

Change Your Game | Cambia Tu Juego is an exhibition at the National Museum of American History that uses invention in sports to promote visitors' inventive identity exploration



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LEMELSON CENTER FOR THE STUDY OF INVENTION AND INNOVATION

**Inspiring the next generation of
inventive problem-solvers through:**

- **Invention Education**
- **Public programs**
- **Historical research**
- **Hands-on learning in Spark!Lab**
- **Interactive exhibitions**

THE SMITHSONIAN INSTITUTION



World's largest museum and research complex

20 million+ annual visitors

Trusted brand in education and lifelong learning

NATIONAL MUSEUM OF AMERICAN HISTORY

Mission: Empowering people to create a just and compassionate future by exploring, preserving, and sharing the complexity of our past

1.8 million national treasures

3-4 million annual visitors a year



CHANGE CAMBIA YOUR TU GAME JUEGO

Shares stories of diverse inventors and their motivations for creating new technologies for sports to *inspire visitors to become game changers in their everyday lives.*

We include stories of inventors and innovators who are:

- Designers
- Engineers
- Athletes
- Scientists
- Health professionals

Priority audiences:

- Girls and young women ages 10-17
- African American youth ages 10-17
- People with disabilities





Shawn Springs, Windpact CEO and former NFL player

Inside the exhibition, inventors' motivations are the central concept



Van Phillips, "Cheetah Leg" inventor and recreational athlete

FAIRNESS + ACCURACY EQUIDAD + PRECISIÓN

Innovators help level the playing field to give everyone an honest chance to compete. Technology helps ensure fairness down to a millimeter or millisecond.

HEALTH + SAFETY SALUD + SEGURIDAD

Invention improves our ability to get the maximum health benefits from sports. It also aids in protection and making sports safer, enabling us to play for years to come.



Photo: Gary Calton

FUN FOR EVERYONE DIVERSIÓN PARA TODOS

Perhaps the simplest explanation for humanity's love of sports is that it brings us pleasure. Innovations make sports more fun and accessible for a wider range of people.

COMPETITIVE EDGE VENTAJA COMPETITIVA

Competition pushes us beyond our perceived limits to achieve the unbelievable. Innovations provide athletes with the competitive edge needed to reach new heights.

Above: NASA's Langley Research Center was instrumental in the development of Speedo's LZR Racer swimsuit, worn here by Olympic swimmer Jess Sylvester as she stands among some of the suit's developers.

Competitive Edge Zone



Fairness and Accuracy Zone



Fun for Everyone Zone



Health & Safety Zone



WHAT IMPACT CAN YOU MAKE?
¿QUÉ IMPACTO PUEDES HACER?

+ WHAT IMPACT QUÉ IMPACTO PUEDES HACER

U.S. Patent Oct. 21, 2014 Sheet 5 of 17 US 8,863,320 B2

LOREM IPSUM DORIT QUE LOREM IMPACTO

U.S. Patent Oct. 21, 2014 Sheet 5 of 17 US 8,863,320 B2



S-06-02

SAFETY REMIX

SAFETY REMIX

Can you strike the right balance between Safety and Performance?

So many incredible innovations were motivated by the need to keep people safe. You will have to be inventive, using a random collection of gear in new and novel ways.

LETS GO!



ES

CHANGE YOUR GAME

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SAFETY REMIX

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SAFETY REMIX

SELECT A CHALLENGE



SKATEBOARDING



SNOWBALL FIGHT

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SAFETY REMIX

CHOOSE YOUR GEAR

Tap the left and right arrows on each piece of gear to change your selections.

◀ FOOTBALL HELMET ▶

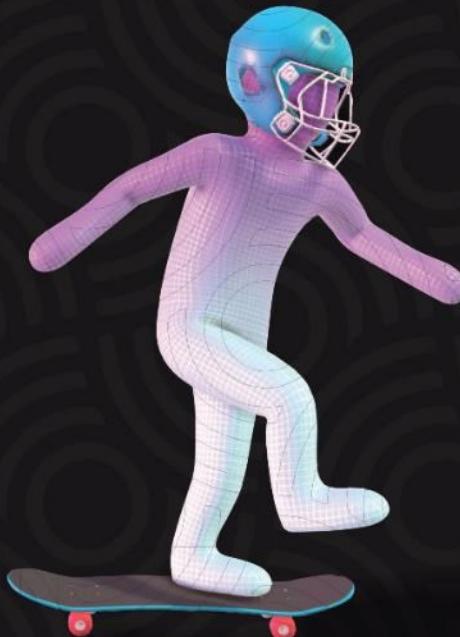
◀ SELECT BODY GEAR ▶

◀ SELECT LEG GEAR ▶

LETS GO!



ES



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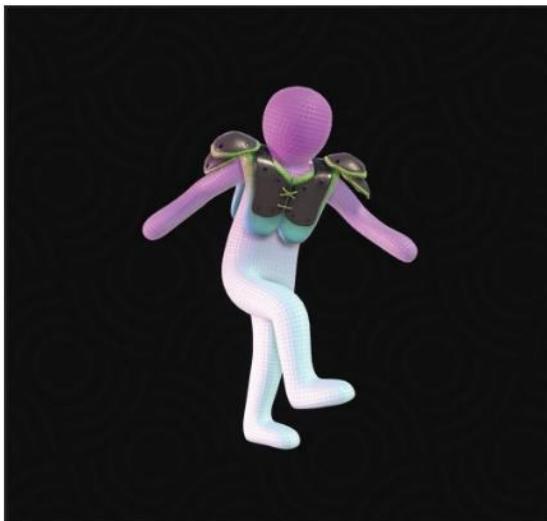
SAFETY REMIX



BUBBLE WRAP



FIREMAN JACKET



FOOTBALL PADS



LONG PARKA



WOOL MITTENS



WRIST/ELBOW GUARDS

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DID YOU FIND THE RIGHT BALANCE?



MILITARY KNEE PADS
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FOOTBALL HELMET
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CUT-RESISTANT SLEEVES
 Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor in cididunt ut labore et dolore magna aliqua. Neque vitae tempus quam pellentesque nec nam aliquam sem et. Adipiscing elit ut.

TRY AGAIN!

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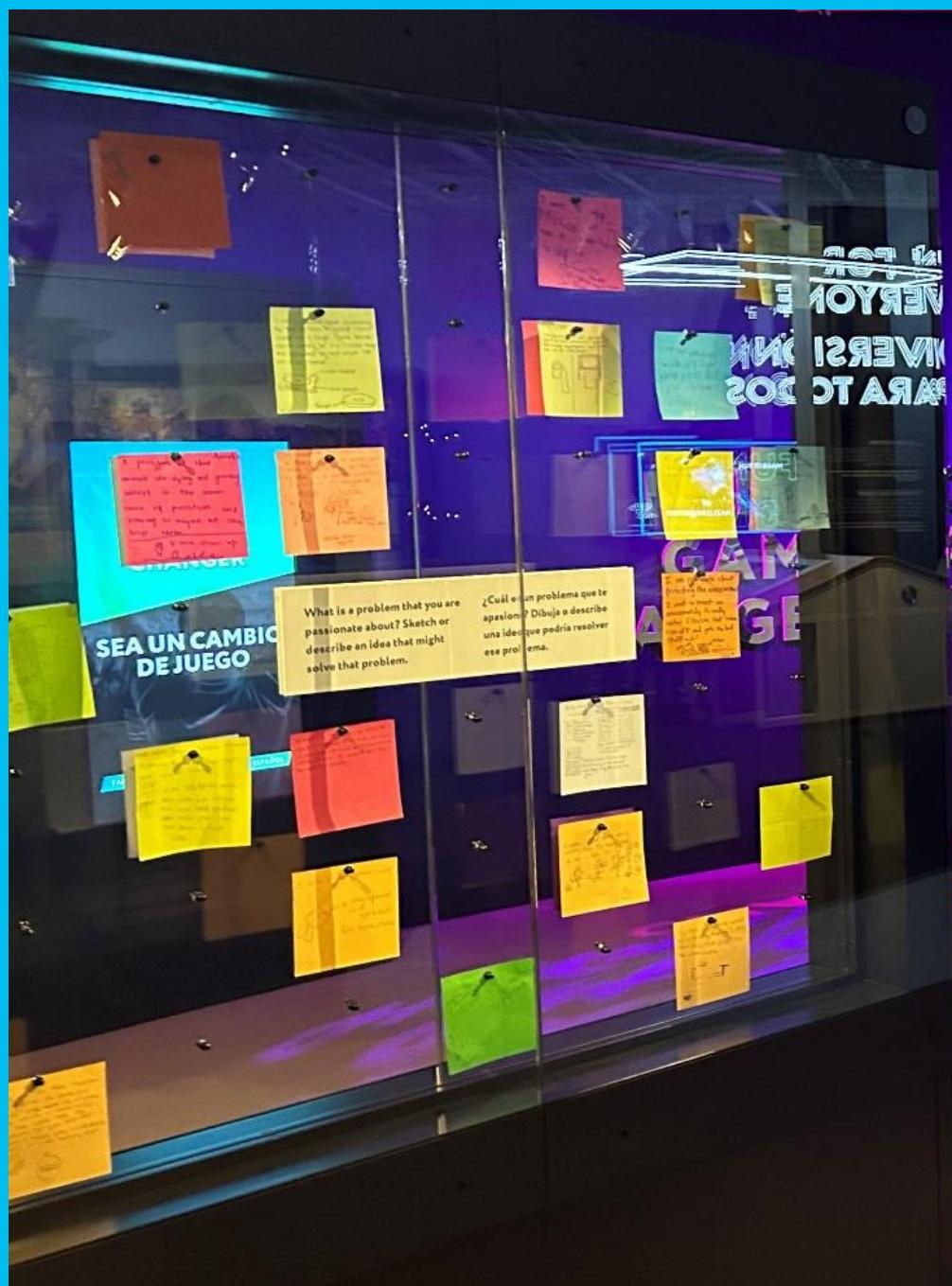
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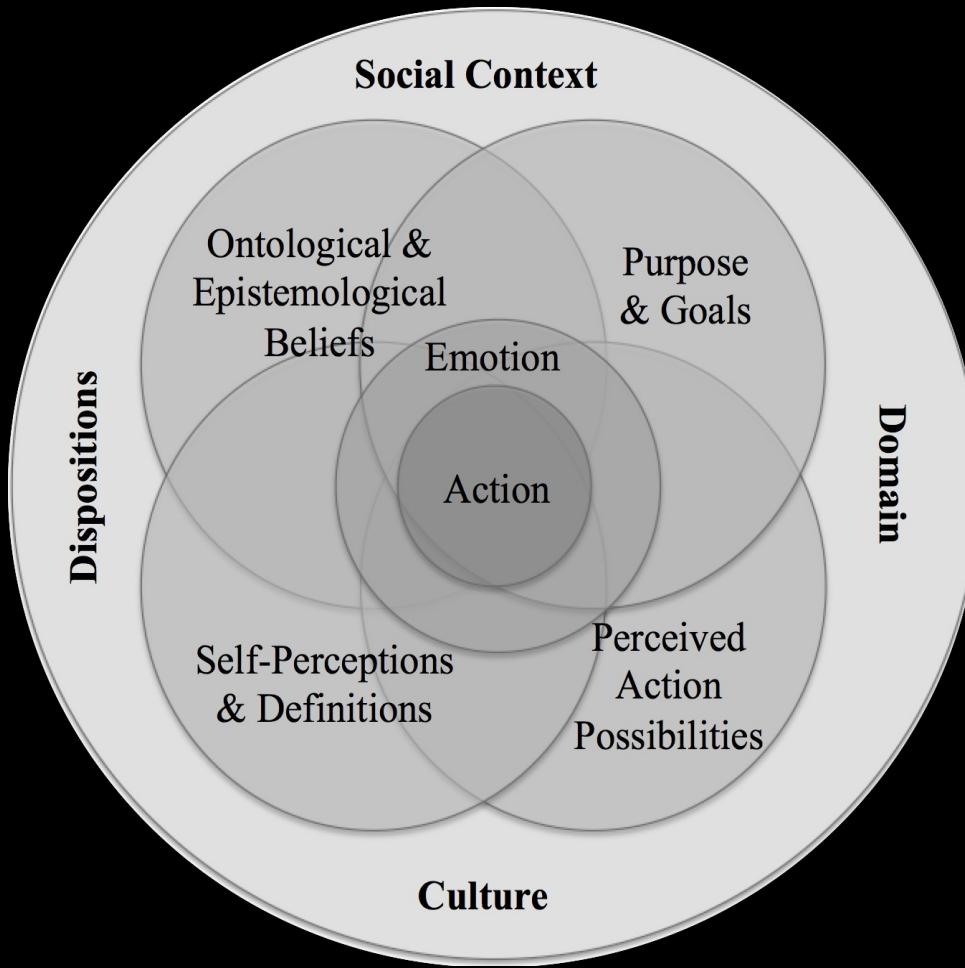
"End Zone"



How can play support visitors' inventive identity exploration?



The Dynamic Systems Model of Role Identity (DSMRI) provides a framework for understanding how visitors' experiences and the exhibition promote insights into the self

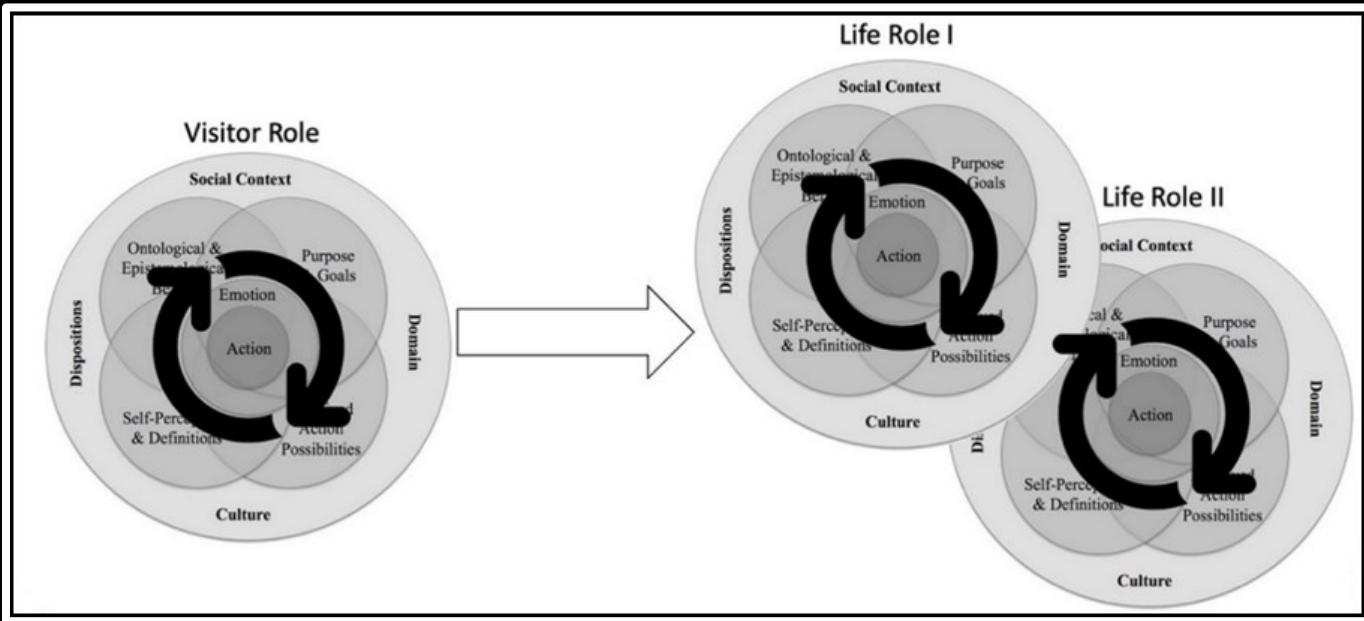


The DSMRI (Kaplan & Garner, 2017)

Scaffolded game play in exhibitions can support visitors' identity exploration



Design a Swimsuit

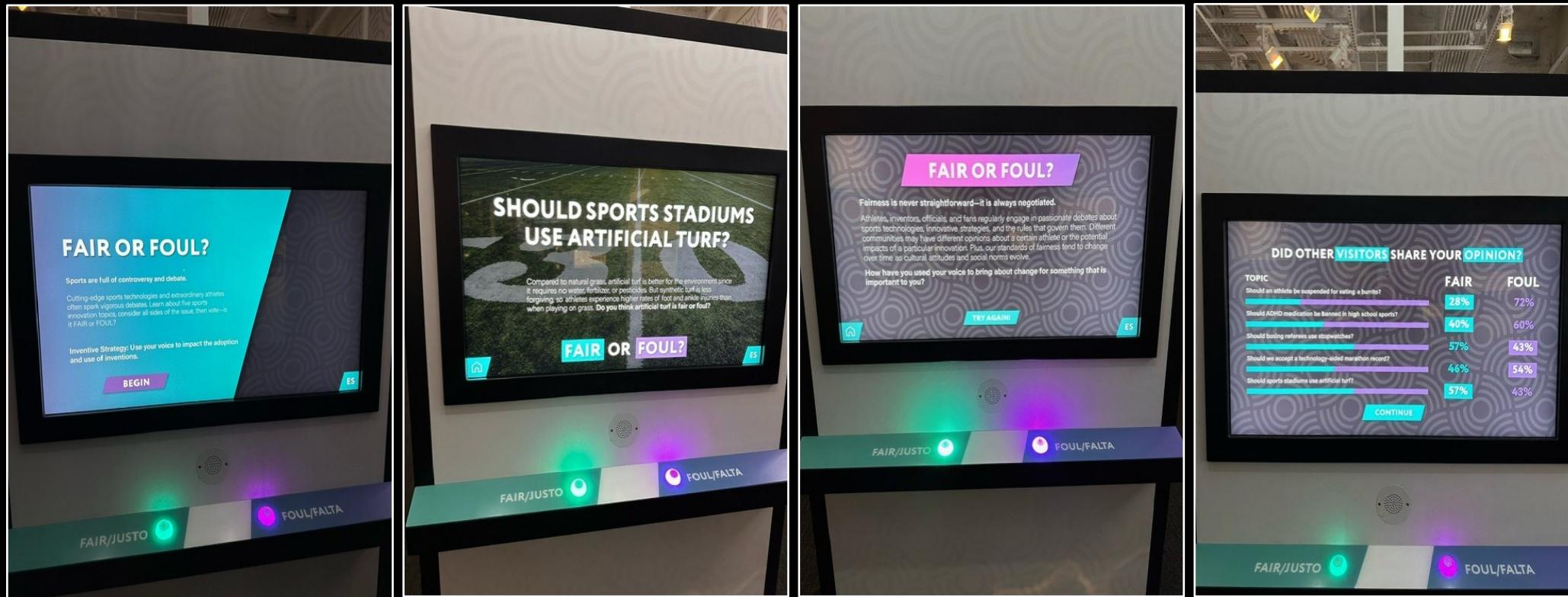


Game-like interactives allow visitors to practice inventive strategies before prompting them to consider if they have used them in their own lives

The floor plan shows the exhibition's zones and object cases as well as **interactives** that allow the visitor to practice inventive strategies in whimsical and meaningful ways



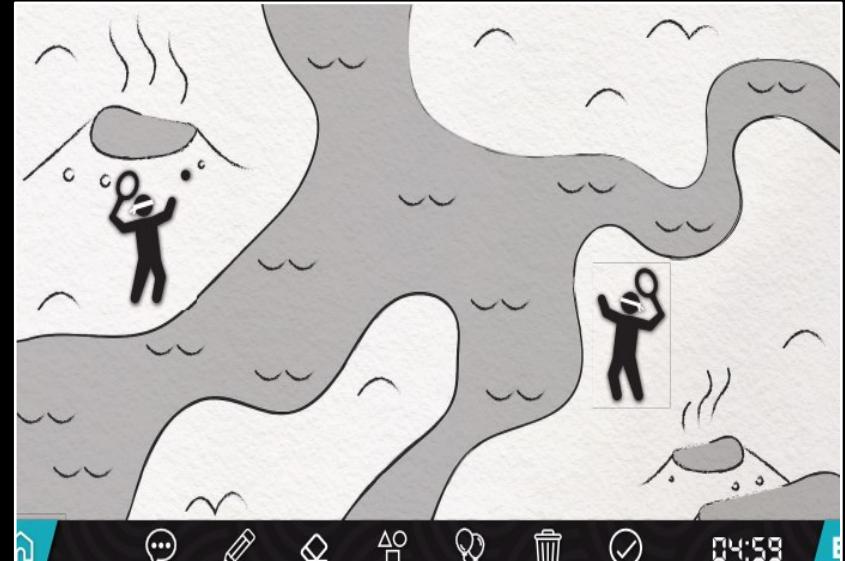
In the **Fair or Foul?** interactive, visitors respond to questions that reveal technology-related dilemmas in sports, and then compare their responses to others



"I enjoyed the fairness section. I'm not a sports person so the invention aspect was important. From a philosophical perspective, people were inspired to invent because of what they're going through. What we're going through as a society. They're very hard questions. The golf cart one. [Should a disabled pro be able to use a golf cart?] No? Hmm?" – Female Caucasian adult with a physical disability.

"The question about transgender athletes...you're born with a certain gene, and you play with someone else, and it gives you an unfair advantage...it was also interesting because some of the questions were not like yes or no and you had to think because it could be different outcomes. You need to do more in-depth thinking about it." - Male African American teen.

In the **Drawing Board** interactive, visitors choose a set of parameters and design a new game



Playing volleyball in a playground with household items

“[use a] microfiber cloth with a ballon and a string...[use a] screen door and two shovels for a net.”
– Female Caucasian adult with sight loss.

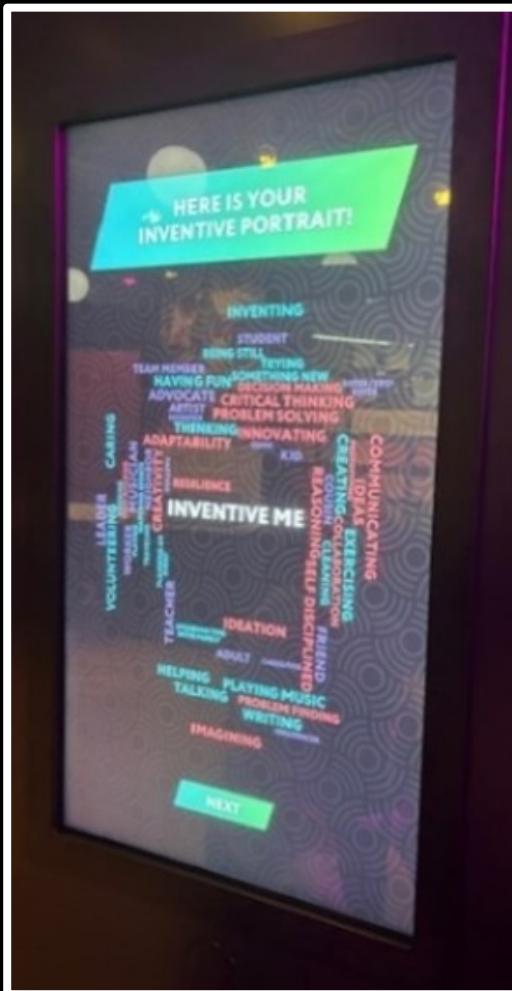
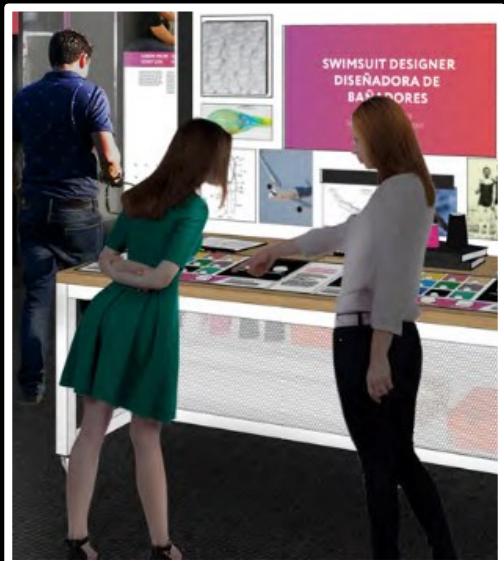
Bowling in a street alley with snowshoes

“That’s not hard...let’s draw the pins!”
“It would be hard to run in snowshoes.”
- Female African American teens

Golf in the yard with household objects

“That’s another thing about CAD. The goal is to communicate it. If it [was a] CAD project, then I would [specify] radius, diameter...use a tennis ball...duct tape, that would be funny, moving [ball] back and forth like Thomas tracks. This is what my sketches look like.”
- Nonbinary Caucasian neurodivergent teen.

Our research reveals meaning making and identity exploration by diverse visitors



"I look at something and [think] 'how would I make this?' Start from a block or an additive? If you model a measuring cup, start with the base and bring it up."

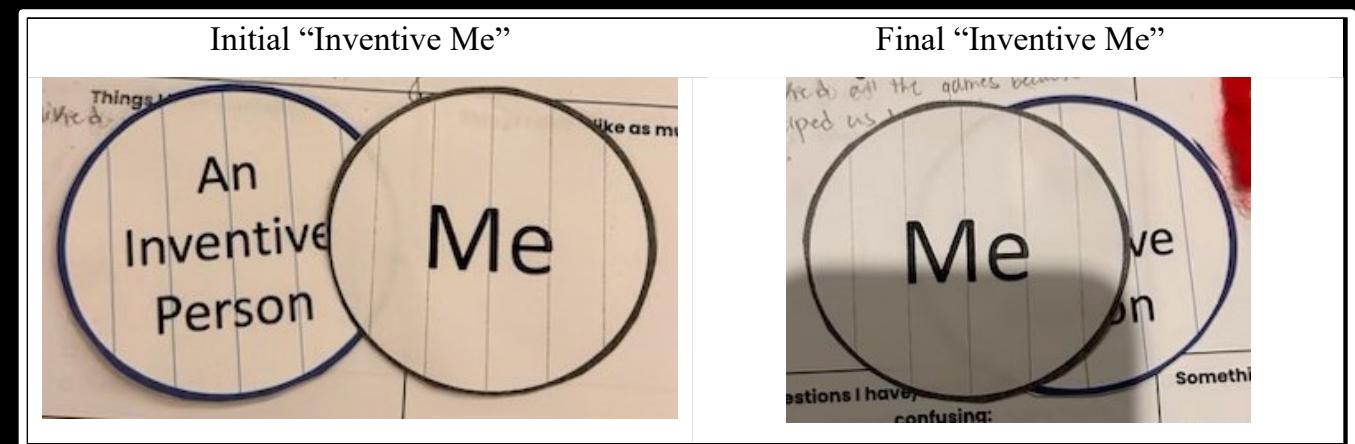
"...thinking about the jog bra [story]. I would have accepted it. We make do because we have to...What am I accepting that I shouldn't accept?"

"At the beginning, I was thinking that sometimes I'm a little lazy. But then, I was thinking that it doesn't have to be big. You can be inventive, like in every day."

"I feel a little bit more [inventive]. I've seen how different people can be innovative. I see how I can be innovative."

"At home, my kid and I were cooking...everyone comes up with substitutes...we were doing a craft. Didn't have this tool. I came up with the replacement."

"Years ago, I bought this paint set. Now it is all dried out, but I have a basement and want to paint on the wall to try to replicate the color. I have to figure out how to do that."



Spark!Lab Hands-on Activities



Digital Activities – Instructables and TinkerCad



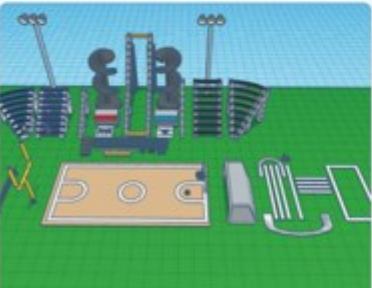
Change Your Game - Sketch a Sports Invention



Change Your Game - Create Some Sports Gear

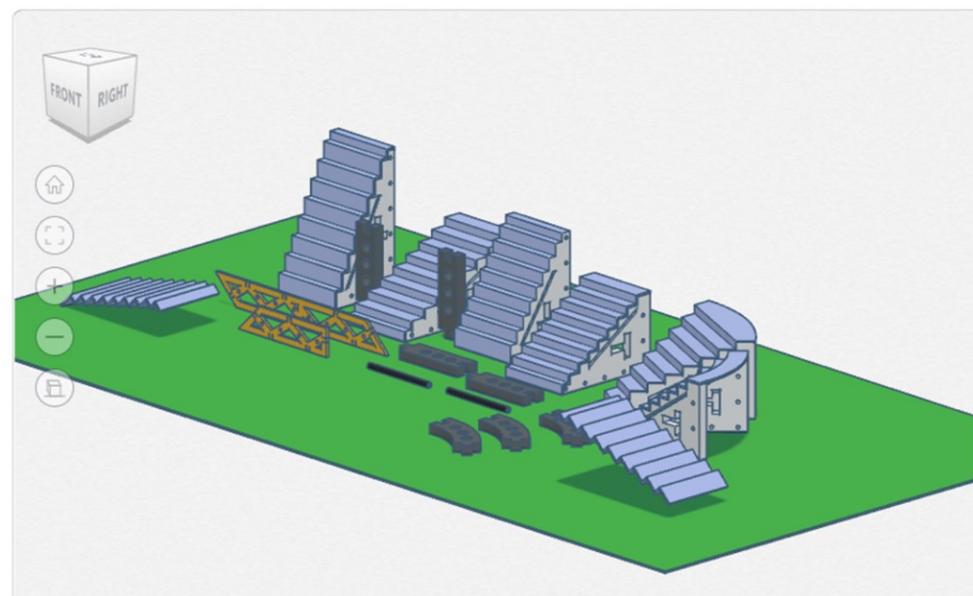


Change Your Game - Invent a Sport



Change Your Game - Design a Stadium

Design a Stadium



About Change Your Game

The Smithsonian Lemelson Center for the Study of Invention and Innovation introduced its Change Your Game exhibit in March of 2014. The exhibit, which examines the powerful influences invention and innovation have had on the evolution and experience of sports in America, is focused on helping people understand what's cool about invention and how to invent things themselves. It's really important to the exhibit to give kids the chance to design and build inventions, which is why we created this place for you to explore!

Inventive Identity

One of the ideas that is very important in Change Your Game is "Inventive Identity." Your inventive identity is how you go about solving problems by creating new solutions, and where and why you do this. We want you to think about your inventive identity, and try different ways to resolve challenges you might face in your everyday life! When you do that, you are exploring your inventive identity and building your inventive skills for the next time you see a problem you want to solve.



Autodesk & The Lemelson Center: A Long History

For nearly a decade, Autodesk and the Lemelson Center have been creating ways for students, teachers and future inventors to design, make and explore. Working together, our goal is to inspire you to solve problems by using your creativity, and have fun while doing it! We can't wait to see what you have to offer as you complete our activities and challenges.

Community Programs and Festivals



