

# Energy Savings from Recycling

In this week's lesson, "Why Recycle?", you learned that recycling preserves natural resources, conserves water, and saves a lot of energy! In this week's short activity, you'll calculate how much energy recycling really saves, and what that means in real life.

## SHORT STORY MATH CHALLENGES

(answers provided at the bottom of page)

1. Recycling ONE aluminum can saves enough energy to power 5.2 hours of one laptop! **How many hours of a laptop would you power if you recycled 50 aluminum cans?**
2. If you recycle 10 glass bottles, it will save enough energy to power 20.9 hours of one laptop. **How many hours does 1 glass bottle power?**
3. **Which saves more energy, recycling one aluminum can or recycling one glass bottle?**
4. In 2017, Colorado recycled and composted 2,102,083 tons, which saved 1,642,981 tons of carbon emissions. **If Colorado residents increased the tonnage they recycled and composted by 10%, how many total tons of carbon emissions would be saved?**
5. Saving one ton of carbon emissions is the same as taking 0.216 cars off the road for one year. **Currently, Colorado saves 1,642,981 tons of carbon emissions, which is equivalent to taking how many cars off the road for one year?**

To learn more about the energy savings of recycling, go to <https://www.epa.gov/sites/production/files/widgets/iwarm-skinny.html> and calculate the energy savings of different recyclable materials.

Answers:

1. Recycling 50 aluminum cans would provide power to a laptop for 260 hours (50 cans x 5.2 hours of power)
2. One glass bottle recycled saves enough energy to power a laptop for 2.09 hours (20.9 hours/10 bottles = 2.09)
3. Recycling one aluminum can saves more energy than recycling one glass bottle.
4. 1,807,286.88 total tons of carbon emissions saved. First, find the amount of carbon saved per ton recycled (1,642,981/2,102,083 = .7816 tons of carbon saved per ton recycled). If tons recycled increases by 10%, then Colorado would recycle 2,312,291.30 tons (2,102,083 x 1.10). The amount of carbon emissions saved if Colorado increases tons recycled by 10% would be 1,807,286.88. (2,312, 291.30 x .7816)
5. 354,883 cars (1,642,981 tons x 0.216 cars)