

# DC Reduce First Challenge – Paper Edition



DCPS Recycles!

Government of the District of Columbia

Department of General Services

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DEPARTMENT OF GENERAL SERVICES



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## About the DC Reduce First Challenge – Paper Edition

Achieving the [Sustainable DC](#) target of zero waste by 2032<sup>1</sup> will require substantial effort and increased emphasis on the first of the 3 R's – Reduce!

Did you know that preventing one ton of paper waste saves between 15 and 17 mature trees?<sup>2</sup> Schools generate a lot of paper waste each day. In many cases, this paper gets recycled. But what about reducing paper use in the first place?

The DC Reduce First Challenge – Paper Edition is a challenge, open to all DC schools, focused on reducing paper use. During the challenge, schools will conduct simple surveys of paper waste and then take action to reduce paper usage.

### Awards & Recognition



**Best Performance** – An objective category based on percent reduction from the baseline. The metric is the percentage change between the weight of paper in your sample between Week 1 and Week 4.



**Most Replicable Solution** – A subjective category to award the most effective and replicable waste reduction solution.



**Most Learning** – A subjective category to award the school that demonstrates the most learning from participating in the challenge, regardless of whether or not a reduction in paper waste was achieved.

### Deadlines

Fill in the blanks for your school's competition.

Week 1 – Submit your baseline by **Friday**, \_\_\_\_\_

Week 2 – Submit an update by **Friday**, \_\_\_\_\_

Week 3 – Submit an update by **Friday**, \_\_\_\_\_

Week 4 – Submit your final results by **Friday**, \_\_\_\_\_

Make-Up Week – Submit missed deliverables by **Friday**, \_\_\_\_\_

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<sup>1</sup> Sustainable DC. <http://www.sustainabledc.org/>.

<sup>2</sup> National Wildlife Federation: Facts about Consumption and Waste: <https://www.nwf.org/Eco-Schools-USA/Become-an-Eco-School/Pathways/Consumption-and-Waste/Facts.aspx>

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## Before the Challenge

**Prerequisite:** In order to participate in the competition, your school must have a recycling program in place! If you do not have a recycling program but would like to start one, visit the DCPS Recycles! homepage: <http://dgs.dc.gov/page/dgs-healthy-schools>.

### Step 1: Assign Roles.

Determine the teachers, staff and students who will lead participation in the challenge. Also, talk with your school custodial staff to make sure you know when paper collection occurs each week and to coordinate your surveys with the collection schedule.

### Step 2: Set Up.

Make sure recycling and trash supplies are set up correctly throughout your school.

For DCPS Schools: Proper classroom recycling set-up includes 1 blue bin labeled for paper only and 1 non-blue bin for trash. Refer to the [Supplies Set-Up Cheat Sheet](#). See [DCPS Recycles! Signs and Labels](#) for printable signage or email [carablumenthal@dc.gov](mailto:carablumenthal@dc.gov) for classroom bin labels. Post additional posters and signage as you see fit.

For Charter Schools: Correct sorting procedures and set-up depends on your school's recycling program in place. If you are unsure about your school's recycling program, ask you school's business manager and/or head custodial.

### Step 3. Choose your Sample Size.

The metric used to measure progress is the weight of paper waste in your sample size. Determine your sample size by choosing the rooms you will survey. You must choose at least 5 rooms to survey. The sample size must be the same throughout the challenge.



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## Challenge Instructions

### Week 1 – Understand the Problem: Establish your Baseline

Establishing your baseline is crucial to the challenge. In order to know how much paper you reduce, you must know how much paper you start out with. Your baseline will be based on surveys from three (3) days during Week 1.

**Measure Weight.** For three (3) days during the baseline week, measure the weight of paper waste in each room. If you do not have a scale, request a loaner electronic fish scale from DGS. *Optional:* In addition to measuring the weight of paper bins, you may estimate the volume of each paper bin.

**Summarize & Submit.** Summarize the data from the 3 days using the Weekly Summary Worksheet on page 6.

### Week 2 – Take Action & Measure

**Propose a Strategy.** During Week 2, use your baseline data to come up with an hypothesis. Propose a strategy or strategies you think will reduce the amount of paper waste generated throughout the week.

**Take Action.** Then, take action. You can use this opportunity to apply science concepts with your students, such as conducting an experiment and how to write and test hypotheses. For ideas on how to reduce paper waste, review the resources provided below. Also, use your creativity to come up with your own ideas!

**Measure Weight.** At the end of Week 2, conduct a second survey to measure the weight of paper waste in each room of your sample. *Optional:* In addition to measuring the weight of paper bins, you may estimate the volume of each paper bin. Be honest with your results. Even if your numbers do not go down, simply conducting the surveys teaches students about the importance of rethinking waste and waste reduction.

**Summarize & Submit.** Summarize the data from the 3 days using the Weekly Summary Worksheet on page 6.

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### Week 3 – Take Action & Measure

Repeat the steps in Week 2. Revise your strategy if you did not see a reduction in the weight of the paper bins in your sample.

### Week 4 – Take Action, Measure & Calculate Results

Repeat the steps in Week 2. Revise your strategy if you did not see a reduction in the weight of the paper bins in your sample.

**Calculate Percentage Change.** Calculate the percentage change between Week 1 and Week 4 to measure your progress throughout the month-long challenge.

$$\text{Percentage Change} = [(\text{Week 4} - \text{Week 1}) \div \text{Week 1}] \times 100$$

**Summarize & Submit.** Summarize the data from the 3 days using the Weekly Summary Worksheet on page 6.

**Share your results with DGS so your success story and ideas can be shared with other schools.**

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**DC Reduce First Challenge – Paper Edition**  
**Daily Worksheet**

**Date:**        /        /

**Week (Circle One):**    Week 1    Week 2    Week 3    Week 4  
**Day (Circle One):**     Day 1    Day 2    Day 3

	<b>Room #</b>	<b>Weight of Paper (lbs)</b>	<b>Volume of Paper (gallons) - <i>Optional</i></b>
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	<b>Total</b>	_____ lbs	_____ gallons

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DC Reduce First Challenge – Paper Edition  
**Weekly Summary Worksheet**

<b>Circle One:</b>	Week 1	Week 2	Week 3	Week 4
	<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Week's Total</b> (Day 1 + Day 2 + Day 3)
<b>Weight (lbs) of Paper Bins</b>				

DC Reduce First Challenge – Paper Edition  
**Percentage Change Calculation**

Calculate the percentage change in weight of your sample between Week 1 and Week 4. Weight is used rather than volume because weight is a more accurate and comparable metric.

**Percentage Change** =  $[(\text{Week 4} - \text{Week 1}) \div \text{Week 1}] \times 100$

<b>Percentage Change in Weight between Week 1 and Week 4</b>	<b>%</b> _____
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## Resources

- **Stop Waste at School: Reduce paper consumption at school.**  
<http://schools.stopwaste.org/tools/qhow-toq-tips/292-tips-to-reduce-paper-consumption-at-school.html>
- **Northeast Recycling Council: Paper Use Reduction in Schools.**  
<https://nerc.org/documents/schools/PaperUseReductionInSchools.pdf>
- **Hamilton County Recycling and Solid Waste District: Reduce Paper Waste.**  
<http://www.hamiltoncountyrecycles.org/index.php?page=reduce-waste-at-school#paper>
- **Make Homemade Paper.**
  - This Instructables how-to guide uses an “apple pallet” which you can get from your school’s kitchen: <http://www.instructables.com/id/Homemade-Paper/?ALLSTEPS>
  - How to make homepade paper: <http://paperslurry.com/2014/05/19/how-to-make-handmade-paper-from-recycled-materials/>
  - Make seed paper: <http://climatekids.nasa.gov/seed-paper/>