MARCH 19, 2021 • VOL. 11 • NO. 20 EDITION 5-6

TIME for KiDS

Artist Sougwen Chung draws with the help of a robot.

STATE OF THE ART

Computers, robots, and artificial intelligence: Artists are finding new ways to get creative.

timeforkids.com

KEVIN DIETSCH—UPI/BLOOMBERG/GETTY IMAGES

LEADING THE WAY Jennifer Klein (right), cochair of the Gender Policy Council, appears at the White House with cochair Julissa Reynoso (far left) and White House press secretary Jen Psaki on March 8.

ADVANCING EQUALITY

By Karena Phan

March 8 was International Women's Day. President Joe Biden marked the occasion by signing an executive order that promotes gender equity and equal rights for women and girls.

The order establishes the White House Gender Policy Council. Its job is to ensure that gender equity is a priority in United States government policies. These policies affect people in the U.S. and around the world.

Jennifer Klein and Julissa Reynoso will lead the council. Klein was an adviser to Hillary Clinton when Clinton was First Lady and secretary of state. Reynoso is chief of staff to First Lady Jill Biden. Reynoso also served as ambassador to Uruguay under President Barack Obama.

At a press briefing on March 8, Reynoso said the council will work for women's access to things like healthcare, fair pay, and education. "This is a matter of human rights, justice, and fairness," she said.

This is not the first office of its kind. Under Obama, it was called the White House Council on Women and Girls. This one has a different name for a reason. "We intend to address all sorts of discrimination," Klein said, "[and] fight for equal rights for people, whether that's LGBTQ+ people, women, girls, [or] men."

Stop and Think!

WHAT quotes does the article include? What do these quotes tell you about the Gender Policy Council?

DAVE ZAJAC—RECORD-JOURNAL/AP

INTO THE TRASH A student in Connecticut throws out food at the end of lunch period.

FOOD GONE TO WASTE

By Shay Maunz

More than 1 billion tons of food are wasted each year, according to a new report from the United Nations. That's 17% of the food produced globally in a year.

Most waste happens at home, the report says. People buy too much food, or they throw it away too soon because of the date on the package. To a lesser degree, waste also happens in restaurants and stores.

Concern about food waste has grown because of the toll food production takes on the environment. Farming, packaging, and transporting food all produce greenhouse-gas emissions.

Experts say governments need to do more to track food waste and promote better habits. Richard Swannell is one of the report's authors. He hopes awareness will lead people to value food more. "Food is too important to waste," he says.

COVER: COURTESY SOUGWEN CHUNG

FROM OUR READERS...

We usually publish letters from students. But teachers read TIME for Kids, too. They often tag us on Twitter and other social-media platforms to show us how a class is using the magazine. Here are two recent examples. Both get an A+ in our book!

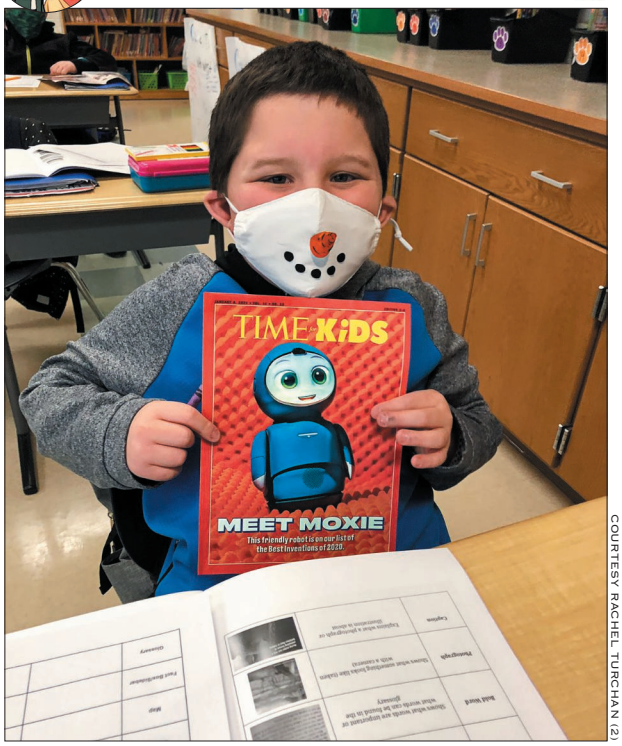
Ms. Zubovic February 11, 2021

Today fifth graders celebrated Lunar New Year! We made lanterns and read about the "Dancing Lions" in the latest TIME for Kids issue. Let's celebrate the Year of the Ox! @timeforkids #fifthgrade #scotties #YearOfTheOx #teach

COURTESY LAUREN ZUBOVIC (2)

Mrs. Turchan February 4, 2021

Today we started the morning by reading TIME for Kids! Ask your child who Moxie is!



COURTESY RACHEL TURCHAN (2)

SOCIAL-MEDIA POSTS ARE EDITED FOR CONSISTENCY WITH TFK STYLE.

Write to us at *tfkeditors@time.com* to share your thoughts and ideas.

MARCO RESTIVO—BARCROFT MEDIA/GETTY IMAGES

NEWS STORIES MAY INCLUDE REPORTING FROM THE ASSOCIATED PRESS.

SNAPSHOT

ETNA ERUPTS

Mount Etna, a volcano on the Italian island of Sicily, continued to erupt on March 7. It spewed a column of lava and ash that reached a spectacular height of 33,000 feet.

Mount Etna is Europe's most active volcano. It has been erupting since mid-February. Fortunately, no serious damage or injuries have been reported in nearby towns after the recent blasts.

—By Rebecca Mordechai

ALGORITHM ART

Computer algorithms are instructions that tell machines to solve problems and make predictions. They help us use our smartphones and stream videos, and someday they'll drive our cars. But can they make us more creative?

Some artists think so. Algorithms are helping them to come up with new ideas and produce surprising artworks. These works remind us that science can be creative and that art is a form of invention. Meet three artists who have advanced the possibilities of algorithm art. *—By Brian S. McGrath*

TEAMWORK Sougwen Chung works with a team of robots to paint spirals and swirls on a canvas.

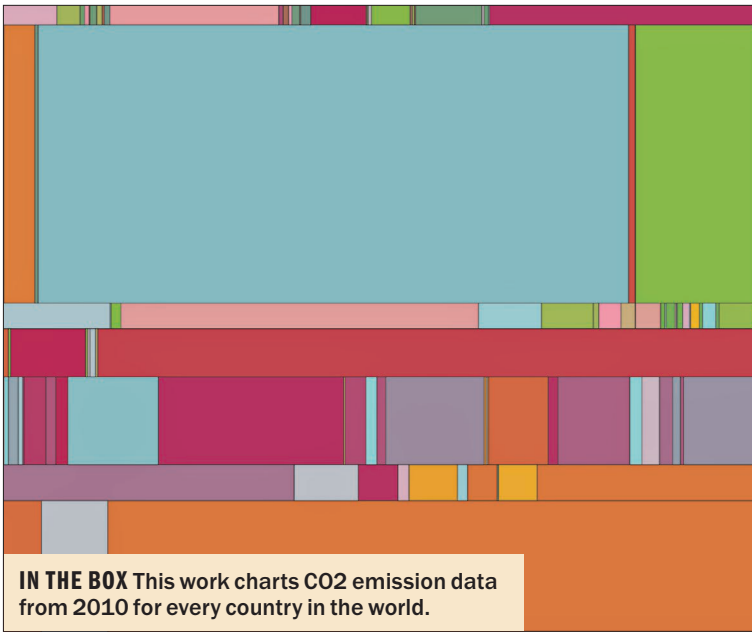
COURTESY SOUGWEN CHUNG

PAINTING WITH ROBOTS

For **SOUGWEN CHUNG,** the computer is a tool for expanding her creativity. Chung, who is based in New York City, works with a set of robots called DOUG, short for Drawing Operations Unit: Generation. DOUG can be a robotic arm fitted with a pencil or paintbrush, or it can be a team of robots.

Chung programmed DOUG to paint. She gathered 20 years of her drawings and made digital copies, then saved these copies in the robot's memory bank. As Chung paints on a canvas, the robot responds to her brushstrokes. From "memory," it makes a stroke that Chung might make. In this way, artist and machine work together, and the result is always a surprise.

Chung and DOUG often perform before an audience. It must be "a bit weird" to watch an artist work without a definite plan, Chung says. But that's the fun of it. "The second I know what's happening in those performances, I'll probably stop doing them. For now, I like the energy it gives to the work."



IN THE BOX This work charts CO_2 emission data from 2010 for every country in the world.

BEN SHNEIDERMAN

STRANGE FORMS A spectator examines a column created with algorithm technology.

MICHAEL HANSMEYER

CUTTING-EDGE ARCHITECTURE

MICHAEL HANSMEYER wants to create forms we've never seen. "We are drawn to things that make us curious," says the architect, who's based in Germany and Switzerland.

Take the column pictured above. It started with a simple shape: a cylinder. Hansmeyer programmed a computer to fold a digital cylinder again and again, producing countless new details. "It's like doing origami with a piece of dough," he says. Surfaces could stretch and tear. Some were almost too tiny to see. The result would have been impossible to draw, or to imagine beforehand.

A laser cutter was used to shape the actual column. About 3,000 slices of cardboard were made and stacked on top of one another. Since then, technology has improved, and Hansmeyer has made columns out of sandstone using a 3D printer.

These wondrously detailed forms pull people in for a closer look. When first displayed, the works came with signs that read "Do Not Touch." "But everybody reached out and touched them," Hansmeyer says. "In a way, that was the greatest compliment."

COLOR BY NUMBERS

BEN SHNEIDERMAN doesn't call himself an artist. "But I aspire to be an artist," he says. Shneiderman is a computer scientist at the University of Maryland. He's an innovator in the field of data visualization, a way of making large amounts of information visible at a glance.

In the 1990s, Shneiderman was looking for a way to see all the data contained on a computer hard drive. It dawned on him to make a digital map. So he designed an algorithm that could organize information using shapes of different sizes and colors. It turned out that the maps were not only useful, they were beautiful. They looked like art.

Shneiderman has mapped everything from sports statistics to population growth. Several of his works now belong to the Museum of Modern Art in New York City. And that makes sense to him. "There's a lot of unity between art and science," he says. "You don't have to choose one or the other. You can have both in your life."

Power Words

algorithm *noun*: a step-by-step process for achieving a task

cylinder *noun*: a shape, such as a tube or column, that has straight, parallel sides and circular ends

THE SCIENCE OF COOKING

Want to make tasty meals? Use science!

The majority of shoppers in the United States have been eating at home more often since the pandemic began. That's according to a 2020 report from Acosta, a marketing company that studies consumer trends. This means people are cooking more, too. And one way to make homemade meals more delicious is science.

"There's loads of chemistry involved in how different ingredients react to one another," Kristin Sargianis told TIME for Kids. She's the deputy editor at America's Test Kitchen Kids. "If you understand the science behind why things happen when you're cooking," she says, "you can take that knowledge and apply it and come up with your own recipe or tweak a recipe."

A CHEF'S CREATIONS

Professional chefs, such as Samin Nosrat, rely on science when creating recipes. Nosrat appears on *Waffles + Mochi,* a kids' food show on Netflix. Currently, Nosrat is developing a pizza dough recipe for young chefs.

Many bakers use a stand mixer to knead dough. Kneading develops gluten, a protein that helps dough swell into a light, chewy bread. But "a lot of people don't have stand mixers," Nosrat says. So her recipe calls for more water than other pizza dough recipes. This means less kneading is required and more gluten can develop on its own.

Resting the dough for a while also helps gluten. "Time and water do the work of the kneading," Nosrat says.

SAY "CHEESE!"

Science can also be used to adjust a recipe that you've enjoyed for years. Take grilled cheese, for example. It's delicious. But the cheese might not always melt smoothly.

Sargianis has a tip. To make a velvety grilled cheese, avoid using aged cheeses, like extra-sharp cheddar. Cheeses age by staying in a climate-controlled room for a long time. That develops their flavor. But as time passes, a cheese loses water through evaporation. The result often has a drier texture that doesn't melt well. Sargianis says that a young cheese, like mozzarella, is "full of water and will be gooey" when melted.

Whether making a favorite dish or trying a new one, getting curious about why foods taste and feel the way they do can make you a better cook. "The nice thing about cooking," Nosrat says, "is that usually there is a 'why' to be explained."

—By Rebecca Mordechai

FOOD EXPERIMENT Kristin Sargianis teaches kids the secret to making the fluffiest popcorn.

AMERICA'S TEST KITCHEN KIDS (2)

Power Words

knead *verb*: to press into and push at a ball of dough

tweak *verb*: to make small changes to something

STRETCH IT! Cheeses with more water in them make for a more gooey, stretchy grilled cheese.

INTERVIEW

8 QUESTIONS FOR AINISSA RAMIREZ

TIME for KIDS KID REPORTER

TFK Kid Reporter Donnell Meekins talks with scientist and author Ainissa Ramirez about how science has shaped our world, and how it might shape the future.

FUN SCIENCE Ainissa Ramirez does a science experiment with kids in a school cafeteria in New Haven, Connecticut.

FROM TOP: BRUCE FIZZELL; MICHAEL MARSLAND

1. Your book *The Alchemy of Us* is about inventions. Why are you interested in inventions?
As a materials scientist, I like making things. If you're making an airplane, a materials scientist has to decide: What's the best material for the job? So I am interested in other people's inventions, because they can help me figure out how to make new things.

2. Why is it important to get people excited about science?
Most of the big questions in our world involve science. It makes our cell phones possible. Someday, we'll have driverless cars. I think if people knew more about science, they would feel more connected to the world.

3. What's one big problem science could help solve?
Climate change is something we need to work on. We need better green technology, like solar cells, so we can use energy from the sun, and better magnets, so that wind turbines can make energy more efficiently.

4. You've written about bias in technology. Can you explain what that is?
Here's an example. Some water faucets have a light sensor that detects your hand. But that sensor may be designed only for lighter skin. If I were to put my hand in front of it, water wouldn't come out. Whoever made this sensor probably tested it on themselves and their friends. But they didn't test it on someone who had a different color skin. That's why we need to have people with a range of experiences working on projects.

5. I read that a TV show inspired you to become a scientist. Can you talk about that?
Yes. The show was called *3-2-1 Contact*. It had kids solving problems. One of the kids was an African-American girl. When I was growing up, you didn't see a lot of African-American people portrayed in a positive way on television. This girl was using her brain. I said, "That's what I want to do."

6. What can science fiction teach us about science?
Science fiction can help us imagine the future. It can be a map that shows us which way we should go with technology, and which way we should not go.

7. How is science related to other school subjects, like art or English?
We separate subjects in school, but in life, they are not separated. Science happens in history. It touches culture. Scientists can be influenced by art or writing.

8. What advice would you offer a budding scientist?
If science class gets hard, tell a teacher right away. Everyone should get a shot at science. Find other people who like science, and encourage one another. And the next time something breaks at home, ask your parents, "Can we take this apart?" Just to see how things work.

Power Words

detect *verb*: to discover the presence or existence of

turbine *noun*: an engine with blades that are caused to spin by water, air, steam, etc.

THIS INTERVIEW HAS BEEN EDITED FOR LENGTH AND CLARITY.

READY TO EXPERIMENT?

The first episode of *Emily's Wonder Lab,* on Netflix, is about things that glow. In an experiment, host **EMILY CALANDRELLI** teaches a group of kids how to make fluorescent paint. "Oh, no, no! I put too much [cornstarch] in," one of them exclaims. "Don't worry about it," Calandrelli tells him. "Remember, science is all about trial and error."

Calandrelli wants kids to know that failure is an important part of the scientific process. "Failure is not a bad thing," she told TIME for Kids. "It's okay to mess up, because that means you're learning something. And the whole point of science is to learn something."

Calandrelli has four degrees in science and engineering. On her show, she shares her love of science with kids. Together, they conduct experiments and do activities. In one episode, they run across a pool of a gooey material called oobleck. In another, they create rainbow explosions. "Science is how we understand how the universe works," Calandrelli says. "It's like magic that you get to understand."

—By Rebecca Katzman

COURTESY NETFLIX (2)

OBSERVING THE OUTDOORS

FROM LEFT: ROSALIE WINARD; STEPHEN BLUE FOR TIME FOR KIDS

Look outside. What do you see? Are there birds in the trees or bugs crawling around? What can you discover about these creatures by watching them? With *The Outdoor Scientist,* you'll learn to make scientific observations about the natural world. The book comes with fun facts about plants, animals, and insects, as well as interactive projects that you can do with friends and family.

TEMPLE GRANDIN is the book's author. She's also an inventor and a scientist. "When I was a child, I grew up looking at bugs and leaves," she told TFK. Grandin encourages readers to explore the world around them. "Kids today need to get outside and just observe nature," she says. "Observation is an important part of science."

—By Ellen Nam

TIME for Kids Edition 5–6 (ISSN 2156-9150) is published weekly from September to May, except for school holidays and two double issues, by Time USA, LLC. Volume #11, Issue #20. Principal Office: 3 Bryant Park, New York, NY 10036. Periodical postage paid at New York, NY, and at additional mailing offices. Subscribers: If the postal authorities alert us that your magazine is undeliverable, we have no obligation unless we receive a corrected address within two years. POSTMASTER: Send address changes to TIME for Kids, P.O. Box 37508 Boone, IA 50037-0508. Subscription queries: 877-604-8017. TIME for Kids is a registered trademark at Time USA, LLC. For international licensing and syndication requests, please email *syndication@time.com.*