TRASH TO TREASURE°

Kids' Solutions for a More Sustainable World

TRASH TO TREASURE is one installment of KIDS, a special track within Latitude's "42" innovation series. KIDS explores future opportunities for technology development as imagined by incredibly insightful, if unexpected, visionaries: young people all across the world.

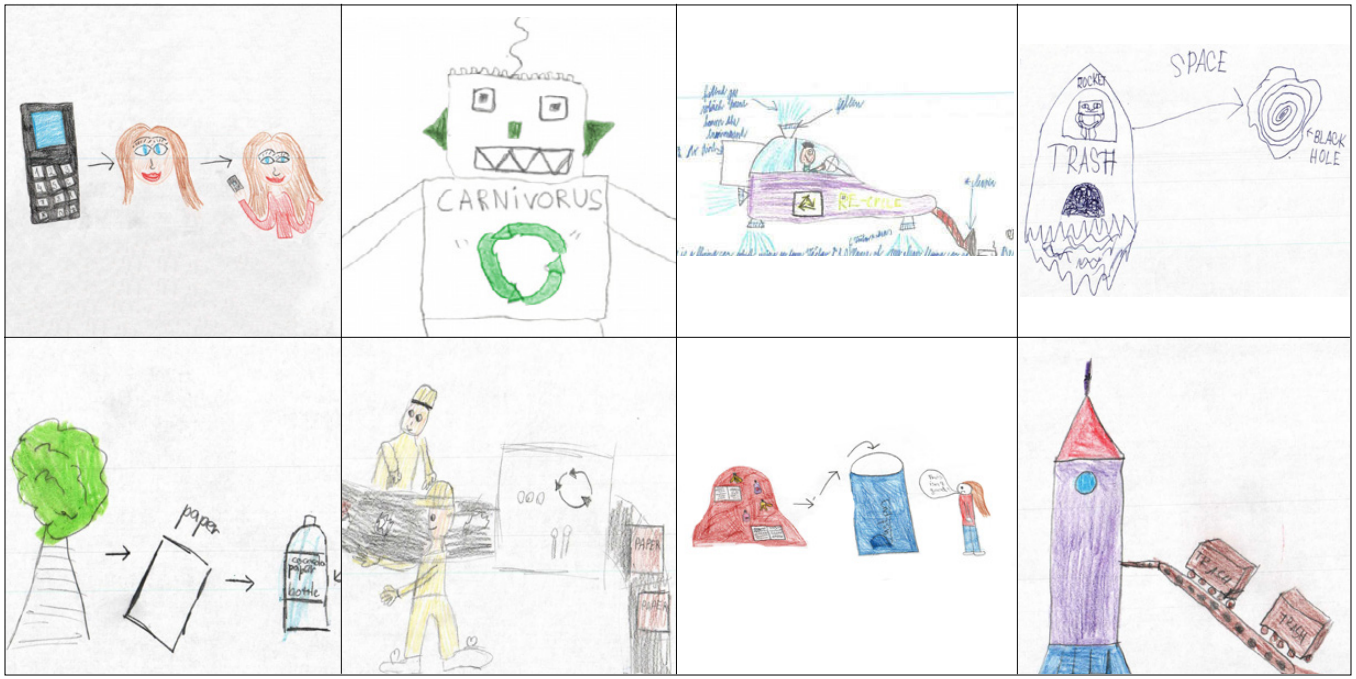
Latitude°

Summer 2014

42°

CONNECTED PROGRESS

WE ASKED A COUPLE HUNDRED KIDS AROUND THE WORLD, **"WHAT SHOULD WE DO WITH ALL OUR TRASH?"**



PLACES OF STUDY:

CZECH REPUBLIC
FRANCE
GERMANY
UNITED STATES

TYPE OF STUDY:

GENERATIVE

From 2011-2014, Latitude asked more than 270 children, ages 8-13, from the Czech Republic, France, Germany and the United States, to brainstorm possible solutions for the world's growing waste problem.

As part of their classroom activities, the children were first asked a series of open-ended questions to assess their knowledge of trash: where it goes, current disposal solutions, and why it's an increasingly troublesome problem. Next, they were instructured to write and illustrate their own narratives about trash, explaining how *they* might approach the problem. Researchers at Latitude then coded the children's narratives to identify and quantify common themes in the children's thought processes and proposed solutions.

**Percentages quoted throughout this report are based on the number of stories out of the total 270-story submission pool containing the reported code.*

***In some cases, text excerpted from children's stories has been translated to English.*

OUR QUESTIONS

1. How much do children know about the journey of trash once it's thrown away?

2. How do children think we can reduce and re-use trash more intelligently?

3. What possibilities do "digital natives" see for technology to create a more sustainable future?

"I will invent a cell phone that will be indestructible because we change phones many times during our lives. Then we will have one mobile and factories won't make lots of them."

—Tereza, 12, Czech Republic

INSIGHT° INTELLIGENT PRODUCTION = PREVENTION

We're Burying Our Heads in the Trash

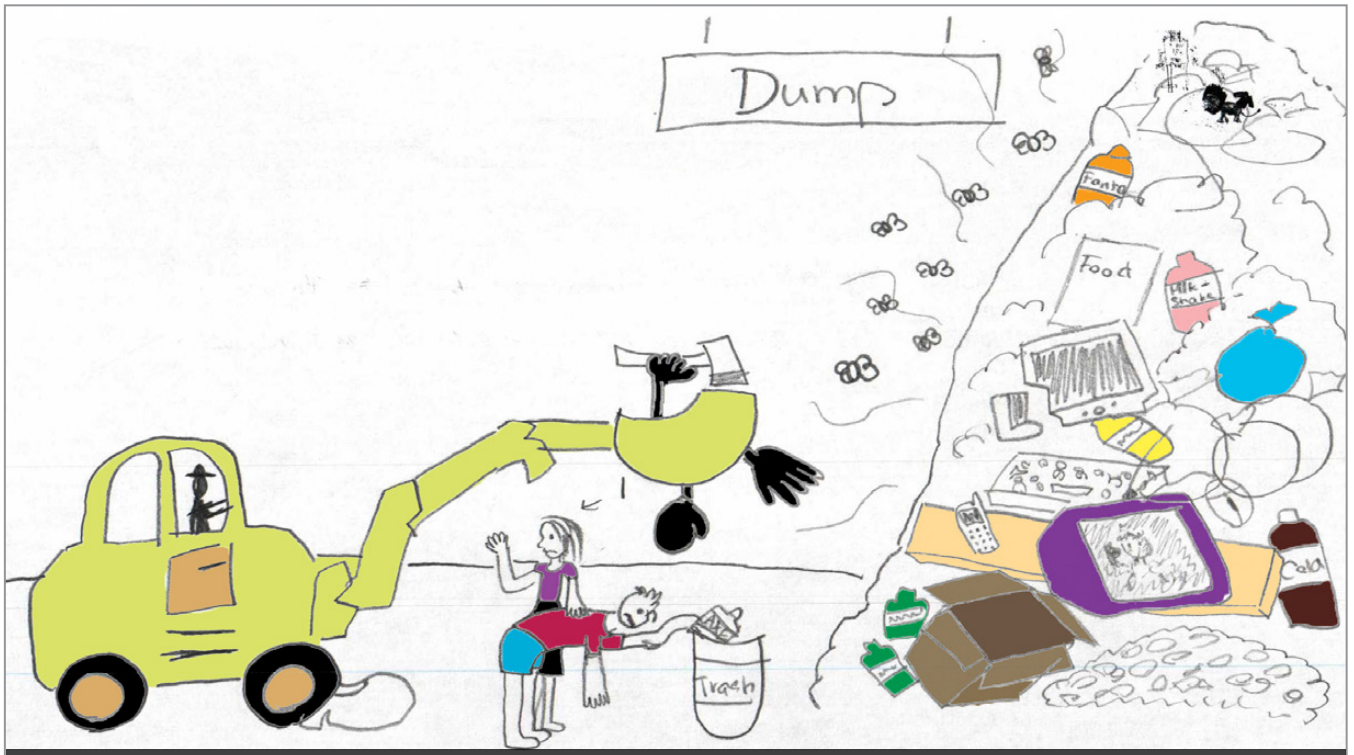
...and kids know it. Not surprisingly, some children proposed solutions that have already been tried and found wanting—such as burying garbage, sending it into space, or displacing it onto deserted islands and other locations sparsely inhabited by humans. Others suggestions included destroying waste with nuclear explosions or even employing fancy physics tricks using CERN's facilities. These ideas relate to creating distance from the problem—making trash simply "disappear," either though magic or science—while keeping everything else about how we consume the same.

For Starters, Design Smarter Stuff

Getting people to change the way they live is a tall order, so why not begin by attacking the problem at the product level? When asked how technology could help reduce or eliminate waste, a number of children suggested more eco-friendly product design—a clear opportunity for brands and product developers. Kids' ideas included using solar power instead of batteries and building higher-quality products that last longer and don't require frequent replacing. In this vein, Google has pioneered Project Ara, an "open hardware" platform for creating modularly constructed smartphones, which is scheduled for release in 2015.

INSIGHT°

DISPOSAL HABITS TODAY ARE PURE RUBBISH



"The machine punishes people for throwing away things they can use again."

—Barbora, 10, Czech Republic

Change Myself, Change the World

Kids understand that hyperconsumption coupled with careless disposal is the crux of the waste problem, with their own behaviors being no exception; as an 11 year-old boy noted, "even my family doesn't recycle as much as we should." When asked what steps they could personally take, 66% of children mentioned reducing waste and pollution—by reusing plastic bags and bottles, giving away unwanted items to others, limiting food waste, recycling, and using bikes instead of cars to get around.

A Tech-Driven Education in Sustainable Living

To encourage lifestyle changes, many children suggested tech-driven educational initiatives (e.g., learning via video games, spreading awareness via SMS or Xbox chat, etc.). Kids today possess a surprising sense of personal accountability around environmental issues and the belief that technology can encourage meaningful changes in people's mindsets and behaviors.

INSIGHT°

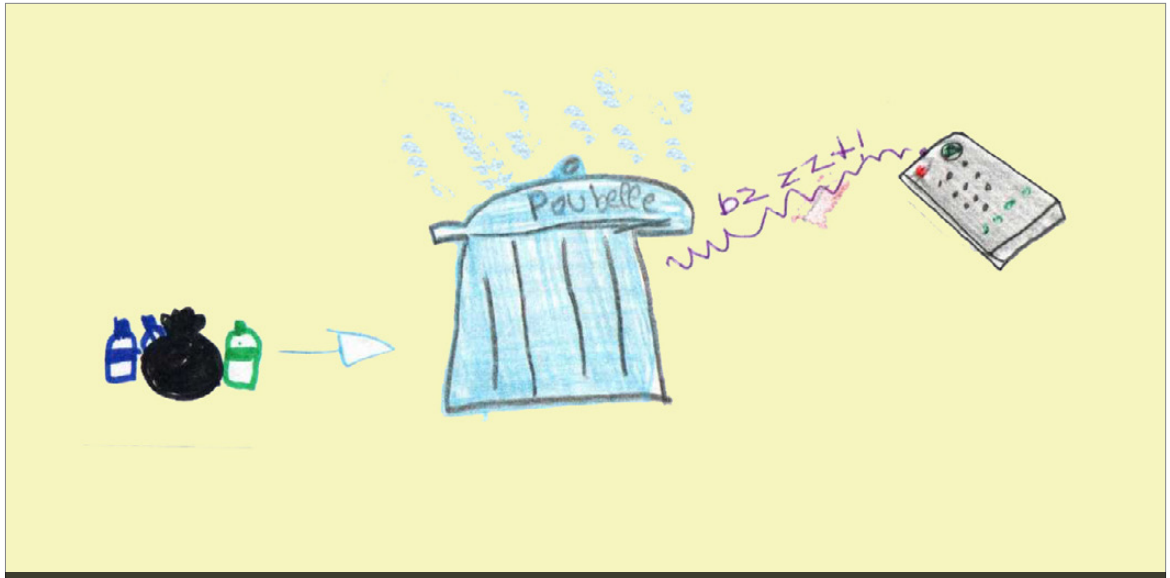
THERE SHOULD BE AN APP FOR TRASH

Turning Trash to Treasure with Technology

When asked how technology could tackle the trash problem, 86% of children had an answer at the ready. Many kids focused on the "transformative" power of technology: converting trash into something useful, whether that be fuel for cars or electronic devices, a bridge, or a new and desirable object. The idea of "smart" or self-updating products was also mentioned. Impressively, a few children saw potential in the way that technology connects individuals (and their stuff), suggesting that people trade, sell or donate unwanted items to others using websites like eBay. (See infographic on the next page for key technology-related themes.)

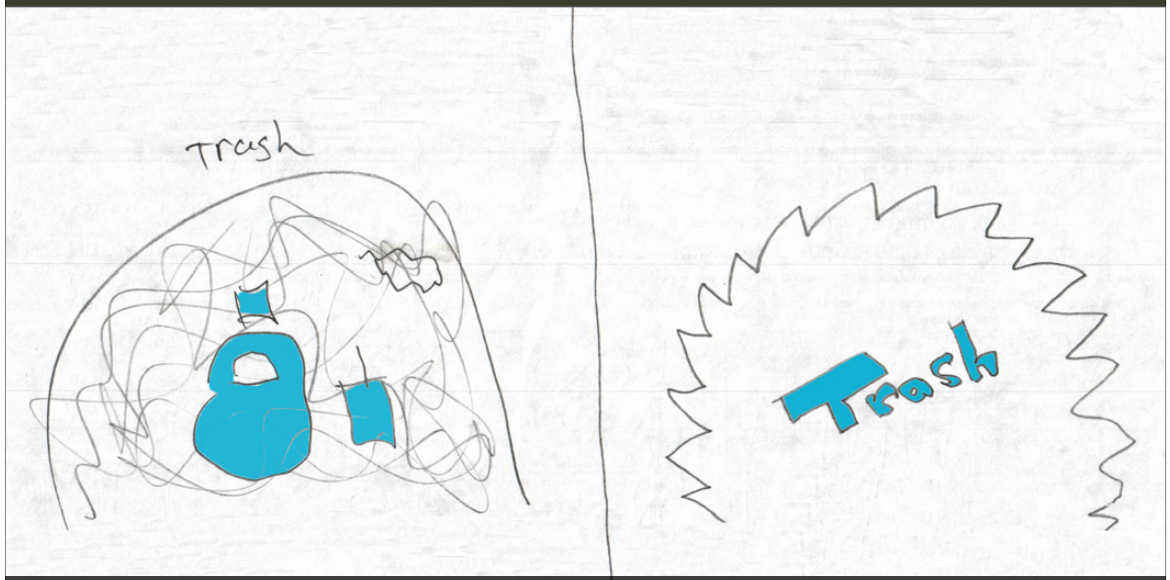
Blurring the Physical-Digital Divide

As with many areas of life, children don't make a sharp distinction between "real" and "virtual." For example, one child proposed transporting trash to a virtual game world, while another imagined a game whose levels could only be unlocked by recycling real trash. While waste is a relentlessly physical problem, kids' intuitive relationship with technology could suggest new digital possibilities that have a tangible impact, such as motivating more sustainable behaviors (e.g., via "smart" devices, etc.).



"A remote control with a 'recycle' button which, when pressed, transforms any kind of trash into something useful."

—Louise, 12, France



"We should transport trash into the virtual world in video games—but it would not be trash in the virtual world; it could be a new object."

—Jennie, 10, United States

TRASH TO TREASURE: KIDS' TECH-DRIVEN SOLUTIONS FOR A MORE SUSTAINABLE WORLD°

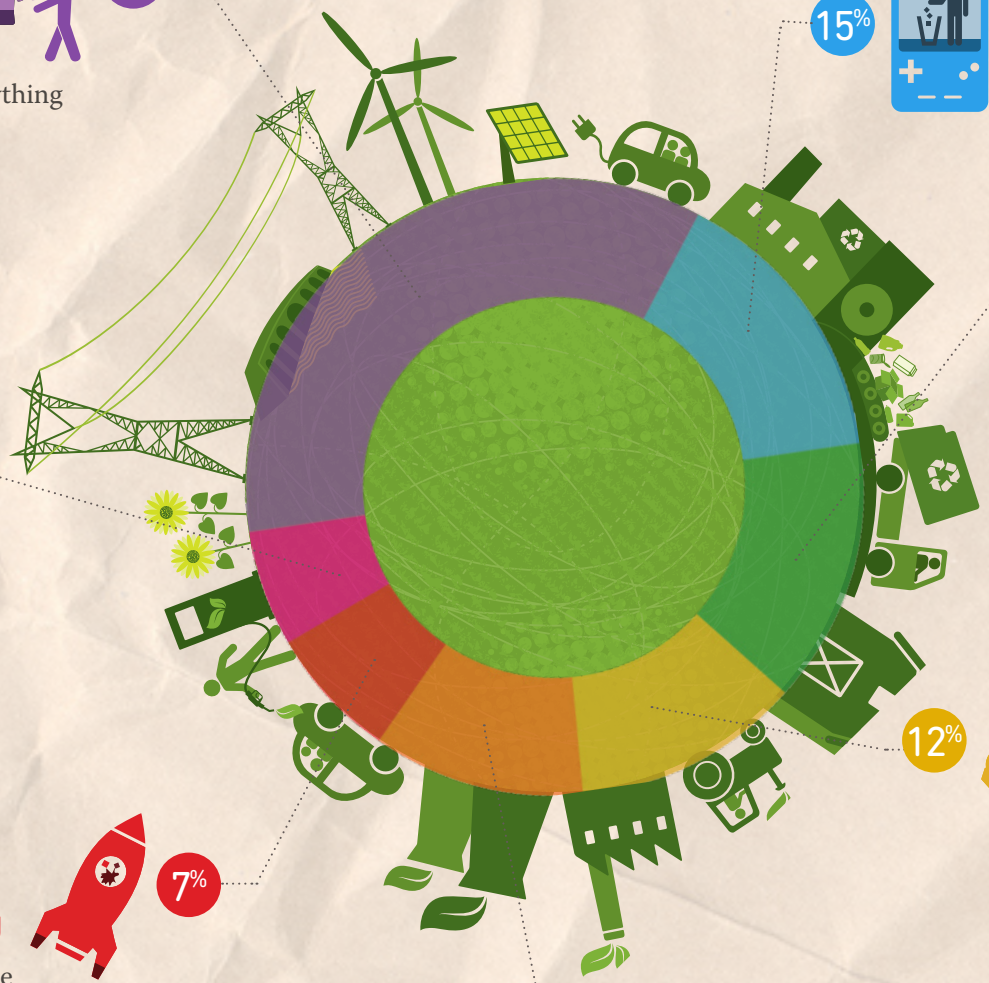
How can technology help us solve our growing trash and pollution problems?

transforming & transacting — 35%

- create self-updating products
- make computer that turns trash into anything
- sell unwanted items online

teaching through play — 15%

- send trash into the game world
- play video games about recycling
- offer virtual rewards for sustainable choices



other (non-tech) — 14%

- invent water-powered cars
- make belongings last longer
- invest in trash handling centers

fueling — 6%

- use trash as fuel
- turn landfill gases into electricity
- use trash to charge mobile phone

automating — 12%

- invent trash-eating robots
- build trash sorting device
- create waste-vanishing trash bins

displacing & destroying — 7%

- shoot trash into a black hole
- build machine that explodes trash
- pulverize trash with a laser

informing — 11%

- create commercials/PSAs
- use telepathic machines to relay information
- build apps that tell people what's recyclable

Graphic is based on data from Latitude's "Trash to Treasure" study with kids ages 8-13 from the Czech Republic, France, Germany, and the United States.

POSSIBILITIES°

Photo by Paco Olvera Monterd

FOR TECHNOLOGISTS: LEVERAGE THE INTERNET OF THINGS

The Internet of Things (or "smart" objects) can help motivate more eco-friendly behavior, such as by having a "smart" bin detect the amount of goods recycled and convert that into virtual points. Going even further, some children took for granted that the Internet could remove the human factor by automating certain processes entirely. In reality, this might mean self-driving cars that maximize fuel efficiency or homes whose sensors adjust the temperature at the right times to avoid unnecessary energy use. These and other automated solutions warrant further exploration.

FOR BRANDS & PRODUCT DEVELOPERS: DESIGN WITH NO END IN SIGHT

In the future, brands who succeed will not only create high-quality, long-lasting products; they'll also design with the entire lifecycle of a product in mind. This could include using materials that can truly be recycled and not just "downcycled" to form new products of lesser quality; building modular products so that parts can be upgraded and interchanged without replacing the entire item; or designing products that have secondary uses once their primary purposes have been exhausted—such as Nike's "Reuse-a-Shoe" program which transforms worn-out athletic shoes into high-quality sports surfaces like courts, tracks and turf fields.

FOR EDUCATORS: MAKE ENTHUSIASTS INTO ENACTORS

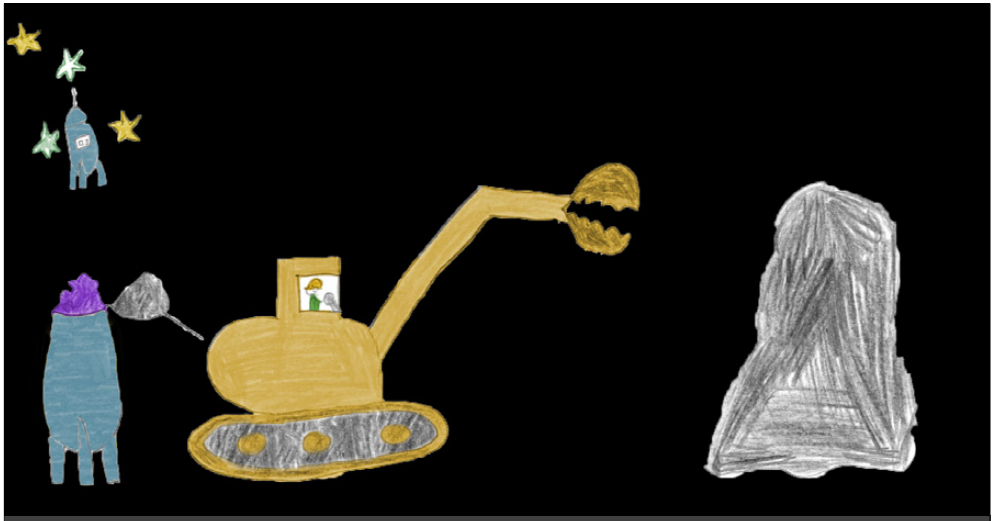
Early education around sustainability is a very effective way to instill life-long, environmentally conscious behaviors. However, as the global population (and purchasing power) rise, steps like turning off lights, recycling, and minimizing water usage won't be enough to counteract the world's growing waste issues. It's critical that society—and educators in particular—foster early childhood enthusiasm for sustainability and carry it through the curricula (e.g., applied sciences, design, etc.) so that future generations are motivated and equipped not only to imagine, but also to create, applied solutions that will address these problems head-on.

CHILDREN'S SUSTAINABLE SOLUTIONS°

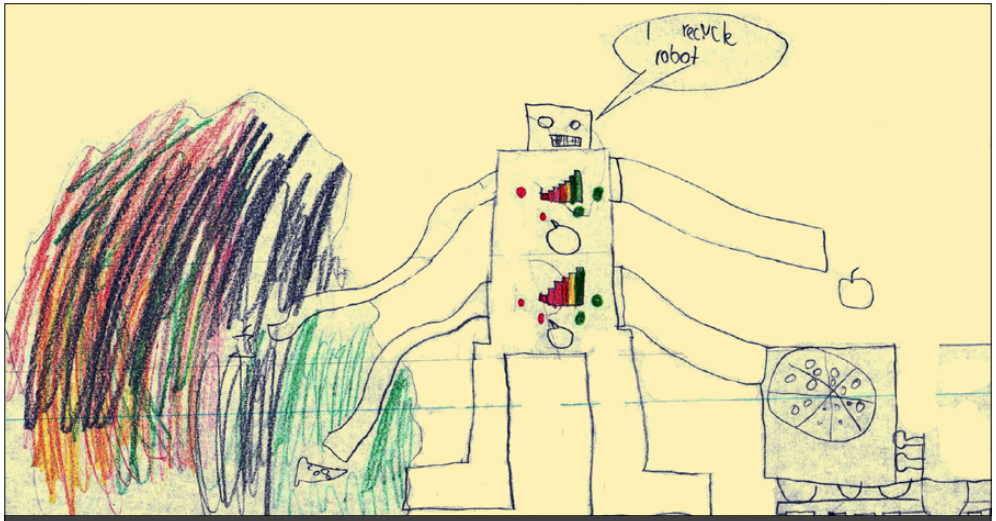
SELECT SUBMISSIONS

"I would make new water-powered cars with water emissions."

—Selina, 11, Hallbergmoss, Germany



"We could load trash into a big rocket, send it to an uninhabitable planet, unload, and then come back." —Nicolas, 12, France



"This robot eats old food and makes it into new food."

—Max, 10, Czech Republic

"Recycle infusible things of trash and metal to make a bridge."

—Klára, 12, Czech Republic

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This study was prepared by:

Latitude°

Latitude Studios, a branch of Latitude Research, reimagines the way research is traditionally communicated through an emphasis on storytelling and highly visual, interactive ways of conveying knowledge and insights. We tell stories, from the perspective of individuals and groups of people across the world, about how the Web can continue to change the way we live for the better.

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About Latitude: How We Work with Clients

Latitude provides knowledge and software for innovative organizations worldwide. Its research and consulting group transforms data and information of all kinds into visually-rich insights and opportunities for clients. Latitude's online platform, Lumière, allows people to provide open feedback and new ideas for video-based content.

Latitude helps companies better understand and engage their audiences across the following areas:

- Content & programming strategy
- Digital & mobile usability & UX
- Digital product development for children & adults
- Innovation in learning, games & entertainment

Other Select KIDS Projects by Latitude

Children's Future Requests for Computers & the Internet asked children across six continents: "What would you like your computer to do that it can't do now?" Children's eerily insightful—and often accurate—predictions spanned topics including food, "smart home" innovations, 3D printing, robotics, education, games and media.

Robots @ School asked children to tell the story of a fictional day spent with a robot companion, spanning both school and home life contexts. What would the robot be like, and what would it do? The study shed light on children's learning processes (e.g., learning through play, etc.), underserved educational needs, and opportunities to improve education—both with and without robots.