



**RE-DESIGNING
FOR
ACCESSIBILITY**

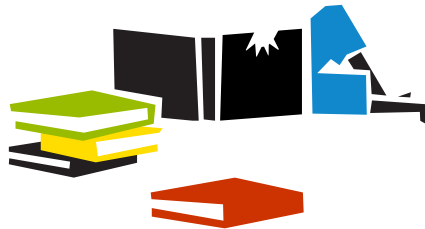
By Class 3-304 at P.S. 4
The Duke Ellington School

Behind the Book / New York

Behind the Book's mission is to develop engaged readers and writers in underserved NYC public schools by designing and delivering programs that are multi-disciplinary, culturally responsive, and promote deeper connections to books and their authors.

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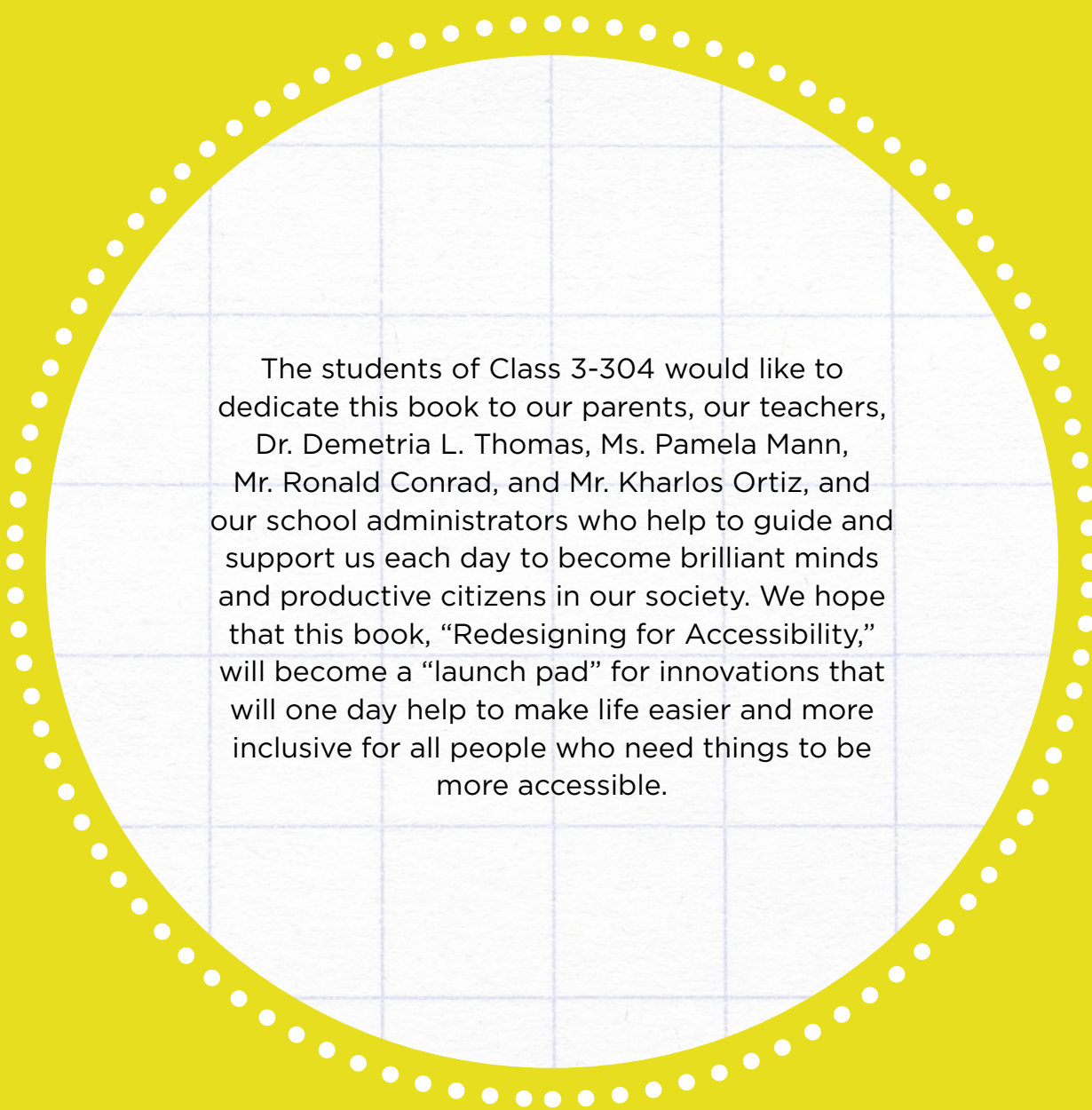
Special Thanks:

We would like to extend our deepest thanks to author Vicky Fang, who went above and beyond to make her author visit happen during the pandemic.

We would also like to extend our deepest thanks to Adam El-Sawaf, Senior Designer and Fabricator at the Adaptive Design Association, for educating students in the adaptive design process, and the importance of accessibility.

We would like to thank two of our generous funders: The Guru Krupa Foundation, whose contribution made this program possible, and The Korein Foundation, who supported the creation and publication of this class book.

In the interest of honoring student voice, Behind the Book presents students' work as received from the teacher.



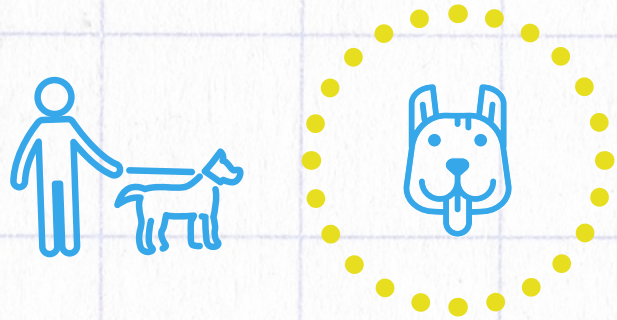
The students of Class 3-304 would like to dedicate this book to our parents, our teachers, Dr. Demetria L. Thomas, Ms. Pamela Mann, Mr. Ronald Conrad, and Mr. Kharlos Ortiz, and our school administrators who help to guide and support us each day to become brilliant minds and productive citizens in our society. We hope that this book, “Redesigning for Accessibility,” will become a “launch pad” for innovations that will one day help to make life easier and more inclusive for all people who need things to be more accessible.

ABOUT THE PROGRAM

How can we adapt products we use every day to be more accessible?

Students in Class 3-304, with their teachers Dr. Thomas and Ms. Mann, explored how thoughtful product design can increase accessibility to all people. The class read *Layla and the Bots: Built for Speed* by Vicky Fang. In the book, Layla wants to participate in a go-kart race but needs to redesign one with hand controls and other special features so that her friend Tina, who is in a wheelchair, can participate as well. Through the story and discussions, the students learned to identify what makes products more accessible and inclusive. One student summarized the concepts they learned as: “accessibility is important because it means we are all treated equally, no matter what.”



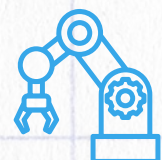


During Vicky’s virtual visit to the class, she described her interest in creating products for people with different abilities and asked the students what they thought would be needed to design an inclusive, accessible dog park.

The class also met with Adam El-Sawaf, the senior designer and fabricator at the Adaptive Design Association. He showed examples of projects that he helped design such as a wheelchair with a collapsible desk. He and the students began brainstorming about their own inventions designed to make products easier to use and more accessible. Assisted by Behind the Book staff, the class began writing drafts describing their redesign inventions, including why a redesign was important and how their invention could make a difference. One student proudly reported, “I designed a wheelchair with a claw so that people in the chair can reach items in their cabinets even if they are really high up.”

To illustrate design concepts involved in making items and spaces more accessible, Behind the Book teaching artist Candice Humphries helped the class create three-dimensional dioramas inspired by *Layla and the Bots*. Through the art project, they employed engineering and design concepts that would facilitate inclusivity.

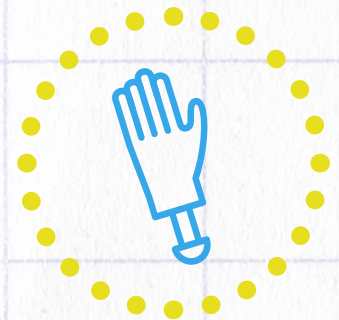
Throughout the program, the students learned to be sensitive to those with differing abilities and to consider how all people could best use products and navigate spaces. During a writing workshop, one student summed up what he learned from the program, “I am redesigning a ramp that is compact and can be carried around and used whenever it is needed. This redesign is solving the fact that there’s not always a ramp. This is important because everyone should be able to move around and enjoy New York City.”





CONTENTS

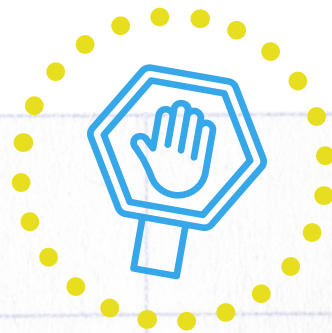
SAMANTHA	6	MILAN	28
CAMILA	8	KAYLEE	30
JEREMIAH	10	KYLE	31
AIRYN	12	KING	32
AYDEN C.	13	LLOYD	34
NAMINATA	14	CLAUDIO	36
AYDEN L.	16	SINCERE	38
JESSELEE	18	RYAN	40
JACKNIEL	20	SHALEAH	42
STEVEN	21	MICHAEL	44
DAIRALIS	22		
SMIL	24		
JESUS	26		

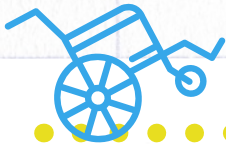




SAMANTHA

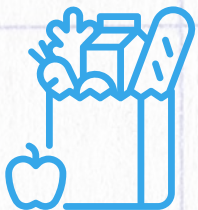
I am redesigning a stop or go sign that can say go or stop. This redesign is solving blind people listen if they could go or stop. This is important because blind people could die if they walk while cars are moving. This works by them pressing a button so when they press it the stop and go sign tells them to go or not. This redesign is making the world more inclusive because it's helping them save their lives.

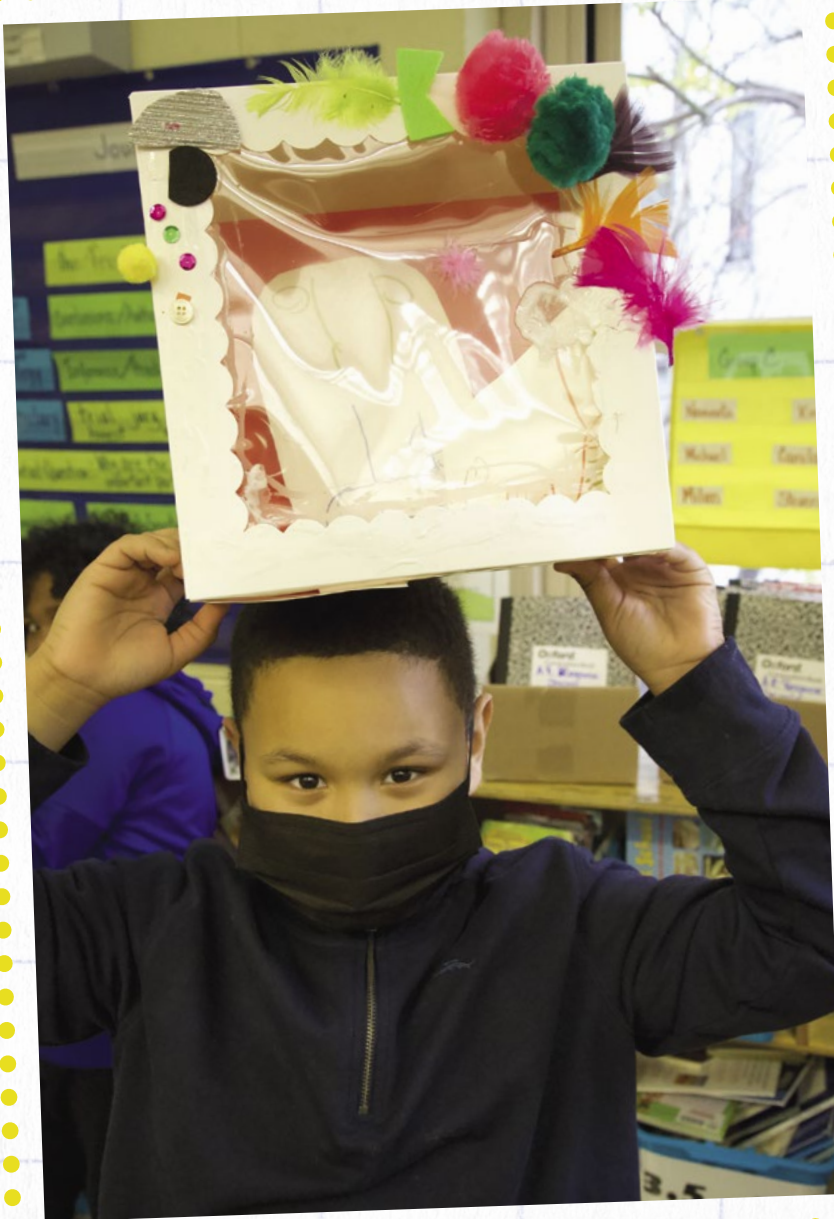




CAMILA

I am redesigning a wheelchair that if you can't reach the food on top of you push a button and it will make the wheelchair high. This redesign is solving a person that's on the wheelchair reach food that is on top of you. This is important because a wheelchair person can't reach food he or she will be hungry. This works by A wheelchair and a button so you push a button and the wheelchair high. This redesign is making the world more inclusive because A wheelchair person can't walk or reach.





JEREMIAH

I am redesigning a phone, Braille tablet that can help the blind read. This redesign is solving blind people being able to read. This is important because blind people cannot see. This works by reading to them. This redesign is making the world more inclusive because helps every one read.

AIRYN



I am redesigning a baby monitor that can help mothers and fathers who cannot hear to be able to monitor their baby. This redesign is solving the problems that deaf people would have trying to take care of their children. This is important because if the baby is in trouble or crying, the mom will not know the baby needs help if they cannot hear him. This works by the deaf person who has a bracelet that is connected to a camera and when there is movement the bracelet will vibrate. This redesign is making the world more inclusive because the deaf people can help their baby by themselves.



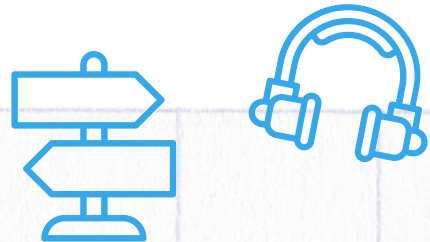
AYDEN C.

I am redesigning an extendable staircase that can go up and down and left and right and straight and back. This redesign is solving people needing to reach things because that in wheelchairs. This is important because people that can't walk have a wheel chair but that's short wheel chair so that's way I track. This works by it has gears that go up and down. This redesign is making the world more inclusive because it helps devices it brings people in wheel chair up and down and back and forward and left and right.

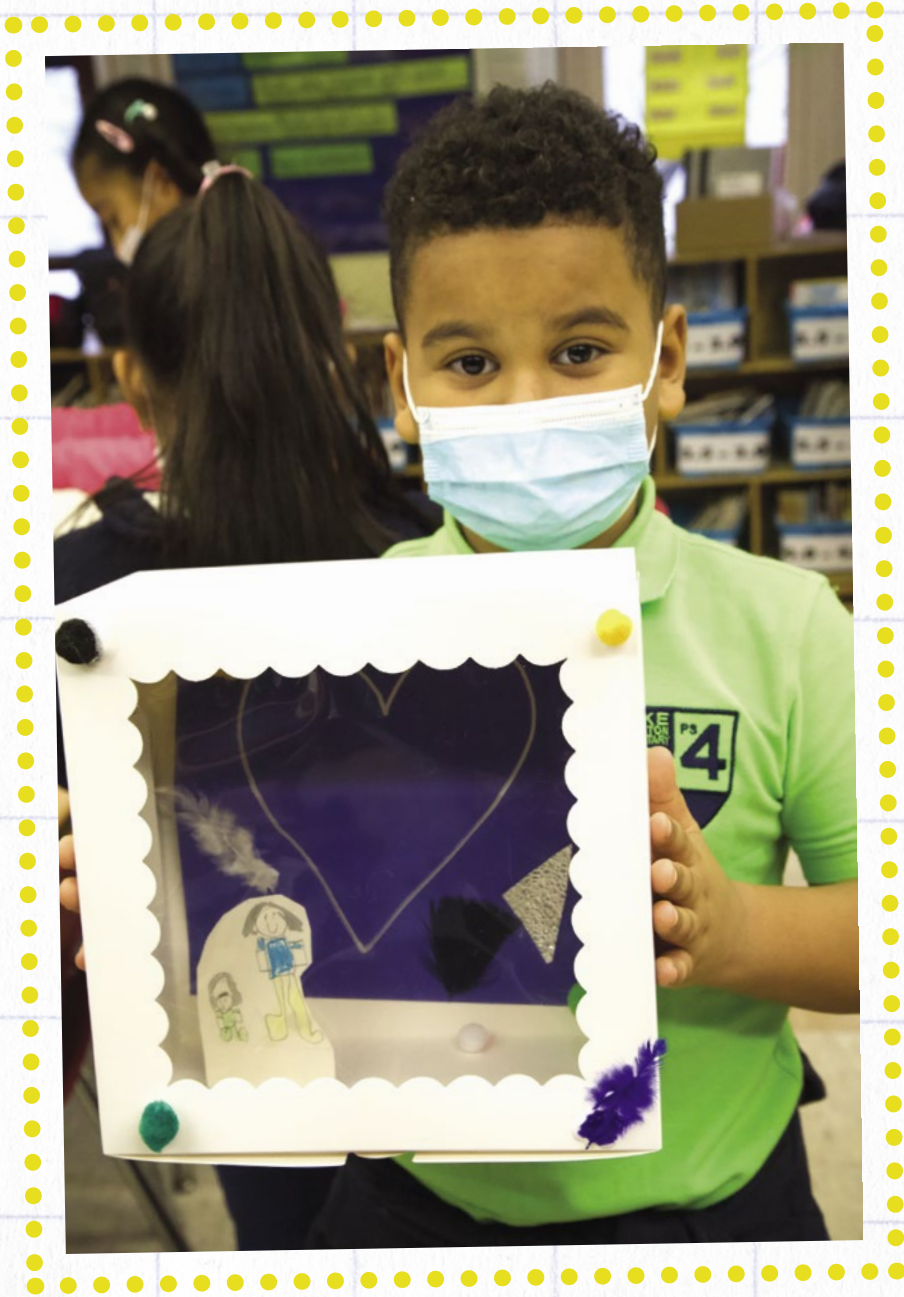


NAMINATA

I am re-designing a headphone that can tell you when to cross the street. This redesign is solving blind people's problems. This is important because if you were blind you won't be able to cross the street. This works by you put it on and it tells you when it's safe to cross the street. This redesign is making the world more inclusive because blind people can't cross the street or they will get hit by a car.



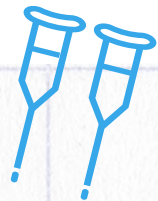




AYDEN L.



I am redesigning ramp + no to compactible
be carried around whenever needed.
This redesign solving the fact + no + there's
not a low use ramp. This is important because
everyone should enjoy NYC this works by
press a button to make it expand.
This redesign is making + ne more inclusive because
people should not be limited but new experiences.





JESSELEE

I am redesigning a Flying wheelchair
Wheelchair users in NYC; This
redesign is solving NYC is not
flat and accessible. This is
important because
everyone should be able to get
around easily + three
jet propellers people
with different abilities
can enjoy NYC.



JACKNIEL



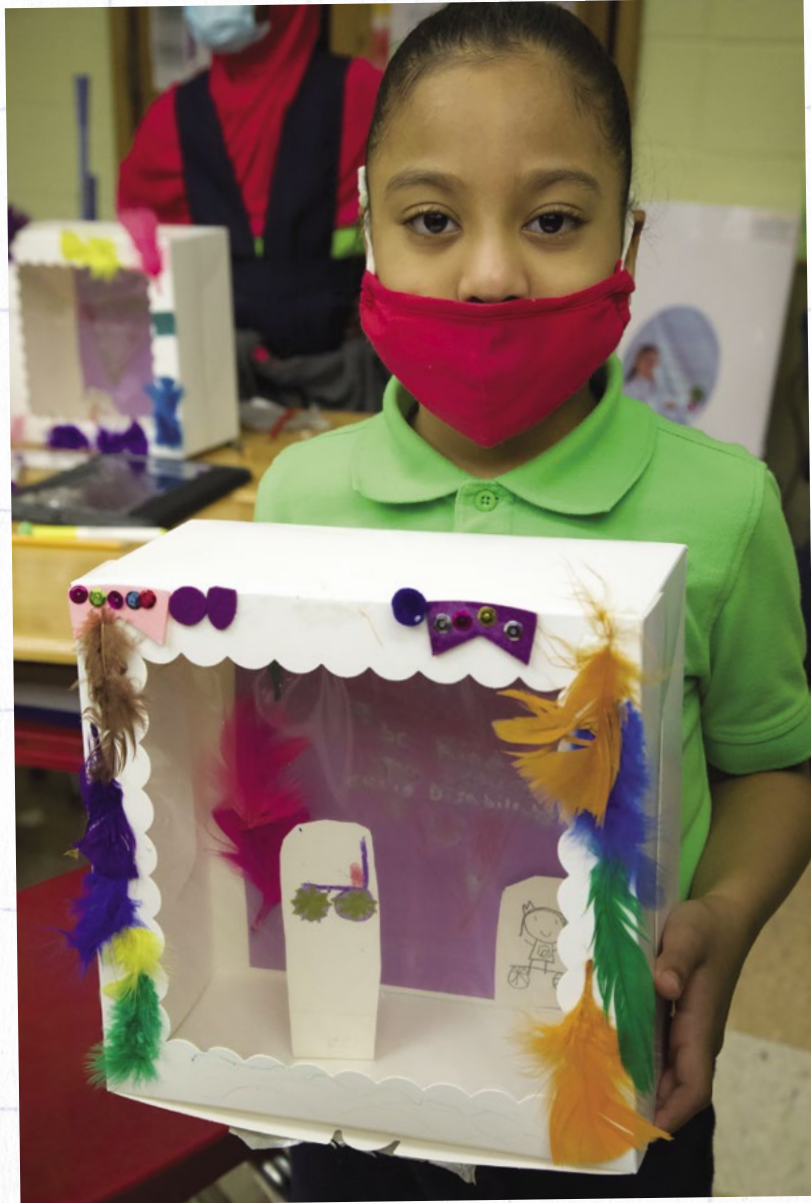
STEVEN

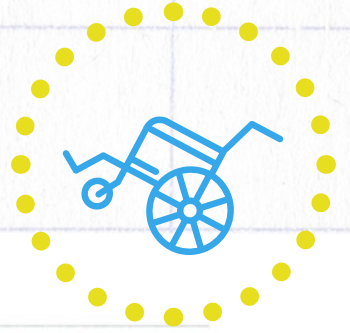


I am redesign a wheel chair that can turn steps into a ramp with a push of a button. This redesign is solving people getting up the stairs. This is important because it helps get upstairs. It is important up there. This works by clicking a button then it turns into a ramp. This redesign is making the world more inclusive because it helps people get around in the house.



DAIRALIS





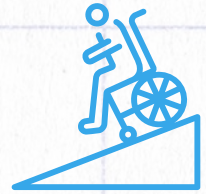
I am redesigning a wheelchair that can go on stairs to make it easier for them to go on stairs cause its hard.

People that cannot walk some places cause of stairs that's why they should make wheelchairs easier to use. Some places have stairs or steps. it is a problem cause people have wheelchairs and cannot walk so they should make a wheelchair so they can go on steps. wheelchairs can walk on steps instead of having a trouble. ANYONE can use the stairs if they have wheelchairs or not.



SMIL

I am redesigning a wheelchair that have a ramp to go up and down the stairs. This is important because people in the wheelchair that needs a ramp because it hard to go up and down the stairs. This works by it has a ramp in the bottom that come out. This redesign is making the world more inclusive because it's helping people that don't walk to go up and down the stairs.



JESUS

I am redesigning a Braille tablet lead for the person that's blind find Braille this redesign solving that people can't find Braille books.

This is important because they will be able to read translated into Braille.

This works by there's an app that you download and you save the name of the book the it as Braille this redesign making the world more include more blind people need to know stuff





MILAN



KAYLEE



MILAN

I am redesigning a button that helps people in a wheel chair. This redesign is solving people in a wheel chair's to get on beds. When you press the button and the bed will go lower and you can get on it. This is important because if your in a wheel chair you cant get on the bed because it is to high so theres a button that pulls the bed lower and the wheel chair will push you towards the bed and will push you on the bed. This works by pushing the button and holding the rail for your hand. This redesign is making the world more inclusive because ill help others get on the bed.





KAYLEE

I am redesigning a ramp to help others that can go up and down the stairs. this redesign is solving others in a wheelchair who want to go up and down when they need to. this is important beacuse there really gonna need it if they have places to go to. this works by making a ramp and helping. this redesign is making the world more inclusive beacuse of the ramp i feel bad beacuse ppl can't go on stairs beacuse of a wheel chair. so why not help them!



KYLE



KING





If wheelchairs didn't exist you wouldn't be able to walk if you broke your leg and if you press a red button on the wheelchair the stairs turn into a ramp so you can get down the stairs if you're in a wheelchair. This redesign is making the world more inclusive because it's making sure everybody can walk.





LLOYD

I am Redesigning an auto wheel chair that can help people that can't move it any more. It helps people that have broken legs when crossing the street. It helps people that have broken legs in a wheel chair and don't have to move your hands. It works by pressing a button on the wheel chair. It helps people that have broken legs.

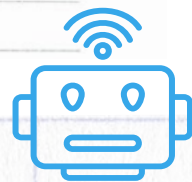
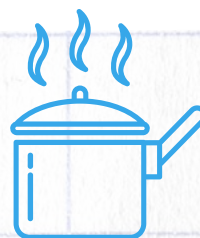






CLAUDIO

I am redesigning a robot that walks and that can do anything. It can fly, talk, and cook. This redesign is solving people that can't walk with their feet. This is important because people that have trouble walking can move. This works by the control panel inside the robot. This redesign is making the world more inclusive because robots are cool to use because people in robots look cool.



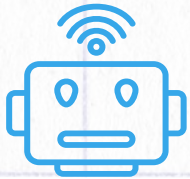


SINCERE

I AM REDESIGNING AN APPLE PICKING MACHINE THAT CAN HELP GET APPLES WHO ARE TOO SHORT TO REACH THEM. THIS REDESIGN IS SOLVING THE PROBLEM FOR PEOPLE TO PICK APPLES. THIS IS IMPORTANT BECAUSE IF SOMEONE DOES NOT HAVE ANY ARMS THEY MAY NEED THIS MACHINE.







RYAN

I am redesigning a robot that can help load dishes into the dish washer. this redesign is solving cleaning, this is important because it helps people clean, this works by you put batteries in it. It cleans people's stuff. this redesign is making the world more inclusive because if it sees garbage, it can clean it.

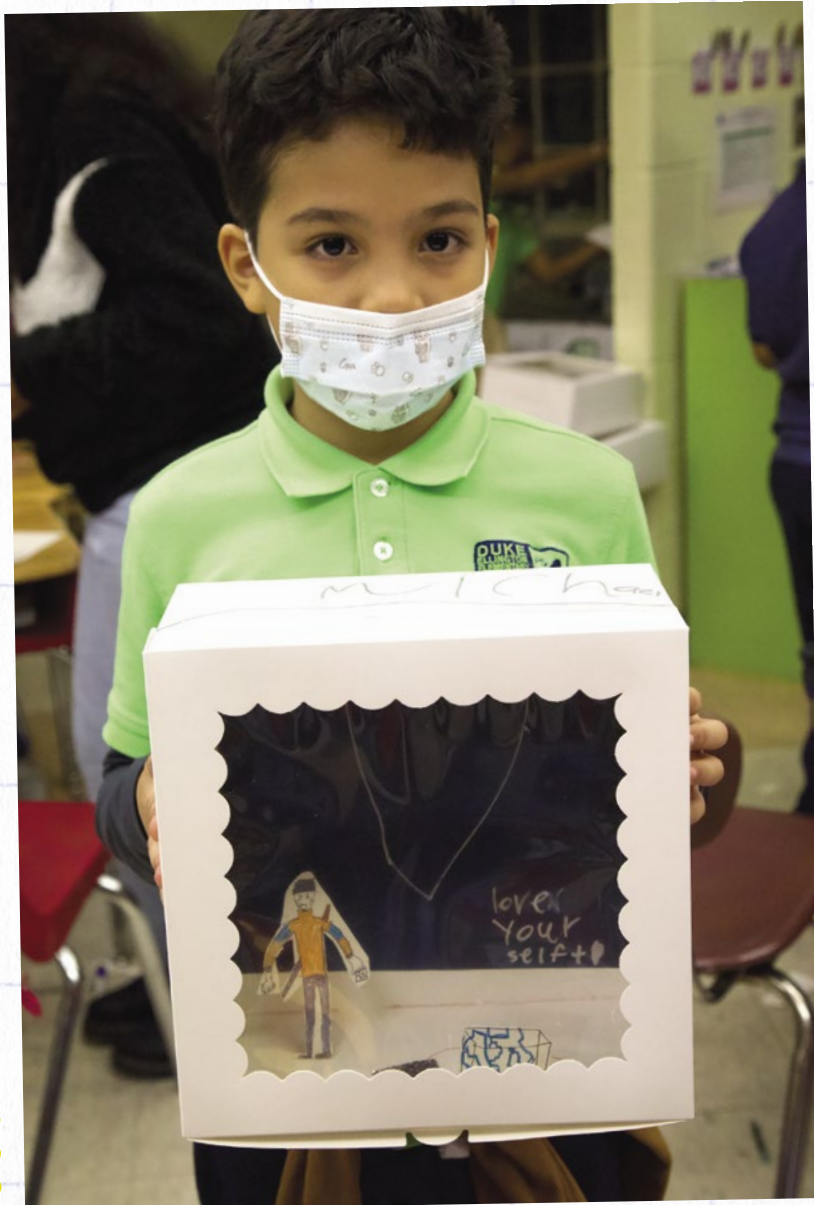


SHALEAH

I am redesigning a phone that would help blind people when they are going some where. This redesign is solving blind people when they are going somewhere. This is important because when blind people i going some where they don't get lost. This works by using a phone and a app and a lady would say what app it is. If i was blind i would asked the lady to go to what app i want. This redesign is making the world more inclusive because It would help blind people from geting lost.







MICHAEL

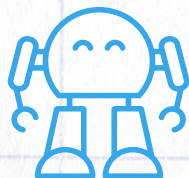
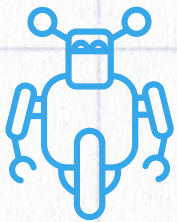
I am redesigning an telescope that can help people see better, this redesign is solving problems with blind people that can't see very well. This is important because some people in the world can't see very well and need this telescope to see better. This works by putting your eye on the bottom of the telescope then press the red button then you could see. This redesign is making the world more inclusive because you could have bad vision and this telescope will help.

ABOUT THE VISITING AUTHOR

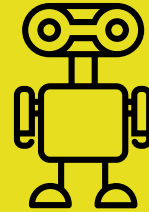


Hi! I'm Vicky Fang. I'm a children's book author and illustrator. I'm also a product designer who invents things—like cars that talk to each other, robots you can build at home, and games you can play with your voice. I started writing to support the growing need for early coding education, particularly for girls and kids of color. I am the author and sometimes illustrator of ten new and upcoming STEAM books for kids, including *Invent-a-Pet*, *I Can Code*, *Layla and the Bots*, *AlphaBot*, and *Friendbots*.

Outside of writing, I like eating, binge-watching TV series, papercraft, crafting new anything, dancing, and playing with my kids. I live with my husband, my two boys, and one pet rhinoceros beetle in Mountain View, California.



ABOUT THE STUDENT AUTHORS



Class 3-304 is a class of 25 innovative and inquisitive minded 3rd graders. Uniquely, these students strive to do their best in all to be the best. They love to work in teams in order to accomplish goals, yet each one contributes through their own individuality. These 3rd graders are friendly, kind, and loving to one another and always strive to show their “Ellington Pride.” Being in the midst of a pandemic, this has been a very different kind of year for these students. However, through it all, they have shown great integrity to keep pushing themselves to become better in Science, Technology, English Language Arts, Art, and Math (S.T.E.A.M).



ABOUT BEHIND THE BOOK

Behind the Book brings authors and their books into classrooms to build literacy skills and foster a community of lifelong readers and writers. Working with classes from Pre-K through 12th grade, our series of workshops is designed to bring books to life and inspire students to reach their full potential. Behind the Book is embedded in the class curriculum, nurtures critical thinking, creativity, and self-confidence in New York City public school students. All programs meet the Next Generation Learning Standards.

NEXT GENERATION LEARNING STANDARDS ADDRESSED

Writing

NYSNGS.ELA-LITERACY.3W2: Write informative/
explanatory texts to explore a topic and convey ideas
and information relevant to the subject.

Reading

NYSNGS.ELA-LITERACY.3R9: Recognize genres
and make connections to other texts, ideas, cultural
perspectives, eras, personal events, and situations.



Behind the Book

BtB empowers the next generation of readers and writers by nurturing critical thinking, creativity, and self-confidence in our students.

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