

TEACHER KEY

Standby Power Worksheet

1. What is standby power?

Standby power occurs when a device isn't performing its main function but is still drawing power. The device may be off or in standby mode.

2. Based on the descriptions, check the devices that probably use standby power:

- A coffee maker that has a clock display.**
- A lamp with an on-switch on the cord.
- A stereo with a remote control.**
- A fish tank light that changes color when it's on.
- A game console (like a Playstation) that displays a red light when off.**
- A curling iron with an on-off switch and heat control.
- A power strip that has a lighted on-off switch.**
- A cell phone charger that feels warm to the touch all the time.**
- A computer that turns on quickly when you move the mouse.**

3. If a family's standby power usage is 8% of their total energy use and their average monthly bill is \$100, how much money could they save in one year by reducing their standby power use by 3%? (Show your work.)

$$\$100 \times 12 \text{ mo} = \$1200 \text{ in a year}; \quad \$1200 \times 0.03 = \$36$$

(There are a number of ways to work this one out, take all logical steps.)

4. If a family's standby power usage is 15% of their total energy use and their average monthly bill is \$150, how much money could they save in one year by reducing their standby power use by 5%? (Show your work.)

$$\$150 \times 12 \text{ mo} = \$1800; \quad \$1800 \times 0.05 = \$90$$

5. Let's assume the average family in the US has an average monthly electric bill around \$100 and 10% of that is used for standby power. There are around 130,000,000 (130 million) homes in our country. Using that information, how much money is being spent each year in the US on standby power? (Show work.)

$$\$100 \times 12 \text{ mo} = \$1200 \text{ in a year} \times 0.10 = \$120 \text{ per year per family}$$

$$\$120 \times 130,000,000 = \$15,600,000,000 \quad (\text{That's } 15.6 \text{ BILLION dollars!})$$