



RAD Scrounge-a-thon Challenges!

ARE YOU A TEACHER, STUDENT? OR MENTOR?

YOU CAN MAKE A DIFFERENCE-HERE ARE SOME IDEAS TO TRY!

Champlain Maker Faire has small grants for teams of Vermont students to solve real-world problems using a lot of common sense and a little money.

Ideas below-Reduce-Adapt-Drawdown

Overview of 5 first challenges below. Your ideas welcome!

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Sign up here: _____

<https://champlain.makerfaire.com/biolauncher/>

https://www.waytogovt.org/tools_for_success

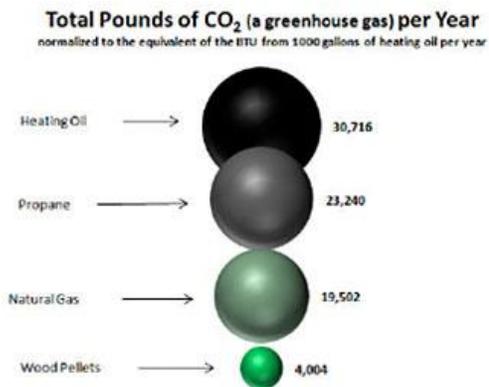
https://d3n8a8pro7vhmx.cloudfront.net/waytogovt/pages/27/attachments/original/1569623011/WTG_Scrounge.a.thon_One.Pager.pdf?1569623011

<https://goradnow.com/>

<http://champlain.makerfaire.com/wp-content/uploads/sites/56/2020/01/Scrounge-a-thon-presentation-cmf.pdf>

CHALLENGE 1: BIOLAUNCHER! REDUCE USE OF FOSSIL FUEL FOR HEATING

1. Bio-launcher-vertically lift wood pellets: local fuel!



Low speed drill attached to auger to lift pellets

1) **Biomass energy**-Automatic biomass delivery system for pellets: Goal-Must lift chips and/or pellets 10 feet in air using minimal amount of energy. To lift 40 lbs of pellets in less than 5 minutes.....and the song:

Why-because Vermont is exporting 78 cents of every energy dollar out of state. Keep energy dollars in-state-burn biomass. Initial grant funding from Vermont Clean Energy Development Fund, Bourne Energy and Pellergy! Reduce use of fossil fuels.

<https://www.pelletheat.com/for-consumers/about-pellets>

<https://www.youtube.com/watch?v=xUQ70lrRwcY>

<https://www.hearth.com/talk/threads/awesome-things-i-found-for-moving-pellets-around.145309/>

https://www.pelheat.com/wood_pellet_vacuum.html

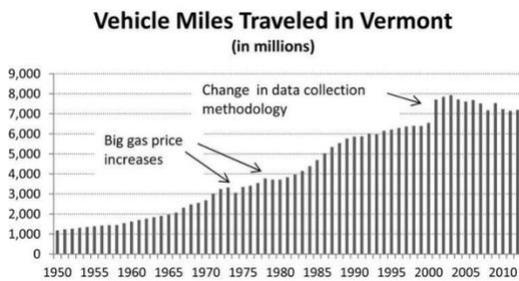
<https://youtu.be/HDnqlGxNX4w>

off the shelf wood pellet vacuum

<https://youtu.be/BPE415laWHs>

CHALLENGE 2: REDUCE USE OF FOSSIL FUEL FOR DRIVING - RIDE SHARE APP

2. Ride-Share app for rural transportation.: Reduce CO2



Winning apps might be integrated into the statewide Go! Vermont program:

WHY: Reduce miles driven in single occupancy vehicles; promote community and communication. Make better use of our existing transportation network.

<https://libretaxi.org/>

Free and open source ride share software!

DiDi-Rider

[DiDi Global](#)

Free rideshare

app:https://play.google.com/store/apps/details?id=com.didiglobal.passenger&hl=en_US

<https://www.wheeli.us/> Wheeli (carpooling app for college students)

Free App for Kids Carpooling

Save time, share carpool with families you know and trust.

<https://www.gokid.mobi/>

<https://www.carpooltoschool.com/> CarpooltoSchool enables simple, safe and community-based transportation for students.

<https://carpool-kids.com/> The Carpool-Kids App ends the pain of ride sharing by providing a simple way to manage your carpools

Agilemile <https://agilemile.com/> Software FOR GOVERNMENTS. Seriously good software for seriously reducing driving

CHALLENGE 3: REDUCE USE OF FOSSIL FUEL FOR HEATING

3. Weatherization-80,000 of Vermont's 250,000+ homes need weatherizing. Current rate: <2000 year:



OR



Buy for \$3,500 or DIY for

\$100 ?

Contact the Vermont technical schools for Certificates of Proficiency

<https://www.builditsolar.com/Projects/Conservation/BlowerDoor/BlowerDoor.htm>

<https://www.builditsolar.com/Projects/Conservation/BlowerDoor/BuildingBlowerDoor.htm>

<https://www.youtube.com/watch?v=JxoApQkEhyA&list=LL2Nc5cn9TNJKJR6DLs8P0NA&index=2> **Watch this amazing 1 minute video**

The Pay As You Save (PAYS) system enables building owners or tenants to purchase and install money-saving resource-efficient measures with no up-front payment and no debt obligation.

The monthly charge is always lower than the measures estimated savings and it remains on the bill for that location until all costs are recovered. Like a loan, PAYS allows for payment over time, but unlike a loan, the PAYS obligation ends when occupancy ends or the measure fails.

<https://www.eetility.com/single-post/2016/10/17/HELP-Pays---Pay-as-You-Save-Energy-Efficiency-Program>

<https://www.eetility.com/utilites>

Hire 3,000 students that are professionally trained and receive Certificates of Proficiency through the technical schools via NCCER <https://www.nccer.org/> or BPI <https://bpi.org/> to weatherize houses. Each team will weatherize 15 houses a year. Lots of benefits.

WHY? Vermont spends about \$1 billion annually on fossil fuels to heat our homes. Reduce dependence on fossil fuel. Save \$200 million a year by weatherizing VT homes.

CHALLENGE 4: REDUCE USE OF FOSSIL FUEL FOR HEATING OR DRIVING; ADAPT THIS “WASTE” INTO RESOURCE

4. Turn dirty Plastics to fuel. Plastic use predicted to increase by 3-4x by 2050



<https://www.youtube.com/watch?v=hOwuK4MQPYI>



WHY:

Reduce amount of plastic waste. Make floatable plastic a valuable resource to run our municipal vehicles, farm equipment etc.

Pyrolysis-or melting plastic without air is as clean as burning natural gas or propane. Plastic can be made into gasoline, diesel or kerosene- depending on temperature. This valuable resource can be used to stop increased extraction of fossil fuels.

<https://www.instructables.com/id/Waste-Plastic-to-Fuel/>; BBC diesel from waste plastic; Recor from South Africa-waste plastics to diesel; Mr. Trashwheel

<https://www.recor.co.za/plastifuel-waste-plastics-to-diesel>

<https://www.recor.co.za/technologies-1>

<https://www.youtube.com/watch?v=njIYHtFmcS>

bbc special

women making it in Malaysia

<https://www.youtube.com/watch?v=09J6q0L4CdQ>

<https://www.youtube.com/watch?v=09J6q0L4CdQ><https://www.baltimorewaterfront.com/health-harbor/water-wheel/>

<https://www.youtube.com/watch?v=A0IS2a8jpvQ>

<https://www.youtube.com/watch?v=RkQbcryAeE&t=197s>

CHALLENGE #5: REDUCE USE OF PLASTICS; DRAWDOWN CARBON; IMPROVE WATER QUALITY

5.Reduce Algae: Clean up Lakes. **Love your zooplankton****!!!!**

Remove non-native Alewives and white perch that eat zooplankton



<https://www.fastcompany.com/90154210/the-creators-of-this-algae-plastic-want-to-start-a-maker-revolution>



<https://www.standard.co.uk/futurelondon/culturecity/algae-plane-3d-printed-luggage-british-airways-saatchi-gallery-exhibition-a4214306.html>

AI:<https://www.forbes.com/sites/cognitiveworld/2020/01/23/hypergiant-ai-algae-climate-change/>

Beer:<https://www.abc.net.au/news/2020-01-15/growing-algae-to-brew-greener-beer/11720484>

Buildings:
<https://www.labroots.com/trending/videos/11463/biq-the-alga-powered-building-in-germany>

Why: Reduce our use of plastics

Adapt: change from plastic to algae based products

Drawdown: Algae photosynthesis can drawdown as much as 400 x more carbon than a tree.

Algix-making sneakers from algae; Use algae instead of plastic

<https://algix.com/> harvest algae with skimmers

<https://www.youtube.com/watch?v=Xk525GuudYE> Absolut Vodka: making algae from distillery waste:

<https://www.youtube.com/watch?v=ZPNR4szuTuQ> Harvest algae with a drill

“Fish removal to restore lakes” Kortmann: Ecosystem consulting literature.

<https://www.tandfonline.com/doi/full/10.1080/07438141.2011.590269>

Seabasticook lake:

<http://www.gulfofmaine.org/kb/files/9202/Halliiwell%20&%20Evers%2009.pdf>

<https://www.youtube.com/watch?v=Dqu0GII-7II>

https://www.youtube.com/watch?v=zuguR_yURjQ

<https://www.youtube.com/watch?v=SaAFQlFC7fi>

