

Design & Sustainability Summer Challenge 2014

For your kids and you

Kids Future Press

www.kidsfuturepress.com

Design & Sustainability

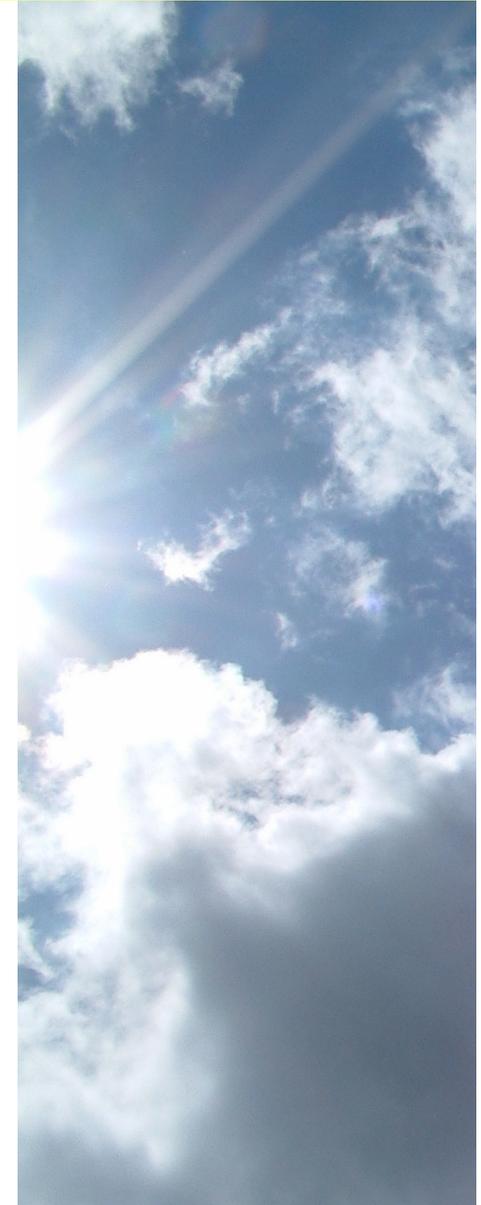
Thanks for trying our 4-week, 4-project challenge! Each of the projects helps introduce ideas of sustainability (or “resilience,” if you prefer) to kids.

We pictured 4 to 12 year olds doing these projects, guided by an adult. Each project challenges you to observe, question, and make design proposals for sustainability.

Kids Future Press publishes children’s picture books that capture what’s cool about the design and technology of a sustainable future and bring it to life for your children . . . and you! Our first title, *Bicycles, Airships and Things that Go*, is launching later in the summer of 2014.

Know someone who’d like to get resources like this one? Ask them to join the Kids Future family here: <http://www.kidsfuturepress.com/about/>

Please direct questions and comments to ab@kidsfuturepress.com



Kids Future Press

www.kidsfuturepress.com

Week One

Power-free hour/Power-free day

Become more aware of the huge role that electricity plays in life...by consciously taking some power-free time.

For younger kids this might just be 15-30 strategically chosen minutes where you avoid anything electrical, whether cord or battery operated. Make a game of it by asking "how long is the list of things we normally use with electricity?" How long is your list after 15 minutes, 30 minutes, an hour? Next ask what you can substitute in place of electricity-powered activity?

For older kids you could set yourself a challenge of going for a half or whole day. Add other forms of energy besides electricity.

Where does electricity come from? You may want to extend the project to do some "research" on the source of electricity:

- Human power from winding up or pedaling
- Wind or sun power using turbines or solar electric panels
- Fossil fuel power from burning oil, coal, or gas dug up from underground
- Nuclear power from splitting atoms



Week Two

How nature designs

Mother nature is a really good designer of things that are sustainable over the very long term. Nature has ways to:

- make strong, lightweight structures, like spider web, without using high temperature or pressure
- make plants move without muscles
- keep animals at the right temperature even in extreme climates

In this project look at how plants move without muscles. Take a carrot and slice it length-wise and cover it with water. After a few minutes you will notice that it is moving—curving to one side. Ask the kids what might be going on. The carrot's cells on the “cut” side are absorbing water and that causes it to change shape, to move without muscles. If you have a pine cone you can put it in water and see it close—it may take 10 or 15 minutes. It opens again as it dries.

Velcro, inspired by burrs, and swim suits inspired by shark-skin, are two examples where designers have been inspired by how nature designs, a process called biomimicry. Shark skin is made of tiny scales that make water flow over the skin more easily, allowing a shark to swim faster. How else could designers borrow from nature? Draw some of your ideas!



Week Three

Close the Loop

We use a lot of stuff, like plastic packaging, paper books, and fabric. Our stuff becomes waste more quickly these days. Some waste gets into the environment and it's bad for our health and for nature. In this project put on designer's hats and look at waste in three ways:

1. Visit a second hand shop or transfer station and find something that you would like to have or use. Imagine a story about the person who had it before: why they gave it, or threw it, away. Who could you give it to next, is there anything you could change about it to make it desirable to the next person?



Everyone in this family wanted a turn with this dress—who will they give it to next?

Week Three . . . continued

Close the Loop

2. Pick out a few things from around the house, or have the kids choose, things that they regularly use. Ask which items they'll keep longer, and why. After they get started, you can prompt: Is it because it keeps looking good? because it has happy memories? Is it because you can adjust it over time (like Lego)?

How could you change (re-design) any of these things so that you'd keep them longer?

3. Find some actual rubbish and challenge the kids to create (design) something from it. Alternatively find a broken thing that you can open and look inside – what materials are in there and what could you make from those?



Week Four

Cool the City

Paving on roads, parking lots and sidewalks makes cities hotter than the rural areas around them. Try feeling the temperature on an asphalt driveway near a building, compared to a grassy area or garden. Dark rooftops also trap heat. In this project look for places in our cities and towns where we could replace paving or dark surfaces with gardens, trees, and light surfaces.

Plants naturally cool their surroundings, not only by providing shade but also by transpiration. It's the way plants "sweat" by giving off excess water when it gets hot, air around the plant feels cooler. (Try fanning yourself when your skin is wet and see how much cooler it feels.)



The "no park" park, New York City



City Hall green roof, Chicago

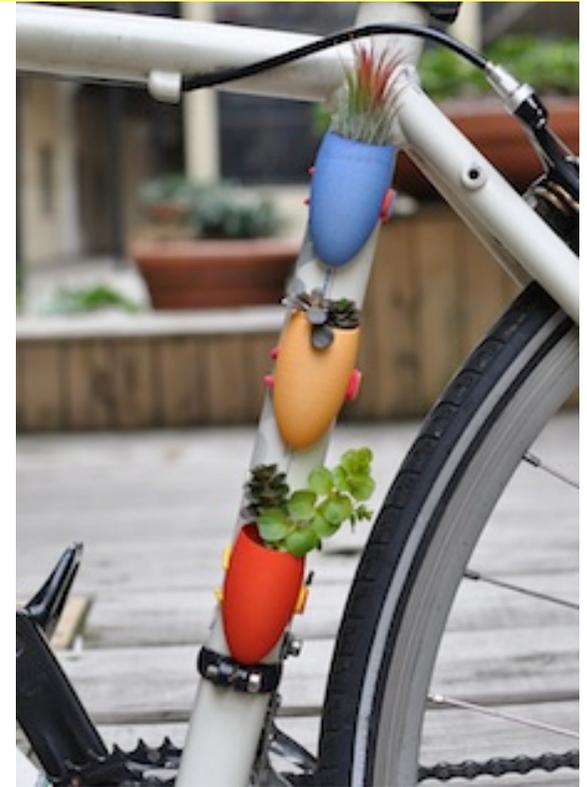
Week Four . . . continued

Cool the City

By growing plants we can also grow food. If we grow food near us, then we don't have to use so much energy to bring it from somewhere else. Plants also absorb carbon dioxide, a key climate change gas.

So open your eyes and start looking around for where you can replace paving or dark surfaces with plants or gardens. Start by looking at existing gardens to thinking about what you need to grow a plant: soil, water, light.

You can make this into a challenge by asking, "how many places can we find to add plants and gardens? Where can we 'design in' new gardens?" Draw as many of your ideas as you can. You can finish this project by actually planting a new little garden. If that's not practical consider framing and/or hanging up the proposed garden picture(s) that everyone likes best.



Congratulations!

You've met the challenge

Did your projects result in some great drawings and ideas? Send drawings, photos, quotes and observations on to publisher@kidsfuturepress.com and we'll assemble a gallery online.

Let us know your ideas for our next challenge.

Picture Credits

Week one: cables and windup radio by Andy Crawford; wind turbines courtesy of National Renewable Energy Laboratory

Week two: swimmer by iStockphoto; sharkskin courtesy of Electron Microscope Unit, University of Capetown; burr by Andy Crawford

Week three: polka dot dress by Sean Michael, courtesy of Local Wisdom project; Lego by F. Brandt

Week four: no park courtesy of the Environmental Health Clinic and Lab, New York University; Chicago city hall roof by Raeky ; bicycle planters by Wearable Planters; Spanish green roof bus by Photo Kinetic via Urban Gardens

Find more resources on our blog and on Facebook and our Pinterest boards



<http://www.facebook.com/kidsfuturepress/>

<http://www.pinterest.com/kidsfuturepress/>

© Kids Future Press, 2014

Kids Future Press

www.kidsfuturepress.com