

MONDAY, NOVEMBER 1, 2021

Smithsonian in collaboration with USA TODAY presents:

INNOVATION  
ACROSS THE

NATION

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 Smithsonian

 USA TODAY

# WELCOME



**Lonnie G. Bunch III**  
Secretary of the  
Smithsonian Institution

Innovation springs forth when people can see the world through new lenses, revealing unexpected possibilities. With Innovation Across the Nation, the Smithsonian and USA Today invite you to shift your own perspectives by examining some of the artistic, scientific, historical, and cultural innovation found across the Smithsonian.

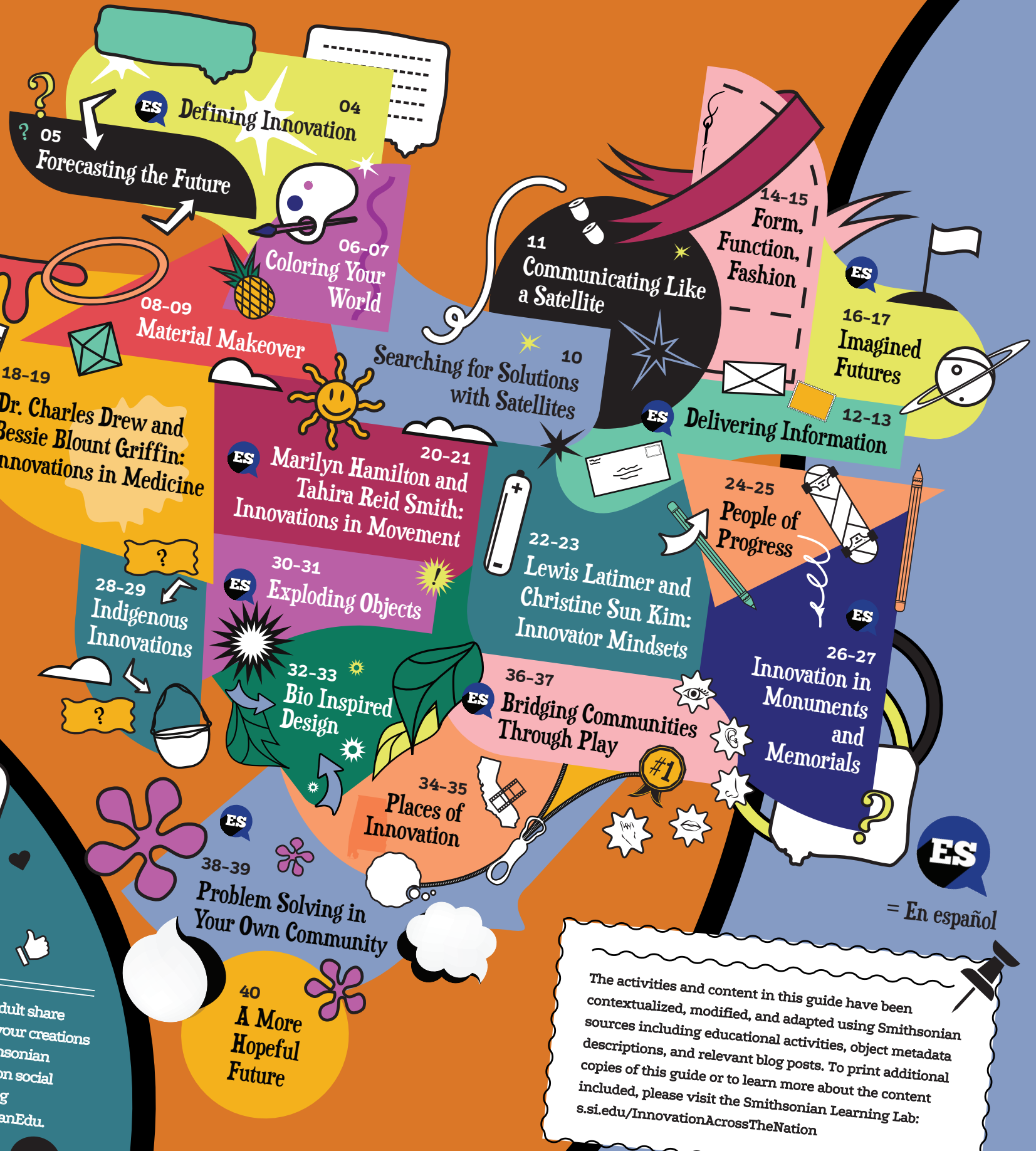
Building on the ideas of this summer's Inspiration Nation, this activity guide aims not only to inspire K-8 students with examples of true innovators who changed the world forever, but also to spur you to put your ideas into action. Whether recasting a 19th century portrait for the modern age, experimenting with the property of density, or writing your own science fiction story, these activities will engage your hands, your minds, and your creativity. I hope you enjoy the games, puzzles, and stories our Smithsonian experts have compiled for you. Most of all, I hope they show you how much fun it is to innovate.



**Nicole Carroll**  
Editor-in-Chief  
of USA TODAY

At USA Today, innovation is what we do. When it launched in 1982, the newspaper was the only daily paper distributed nationally that published color graphics and photos on its section fronts, something that's common now. Before that, the precursor to USA TODAY— called Florida Today – became the first paper on the moon when a microfilmed version was hand-carried by astronaut Alan Shepard on the Apollo 14 mission in 1971.

This past summer, the paper that went to the moon inspired USA Today's first NFT, or non-fungible token. NFTs use certificates to verify ownership of digital items. That can range from pieces of art to highlights from a professional sports game. Journalists from USA Today assembled photos, graphics and front pages from five decades of space coverage to create a space-themed interactive mosaic. It celebrated space and the human ingenuity it took to reach and explore it. We think it was also good, innovative journalism. Let the articles and activities in this section inspire you to find ways to innovate in areas that interest you.



18-19  
**Dr. Charles Drew and Bessie Blount Griffin: Innovations in Medicine**

28-29  
**Indigenous Innovations**

20-21  
**Marilyn Hamilton and Tahira Reid Smith: Innovations in Movement**

30-31  
**Exploding Objects**

32-33  
**Bio Inspired Design**

34-35  
**Places of Innovation**

38-39  
**Problem Solving in Your Own Community**

40  
**A More Hopeful Future**

04  
**Defining Innovation**

05  
**Forecasting the Future**

06-07  
**Coloring Your World**

08-09  
**Material Makeover**

10  
**Searching for Solutions with Satellites**

11  
**Communicating Like a Satellite**

12-13  
**Delivering Information**

14-15  
**Form, Function, Fashion**

16-17  
**Imagined Futures**

24-25  
**People of Progress**

26-27  
**Innovation in Monuments and Memorials**

22-23  
**Lewis Latimer and Christine Sun Kim: Innovator Mindsets**

36-37  
**Bridging Communities Through Play**

Have an adult share photos of your creations with Smithsonian Education on social media, using #SmithsonianEdu.

The activities and content in this guide have been contextualized, modified, and adapted using Smithsonian sources including educational activities, object metadata descriptions, and relevant blog posts. To print additional copies of this guide or to learn more about the content included, please visit the Smithsonian Learning Lab: [s.si.edu/InnovationAcrossTheNation](https://s.si.edu/InnovationAcrossTheNation)

**ES**  
 = En español



# DEFINING INNOVATION

Ask a partner what words or phrases they think of when they hear "innovation." Jot down notes from your conversations. What do you notice about your findings?

## ES DEFINIR INNOVACIÓN

Improving existing systems

ES Mejorar los sistemas existentes

Brainstorming without limits  
Lluvia de ideas sin límites

ES

### HOW DO YOU DEFINE INNOVATION?

### ES ¿CÓMO DEFINIR LA INNOVACIÓN?

Problem solving

ES Resolución de problemas

Making changes in the lives of individuals, communities, and the world

ES Hacer cambios en la vida de las personas, las comunidades y el mundo

Thinking up new possibilities  
ES Pensar en nuevas posibilidades

Imagining (and reimagining) the way things work

ES Imaginar (y reinventar) la forma en que funcionan las cosas

Using existing things in new ways

ES Usar cosas existentes de nuevas formas

## Innovation can be...

- Practiced throughout time and around the world
- Shaped by culture
- Reflected in artworks and creative approaches
- Developed through cycles of the scientific process
- Spontaneous, messy, and fun!

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As you complete activities in this guide, you can revisit and expand your ideas about what innovation means.

## La innovación puede. . .

- Practicarse a lo largo del tiempo y en todo el mundo
- Moldearse por la cultura
- Reflejarse en obras de arte y enfoques creativos
- Desarrollarse a través de ciclos del proceso científico
- Ser espontánea, desordenada, y divertida!

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A medida que completas las actividades de esta guía, puedes volver a visitar y ampliar tus ideas sobre lo que significa la innovación.





What do you think the origin story of this object is?

# FORECASTING THE FUTURE

Sometimes innovative thinking requires us to “discard logic” and make space in the brainstorming process to accept all possible ideas that come to us. Try this three step *\*speculative storytelling* process with this object from the Cooper Hewitt, Smithsonian Design Museum’s collection, or with any object you’re able to access.

>> COOPER HEWITT,  
SMITHSONIAN  
DESIGN MUSEUM

*\*Speculative refers to a guess about the future.*

## STEPS:

1

Consider the real-life origins and uses of this object. What materials are they made of? Where do these materials come from? Are the objects heavy? Light? Can you wear them? Are they used to complete an action or task?

2

Now, discard the logic-based conclusions from the previous step and invent your own origin stories and uses for the object.

3

Imagine you are now 50 years into the future and a problem in your neighborhood or around the world is solved thanks to the objects you have chosen. How was this object used to accomplish this?



Are there other objects around you that you might think of in different ways now?



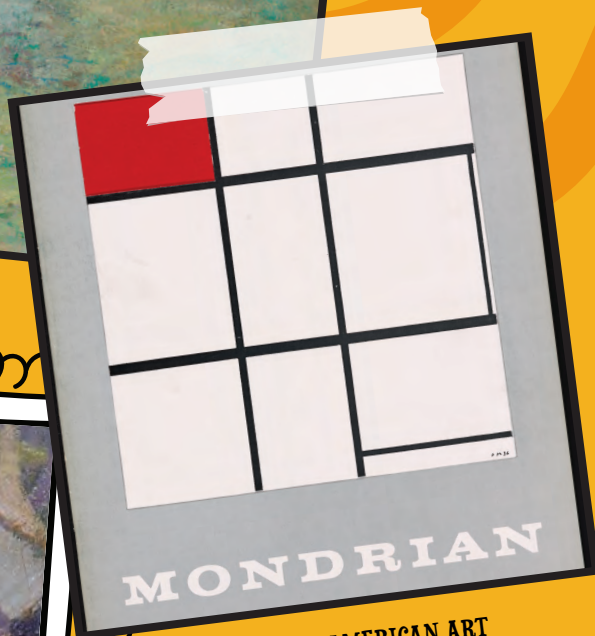
Adapted from an activity created by the Cooper Hewitt, Smithsonian Design Museum



>> SMITHSONIAN AMERICAN ART MUSEUM



>> SMITHSONIAN AMERICAN ART MUSEUM



>> ARCHIVES OF AMERICAN ART

# COLORING YOUR WORLD

Styles of art are constantly changing. Each generation strives to make a change from the past. In the second half of the 19th century, Impressionism was all the rage. Images were soft, airy, and just gave the impression of what you were looking at. But in the early 20th century, that grew to the chaos Cubism, where movement and multiple perspectives were piled into one still image. Piet Mondrian had enough of freeness of color and shapes and committed to a new style of art made from strict straight lines, primary colors, and black and white.



## CREATE YOUR OWN COLOR SWATCH

GIVE YOUR NEW COLOR A NAME:



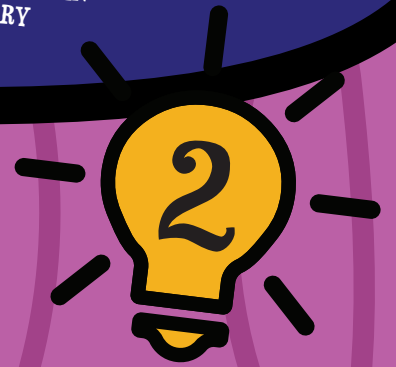
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Style isn't the only innovation in the art world. Quite by accident, a scientist attempting to cure malaria produced a rich purple dye, one of the first synthetic colors ever. This mauve took the art world by storm and showed up in everything from Impressionist paintings to Tiffany glass. In the late 19th century it was the IT color.



>> NATIONAL MUSEUM OF AMERICAN HISTORY



Modern-day artist Anish Kapoor uses color as his style. Pictured here is Vanta Black, the darkest synthetic pigment currently available!

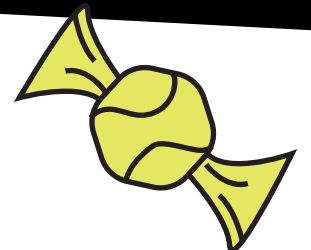


>> HIRSHHORN MUSEUM AND SCULPTURE GARDEN



## MAKE YOUR OWN COLOR!

Invent a new shade by mixing art materials you have at home. Or try an unexpected source: a vegetable, a flower, candy, and more.





# MATERIAL MAKEOVER

Have you ever collected recycling or participated in a street clean-up? Have you ever thought about creating art from what you found? There are many works of art at the Smithsonian Museum to discover more about this piece of recycled art!

1

Spend one minute looking closely at this artwork. Touch every part with your eyes --- from top to bottom, left to right, and all around.

2

How would you describe this artwork to someone who isn't looking at it?

3

This artwork is made up of various objects that the artist found while taking walks. Can you identify three different objects that are part of this artwork?

4

Fill in the blank: "This artwork makes me think about \_\_\_\_\_."

5

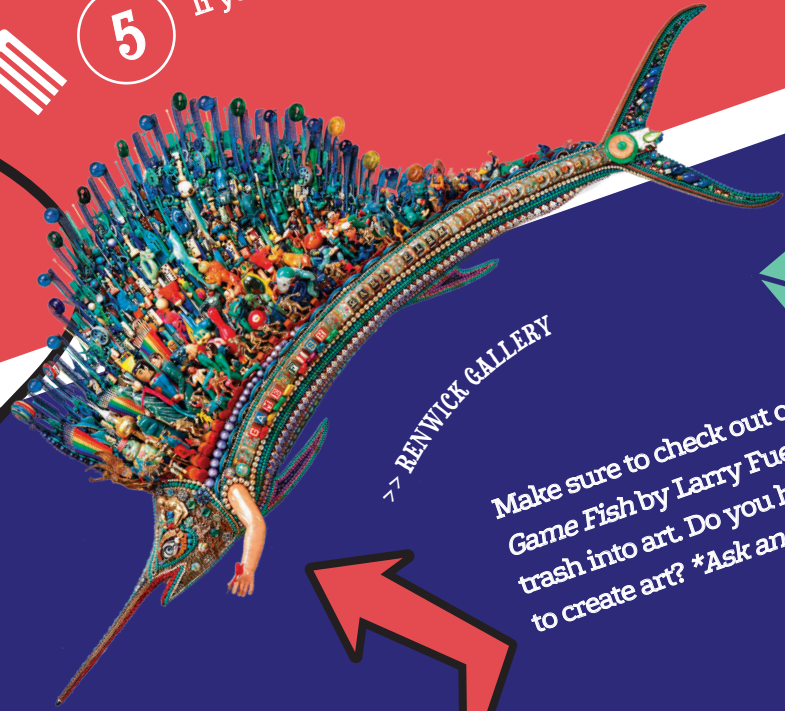
If you could add an object to this artwork, what would you include?



SMITHSONIAN AMERICAN ART MUSEUM

## WANT TO KNOW MORE ABOUT THIS ARTWORK?

Robert Ebendorf made *Off the Street, On the Beach* using materials that he collected while walking with his daughter around the beach and on the way to school. He then assembled these found pieces of glass, wire, spoons, and plastic into a playful necklace.



RENWICK GALLERY

Make sure to check out other artworks from the Smithsonian's collections, like the *Game Fish* by Larry Fuente, that showcase innovative ways that people have turned trash into art. Do you have any ideas about how you can use trash or recycled materials to create art? \*Ask an adult to double check that your materials are clean and safe to use!



Adapted from an activity created by the Smithsonian American Art Museum.

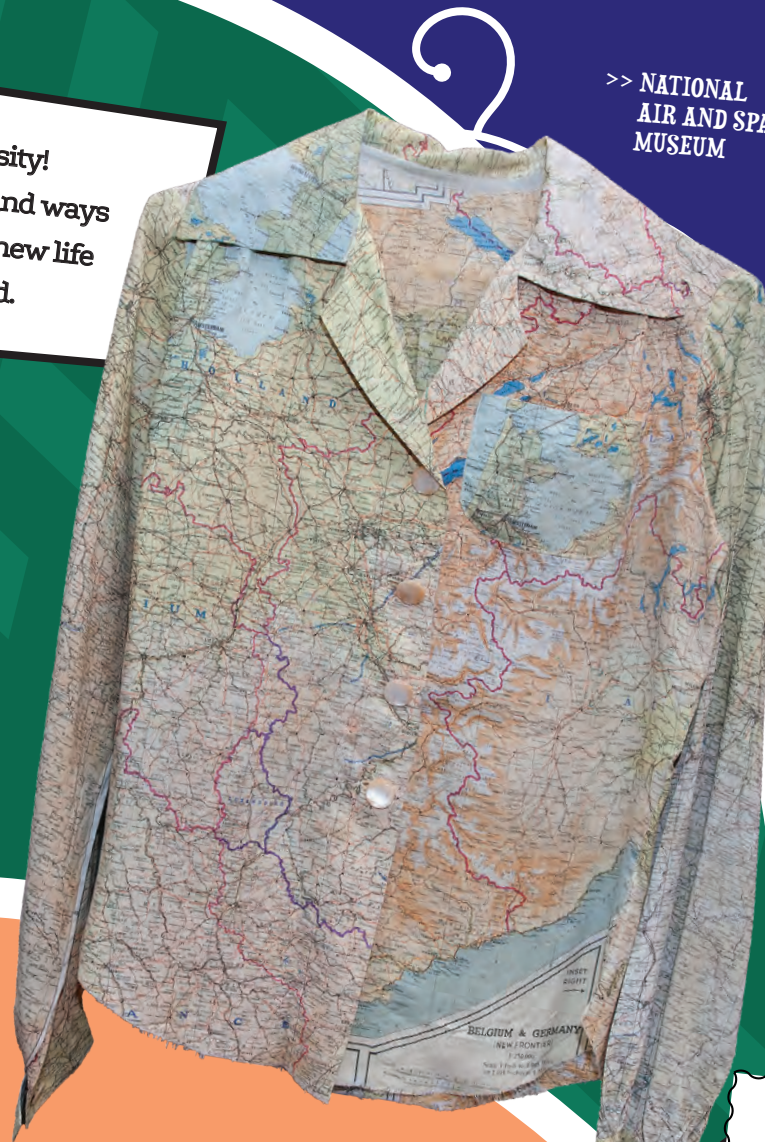


Innovation is often inspired by necessity!  
Throughout history humans have found ways  
to give material used for one purpose new life  
by repurposing it to meet a critical need.

>> NATIONAL  
AIR AND SPACE  
MUSEUM

During World War II many materials were unavailable to the public because of government rationing. This blouse is an innovative example of a woman repurposing the silk escape maps that her husband used while flying combat missions in Europe.

>> NATIONAL MUSEUM OF  
AMERICAN HISTORY



Life on America's farms in the 1920s and 1930s was difficult, and families wasted nothing that could be recycled or reused. With feed sacks and flour bags, people on farms took thriftiness to new heights of creativity, transforming the humble bags into dresses like the one shown here. They also used the materials to make underwear, towels, curtains, quilts, and other household necessities. Manufacturers responded by turning out bags in bright colors and printed designs, hoping it would boost their sales.

### HAVE YOU EVER HEARD OF A TRASHION SHOW?

Trashion is a modern term used to describe taking items that would otherwise be discarded and turning them into a fashion item! Identify some things in your environment that can be transformed this way. Hold a trashion show with your family or friends!

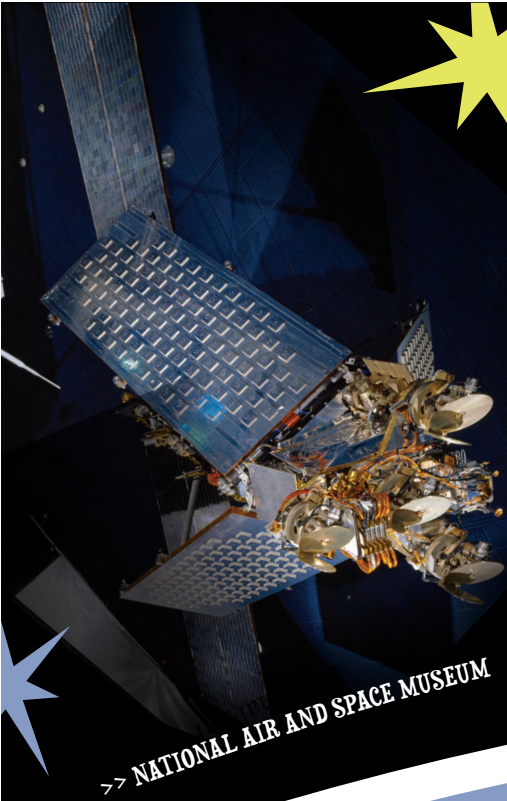




# SEARCHING FOR SOLUTIONS WITH SATELLITES

When you hear the word "satellite," what do you think of? What do you already know about satellites?

A satellite is an object that orbits or goes around another object. In 1957, the Soviet Union launched the first artificial satellite, Sputnik 1. Since Sputnik, many satellites have been flown into space for different jobs, such as taking pictures, communicating, tracking weather, and helping us to navigate or find our way. At the Smithsonian, scientists also use information from satellites to better understand the world around us. Keep reading below to learn how scientists at the Smithsonian's National Zoo and the Smithsonian Astrophysical Observatory use information from satellites!



>> NATIONAL AIR AND SPACE MUSEUM



The Migratory Bird Center at the National Zoo seeks to understand, protect, and support birds that migrate or move seasonally from one area to another. One way scientists try to understand birds' migration is by satellite observation. People will tag birds with devices that can be tracked by satellites, so that we can study where they go.

>> SMITHSONIAN'S NATIONAL ZOO AND CONSERVATION BIOLOGY INSTITUTE

## CREATE A HYPOTHESIS:

How do you think air pollution might affect bird migratory patterns?

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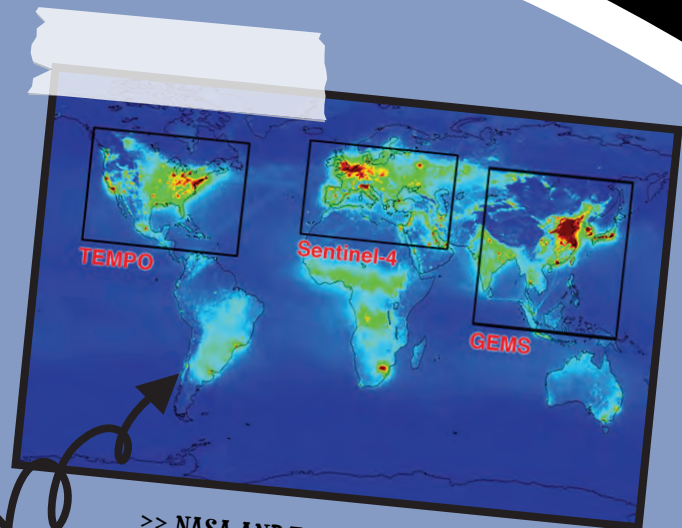
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>> NASA AND THE SMITHSONIAN ASTROPHYSICAL OBSERVATORY

Have you ever wondered what is in the air we breathe? Scientists at the Smithsonian Astrophysical Observatory are leading a NASA Mission to send a satellite, named TEMPO, into space. It will be the first to share hourly information about air pollution over North America from space.



# COMMUNICATE LIKE A SATELLITE

Now we know that we send satellites to space to study Earth from above, but how do we get all of the information back to the ground?

Computers, including the ones on satellites, use a special language to communicate between one another. This language, known as "binary code," uses zeros and ones in a series of eight spots. Each pattern of eight represents a different letter or number. This simple system of zeros and ones is an easy way to talk with machines, because electricity can either be on or off.

## BINARY CODE KEY

A	■ □ ■ ■ ■ ■ ■ ■ □	Q	■ □ ■ □ ■ ■ ■ ■ □
B	■ □ ■ ■ ■ ■ ■ ■ □	R	■ □ ■ □ ■ ■ ■ ■ □
C	■ □ ■ ■ ■ ■ ■ ■ □	S	■ □ ■ □ ■ ■ ■ ■ □
D	■ □ ■ ■ ■ ■ ■ ■ □	T	■ □ ■ □ ■ ■ ■ ■ □
E	■ □ ■ ■ ■ ■ ■ ■ □	U	■ □ ■ □ ■ ■ ■ ■ □
F	■ □ ■ ■ ■ ■ ■ ■ □	V	■ □ ■ □ ■ ■ ■ ■ □
G	■ □ ■ ■ ■ ■ ■ ■ □	W	■ □ ■ □ ■ ■ ■ ■ □
H	■ □ ■ ■ ■ ■ ■ ■ □	X	■ □ ■ □ ■ ■ ■ ■ □
I	■ □ ■ ■ ■ ■ ■ ■ □	Y	■ □ ■ □ ■ ■ ■ ■ □
J	■ □ ■ ■ ■ ■ ■ ■ □	Z	■ □ ■ □ ■ ■ ■ ■ □
K	■ □ ■ ■ ■ ■ ■ ■ □		
L	■ □ ■ ■ ■ ■ ■ ■ □		
M	■ □ ■ ■ ■ ■ ■ ■ □		
N	■ □ ■ ■ ■ ■ ■ ■ □		
O	■ □ ■ ■ ■ ■ ■ ■ □		
P	■ □ ■ ■ ■ ■ ■ ■ □		

■ COLOR CHOICE #1  
□ COLOR CHOICE #2

## MAKE A BINARY BRACELET:

- 1 Write your initials on a piece of paper.
- 2 Use the key on this page to write out each letter in binary code.
- 3 Transform, or code, each letter to a colored bead. Choose one color bead to represent the white squares, signifying the '1' in binary code. Then choose another color to represent the black squares, representing the '0' in binary code.
- 4 Cut a piece of string or cord to fit around your wrist with a few extra inches to have room to tie knots.
- 5 Tie a knot on one end of the string, then string each of your beads onto the string.
- 6 Knot the open end of the string, then tie the two ends together.
- 7 Now you've got a binary bracelet!



Adapted from an activity developed by the Chandra X-ray Center at the Smithsonian Astrophysical Observatory with additional support from NASA's Universe of Learning.

# DELIVERING INFORMATION

Mail transportation has gone through innumerable changes since the United States Post Office was created in 1775. The increased use of automobiles in the 1900s was by far the most revolutionary development up to that point, allowing for much quicker and more efficient city mail delivery. But the Postal Service vehicles were often secondhand military trucks and were not standardized. By 1950, the fleet was hopelessly out of date - some trucks had been on the road as long as 30 years. It was time for some innovation!



>> NATIONAL POSTAL MUSEUM

Next the Postal Service turned to the tough and reliable Jeep, which had been a small part of the fleet in the 1950s and now became a mainstay. For more than 20 years, they withstood tough weather conditions and rigorous use to keep mail delivery on schedule.



>> NATIONAL POSTAL MUSEUM

After grueling testing of numerous models, the custom-built Long Life Vehicles debuted in 1987. Though they lived up to their name - many are still in operation today - once they were in regular use, flaws such as low driver visibility began to show.



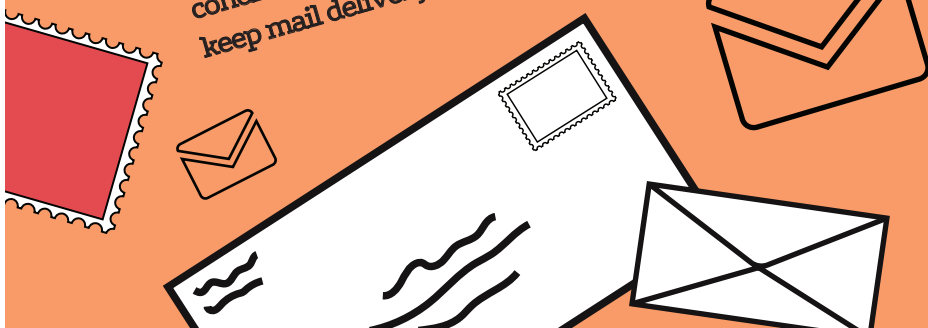
>> PHOTO COURTESY OF UNITED STATES POSTAL SERVICE

Following extensive input from mail carriers and numerous other stakeholders, the Postal Service announced that the Next Generation Vehicle is scheduled to hit the road in 2023. It will include improvements such as air-conditioning and heating, 360-degree cameras, air bags, and automatic braking. With an eye toward future innovations, the Next Generation Vehicles are designed to be adaptable to new technologies.

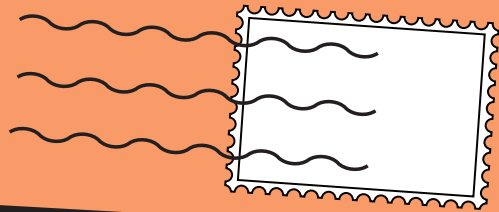


>> NATIONAL POSTAL MUSEUM

Piloted with great excitement in 1957, the lightweight, three-wheeled Mailster soon made up nearly one-third of the postal fleet. However, Mailsters had not been tested thoroughly and it turned out they were immobilized by small amounts of snow, tipped over easily, were slow, and were prone to breakdowns.

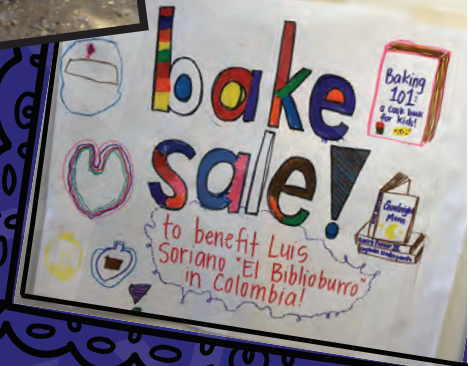






Libraries offer critical access to vast collections of physical and electronic resources. Most kids are familiar with libraries and can take advantage of the learning opportunities they provide. But in some parts of the world, libraries are scarce and it can be hard to access information. Luis Soriano took a creative approach to addressing this need in his native Colombia. Since 1996, Soriano has traveled throughout remote mountainous areas of Colombia with his Biblioburro - a donkey library - to bring books to children who don't have traditional libraries in their communities.

**ES** Las bibliotecas ofrecen acceso crítico a vastas colecciones de recursos físicos y electrónicos. La mayoría de los niños están familiarizados con las bibliotecas y pueden aprovechar las oportunidades de aprendizaje que brindan. Pero en algunas partes del mundo, las bibliotecas son escasas y puede resultar difícil acceder a la información. Luis Soriano adoptó un enfoque creativo para abordar esta necesidad en su Colombia natal. Desde 1996, Soriano ha viajado por zonas montañosas remotas de Colombia con su Biblioburro - una biblioteca en burro - para llevar libros a los niños que no tienen bibliotecas tradicionales en sus comunidades.



Kindergarten students at the Smithsonian Early Enrichment Center learned about Luis Soriano's work and wanted to connect with him. After emailing him many questions about his program, they discovered he was fundraising to build a library in his hometown of La Gloria, Colombia. The kindergarten decided to support his library in two ways: they held a bake sale to raise funds for him and they made a bilingual ocean animal alphabet book to donate to the library. The bake sale raised almost \$500 and the book was dedicated to Soriano's two hard-working donkeys, Alfa and Beto.

**ES** Los estudiantes de kindergarten en el Smithsonian Early Enrichment Center aprendieron sobre el trabajo de Luis Soriano y querían comunicarse con él. Después de enviarle muchas preguntas por correo electrónico sobre su programa, descubrieron que estaba recaudando fondos para construir una biblioteca en su ciudad natal de La Gloria, Colombia. El jardín de niños entonces decidió apoyar su biblioteca de dos maneras: realizaron una venta de pasteles para recaudar fondos para él e hicieron un libro bilingüe del alfabeto de animales del océano para donarlo a la biblioteca. La venta de pasteles recaudó casi 500 dólares y el libro fue dedicado a los dos burros de Luis, Alfa y Beto.



# FORM, FUNCTION, FASHION

Innovation can be seen in what we wear.  
Take a close look at the objects to the left and right.  
What do you notice? What is similar?  
What is different?

>> NATIONAL AIR AND SPACE MUSEUM



>> NATIONAL MUSEUM OF AFRICAN AMERICAN HISTORY AND CULTURE

Think about the shoes in your closet.

What do you notice about them?

What purposes do different shoes have?

How does their appearance reflect their purpose?



Toe shoes like the ones shown above, worn by Ingrid Silva, allow ballerinas to dance en pointe, or on the tips of their toes. While these shoes have mostly stayed the same for around 200 years, dancers often make their shoes their own by adding in cushioning or foam for support, bending them back and forth to make them less rigid, and by custom coloring them. More recently, manufacturers and students have been reimagining creating the pointe shoe. To learn about how 3D printing and memory foam are supporting the reimagining of the pointe shoe, read this blog post. [invention.si.edu/better-pointe-shoe-sorely-needed](http://invention.si.edu/better-pointe-shoe-sorely-needed)

Look closely at these shoes - where would you wear them? Why? These bulky shoes, called lunar overshoes, were worn on the Moon! Sharp rocks, lack of gravity, and extreme temperatures are several of the factors that influenced the design of these lunar overshoes worn by Eugene Cernan, part of the Apollo 17 crew that landed on the Moon on Dec. 10, 1972. What other wearable innovations throughout history have protected during space exploration? Dive deeper on the next page.

# INNOVATING PROTECTIVE GEAR

Designed to protect the bodies of airplane pilots and astronauts, pressure suits and spacesuits have been re-envisioned over time. These changes have been made to suit different mission needs as we explore farther away from Earth. Examine how these suits have changed over time.

## WHAT HAS STAYED THE SAME?




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## IMAGINE THE SPACESUIT OF THE FUTURE!

Imagine a future where humans have spread out far into the stars. Picture a new planet filled with unknown dangers and opportunities. Now design a suit to explore that world!

Be sure to think about possible challenges like extreme temperatures, meteors, or lack of oxygen. How hard or easy will it be for you to get around? Are you visiting a water world, or one with lots of mountains and valleys to climb?



1934

>> NATIONAL AIR AND SPACE MUSEUM

This pressure suit was worn by Wiley Post during a high altitude flight from California to Ohio to protect his body from dangers such as lack of oxygen.

1969



Worn by Neil Armstrong during the Apollo 11 mission, this pressurized suit was designed to protect the astronaut from micrometeoroids and extreme temperatures.

>> NATIONAL AIR AND SPACE MUSEUM

TODAY & BEYOND



What will spacesuits look like when we return to the Moon and go to Mars? Dava Newman has envisioned the BioSuit, which would protect astronauts like past suits, but also allow them to move more freely.

>> ARTS AND INDUSTRIES BUILDING, FUTURES





>> NATIONAL AIR AND SPACE MUSEUM

# IMAGINED FUTURES

Author Jules Verne's 1865 vision of a rocket launched from Florida foreshadows NASA launches from Cape Canaveral nearly 100 years later.

## Innovación en ciencia ficción

ES

La visión de 1865 del autor Julio Verne de un cohete lanzado desde Florida presagia los lanzamientos de la NASA desde Cabo Cañaveral casi 100 años después.

>> NATIONAL AIR AND SPACE MUSEUM

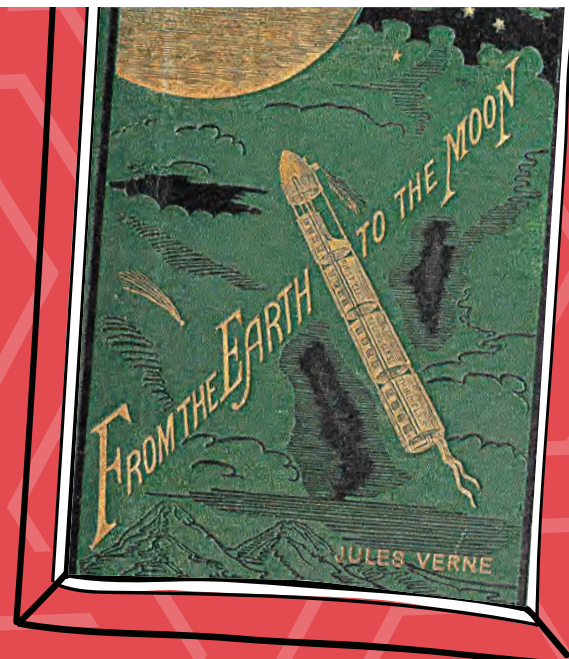


>> SMITHSONIAN LIBRARIES AND ARCHIVES

In 1908's "The War in the Air," writer H.G. Wells predicted aerial combat of World War I.

ES

En "The War in the Air" de 1908, el escritor H.G. Wells predijo el combate aéreo de la Primera Guerra Mundial.



>> SMITHSONIAN LIBRARIES AND ARCHIVES

>> NATIONAL MUSEUM OF AMERICAN HISTORY



Think about the shows and movies you watch and books you read. For those set in the future, what technologies do you think might become reality?

ES

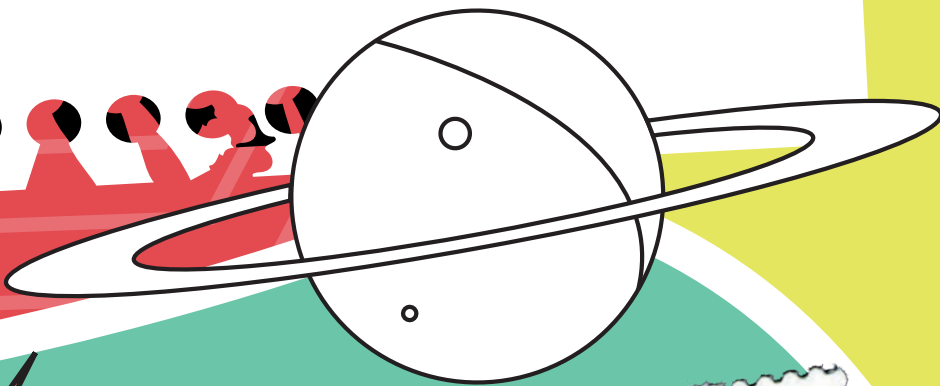
Piensa en los programas y películas que ves y en los libros que lees. Para los que se establecen en el futuro, ¿qué tecnologías crees que podrían convertirse en realidad?



The "Futures" exhibit at the Arts and Industries Building imagines what a normal day might be like in 2071. Will dogs visit other planets by then? Will families travel together by rocket? What do you imagine life might be like 50 years from now, either here on Earth or in space? Draw your idea below.

ES

La exposición "Futures" en el Edificio de Artes e Industrias imagina cómo sería un día normal en 2071. ¿Los perros visitarán otros planetas para entonces? ¿Viajarán las familias juntas en cohete? ¿Cómo imaginas que será la vida dentro de 50 años, ya sea aquí en la Tierra o en el espacio? Dibuja tu idea a continuación.



&gt;&gt; NATIONAL POSTAL MUSEUM

&gt;&gt; NATIONAL POSTAL MUSEUM

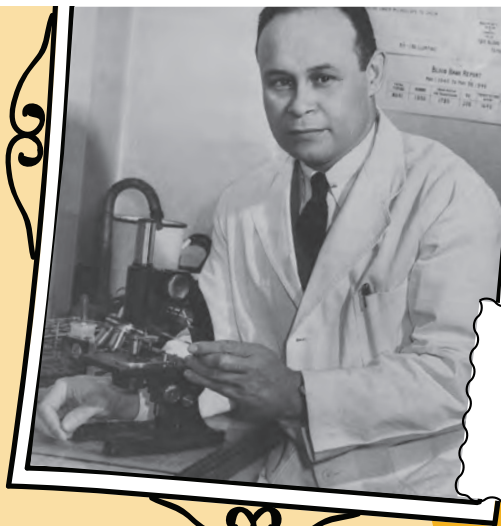


In celebration of the approaching 21st century, the U.S. Postal Service held a contest in 1999 asking children to submit artwork based on their visions of the future. These are two of the winning designs that were issued as postage stamps on July 13, 2000. Twenty-one years later, the future these children envisioned is not yet a reality, but humans have witnessed major milestones in space exploration, such as the launch of the International Space Station and the fly-by of Pluto.

ES

Para celebrar el siglo XXI que se acerca, el Servicio Postal de EEUU organizó un concurso en 1999 para pedir a los niños que enviaran obras de arte basadas en sus visiones del futuro. Estos son dos de los diseños ganadores que se emitieron como sellos postales el 13 de julio de 2000. 21 años después, el futuro que estos niños imaginaban aún no es una realidad, pero los humanos han sido testigos de importantes hitos en la exploración espacial, como el lanzamiento de la Estación Espacial Internacional y el sobrevuelo de Plutón.

# DR. CHARLES DREW AND BESSIE BLOUNT GRIFFIN: INNOVATIONS IN MEDICINE



>> NATIONAL MUSEUM OF AMERICAN HISTORY

Visit the Smithsonian Learning Lab to learn more about Dr. Charles Drew and to create a density tower using household liquids.

Charles Drew was an African American physician and researcher best known for his contributions to blood research during the first half of the 1900s. While blood transfusions had been performed on humans for nearly 200 years, there were still many issues such as bacterial contamination, matching of blood groups, and blood spoilage that made this process challenging. During World War II, while leading the American Red Cross' Blood for Britain program, Drew learned that he could dehydrate blood plasma and ship it overseas far more effectively than one could ship whole blood. This medical breakthrough allowed whole blood or its individual components to be stored longer without spoiling, meaning more lives saved. In addition to this, Drew helped invent and patent an 'Apparatus for Preserving Blood,' which helped lengthen how long blood could be stored before spoiling.

Dr. Drew was able to make innovative improvements to blood storage and processing because he understood its properties. Whole blood can be separated into three layers (red blood cells, white blood cells, and plasma) based on their densities.



You can think of density as how much stuff is packed into a space. Denser objects sink and less dense objects float on top of the other liquids.

WHOLE BLOOD COMPONENTS	DENSITY
Plasma	1.03g/ml
White Blood Cells	1.07g/ml
Red Blood Cells	1.13g/ml

LIQUIDS

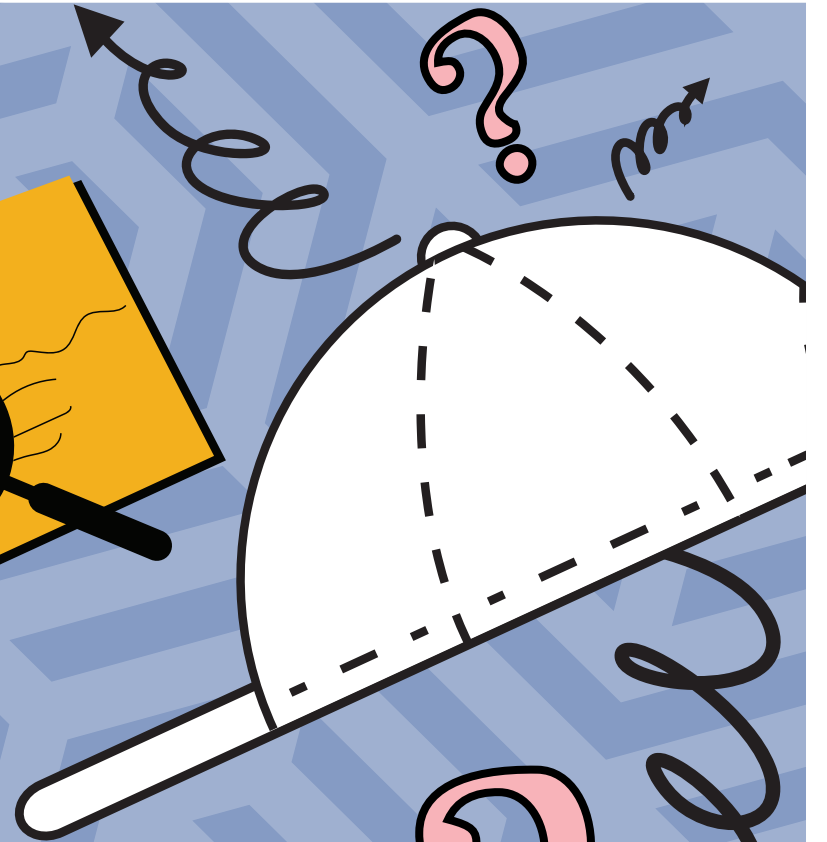
- (A.)  
Vegetable Oil
- (B.)  
Juice
- (C.)  
Chocolate Syrup
- (D.)  
Rubbing Alcohol
- (E.)  
Corn Syrup
- (F.)  
Water

- 1 Guess the order of the liquids from most dense to least dense.
- 2 Fill the letters into the beaker on the left, based on how dense you think each liquid is. The denser the liquid, the lower it will be in the beaker.
- 3 Test your hypothesis by building your own density tower. Follow the instructions found in the Learning Lab collection.

LEAST DENSE TO MOST DENSE | ANSWERS: D A F B C E



Bessie Blount Griffin was an African American nurse and physical therapist during World War II. She is most well known for her inventions designed to improve the lives of the soldiers who were amputees because of the war. She patented the 'Portable Receptacle Support,' which allowed its users to feed themselves without the use of their limbs. In addition to her career as an inventor, she was also the first African American woman to study at the famed Scotland Yard. She even became a handwriting forensic expert, examining evidence for court cases. During the later years of her life she traveled the country talking with audiences about her many careers.



### ACTIVITY

Let's put on our creativity caps!  
What is something that you can create to improve the lives of others so that they can more fully participate in daily activities?  
Think about where you live, where you go to school, where you play, and all that you do. What are some of the best ways for you to make a positive difference for others?

A large white area with a red question mark on the left and four horizontal lines for writing, each starting with a black dot. A small pencil icon is positioned above the first line. A vertical strip of torn paper with question marks runs along the right edge of the writing area.





## MARILYN HAMILTON AND TAHIRA REID SMITH: INNOVATIONS IN MOVEMENT

Marilyn Hamilton experienced innovation out of necessity. After a hang-gliding accident left her paralyzed in 1979, her active lifestyle stalled. In that moment, she and some friends built the first Quickie Wheelchair. It was lightweight, quick to move, and allowed her to continue her athletic pursuits. Prior to this, wheelchairs hadn't seen a lot of innovation since the Civil War, when they were first mass-produced for wounded soldiers. Thanks to Hamilton, the Quickie Wheelchair is now assisting athletes in over 130 countries.

>> NATIONAL MUSEUM OF AMERICAN HISTORY

Have you ever found yourself stuck or unable to succeed because you lacked the correct tools?

What can you invent to make your life and others? Maybe it's something faster, quieter, or smoother?

Sketch your creations!





Tahira grew from a creative young girl into a brilliant inventor. What are you passionate about? Is there currently a need or challenge with it that you could improve on?

**DRAW** your design below.



>> COURTESY OF TAHIRA REID SMITH

## TAHIRA REID SMITH: DOUBLE-DUTCH MACHINE

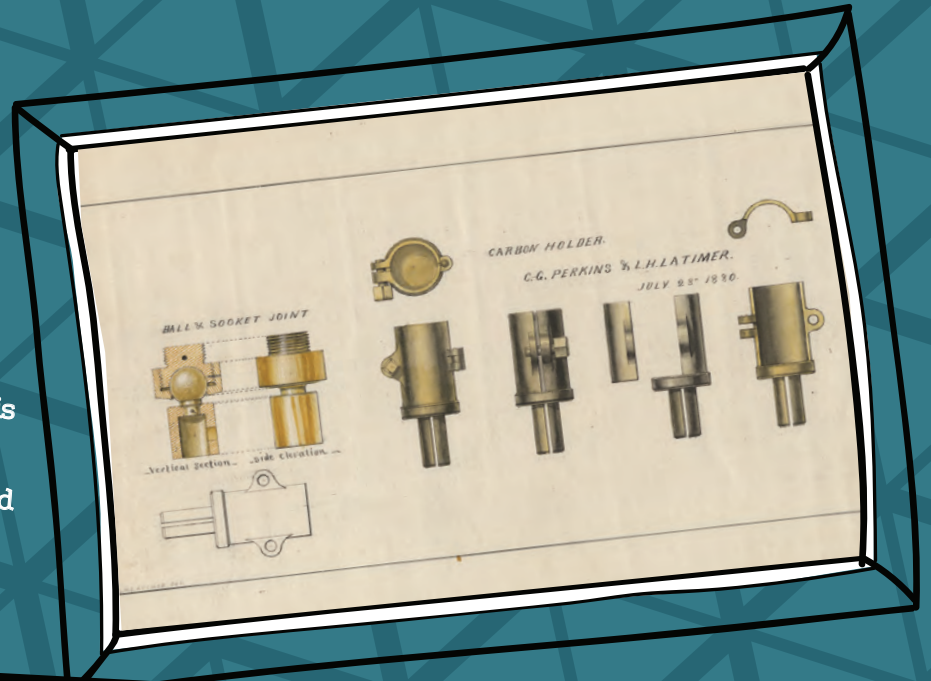
Tahira Reid Smith was in third grade when she first dreamed up a double-dutch jump rope machine. The poster (above) won her first prize in a school competition. Many years later, while attending an engineering class in college, she remembered the idea and decided to make it a reality. Working with her classmates, they constructed a working prototype, made ongoing improvements to the idea, and eventually received three patents for the work.

>> LEMELSON CENTER FOR INNOVATION AND INVENTION

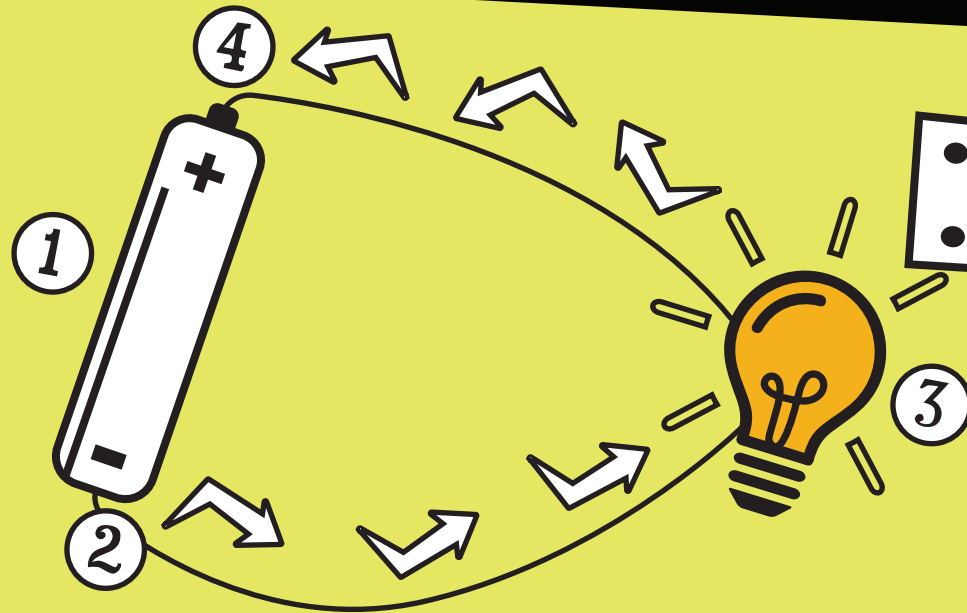


# LEWIS LATIMER AND CHRISTINE SUN KIM: INNOVATOR MINDSETS

Lewis Latimer was an African American electrical engineer and inventor best known for his work on the electric light bulb. During his career, he worked for multiple electric lighting companies including the Edison Electric Light Company. In 1882 he developed and patented an innovative process for improving the filaments of electric light bulbs. These changes reduced the costs of electric light, allowed the bulbs to burn longer, and made them more accessible to the public.



>> NATIONAL MUSEUM OF AMERICAN HISTORY



• The light bulbs you see today are the results of the work of *many* people, including Lewis Latimer. << •

## ACTIVITY: INVESTIGATING ELECTRICAL CIRCUITS

Create a *circuit* using the following materials:

- 1 D battery
- 2 x 6 inches wire
- Mini bulb
- Mini bulb holder

>> A *circuit* is a closed path that allows electricity to flow through it. •



• >> The *filament* is the part of the light bulb that produces light when electricity moves through it. •

- 1 Electrons are generated by a chemical reaction in the battery.
- 2 Electrons flow from the negative end of the battery through the wire on a path to the positive end of the battery.
- 3 Electrons flowing through the *filament* of the bulb produce heat and light.
- 4 Electrons return to the positive end of the battery.

Adapted from an activity created by the National Museum of African American History and Culture.



&gt;&gt; PHOTO BY CAMILLE LENAÏN



# INNOVATION IN HOW WE EXPERIENCE SOUND

NEW ORLEANS, LOUISIANA

Elevator Pitch is an interactive art installation that debuted with the Smithsonian Asian Pacific American Center in 2019, celebrating New Orleans as a multisensory musical experience. Created by New Orleans Airlift, Christine Sun Kim, and Rick Snow, it is a Music Box Village's "musical house" structure, offering visitors an innovative encounter with sound. Elevator Pitch is inspired by Kim's childhood memories of loudly crowding elevators with her Deaf friends and shouting so loudly that they could feel the vibrations of each others' voices. Meanwhile, elevators are often known to hearing people as sites of "awkward silence." Born Deaf herself, Kim approaches Elevator Pitch by investigating how Deaf communities of New Orleans experience a city so deeply defined by music and by highlighting how Deaf people are vital to this culture of sound.

## CONSIDER:

How might the innovative concept of this installation challenge ideas of when and where various people have a voice?



>> HIRSHHORN MUSEUM AND SCULPTURE GARDEN

In this artwork, Giacomo Balla sculpted an abstract visual representation of sound and movement out of steel.

Looking at the artwork, what does it make you think of?

What makes you say that?

What are three adjectives you would use to describe it?

1.

2.

3.





# PEOPLE OF PROGRESS

“Men of Progress” is an 1862 artwork featuring an imagined group portrait of 18 American scientists and inventors who “had altered the course of contemporary civilization.”

Look closely at the details of the portrait. Notice the people, as well as the objects included - there are inventions, patent sketches, and even a portrait within the portrait!

## BENJAMIN FRANKLIN

Why might the artist include a portrait of Benjamin Franklin in the artwork?

## JOSEPH HENRY

First Secretary of the Smithsonian.  
He made an international scientific reputation with his research into electromagnetism in the 1820s and 1830s.



>> NATIONAL MUSEUM OF AMERICAN HISTORY

The artist, Christian Schussele, set the imagined group meeting at the Old Patent Office Building in Washington, D.C., the home of the Smithsonian's National Portrait Gallery today.



>> NATIONAL PORTRAIT GALLERY

● >> A patent is an exclusive right granted to an inventor to manufacture, use, or sell an invention. ●



## CHARLES GOODYEAR

Can you think of any items today that bear the “Goodyear” name?

## SAMUEL MORSE

Created the transmitter on which the Morse-Vail Telegraph Key is based.



>> NATIONAL MUSEUM OF AMERICAN HISTORY





WHO WOULD YOU INCLUDE IN YOUR  
OWN DIVERSE DEPICTION OF THE  
"PEOPLE OF PROGRESS" PORTRAIT?

A large, blank, white rectangular area with a red border and a scalloped edge, intended for drawing or writing.



>> NATIONAL MUSEUM OF THE AMERICAN INDIAN

ES

## MONUMENTOS Y MEMORIALES

Muchos monumentos y memoriales siguieron una fórmula similar durante siglos: mármol blanco o estatuas de bronce, más grandes que la vida y que se elevan hacia arriba. Es por eso que hubo tanto alboroto en 1982 con la revelación del Monumento a los Veteranos de Vietnam que era negro, hundido y sin rostro. Maya Lin, una estudiante de arquitectura de 21 años rompió el molde de la tradición y sorprendió a todos, incluida ella misma, al ganar un concurso nacional anónimo para honrar a los caídos en la reciente Guerra de Vietnam. Venció a 1,400 personas, incluido su propio profesor, que le dio una B en esta misma tarea.

Treinta y ocho años después, también en Washington, D.C., Harvey Pratt ganó otro concurso nacional para diseñar el tan necesario Monumento Nacional a los Veteranos Nativos Americanos. Su presentación ganadora continúa la ruptura de la tradición de Lin y facilita la interacción. Celebra formas circulares e incorpora agua para ceremonias sagradas, bancos para reuniones y cuatro postes donde los visitantes pueden atar telas para las oraciones y la curación.

# INNOVATION IN MONUMENTS AND MEMORIALS

Many monuments and memorials followed a similar formula for centuries: white marble or bronze statues, larger than life, and rising upward. That is why there was such an uproar in 1982 with the reveal of the black, plunging, faceless Vietnam Veterans Memorial. Maya Lin, a 21-year-old architecture student, broke the mold of tradition and surprised everyone, including herself, by winning an anonymous nationwide contest to honor those fallen in the Vietnam War. She beat out 1,400 people, including her own professor who gave her a B on this very assignment.

Thirty-eight years later, also in Washington, D.C., Harvey Pratt won another nationwide contest for designing the long-needed National Native American Veterans Memorial. His winning submission continues Lin's breaking of tradition and facilitates interaction. It celebrates circular forms and incorporates water for sacred ceremonies, benches for gathering, and four poles where visitors can tie cloths for prayers and healing.



>> NATIONAL POSTAL MUSEUM

14



Are there any monuments or memorials in your town? Who are the monuments dedicated to, and what does it say about them? Think about other people who have made a positive impact on your own community. How would you memorialize their contributions so that future generations understand why they're important?

Sketch out your idea below! After sketching, try to build a model, or a 3D example, of your monument using things you can find in your home or surroundings.

ES

¡Esboza tu idea a continuación! Después de dibujar, intenta construir un modelo, o un ejemplo en 3D, de tu monumento usando cosas que puedas encontrar en tu hogar o tus alrededores.

ES

¿Hay monumentos o memoriales en tu ciudad? ¿A quién está dedicado el monumento y qué dice sobre ellos? Piensa en otras personas que han tenido un impacto positivo en tu propia comunidad. ¿Cómo recordarías sus contribuciones para que las generaciones futuras comprendan por qué son importantes?



# INDIGENOUS INNOVATIONS

## GREAT LAKES/NORTHEAST

Maple syrup is a unique product that only comes from the Eastern region of North America. Indigenous communities such as the Annishinnabeg (An-nish-shin-a-bek), Mohawk, and Abenaki (Á-ben-á-ki) continue to make maple syrup today.

Through careful exploration of their environment, keen observation, and experimentation, Native people invented a syrup that fulfills a nutritional need.

**IN THIS ARTWORK, MAPLE SYRUP GATHERING BY GEORGE PICKEN,  
WE CAN SEE ALL OF THE PHASES OF MAPLE SUGARING:**

- A** Tapping: Traditionally, a slice was made into the tree and a wooden spout was inserted, allowing the sap to run into a bucket made of folded birch bark.
- B** Filtering: Initially, the sap was put into wide, shallow pans made of birch bark and left out to freeze. The water turned to ice and the sugar would be left. Later iterations filtered directly into buckets left hanging from the trees.
- C** Boiling: Wood pots were used to boil the sap down. They were eventually replaced with ceramic pots, then metal pans.
- D** Transporting: For easier transportation and storage, Native people of the region improvised a way to store the maple sugar by wrapping it within a cone of birch bark.



>> MAPLE SUGAR. NATIONAL MUSEUM OF THE AMERICAN INDIAN





The Native people of the region learned to identify trees that were healthy and had the best type of sap, identified by things such as the shape of leaves, seed pods, or bark. This knowledge is passed down from one generation to the next.

### IT'S YOUR TURN:

Ask a family member to teach you an activity, process, recipe, or other knowledge that they've perfected through the years.

What could you do to improve upon it?



Three sets of dashed lines for writing an answer.

### LABEL THE PHASE OF MAPLE SUGARING YOU SEE IN THE ARTWORK



>> SMITHSONIAN AMERICAN ART MUSEUM

?

?

?

?



# EXPLODING OBJECTS!

There are many innovation stories in this guide about objects and designs, but have you ever thought about where objects begin and end? Is it when the object is made, when the material that it is made from was created, when it is used for the first time, or maybe a combination? To help you think through this question, try this activity from the National Museum of Natural History to “explode” this stone tool.

Innovative objects have been created and refined throughout human history. Stone tools like this Hafted End Scraper were used by Indigenous peoples in North America to scrape animal hides hundreds of years ago!

Now that you have “exploded” this stone tool, you can use the same steps to “explode” any object in your life, even toilet paper!



ES

The handle and scraper are tied together with a piece of sinew, a tendon from the muscle of an animal.  
*La manilla y el raspador están unidos con un tendón, un tendón del músculo de un animal.*

ES

The scraper is made of chert, a type of rock.  
*El raspador está hecho de pedernal, un tipo de roca.*

ES

The handle is made of wood.  
*La manilla está hecha de madera.*

NATIONAL MUSEUM OF NATURAL HISTORY

## STEP 1:

What materials were used to make this object?  
*We did this part for you!*

## STEP 2:

Where are the materials from? *Where do you think someone would get wood, stone, and sinew hundreds of years ago?*

## STEP 3:

What tools were used to make this object?  
*Think about what would be needed to make all three parts.*

## STEP 4:

Who do you think made this object?  
*What makes you say that?*



# OBJETO EXPLOTADO

**ES**

Hay muchas historias de innovación en esta guía sobre objetos y diseños, pero ¿alguna vez has pensado dónde comienzan y dónde terminan los objetos? ¿Es cuando se hace el objeto, cuando se creó el material del que está hecho, cuando se usa por primera vez o tal vez una combinación? Para ayudarte a pensar en esta pregunta, pon a prueba esta actividad del National Museum of Natural History para "hacer estallar" esta herramienta de piedra.



**ES**

Se han creado y refinado objetos innovadores a lo largo de la historia de la humanidad. ¡Los pueblos indígenas de América del Norte utilizaron herramientas de piedra como este raspador de punta con manilla para raspar pieles de animales hace cientos de años!

**ES**

## PASO 1:

¿Qué materiales se utilizaron para hacer este objeto?  
¡Hicimos esta parte por ti!

## PASO 2:

¿De dónde provienen los materiales? ¿De dónde crees que alguien sacaría madera, piedra y tendones hace cientos de años?

## PASO 3:

¿Qué herramientas se utilizaron para hacer este objeto?  
Piensa en lo que se necesitaría para hacer las tres partes.

## PASO 4:

¿Quién crees que hizo este objeto? ¿Qué te hace decir eso?



>> NATIONAL MUSEUM OF NATURAL HISTORY

# BIO-INSPIRED DESIGN:

Bio-inspired Design is when people are inspired by animal or plant adaptations while designing technology that solves human problems or needs.

Adaptations are behaviors or parts of an animal or plant that help it to survive in its environment.



>> NATIONAL MUSEUM OF NATURAL HISTORY

Look closely at the Malaysian Leaf Insect from the National Museum of Natural History. What inferences can you make about how it is adapted to survive in its environment? Hint: What do you notice about its colors or body shape?



(c)2018 KJO/barn Smithsonian

>> NATIONAL MUSEUM OF NATURAL HISTORY

>> SMITHSONIAN INSTITUTION ARCHIVES



### YOUR TURN!

Can you think like an innovator and use bio-inspired design to solve a human problem or need?  
You can draw your design, write about it, or talk with a friend.

### DIVE IN AND THINK ABOUT IT:

1. What animal adaptation are you inspired by?
2. How do you think your bio-inspired design could help someone?



>> NATIONAL MUSEUM OF NATURAL HISTORY



Gloves designed for use in space have experienced a number of design innovations that have been inspired by nature, like rubber fingertips modeled after tactile gecko toe pads and Velcro straps modeled after fastener-like elements of burrs.



>> NATIONAL AIR AND SPACE MUSEUM

The extravehicular (EV) gloves made for and worn by astronaut Buzz Aldrin, lunar module pilot of the Apollo 11 mission in July 1969.

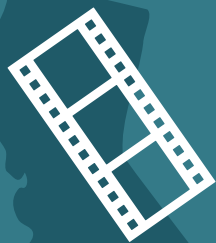


>> NATIONAL MUSEUM OF NATURAL HISTORY



>> NATIONAL MUSEUM OF NATURAL HISTORY

# PLACES OF INNOVATION



Innovation can happen anywhere! Sometimes though, the perfect combination of inventive people, untapped resources, and inspiring surroundings come together. Some examples include the beginnings of Technicolor in Hollywood, California, in the 1930s or hip-hop's birth in the Bronx, New York, in the 1970s. Innovation can happen in a wide range of places—here are a few examples of innovation in rural America!

## INNOVACIONES DEL JUEGO COMUNITARIO

ES

¡La innovación puede suceder en cualquier lugar! A veces, sin embargo, la combinación perfecta de personas creativas, recursos sin explotar y entornos inspiradores se unen. Algunos ejemplos incluyen los inicios del Technicolor en Hollywood, California, en la década de 1930 o el nacimiento del hip-hop en el Bronx, Nueva York, en la década de 1970. La innovación puede ocurrir en una amplia gama de lugares; aquí hay algunos ejemplos de innovación en las zonas rurales de Estados Unidos.



Think about something you use every day. Do you know who invented it? Where were they from?

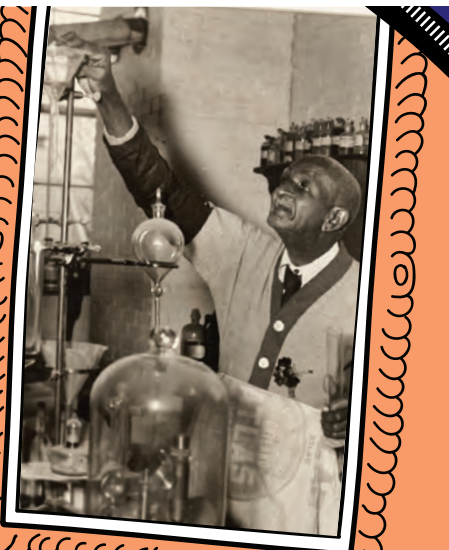
ES

Piensa en algo que usas todos los días. ¿Sabes quién lo inventó? ¿De dónde eran ellos?

>> NATIONAL MUSEUM OF AFRICAN AMERICAN HISTORY AND CULTURE

# Alabama

>> PLACES OF INNOVATION



## HOME GARDENING WITH GEORGE WASHINGTON CARVER

George Washington Carver was born enslaved in Missouri circa 1864. Despite his hardships, he rose to international prominence for his agricultural contributions. In 1896, he was recruited to the Tuskegee Institute in Alabama to teach students and neighboring farmers the innovative practice of crop rotation.

Crop rotation is the method where the crops grown on a piece of land are rotated each season to ensure soil nutrients are not depleted.

Carver taught in the Agricultural Department of Tuskegee for 47 years. His applied research into crop growth and use earned him induction into the Hall of Fame for Great Americans and the National Inventors Hall of Fame.

## ACTIVITY: GROW IT YOURSELF!

### STEPS TO GROW YOUR OWN PLANTS

- Add seeds to each planting container (with holes for drainage)
- Push the seeds about a quarter-inch to a half-inch into the dirt.
- Cover the seeds lightly with dirt.
- Add water to each container until the top of the dirt is moist.
- Place the containers in a sunny location. If needed keep plants indoors.
- It may take a week to see the seedlings starting to sprout. Make recordings weekly.

In the observation column, record information such as:

- When the seeds sprout
- When they get their first true leaves
- When they have their first flowers



WEEK	OBSERVATIONS
1	
2	
3	
4	
5	
6	



# Pennsylvania

>> PLACES OF INNOVATION

A small town of roughly 13,000 people, Meadville was once a stop on the Underground Railroad and the birthplace of the “hookless fastener” (AKA the early zipper). However, despite being in the county where the “oil rush” was born, the community fell on hard times by the 1980s.

Yet the community pulled together to spark its own rebirth through two innovative projects: the Art & Environment Initiative and My Meadville. These initiatives rely on full community engagement to beautify local spaces, often allowing youth to lead the way in designing and developing arts projects, local story gathering, and identifying shared values of residents. A&EI has completed more than 20 public art projects in the greater Meadville area that have engaged hundreds of local residents in the process of establishing project goals and design planning.

In 2023 and beyond, the Museum on Main Street team at the Smithsonian will launch “Spark! Places of Innovation,” a nationwide traveling exhibition. It will explore unique combinations of places, people, and circumstances that spark innovation and invention in rural communities, just like Meadville.

**GANESH: REMOVER OF OBSTACLES. PUBLIC ART CELEBRATING THE ECOLOGICAL HISTORY OF THE AREA BY ARTIST AND A&EI FOUNDER AMARA GEFFEN. PHOTO BY BILL ELDRIDGE.**



>> MURAL OF MY MEADVILLE'S COMMUNITY VALUES DESIGNED BY TEEN YOUTH GROUP “HELPING YOUTH PROMOTE EXCELLENCE” (HYPE). PHOTO COURTESY OF MY MEADVILLE.





# BRIDGING COMMUNITIES THROUGH PLAY

Build your own playground using your imagination and creativity! Incorporate found materials and your own cultural traditions as part of the play. Adapted from the Smithsonian Latino Center's Young Ambassadors Program Washington Week Activity



>> IMAGE COURTESY OF RONALD RAEI, COPYRIGHT RAEI SAN FRATELLO

ES

**INNOVACIONES DEL JUEGO COMUNITARIO**  
 ¡Construye tu propio patio de recreo usando tu imaginación y creatividad! Incorpora materiales encontrados y tus propias tradiciones culturales como parte de la obra. Adaptado de la Actividad de la Semana del Smithsonian Latino Center's Young Ambassadors Program en Washington

**STEP 1:** Think about your neighborhood and the members of your community. Using a blank piece of paper, write down some key features about your community. Think about the following:

ES

**PASO 1:** Piensa en tu vecindario y los miembros de tu comunidad. Con una hoja de papel en blanco, escribe algunas características clave de tu comunidad. Piensa en lo siguiente:

1

Does your neighborhood have certain music or sounds that you hear daily? It could be a type of music like salsa or hip hop, or sounds from animals and nature, like a babbling creek. Do you hear typical sounds of city life, like buses or groups of people talking?

ES

¿Tu vecindario tiene cierta música o sonidos que escuchas a diario? Podría ser un tipo de música como Salsa o Hip Hop, o sonidos de animales y la naturaleza, como un arroyo balbuceante. ¿Escuchas sonidos típicos de la vida en la ciudad, como autobuses o grupos de personas hablando?

2

What languages do you hear spoken in your neighborhood?

ES

¿Qué idiomas escuchas hablar en tu vecindario? Does your neighborhood have specific colors, landscapes, textures, or artwork that are important? Ideas include anything from street murals to mountains, from gravel lots to tall buildings.

3

ES

¿Tiene tu vecindario colores, paisajes, texturas o obras de arte específicos que sean importantes? Las ideas incluyen cualquier cosa, desde murales callejeros hasta montañas, desde lotes de grava hasta edificios altos.

4

ES

Do you associate specific smells with your neighborhood? Think about things like the smell of bread from the bakery or the smell of trees in the forest.

5

ES






¿Asocias olores específicos con tu vecindario? Piensa en cosas como el olor del pan horneado de la panadería o el olor de los árboles en el bosque. Are there specific games or songs that your friends or kids in your neighborhood play? ¿Hay juegos o canciones específicos que juegan sus amigos o niños en su vecindario?

17



## DESIGN IDEA



<b>SENSES</b> Sentidos	<b>PROMPT</b>	<b>INMEDIATO</b> <b>ES</b>
<b>Sight</b> Vista 	Draw three images of a life-size matching card game that uses the colors, images, or textures of your neighborhood.	<i>Dibuja tres imágenes de un juego de cartas de combinación de tamaño real que use los colores, imágenes o texturas de tu vecindario.</i>
<b>Hearing</b> Audición 	Design a playground station that uses the sounds of your neighborhood. <b>Hint:</b> Think about a merry-go-round and how you could have sounds or songs as part of your play.	<i>Diseña una estación de juegos que use los sonidos de tu vecindario. Sugerencia: Piensa en un tiovivo y en cómo podría tener sonidos o canciones como parte de tu juego.</i>
<b>Smell</b> Olfato 	Design a smelling station. <b>Hint:</b> What smells are tied to your community?	<i>Diseña una estación de olores. Sugerencia: ¿Qué olores están relacionados con tu comunidad?</i>
<b>Taste</b> Sabor 	Does your playground have a snack or picnic area? Would there be a specific type of food sold? Ideas include ice cream, snow cones (piraguas), tamales, hot dogs and, naan.	<i>¿Tiene tu patio de recreo un área de merienda o picnic? ¿Se venderá un tipo específico de comida? Las ideas incluyen helado, conos de nieve (piraguas), tamales, salchichas y naan.</i>
<b>Touch</b> Toca 	Create a seesaw that connects two areas of your playground together. Think about Ronald Rael's teeter wall as example. Which two areas of your neighborhood would you like to connect? Are they divided by streets, buildings, or water?	<i>Crea un balancín que conecte dos áreas de tu patio de recreo. Piensa en la pared oscilante de Ronald Rael como ejemplo. ¿Qué dos áreas de tu vecindario te gustaría conectar? ¿Están divididos por calles, edificios o agua?</i>



#1

 BEST DESIGN OF 2020  
LONDON DESIGN  
MUSEUM

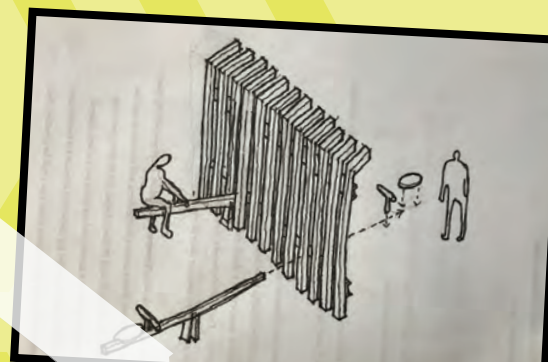
 >> IMAGE COURTESY OF RONALD RAEI.  
COPYRIGHT RAEI SAN FRATELLO

This art project by Ronald Rael turned the wall at the U.S.-Mexico border into the temporary base for pink seesaws - inviting children on each side to come play together. His design won the London Design Museum award for best design of 2020.

**STEP 3:** Using found materials like straws, paper, brown paper bags, recycled bottles, and egg cartons, pick one of your activities and build your drawing. Use only things you can find in your home or school.

ES

**PASO 3:** Usando materiales encontrados como pajitas, papel, bolsas de papel marrón, botellas recicladas y cartones de huevos, elije una de tus actividades y construye tu dibujo. Usa solo cosas que puedas encontrar en tu hogar o escuela.


 >> IMAGE COURTESY  
OF RONALD RAEI.  
COPYRIGHT RAEI  
SAN FRATELLO

**STEP 2:** Using your senses, your answers to the questions in Step 1, and the ideas you list in the chart above, design a playground that reflects your community and its traditions.

ES

**PASO 2:** Usando tus sentidos, tus respuestas a las preguntas en paso 1 y las ideas que enumera en el cuadro, diseña un patio de recreo que refleje tu comunidad y tus tradiciones.

# PROBLEM SOLVING IN YOUR OWN COMMUNITY

## RESOLUCIÓN DE PROBLEMAS EN TU PROPIA COMUNIDAD

What are your ideas on how these problems could be solved?

ES

¿Cuáles son tus ideas sobre cómo se podrían resolver estos problemas?

ES

When were you born? Where did you grow up?  
How long have you lived in your home?

ES

¿Cuándo naciste? ¿Dónde creciste?  
¿Cuánto tiempo llevas viviendo en tu casa?

Have you seen changes in your community in the time you've lived there?

ES

¿Has visto cambios en tu comunidad durante el tiempo que has vivido allí?

This kind of research is called "community history." It's a great way to add voices to history by talking to people who have experienced changes firsthand.

ES

Este tipo de investigación se llama "historia de la comunidad." Es una excelente manera de agregar voces a la historia hablando con personas que han vivido estos cambios.

1

### STEP 1:

Identify a Problem or Community Need

### PASO 1:

Identifica un problema o una necesidad comunitaria

### STEP 2:

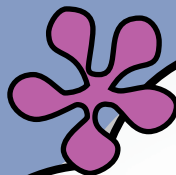
Interview Community Members for Solutions

Pick a person to interview, ideally someone who has lived in your community for a long time -- maybe a parent, grandparent, neighbor, or teacher -- and ask the following questions:

### PASO 2:

Entrevista a los miembros de la comunidad para encontrar soluciones. Elige una persona para entrevistar, idealmente alguien que haya vivido en tu comunidad durante mucho tiempo, tal vez un padre, abuelo, vecino o maestro, y hazle las siguientes preguntas:

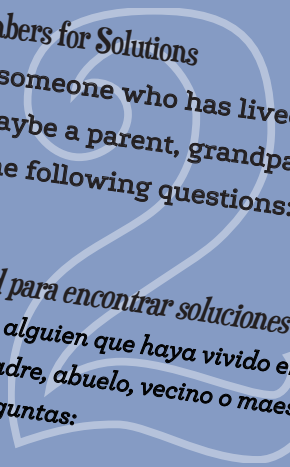
ES



Do you see any local issues that could be solved by the people in the community?  
What solutions have already been tried?

ES

¿Ves algún problema local que la gente de la comunidad pueda resolver? ¿Qué soluciones ya se han probado?





# ORGANIZING YOUR THOUGHTS

## STEP 3:

### Gather Multiple Perspectives

Now think about someone who might have another perspective on the same problem, and interview them as well. Go online to research if other communities have had the same problem, and see what their solutions were. Continue this process until you have a variety of viewpoints and potential solutions.

**ES**

## PASO 3:

### Reúne múltiples perspectivas

Ahora piensa en alguien que pueda tener otra perspectiva sobre el mismo problema y entrevístalo también. Conéctate en línea para investigar si otras comunidades han tenido el mismo problema y ve cuáles fueron sus soluciones. Continúa este proceso hasta que tengas una variedad de puntos de vista y posibles soluciones.

## STEP 4:

### Organize Your Thoughts Into an Action Plan

Write out your problem, and list the causes and negative impact or effects of this problem. Be sure to use facts, not opinions.

Decide how to best address the problem by carefully considering the potential solutions from your research.

**ES**

## PASO 4:

### Organiza tus pensamientos en un plan de acción

Escribe tu problema y enumera las causas y el impacto o efectos negativos de este problema. Asegúrate de utilizar hechos, no opiniones.

Decide cómo abordar mejor el problema considerando cuidadosamente las posibles soluciones de tu investigación.

## STEP 5:

### Put the Plan into Action

Big problems require a community working together to solve them. Think about how you can implement your plan. What will it cost? How will you spread the word? Who might have the power to help make it a reality? Consider contacting your local newspaper, town council, or other community leaders.

**ES**

## PASO 5:

### Pon el plan en acción

Los grandes problemas requieren una comunidad que trabaje unida para resolverlos. Piensa en cómo puedes implementar tu plan. ¿Cuánto costará? ¿Cómo difundirás la palabra? ¿Quién podría tener el poder de ayudar a convertirlo en realidad? Considera comunicarte con el periódico local, el ayuntamiento u otros líderes comunitarios.

ADAPTED FROM A  
"SMITHSONIAN  
IN YOUR CLASSROOM" LESSON



# WHAT CAN WE DO TO BUILD A MORE HOPEFUL FUTURE? WHAT IS YOUR PERSONAL VISION FOR ACTION?

EVERYONE HAS A ROLE  
TO PLAY IN BUILDING  
THE FUTURE!



In the next day, I will \_\_\_\_\_ to make a future that \_\_\_\_\_.

In the next month, I will \_\_\_\_\_ to make a future that \_\_\_\_\_.

In the next year, we can \_\_\_\_\_ to make a future that \_\_\_\_\_.

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Additional content guidance and support provided by staff at the Arts and Industries Building, the Cooper Hewitt, Smithsonian Design Museum, the Lemelson Center of Invention and Innovation at the National Museum of American History, the National Museum of the American Indian, the Museums on Main Street team at the Smithsonian Institution Traveling Exhibition Service, the Smithsonian Asian Pacific American Center, and the Smithsonian Latino Center.

From USA TODAY Network: Melissa Galbraith, print planner, USA TODAY; Joanna Jacobo, editor, La Voz Arizona (azlavoz.com); Stacy Sullivan, community relations director, The Arizona Republic.

Creative services and design by Funnel Design Group.

Printing of this guide was made possible by Lead Sponsor FedEx, with additional support provided by the Ford Motor Company Fund, the Smithsonian Regional Councils, and Nancy Pasternack.



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