litres of water per day. How much water does Susan’s family need in a survival kit to last 5 days?

*Answer:* 120 litres

*Solution:* Each person needs 8 litres of water, five times. That’s 8 × 5 = 40 litres of water each. Since there are 3 people in Susan’s family, they need 40 litres, three times. That’s 40 × 3 = 120 litres 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 20 litres of water. Each litre weighs 1 kilogram. The container itself weighs 1½ kilograms. How much does Siabatou’s container weigh when it’s full?

*Answer:* 21½ kilograms

*Solution:* We know that the water weighs 20 kilograms. Next, we need to add the weight of the container itself: 20 + 1½ = 21½ kilograms altogether.



**Middle School:**

*Question:* A bathroom sink runs at 8½ litres per minute. Daisy uses 250 millilitres 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:* 71 750 millilitres, or 71¾ litres

*Solution:* Jack leaves the faucet running for 3 minutes, 3 times a day. That’s 9 minutes. That means he uses 8½ × 9 = 72½ litres of water to brush his teeth each day. Next, we need to know how many millilitres that is. There are 1000 millilitres in a litre, so Jack uses 72½ × 1000 = 72 500 millilitres of water. That’s 72 500 – 750 = 71 750 millilitres more than Daisy.

**Algebra and Up:**

*Question:* In Sunnydale, the price of water is $1.50 per thousand litres. Residents of Rainwood are charged a base fee of $9.90 and an additional $0.25 per thousand litres 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*** /1000) = 9.90 + 0.25(***w*** /1000), ***w*** =7920 litres of water

*Solution:* We can use the expression 1.5(***w*** /1000) 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 7920 litres of water costs the same amount ($11.88) in both places.