

Energy saving program for students

QUICK START GUIDE

Who:

• You and your student(s), in partnership with the City of Fort Collins Utilities.

What:

• An educational, energy conservation program that encourages students to be more mindful of their at-home electricity usage.

When:

• 3 weeks of your choosing

Where:

• Your home!

Why:

• Developing energy-saving habits at a young age encourages students to be mindful of their Utility use, helping Fort Collins to reduce our City's carbon footprint and help families save on their monthly Utility bill.

What You Need:

• A printer, a bunch of household items to use as counting "tokens", a jar or bowl, and this guide which will walk you through activities. That's it.





Energy saving program for students

Kindergarten

Hello there, adult of a student,

Thank you for downloading Voltbusters! This is a three-week program that is fun and easy, and encourages students develop energy saving habits to reduce electricity use at home. No special materials are needed. Voltbusters is easily integrated into your student's current homeschool curriculum. Plus, you'll have the added benefit of saving on your monthly Utility bill. The next few pages will give you everything you need to get started.

Each week, your students will be awarded points for every energy conserving action they perform, such as switching off a light when they leave the room. The Point Tracking sheet on page five highlights all the actions your student can take to earn points and will help you keep track of individual actions across each of the three weeks. Voltbusting families just like yours across Fort Collins will be participating, reducing our City's carbon footprint and saving money for their households.

This program was created the City of Fort Collins Utilities education team and has been well received by hundreds of students in their classrooms across the Poudre School District over the past four years. We have based *@Home Voltbusters* on that successful program to support our community's families.

We're here to support you! If you have a question, need additional resources or activities, or just want to chat with our education team, please email Taylor Blomquist, Education Specialist at <u>tblomquist@fcgov.com</u>

Warm regards,



STEP ONE – GATHER MATERIALS

Print this PDF

ØLTBUSTERS

- Print the entire document for easy reference or save some trees and print only the Point Tracker (page 5) and Energy Saving Actions (page 6).
 - Select "Fit" from the "Page Sizing and Handling" section to ensure it prints correctly from your printer.
- Get a magnet and stick the point tracker to your refrigerator or other easily accessible and frequented location in your home.
- Find an item around the house you have a lot of. These are given to students by you each time they complete an energy saving action.
 - Not sure what to use? Spare coins that have been collecting in a drawer somewhere, seashells, Lego bricks, pom-poms, Hot Wheels, or even gummy bears work great—whatever is safe for your student and easily accessible.
- Find a clear jar or bowl. This is where students will deposit their items you give them for completing an energy saving action.
 - The smaller the object you select to track points, the smaller the jar or bowl should be. It will be easier to visibly track their progress, and students will be more engaged to "fill up" a collection vessel, spurring them on to do even more actions.
 - Washed and repurposed pickle jars work great (and if you went with the gummy bears mentioned above, the lid will help keep them fresh and away from tempted fingers).











STEP TWO – START VOLTBUSTERS!

- Use the below background information to introduce and frame the program to your students.
 - Most energy on Earth comes from the sun. The sun gives energy to grow our food, and our food gives us energy to run, jump, play and think. Everything we do is powered by energy!
 - The sun creates light and heat, but when we use lightbulbs and heat inside our classrooms or houses, we need to create our own energy, called electricity. Electricity comes from many sources.
 - Renewable energy comes from sources the Earth can make more of, like wind and sunshine.
 Non-renewable energy comes from fossil fuels like coal and natural gas, which are found deep in the ground. Fossil fuels are easy to use for energy, but there are limited amounts.
 - Energy isn't free. Grown-ups pay for all of the electricity used at home, so saving electricity means saving money for you and your family. The easiest way to save energy is to use less.
 There are simple choices we make every day that could save a lot of energy so that we all have enough to share!

• Start saving energy at home, while having fun

- o Incentivize your student's participation with the program.
 - Participating households can submit a photo of themselves completing weekly *@Home Voltbusters* activities for a chance to be featured on Utilities social media channels.
 - Get creative with your students to create a family-personalized, fun incentive for getting to a point target goal you decide. Fill up your jar with 10 items every day to earn dessert after dinner? Get 45 points in a week for students to earn the right to delete one of their chores? Reflect on what your kids like; a well-crafted incentive keeps them engaged and will keep more money in your pocket with every action they take.



STEP THREE – CONSERVE ENERGY!

• Give an item to students to place in the jar for every action they take.

- o Every Daily Action is worth one point/one item.
 - These actions are on page 7 (K-2nd Grade) and page 8 (3rd 6th grade).
- One time each week, students can earn 5 additional points for completing a Power Activity.
 - These activities are described on pages 9 13
 - These activities require a little more time commitment from students, but don't worry, they are still fun and complement other student curriculum subjects.
 - If you forget to do a Power Activity one week, don't worry—you can complete them before the end of the 3-week period.

• Count your points at the end of every week and fill out the Point Tracker.

- If your student is adept with math, have them track and add points earned each day, resulting in your weekly total.
- If addition is a work in progress for your student, counting is easier and fun. Have them count all the items in your jar once a week and add it to the Point Tracker under "Weekly Total".

Send us your weekly point totals every Friday!

- Sending your weekly point totals keeps student's on track to develop positive, energy saving habits and allows us to send you encouragement and additional activities.
- Submit a photo of your students completing *Voltbusters* activities, or a scan of their completed work for a chance to be featured on Fort Collins Utilities' social media page!



Points Tracking Sheet

Week One				
Day	Points Earned	-		
1				
2				
3				
4				
5				
6				
7				
Week 1 Total				

Week Two				
Day	Points Earned			
8				
9				
10				
11				
12				
13				
14				
Week 2 Total				

Week Three					
Day	Points Earned				
15					
16					
17					
18					
19					
20					
Week 3 Total					

lotals				
	Points Earned			
Week One Total				
Week Two Total				
Week Three Total				
Power Activity #1	5			
Power Activity #2	5			
Power Activity #3	5			
Grand Total				



Kindergarten – 2nd Grade

Energy Saving Action	Points	Points Possible
Turn off the lights when you leave the room	1	Unlimited
Turn off an electronic item when you're not using it	1	Unlimited
Check that vents/radiators are not blocked	1	Unlimited
Use natural sunlight when possible	1	Twice a day
Close the window blinds/curtains when the sun goes down.	1	Once a day



3rd - 6th Grade

Energy Saving Action	Points	Points Possible		
Turn off the lights when you leave the room	1	Unlimited		
Turn off an electronic item when you're not using it	1	Unlimited		
Check that vents/radiators are not blocked	1	Unlimited		
Turn off all computer monitors when possible.	1 per time turned off	Three times per day		
Complete an activity that doesn't require electricity	1	Three times per day		
Use natural sunlight when possible	1	Twice a day		
Close the window blinds/curtains when the sun goes down.	1	Once a day		
Shut down all computers at the end of the day	1	Once a day		



Instructions: Create your own light switch cover to remind yourself and others to save energy by turning off the lights when you leave a room. Get out your crayons or markers and have fun coloring! Cut along the lines and place it over your light switch. Add tape to keep it in place.





Instructions: By saving energy at home, you become a Voltbuster superhero! Draw yourself in your very own comic strip below. Do you know someone else who is a hero? Include them in your comic and encourage them to help you on your quest to save energy at home!





Save Energy – Save Water

It's important not to waste water!_Did you know only 1% of all water can be						
used for drinking? It takes energy to produce clean water. Heating water also						
	takes energy.					
	Instructions: Check how you save water. Complete the missing words.					
	save drip hang brush dish water clothes					
	Don't let water run when you $\Box\Box\Box\Box\Box$ your teeth.					
	When you take a bath use only the DDDDD you need.					
	Turn off water so it doesn't					
	Take short showers to					
	Use less hot water so your water heater doesn't have to work so hard. Reduce your time in the shower by 5 minutes and save 25 gallons of water. Does your shower have a water-saving shower head? How can you tell?					
	Remind adults to wash					
	Washing in cold water = 90% energy saved.					
_	iviost detergents work extremely well at low temperatures.					
	When possible help $\Box\Box\Box\Box$ clothes on a clothesline.					
	Help fill the washer and turn it on when it's full. Loading dirty dishes without rinsing saves up to 20 gallons of water. Switch off the dishwasher before the dry cycle and let dishes dry naturally. Some dishwasher models have an energy saving cycle.					





CROSSWORD PUZZLE

ACRO	SS		UI UI						
1. Lo	ok for E	Energy S	Star ele	ctronics	& appli	ances t	hat use		_energy.
2. Tu	2. Turn off theif you are not going to use it for more					or more			
30 mi	nutes.								
3. Co	omputer	screen	savers	are no	t		sa	avers. (Check the
powe	r option	s to sav	ve energ	JY.					
DOWN	1								
1. Flij	p the sv	vitch! T	urn off_			_when	they are	e not be	ing used.
2. A_				is	a unit tł	nat mea	asures e	electrica	l energy.
3. Use astrip to make it easier to turn off multiple electronics.									
					1				[
1		Г							
	2								Word Hints:
									computer
									energy
3			4					1	kilowatt
								J	less
									lights
-				-					power
-			5						[
-									l







How many items use electricity in this room? ______ In your home, how many items are plugged into outlets? ____

Circle the energy using equipment or appliances <u>you</u> use:

ceiling light video game hairdryer cell phone ΤV microwave electric toothbrush toaster computer radio hair curling iron bedside lamp clock (plugged in an outlet) blender CD player VCR/DVD player electric fan iron equipment or cell phone charger





Home Cooling Tips for the upcoming warmer seasons:

• Windows/Doors:

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• In the summer, close window coverings during the day to keep the heat out and open them at night to cool your home down. (Source: Dept. of Energy's Energy Saver Guide, p.



• Add weather stripping around doors and windows to make spaces airtight. This will help decrease energy loss to save money and make your home more comfortable. (Source: Dept. of Energy's Energy Saver Guide, p. 6)

• Check for air leaks in windows and doors. Fixing leaks could save you 10-20% on your heating and cooling bills. (Source: Dept. of Energy's Energy Saver Guide, p. 6)

• Fans:



• Box or ceiling fans use a lot less energy than air conditioners. Use fans when possible, especially during the summer (May-September) on-peak hours of 2-7 p.m. (Source: TOD Appliance Handout)

• In warmer months, make sure your ceiling fan is turning counter-clockwise so the blades push cooler air down in a column. (<u>Source: Dept. of Energy's Energy Saver Guide, p.16</u>)

<u>Air Conditioning:</u>

 Set your thermostat a few degrees higher in the summer months, especially during onpeak hours. The Department of Energy recommends 78 degrees in the summer. (<u>Source:</u> <u>Dept. of Energy</u>)



• Avoid placing TVs or other appliances near your thermostat. The thermostat can sense the heat, which can cause the air conditioner to run longer than necessary. (Source: Dept. of Energy)

• Change the air filter every three months or more frequently.

• Pre-cool your home before 2 p.m., and then turn off your air conditioner until after 7 p.m.. This will help you avoid on-peak pricing. (Source: TOD Appliance Handout)

Save water, save electricity.

- Fix leaking faucets.
- Install low-flow shower heads to save more on water bills.
 - Did you know the City of Fort Collins Utilities offers a showerhead rebate? <u>Check</u> <u>it out here</u>!
- Set hot water heater temperature at 120 degrees to use less energy to heat water.

