

Earth Day Cardboard Challenge Organizer Playbook

PRESENTED BY IMAGINATION FOUNDATION, TIME WARNER CABLE AND YOU!





For more information visit:

cardboardchallenge.com/EarthDay @Imagination, @ConnectMinds #CardboardChallenge #EarthDay #TWCGreen

Welcome

Thank you for bringing the Earth Day Cardboard Challenge to your community this year! The Imagination Foundation and Time Warner Cable are thrilled to work with such an amazing group of parents, educators, and community leaders from around the world to foster creativity, ecological values, and a love of STEM in children everywhere.

This Playbook will help you plan your Earth Day Cardboard Challenge. Just remember that the Playbook is meant to spark ideas and provide inspiration, but in the end, this is your challenge. Be creative, make it your own, and have fun. And we want to hear from you. If you have tips or suggestions for us and the Imagination Foundation community, please share at <u>hello@imagination.is</u>.

Thank you again for helping children become imaginative, earthconscious, STEM-literate citizens!

~Your Friends at the Imagination Foundation and Time Warner Cable

Let's get started.

This Playbook is an ever-evolving document based on contributions from members of the Imagination community. You can access the latest version of the Playbook here:

The 2016 Earth Day Cardboard Challenge Organizer Playbook



Table of Contents

THE EARTH DAY CARDBOARD CHALLENGE IN A NUTSHELL	3
GUIDE TO PLANNING YOUR EARTH DAY CARDBOARD CHALLENGE	7
IT'S ALL ABOUT CREATIVE PLAY	8
THREE EXAMPLES TO HELP YOU PLAN YOURS	10
ACTIVITY STARTERS	14
FURTHER INSPIRATION: GO WILD WITH REUSED CARDBOARD	18
ADDITIONAL RESOURCES	20
ACKNOWLEDGEMENTS / SPECIAL THANKS	23

THE EARTH DAY CARDBOARD CHALLENGE IN A NUTSHELL

THE IMAGINATION FOUNDATION INVITES THE WORLD TO PARTICIPATE IN OUR FIRST EVER EARTH DAY CARDBOARD CHALLENGE!

This event is an outgrowth of our annual Global Cardboard Challenge, which is inspired by the short film, `Caine's Arcade.' The Earth Day Cardboard Challenge, however, is unique in that it's a celebration of ecological values, like sustainability and recycling, and is an opportunity to learn about environmental challenges.

Beginning in April and culminating on Earth Day, April 22, children will use cardboard, recycled materials and imagination to build creative artifacts that address environmental challenges. This is a celebration of Earth Day through the lens of creativity and STEM. Activities culminate on or around Earth Day, which is April 22, 2016, when communities all around the world will come together to celebrate child imagination and the gift of planet Earth!









REMEMBERING CAINE'S ARCADE

ON THE LAST DAY OF SUMMER THROUGH A CHANCE ENCOUNTER, FILMMAKER NIRVAN MULLICK MET CAINE MONROY

... a 9-year-old boy who built an elaborate cardboard arcade inside his dad's East LA auto parts shop. Nirvan was Caine's first customer. Amazed by the boy's creativity, he decided to organize a flash mob of customers to surprise Caine and make his day. Then he made a film about it. After 8 million online views, <u>'Caine's Arcade'</u> has been widely cited as one of the most inspirational stories of 2012, igniting a wave of cardboard creativity in classrooms and neighborhoods across the globe. The Imagination Foundation was born soon after, leading a movement that continues to grow, bringing inspiration, hope and transformation to communities everywhere by fostering child creativity through Creative Play.





IMAGINATION FOUNDATION & TIME WARNER CABLE

THIS IS THE FIRST YEAR OF THE EARTH DAY CARDBOARD CHALLENGE, A PARTNERSHIP BETWEEN THE IMAGINATION FOUNDATION AND TIME WARNER CABLE

This event has its roots in the Global Cardboard Challenge, which is inspired by Caine's Arcade. Resourcefulness, sustainability, creative reuse and other ecological values have always been a part of the Global Cardboard Challenge, but in the context of Earth Day in partnership with Time Warner Cable's commitment to Sustainability through it's "<u>Go Green</u>" initiative and its STEM initiative, <u>Connect A</u> <u>Million Minds</u>, we have a special opportunity to make these values central. The focus of the Earth Day Cardboard Challenge is on "Green STEM" and on celebrating environmental sustainability and the Earth, all while having fun through Creative Play.



WHAT IS GREEN STEM ?

GREEN STEM REFERS TO AN ECOLOGICALLY MINDFUL APPROACH TO SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

And Green STEM also features the creative re-use of various recycled materials. The innovations required to effect critical changes in our society and world are intimately related to STEM concepts and skills, whether that's biology and ecology to understand how life on Earth works and can be preserved, physics to understand energy usage and efficiency, or engineering to

GREEN STEM AND TWC'S "GO GREEN INITIATIVE" SHARE THE VALUES OF:

- using fewer natural resources
- generating less waste
- finding renewable energy opportunities
- investing in fuel-efficient vehicles
- reducing cooling power consumption
- pursuing environmental design in buildings

@Go**Green**







Guide to Planning your Earth Day Cardboard Challenge

1. DECIDE ON PARTICIPANTS

A Cardboard Challenge event can be as simple as a family building together in their living room or backyard, or it can be a school-wide or community initiative. It's up to you! Think about whom you want to invite and how many people. For larger events, get others involved in the planning, and reach out to friends, parents, schools, local businesses, co-workers, and other community members. But big or small, it really is up to you.

2. DECIDE ON TIME AND PLACE

Will your Cardboard Challenge be a one-day event or have multiple maker days leading up to Earth Day on April 22, 2016? Once you've decided, remind others to Save-the-Date. Find a safe and spacious place for hosting your Cardboard Challenge, such as a home, classroom, library, museum, community center, or even in your own backyard. Many events will take place on Earth Day, but we want you to choose a date that's convenient for you.



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3. REGISTER YOUR CHALLENGE & START CONNECTING WITH OTHERS

In April, officially register your Earth Day Cardboard Challenge at www.cardboardchallenge. com/EarthDay. You'll be able to publish your Challenge and share photos, videos and stories with the rest of the world. While working on your Challenge, share your progress with others. Create a simple web or social media page (e.g., a Facebook profile or event page) to share information about your event (and if it's open to the public, collect RSVP's). Post pictures of your progress on social media using #CardboardChallenge #EarthDay #TWCGreen.

4. GATHER CARDBOARD AND OTHER MATERIALS

Begin collecting materials early and find a place to store your supplies (see "Suggested Materials"). Most items needed for your Cardboard Challenge can be found around the house or in your neighborhood (you'll start noticing piles of cardboard all over your community!). Ask participants to start saving supplies like boxes, recyclables, and other miscellaneous items. Contact local businesses and see if they will donate used boxes or supplies.

5. GET EVERYONE INSPIRED

Watch videos like "Caine's Arcade." Look for pictures and videos online using #cardboardchallenge. Show examples of child creativity from all over the world. Discuss ecological values with children and learn what issues resonate most with them. This is your entry point to inspired creativity and engaged learning!

6. BUILD AND CREATE

Brainstorm wild ideas, make sketches, build and test creations. Get inspired by reading the Activity Starters and Further Inspiration sections below. Though this is the first year for the Earth Day Cardboard Challenge, you and your kids will likely find inspiration from our annual Global Cardboard Challenge: take a peek at our winning Global Cardboard Challenge Videos or join the Global Cardboard Challenge for Inspired Educators Facebook Group and G+ Community.

7. CELEBRATE THE EARTH ON EARTH DAY

On or around April 22, invite friends and family to come out to play! Events can be big or small. Show and Tells, craft tables, team building sessions, games, etc., are all great ideas. Whatever you do, take lots of pictures and video throughout your activities and share on Twitter, Instagram and Facebook using @imagination, @ConnectMinds and #CardboardChallenge #EarthDay #TWCGreen.

8. AFTER THE CHALLENGE

Remember to recycle your cardboard and other materials. Find your closest recycling center using search.earth911.com. Send Thank You's to all volunteers and sponsors, and get feedback from participants. Share photos, videos and stories from your activities. Congratulate yourself and get ready for more Imagination events throughout the year. And please stay in touch!

It's All About Creative Play

AT THE HEART OF ANY EFFECTIVE CARDBOARD CHALLENGE IS SOMETHING WE CALL CREATIVE PLAY.

Through Creative Play, children engage their imaginations, open up their minds to what's possible, and turn their ideas into something real. In this process, children learn to develop and test ideas, take chances, solve problems, get input from others, and become better creative thinkers and doers.

At the heart of creative play is the idea that children are naturally creative and curious. Adults can help foster this natural creativity by giving guidance, context, and support. To learn more about the research behind Creative Play, please visit: <u>www.imagination.</u> <u>is/research</u>.







It's All About Creative Play

INSPIRE: IT STARTS WITH WONDER

Stories, new experiences, and child interest get kids excited about learning, exploring and making. Curiosity and wonder kickstart creativity. Watching and discussing the video, "Caine's Arcade," is often a great place to start because the story resonates with all kids.

IMAGINE: TAP INTO DIVERGENT THINKING

Think of new possibilities and explore wild ideas – the sky's the limit. Encourage kids to share ideas (no matter how wacky) in a group setting because this can unearth new and even better ideas. Optimism is key here, and anything is possible. You can start to sketch out designs and mix-and-match ideas. Freely play with materials to get further inspired.



BUILD: JUST BUILD IT!

Work with physical materials to build whatever you can imagine. Take one great idea, or combine a few, and make a project out of it. Keep a record of the different things you try. It's about using materials and tools, about making, constructing, measuring, cutting... Take note of challenges (e.g., maybe the idea doesn't work in real life the way you first thought). Recognize constraints and work to overcome them.

SHARE: REFLECT ON LEARNING

Document your process through stories, pictures, and video, and share what you've made in a meaningful public context. This can be with family and friends, other Challenge participants, or online. Ask for and receive feedback for your work. Let your work inspire others.

PLAY: TEST THE LIMITS

Interact with your own and others' creations to see what works and what could be even better. Provide suggestions to each other for ways to modify the various artifacts to make them work better. Iterate and tinker within an environment of playful experimentation.



Three Examples to Help you Plan yours

Here are a few different scenarios to help you think about the scale of your Earth Day Cardboard Challenge. Remember your activities can happen anywhere, and be of any scale. Every Cardboard Challenge is different. We want you to have fun, be creative and make it your own! Here are three examples of Cardboard Challenge activities to help you understand just how different each Challenge can be:



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EXAMPLE ONE: IMAGINATION PUBLIC SCHOOL'S EARTH DAY CARDBOARD CHALLENGE (LARGE, SCHOOL-WIDE AND FOR OLDER KIDS WITH MORE STEM CONNECTIONS)

LOCATION:

Classroom, then school gym or outdoor quad

DURATION:

3 Weeks Week 1: planning session Week 2: refining our prototypes Week 3: main event, share creations and celebrate Earth Day!

PARTICIPANTS:

Participants: 75 4th graders and 200 classmates, friends, family and local Time Warner Cable employee volunteers – it's school-wide, all are invited!

In the first week of the Challenge, Mrs. J and her fellow science teachers talk to their kids about the Earth Day Cardboard Challenge and what it's all about, and they all watch "Caine's Arcade" for a little inspiration. During class time, groups of kids work independently using the internet to research a variety of environmental challenges. Each group chooses a challenge that interests them (e.g, alternative energy), and then they sketch out ideas for solutions using their "Imagination Journals." Later in the week, Mrs. J takes kids on an 'after-school treasure hunt' through their school neighborhood to find recycled materials they can use to build their creations. TWC Green Team members join the treasure hunt and help kids figure out which materials they can use. By week's end, kids have recycled materials to build a prototype of their ideas (e.g., a miniature cardboard car that is powered by wind!).

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In the second week of the Challenge kids meet after-school in Mrs. J's classroom and continue to refine their prototype, improving its design, or changing it all together based on new ideas and inspiration. Kids play with each group's designs and give feedback. TWC Green Team members join and give kids feedback and tips on how to improve their designs.

Week 3 is the main event, and Mrs. J's class decides to hold their Earth Day Cardboard Challenge after-school, on Earth Day, April 22 as part of their school-wide Earth Day celebration. Kids will display their creations so the whole campus can come and check out what they've made and how their designs help the Earth. Kids will share what they learned through the process. TWC Green Team members come out to see the creations and offer help with set up and cleanup.

There are many ways for local TWC employee volunteers to get involved! Five members of a local TWC Green Team plan to attend: the treasure hunt where they help supervise and collect materials; a build session, as kids refine their prototypes and Green Team members give feedback and join in the fun; and the main event to celebrate kid creativity and give out High Fives!

TIP: If you can't plan your Challenge event on Earth Day, feel free plan it during the weekend on or around that date that is convenient for you.



EXAMPLE TWO: MAX'S NEIGHBORHOOD CARDBOARD CHALLENGE (A COMMUNITY EVENT)

LOCATION: Community Park

DURATION: 1 day (10am - 2:30pm)

PARTICIPANTS: 50 friends, family and neighbors

Max works at the community recycling plant and volunteers at a local library on the weekends. He talks to a few co-workers and other friends and they decide to host an Earth Day Cardboard Challenge at the park as a one day event. They reserve the picnic area for Saturday, April 23 from 10am - 3pm and invite their kids and kids' friends to join. They ask participants to RSVP through a Facebook event page so they know what kind of turnout to expect.

One week before, they start collecting cardboard and other donations from local organizations and businesses. Starbucks, Ralphs, and other places are goldmines for used cardboard boxes. Max's friend Amber works at an arts supply store which agrees to donate tempera paint and a variety of other craft supplies. Other friends bring cupcakes (for the kids) and coffee (for the adults!). A few tables are setup to provide building stations.

EXAMPLE THREE: THE LEE FAMILY EARTH DAY CARDBOARD CHALLENGE (SUPER SIMPLE, LITTLE PREP)

LOCATION:

Backyard

DURATION:

a few hours one day

PARTICIPANTS:

15 (the Lee family and their neighbors)

Noah hears about the Earth Day Cardboard Challenge through his friends at school and begs his parents to let him bring friends over to play. They call their friends and neighbors to join, and with a big pile of cardboard from the last Ikea run, they begin building outside. The Lee Family has a big garden, so the kids decide to focus on garden-inspired creations that will help them celebrate Earth Day. Kids make planters, bird houses, even outdoor cardboard furniture (like chairs and tables). Through the afternoon, the Lee Family take pictures and post them to Facebook to share with their extended families.





Activity Starters: Rainforest Ecosystem, Reinventing Transportation, Urban Redesign





ACTIVITY STARTER 1: RAINFOREST ECOSYSTEM

OVERVIEW

By recycling paper and cardboard, you can learn about the rainforest! Use cardboard and other craft materials to create a plant or animal that lives in the rainforest. Put it together with other participants' creations, and you can create a model of an entire rainforest ecosystem! Dive deeper by investigating actual rainforest ecosystems, and work together with your teammates to make sure your model includes all the crucial elements that a fully-functioning rainforest ecosystem would need. In the process, you can learn all about the pivotal role rainforests play in the global biosphere.

STEM CONNECTIONS: GREEN CONNECTIONS:

Biodiversity, Biology, Ecosystems Conservation, Biodiversity

MATERIALS NEEDED:

- Cardboard
- Colored paper (recycled or reused)
- Markers
- Paint
- Other decorative materials

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• Scissors

- Boxcutters
- X-acto knives
- Glue
- Masking tape

the rainforest ecosystem, and then make it out of cardboard. Decorate it with markers, paint, and other craft materials.

DIVING DEEPER:

GETTING STARTED:

Work with a group to model a rainforest ecosystem. Select a specific rainforest in the world (e.g., Amazon, Indonesia, Pacific Northwest), find out about the essential elements that help its ecosystem to function, and find a way to reuse cardboard and other recyclables in order to model those elements. Consider using math to build your model to scale. Maybe you can even find a way to represent rain!

Choose a plant or animal that lives in the rainforest. Look up

reference images online, learn about its life cycle and role in



ACTIVITY STARTER 2: REINVENTING TRANSPORTATION

OVERVIEW

Designing transportation systems of the future is becoming more and more important. Imagine a car that is powered by wind, water, or the sun. Or imagine an entirely new transportation system that we can ride into the future! In this challenge you'll start out by prototyping a car using everyday materials, including cardboard, popsicle sticks, and/or rubber bands. Dive deeper by using sensors or solar panels to make the car run on alternative energy, or by exploring the creation of transportation other than cars, like a lightning train system. This challenge explores engineering concepts through hands-on, playful tinkering.

STEM CONNECTIONS: GREEN CONNECTIONS: Engineering, Physics Renewable Energy, Repurposing, Reducing Pollution



- Cardboard (for the car body)
- Cardboard circles (for wheels)
- Wooden rods or straws for axles
- Rubber bands
- Plastic bottles

GETTING STARTED:

Build a car powered by a rubber band by using wheels made from circles of cardboard or paperboard, axles made from drinking straws, and car bodies made from other recyclables. Explore how to move the car by pulling back a rubber band. Physics concepts around kinetic energy and simple machines are at play.

DIVING DEEPER:

Designs can go beyond cars or movement from rubber bands! With a little more time, and by incorporating electronics, you can build a vehicle that runs on wind, water, or solar power. Really flex your engineering muscles by designing and prototyping an entirely new transportation vehicle or system!

- Fabric
- Solar panels
- Motors
- Rechargeable batteries
- Insulated wires
- Wire cutters

ACTIVITY STARTER 3: URBAN REDESIGN

OVERVIEW

Did you know that smaller houses are more sustainable? More and more people are going green by building and living in tiny houses. Here's your chance to design your own, using recyclable and sustainable materials. Learn about the concept of scale as you design a tiny version of a tiny house within a single cardboard box. You can dig even deeper by learning about real-life examples of tiny houses and "earthships", and brainstorming ways to power your tiny house using renewable energy. Coordinate your buildings with others in your group, and in the end you'll have a tiny city!

STEM CONNECTIONS:

Mathematics, Engineering, Architecture, Physics **GREEN CONNECTIONS:** Repurposing, Sustainable Materials, Renewable Energy, Reduced Waste

GETTING STARTED:

Design a tiny house to scale (e.g., 1 inch = 1 foot) within a single cardboard box, using recyclable materials. What kinds of things does a house need to have in it? How can you fit all of that into a small area? The smaller the house, the less energy and resources it uses!

DIVING DEEPER:

Design a whole tiny city as a group. What kinds of buildings does a city need? How can they be designed in a sustainable manner? Coordinate the design of different tiny buildings, and negotiate each building's best location to minimize pollution from transportation. Bring in data about traffic in the city you live in to find out more about how to cut down on it. Research LEED certification, green roofs, and other sustainable building practices that cities around the world are implementing, and figure out how to represent them in your tiny building models.

MATERIALS NEEDED:

- Cardboard
- Other recyclables
- Boxcutters
- X-acto knives
- Markers



Further Inspiration: Go wild with reused cardboard! Here are a couple more ways to get started:

CARDBOARD ARCADE:

Go old school with the classic cardboard arcade! With an emphasis on repurposing and recycling materials that would otherwise be thrown away, encourage youth to be like Caine and build a fantasy arcade using cardboard, old toys, an entrepreneurial mindset and a big imagination!

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HOMES AND HABITATS:

Forts, castles, mazes, play houses, bird houses, and other habitats are always fun to make. Let kids go crazy building whatever fun house they have in mind, and use it as an opportunity to talk about design, form and function.

MUSICAL INSTRUMENTS:

Repurpose cereal boxes, tissue boxes, paper towel and bathroom tissue rolls, plastic bottles, glass bottles, and any other recyclables you can think of into fun new musical instruments. Have other "musical" or rhythmic items on hand, like rubber bands for strumming, and seeds or rice for shaking.

ROBOTS:

Make small robots using cardboard boxes, tape, dowels, wheels and other items. You can incorporate simple electronics, such as DC motors and LED lights, so the robot can move, light up and make noise. Try to make them run on alternative energy like solar power.

SUPERHEROES:

Make costumes out of boxes, and create your own superhero. What superpowers does your hero possess? This is a fun context to address environmental challenges and the role a "green" superhero could play in solving them.

PAPER ROLLER COASTER:

By folding stiff paper into tracks and taping them together, you can create your own roller coaster for marbles. Cut the sides of the paper into small strips to make the paper more bendable and to add some loops. Try different sizes of marbles and different heights, and learn about physics in the process.



Additional Resources:

- **O SUGGESTED MATERIALS**
- CHECKLIST
- LETTERS







Suggested Materials

Below are some suggestions, but feel free to use whatever materials you like. We encourage you to use what you have lying around the house or to ask neighbors and businesses to donate leftover scraps and materials. Reuse and recycle whenever you can; buy only if you have to. If you start early, you'll be surprised by how many materials you can collect for free. Check to see if there are any Creative Reuse Centers in your area. See Lancaster Creative Reuse's Directory of Creative Reuse Centers around the U.S. and around the world.



CARDBOARD

Recycled or used cardboard boxes, including cereal and shoe boxes

REUSED/RECLAIMED

Empty containers of strawberries Empty bottles and bottle caps Egg or milk cartons Paper towel tubes Re-purposed fabric (e.g., pillowcases or clothes cut into scraps) Discarded stuffed animals and toys Popsicle sticks Straws

ARTS AND CRAFT SUPPLIES

Clear packing tape Masking tape Glue sticks Colored paper Scissors Markers Pencils Tempera paint Brushes Yarn Box cutters or X-acto knives (for older kids or parents) FunPasses Staplers Brown paper bags Decorative materials such as confetti Rubber bands

TOY STORE/HOME

Bouncy balls (small and medium) Mini basketballs or soccer balls Large racquet balls Various (dollar) toy prizes

ELECTRONICS

Solar panels and rechargeable batteries DC motors LEDs Insulated wires Wire cutters

Checklist:

THINGS TO REMEMBER

Be safe.

Everyone participates.

There's always more than one way to solve a problem.

Have fun!

Looking for more ways to engage a young person's interest in STEM and creative play? Search <u>theconnectory.org</u>. By offering the most comprehensive collection of STEM opportunities and programs, The Connectory is the go-to place for families to discover local STEM opportunities for the children in their lives.

PREPARATION

- Share the Earth Day Cardboard Challenge and your vision of Green STEM with anyone who is important to making your Challenge a success
- Decide dates for make days and your final celebration (on or around April 22, 2016) -and schedule events
- Create a page or event invite (e.g., on Facebook, Eventbrite, Google+), send Savethe-Dates, and ask guests to RSVP
- Recruit volunteers for make days and Earth Day on or around April 22
- Secure a safe and spacious location for hosting your Challenge
- Find a storage space and collect cardboard and other materials, and contact local sponsors for supplies and donations
- Register your Earth Day Cardboard Challenge: <u>www.cardboardchallenge.com/</u> <u>EarthDay</u>
- Promote your Challenge through a newsletter, a press release, an email blast, a Facebook invite, posters/fliers, a school assembly, or word of mouth

UNTIL EARTH DAY ON APRIL 22

- Share 'Caine's Arcade' (Parts 1 & 2) to inspire participants
- Ask participants to bring in items from home, e.g. cereal boxes, egg cartons, toilet paper rolls, etc. See Suggested Materials list
- Schedule time to design and build
- Schedule a video call with another Challenge to share experiences and ideas
- Share pictures of your work in progress online
- Send out event reminders
- Host your celebration and day of play on or around April 22

AFTER EARTH DAY

- Recycle leftover materials (see search. earth911.com for locations)
- Share photos, video, and stories online
- Fill out our Organizer Survey
- If you fundraised, send out donation checks
- Send Thank-You letters to all volunteers and sponsors
- Give yourself a high five and stay in touch with us throughout the year



A SPECIAL THANK YOU TO OUR FRIENDS AT TIME WARNER CABLE!



