FAIRCHILD
TROPICAL BOTANIC GARDEN

THE FAIRCHILD CHALLENGE®
Changing the way we understand and live with nature

The Fairchild Challenge is our award-winning, interdisciplinary, environmental science competition designed to engage students of diverse interests, abilities, talents and backgrounds to explore the natural world. The program has been recognized as a benchmark for exceptional STEM education and for empowering PreK – 12th grade students to become the next generation of scientists, researchers, educated voters, policy makers, and environmentally-minded citizens.

The Fairchild Challenge is made possible by the generous support of the Batchelor Foundation.

The Batchelor Foundation

High School Challenges

Challenge 1: Botanical Breakthrough

Challenge 2: Connect to Protect Network – Short Film

Challenge 3: Growing Beyond Earth

Challenge 4: Green Cuisine – Pantry Based Cookbook

Challenge 5: Environmental Debate Tournament

Challenge 6: Green Treasures – Fairchild's Pharmacy

Challenge 7: Million Orchid Project

THE FAIRCHILD CHALLENGE®

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Challenge 1

Botanical Breakthrough

Nature can be regarded as the most profound inventor ever known. **In response to the ever-changing environment, living organisms have evolved and adapted their form and function.** To unlock solutions to modern problems, humans are inspired by, learn from and emulate nature's materials, structures and systems. **We asked students to research a current engineering issue and design a plant-inspired solution.**

Challenge 1
Botanical Breakthrough

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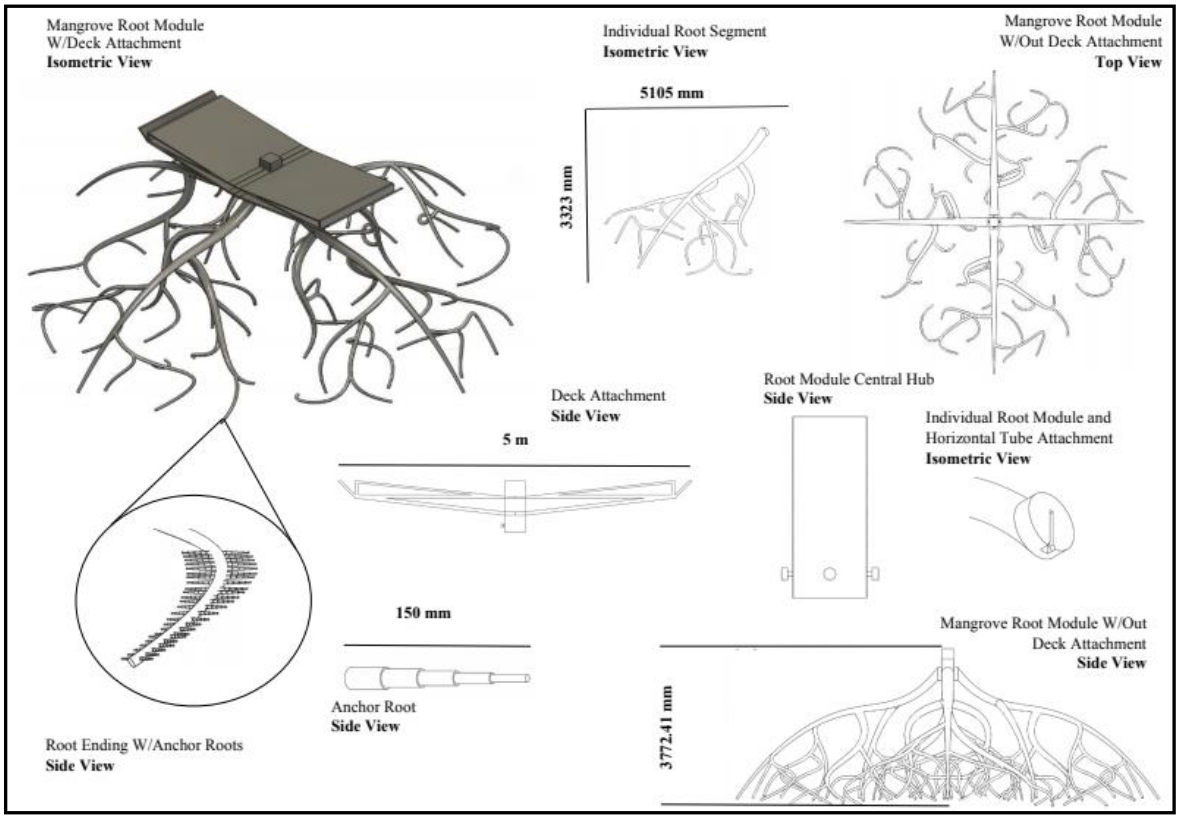
FIRST PLACE

Heleny Perez, Liliana Guillot, Yaniel Rodriguez, Giovanni Lopez, and Justin Sanchez

iMater Preparatory Academy High School



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Challenge 1
Botanical Breakthrough

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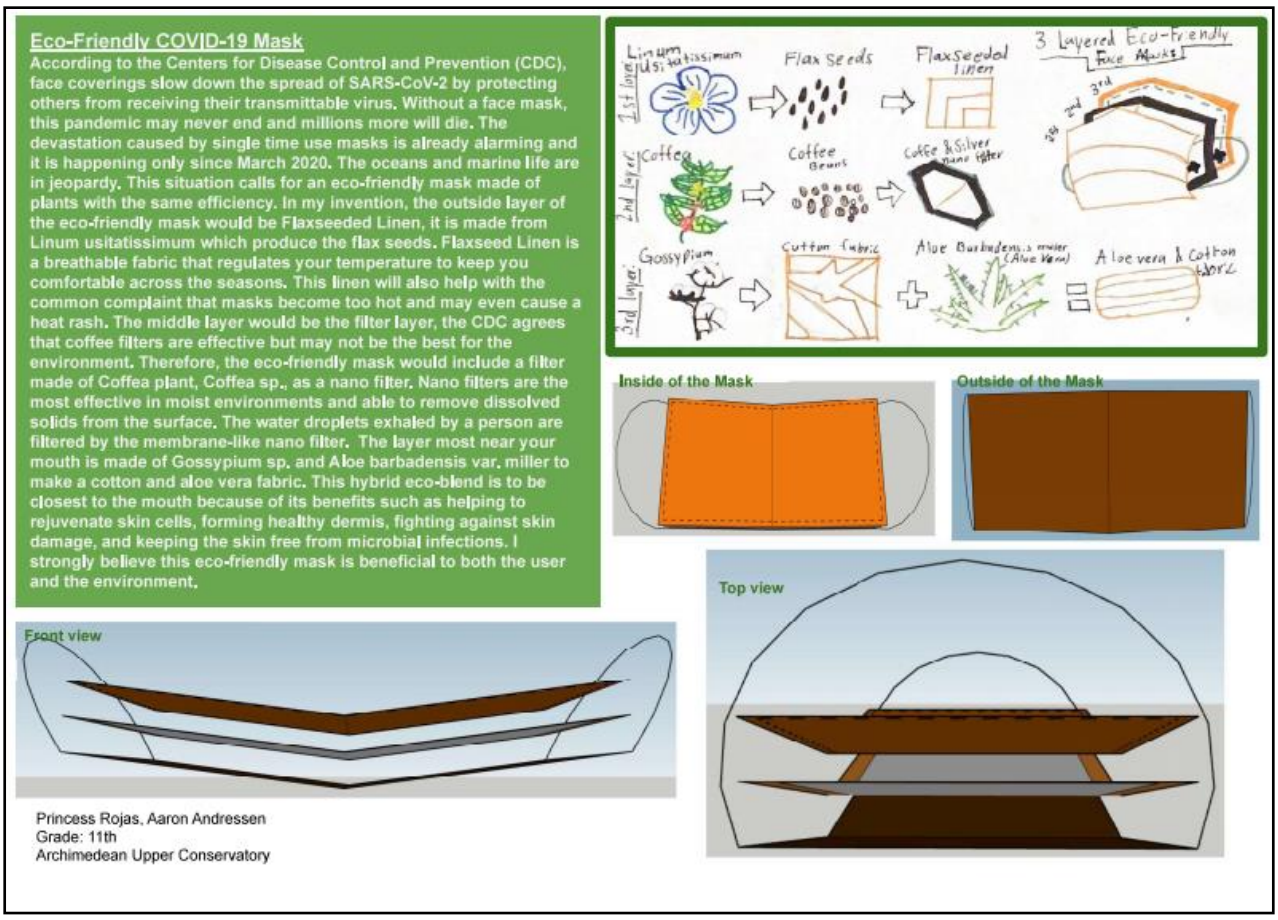
SECOND PLACE

Princess Rojas and Aaron Andressen

Archimedean Upper Conservatory



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Challenge 1
Botanical Breakthrough

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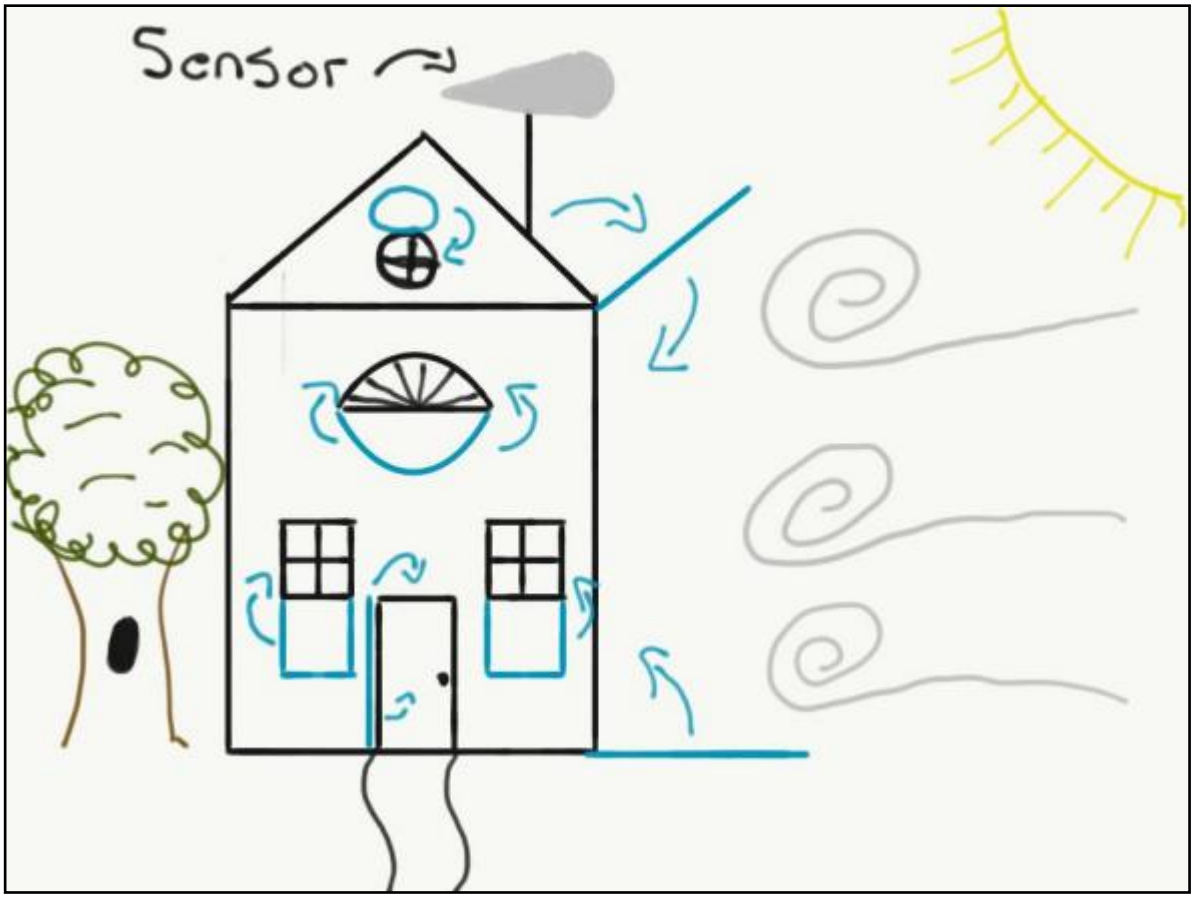
Special Merit – Most Innovative

Millard Mcleod

Coral Reef Sr. High School



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Challenge 1
Botanical Breakthrough

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Special Merit – Most Inspired

Amanda Diaz, Anastasia Haro, Carolina Morales, Eryn Proaño, and Carmen Rangel

Florida Christian School

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Challenge 1
Botanical Breakthrough

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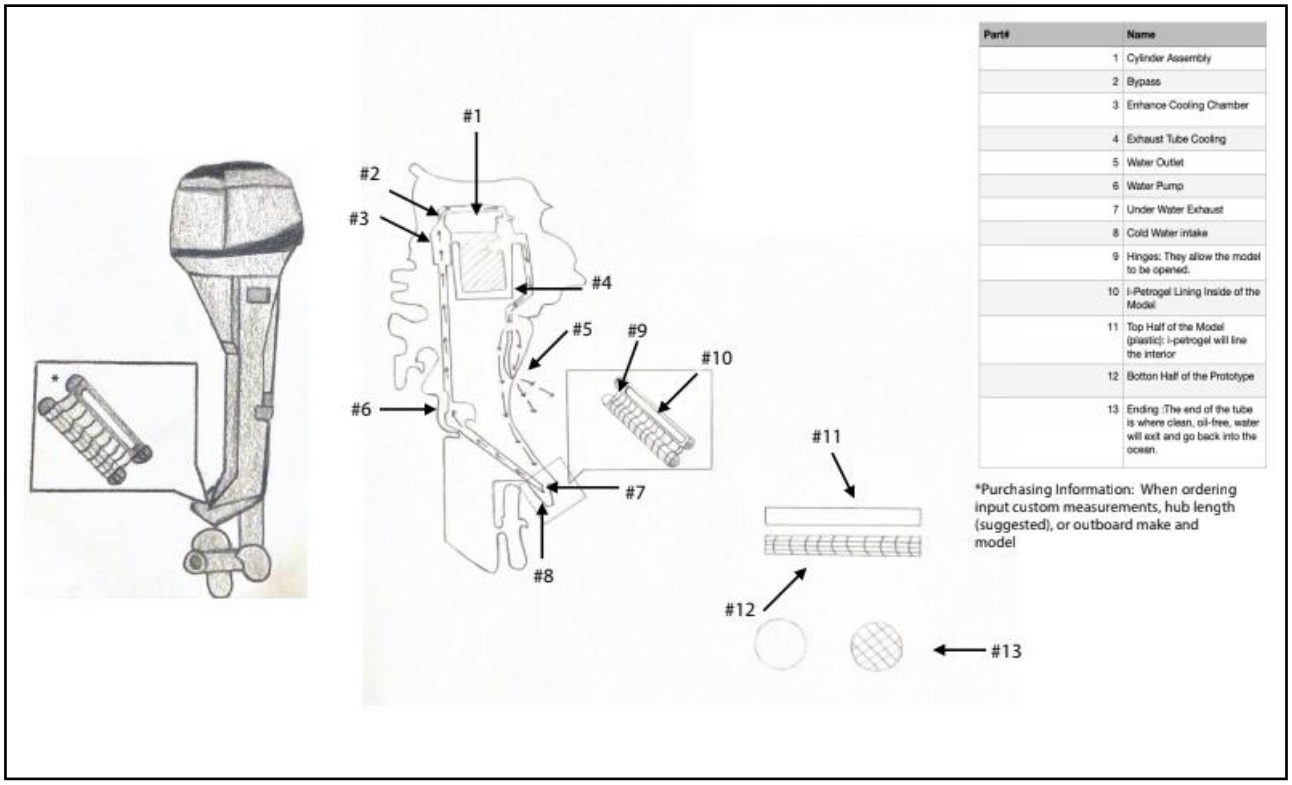
Special Merit – Most Practical

Diana Gil, Maria Muñoz, Christian Rodriguez, Emily Rodriguez, and Kaitlyn Hidalgo

iMater Preparatory Academy High School



Part#	Name
1	Cylinder Assembly
2	Bypass
3	Enhance Cooling Chamber
4	Exhaust Tube Cooling
5	Water Outlet
6	Water Pump
7	Under Water Exhaust
8	Cold Water intake
9	Hinges: They allow the model to be opened.
10	I-Petrogel Lining Inside of the Model
11	Top Half of the Model (plastic): I-petrogel will line the interior
12	Botton Half of the Prototype
13	Ending :The end of the tube is where clean, oil-free, water will exit and go back into the ocean.

*Purchasing Information: When ordering input custom measurements, hub length (suggested), or outboard make and model

Click image to learn more about this entry.

Challenge 1
Botanical Breakthrough

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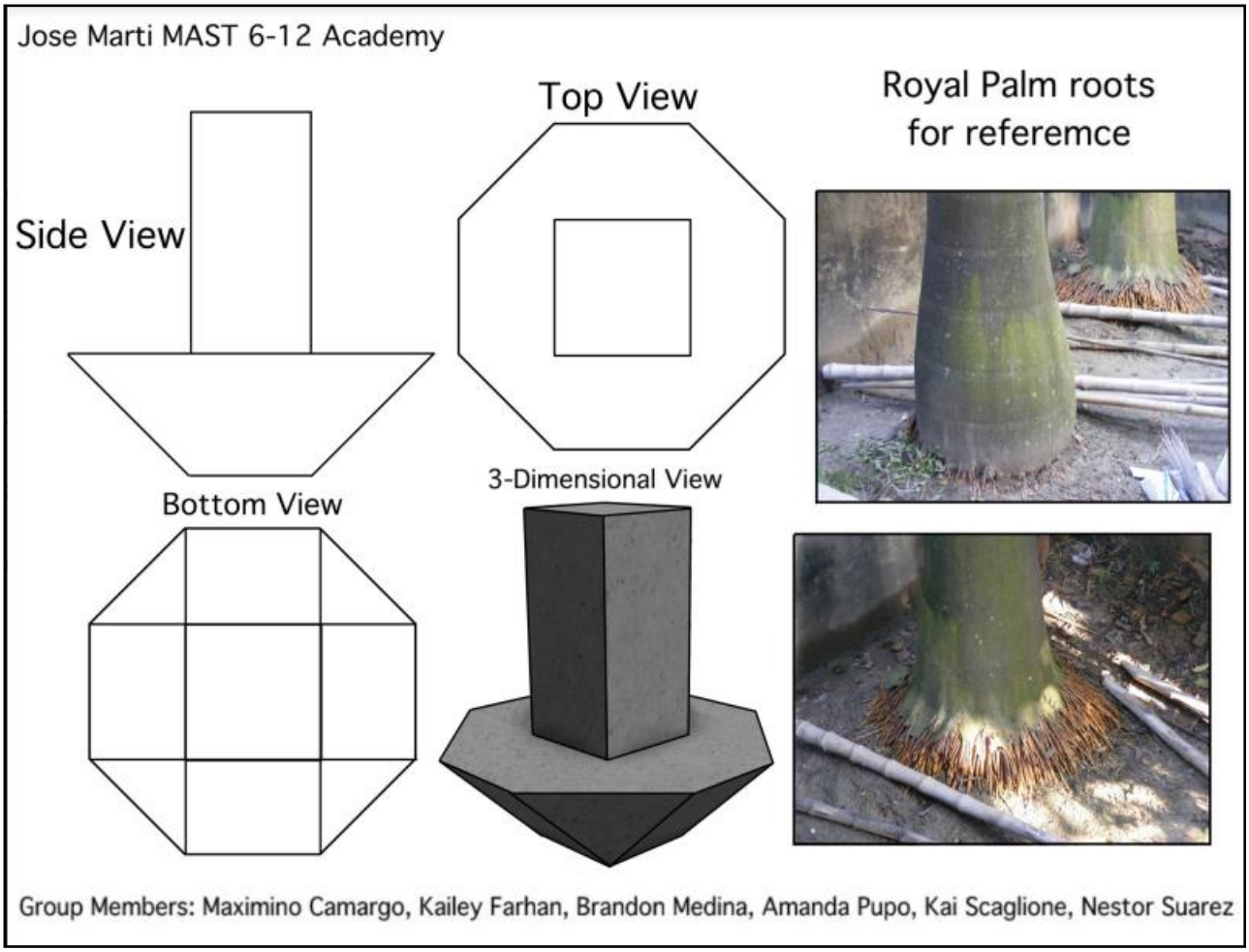
Special Merit – Explanation of Design

Maximo Camargo, Kailey Farhan, Brandon Medina, Amanda Pupo, Kai Scaglione, and Nestor Suarez

José Martí MAST 6-12 Academy



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Challenge 2

Connect to Protect Network – Environmental Short Film

Less than 2% of the pine rocklands remain outside of Everglades National Park making **this natural community one of the most globally imperiled ecosystems**. Much of what remains occurs today exists as only fragmented parcels across Miami and The Keys. **Fairchild's own Connect to Protect Network encourages families, schools and local businesses to plant pine rockland gardens to increase the probability of visits of seed dispersers and pollinators.** The goal of this conservation program is to improve genetic health of plant species by connecting these remaining isolated patches across urban areas. **We asked students to create a short film that showcases Connect to Protect Network.**

Challenge 2
Connect to Protect Network
Environmental Short Film

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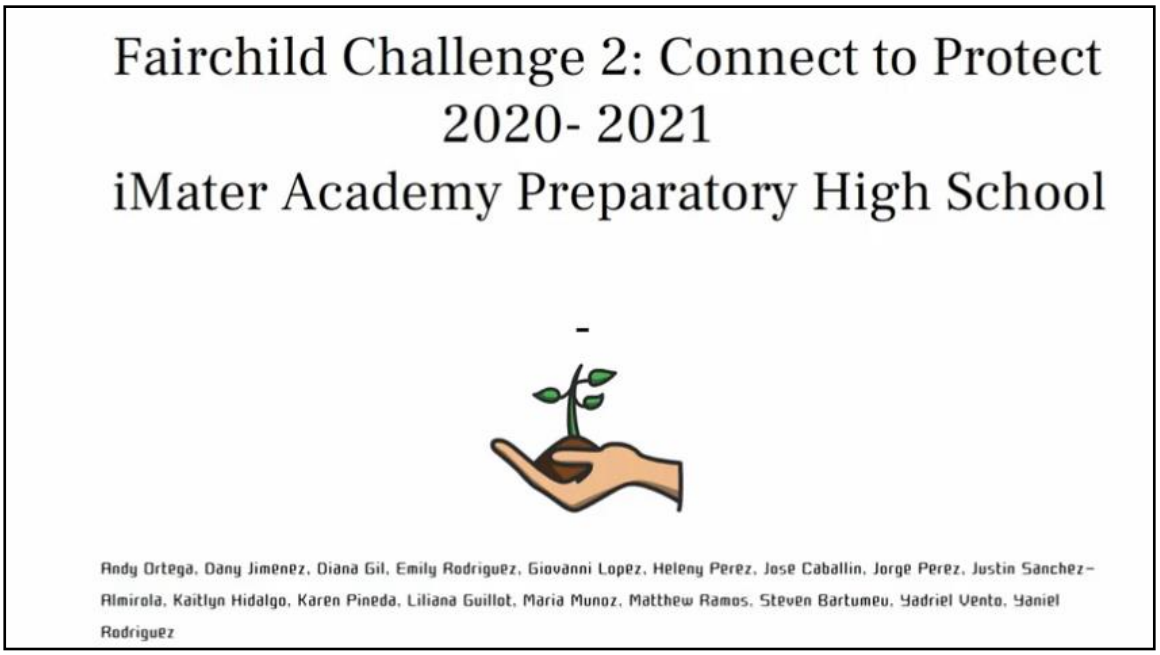
FIRST PLACE

iMater Academy Preparatory High School



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Challenge 2
Connect to Protect Network
Environmental Short Film

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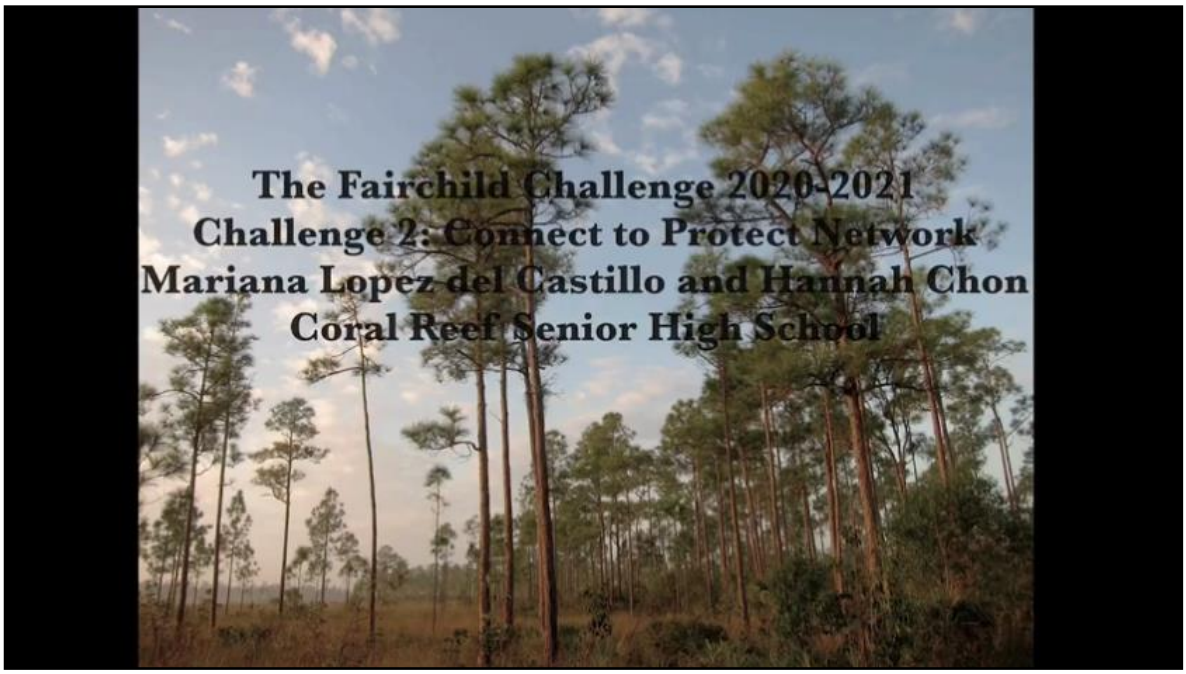
SECOND PLACE

Coral Reef Senior High School



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Challenge 2
Connect to Protect Network
Environmental Short Film

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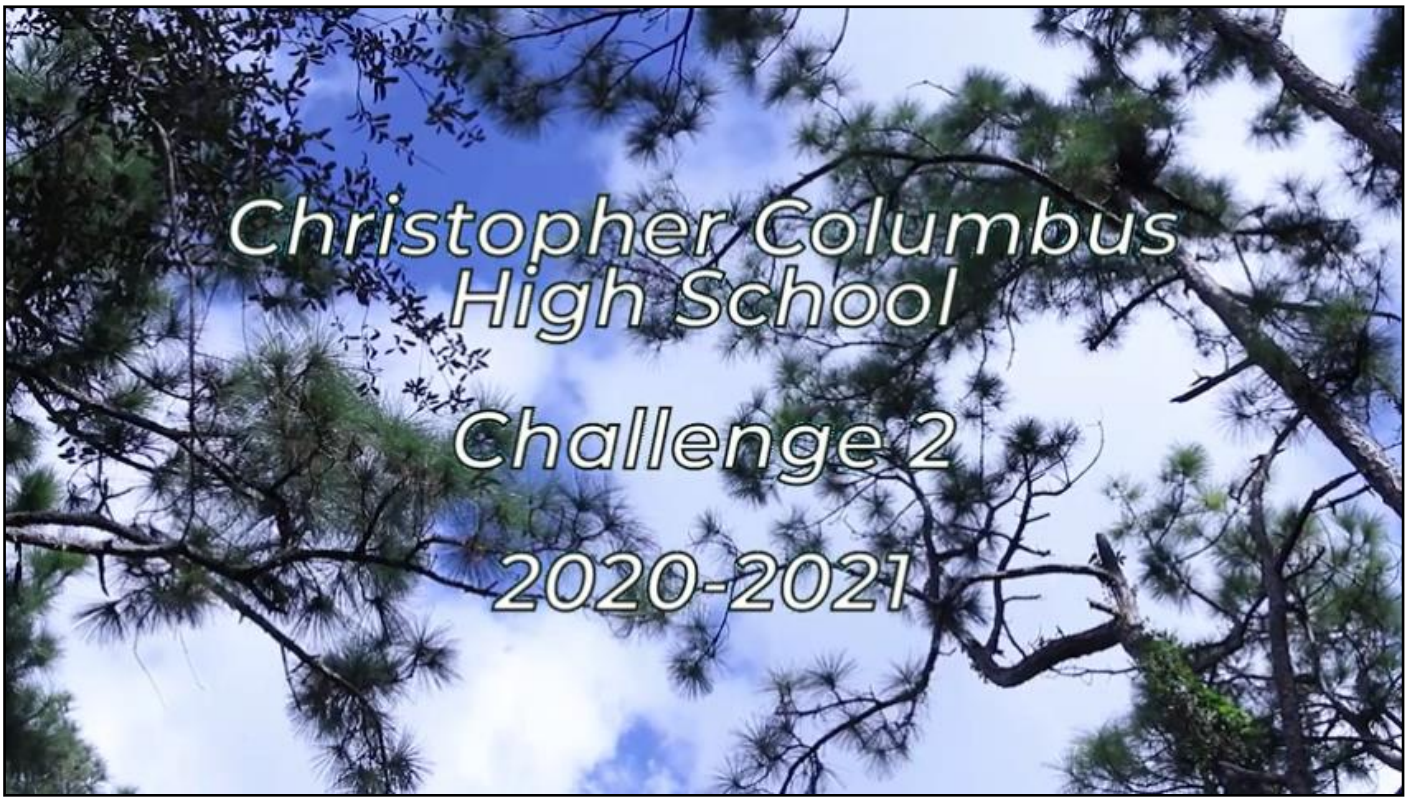
Special Merit – Most Informative

Christopher Columbus High School



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Challenge 2
Connect to Protect Network
Environmental Short Film

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Special Merit – Depth of Research

José Martí MAST 6-12 Academy

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Challenge 2
Connect to Protect Network
Environmental Short Film

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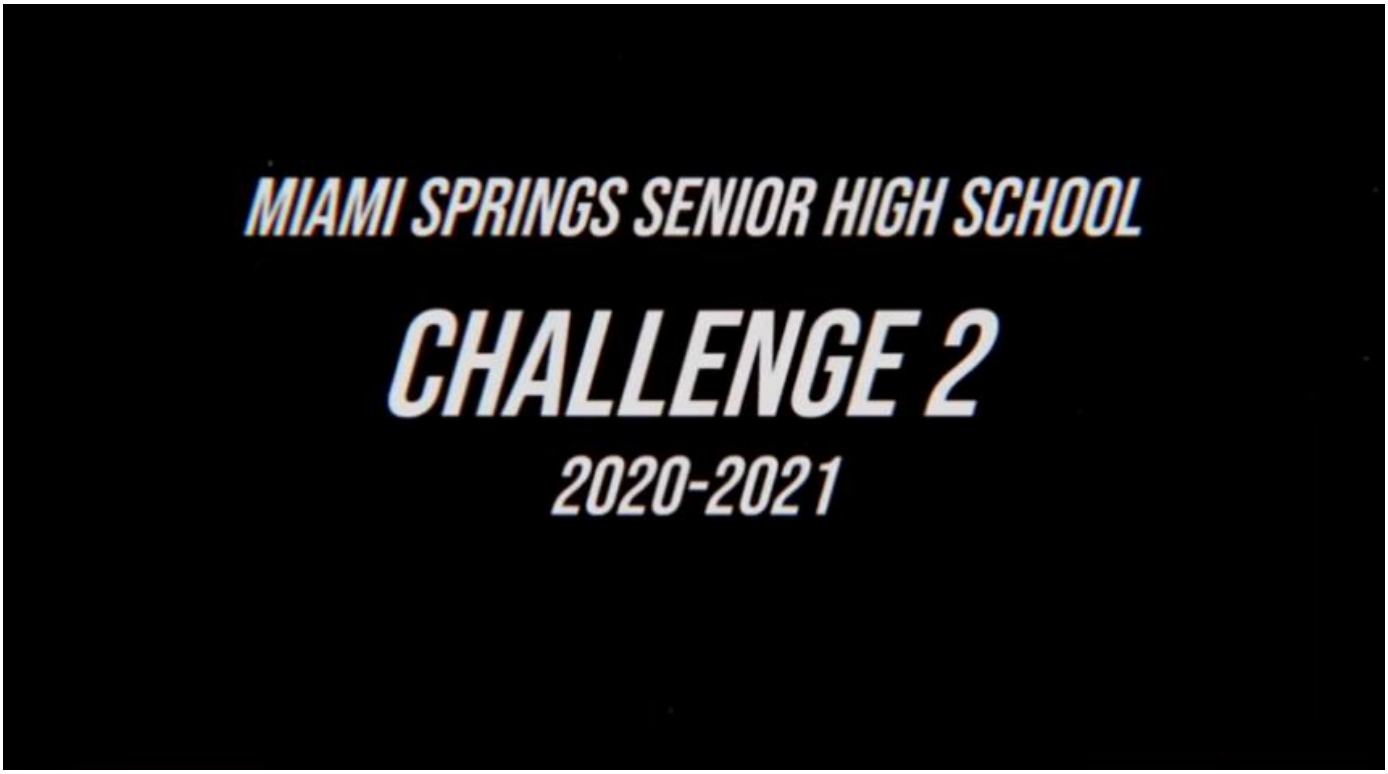
Special Merit – Originality

Miami Springs Senior High School



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Challenge 2
Connect to Protect Network
Environmental Short Film

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Special Merit – Captivating

Archimedean Upper Conservatory

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Challenge 3

Growing Beyond Earth

Humans have never been more determined to explore the universe, however reaching and settling new planets is still an incredible challenge with several hurdles to overcome. **One of the biggest challenges will be providing fresh produce for astronauts during long distance space travel.** For the past 5 years, your research has brought NASA closer to solving that problem and has supported some of the important components of growing plants in space. This year, **students selected one of the three variables, fertilizer, photoperiod, or light spectrum, to test how they affect plant growth** by growing them in the "Advanced Plant Habitat", the big brother of "Veggie".

Challenge 3
Growing Beyond Earth

THE FAIRCHILD CHALLENGE®
Changing the way we understand and live with nature

SECOND PLACE

iMater Preparatory Academy

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Challenge 3
Growing Beyond Earth

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Special Merit – Enthusiasm

Allison Academy

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Challenge 3
Growing Beyond Earth

Special Merit – Technical Ability

Miami Palmetto Senior High School

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Challenge 3
Growing Beyond Earth

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Special Merit – Effective Use of Visuals

Somerset Academy Charter School

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Changing the way we understand and live with nature

Challenge 4

Green Cuisine – Pantry-based Cookbook

Food brings comfort during these unprecedented times when people maintain social distancing and stay at home**. To reduce shopping trips people turn to their pantries for convenience, nutrition and delicious meals.** Staples such as rice, pasta and beans to shelf-stable condiments like vinegar, soy sauce and hot sauce can be found in the cupboard. **Students were asked to create a "Pantry-based Cookbook" showcasing tasty and imaginative recipes from the cupboard.**

Challenge 4
Green Cuisine
Pantry-based Cookbook

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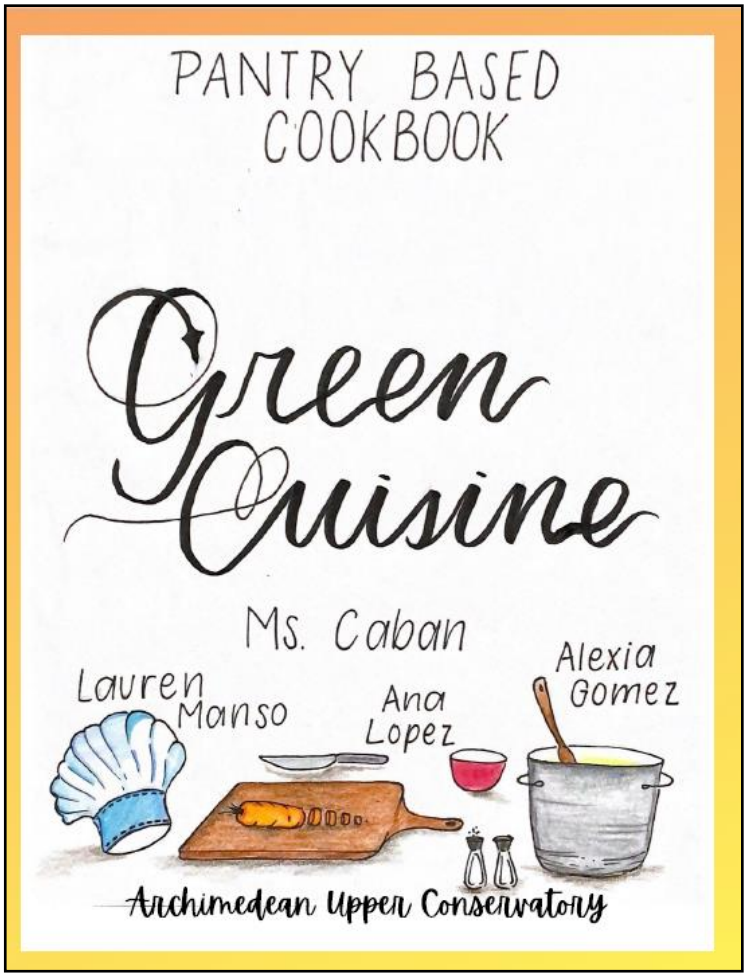
FIRST PLACE

Lauren Manso, Ana Lopez, and Alexia Gomez

Archimedean Upper Conservatory



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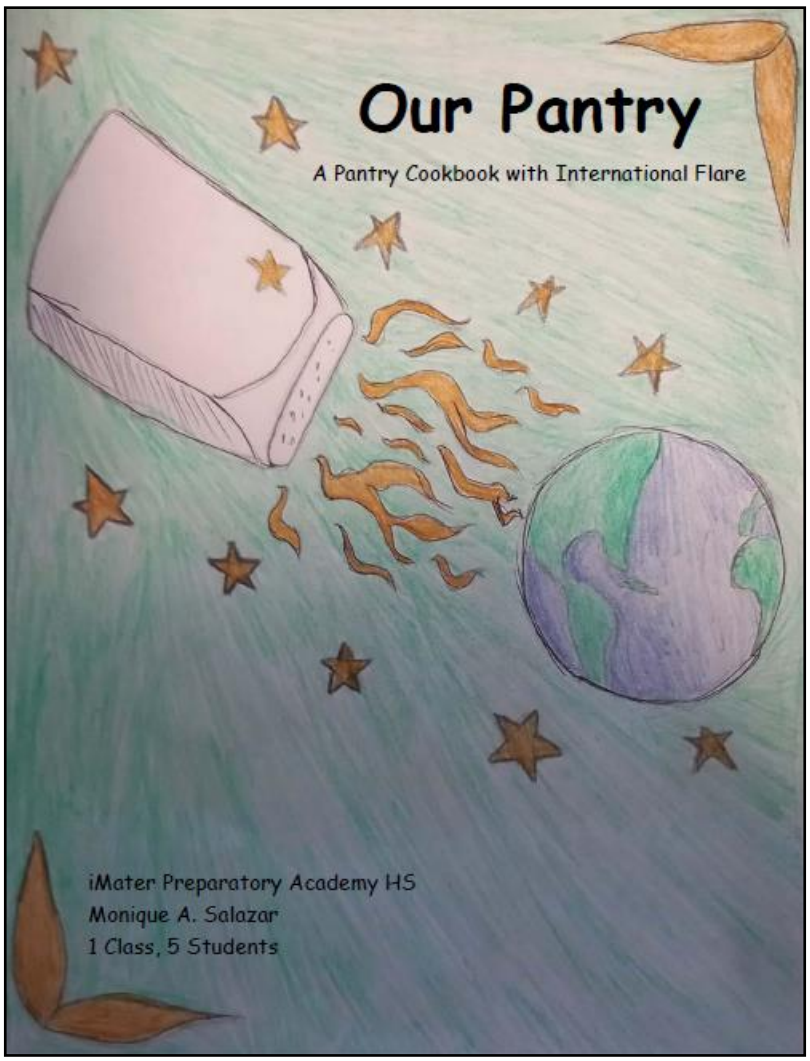
Challenge 4
Green Cuisine
Pantry-based Cookbook

THE FAIRCHILD CHALLENGE®
Changing the way we understand and live with nature

SECOND PLACE

iMater Knights

iMater Preparatory Academy High School



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Challenge 4
Green Cuisine
Pantry-based Cookbook

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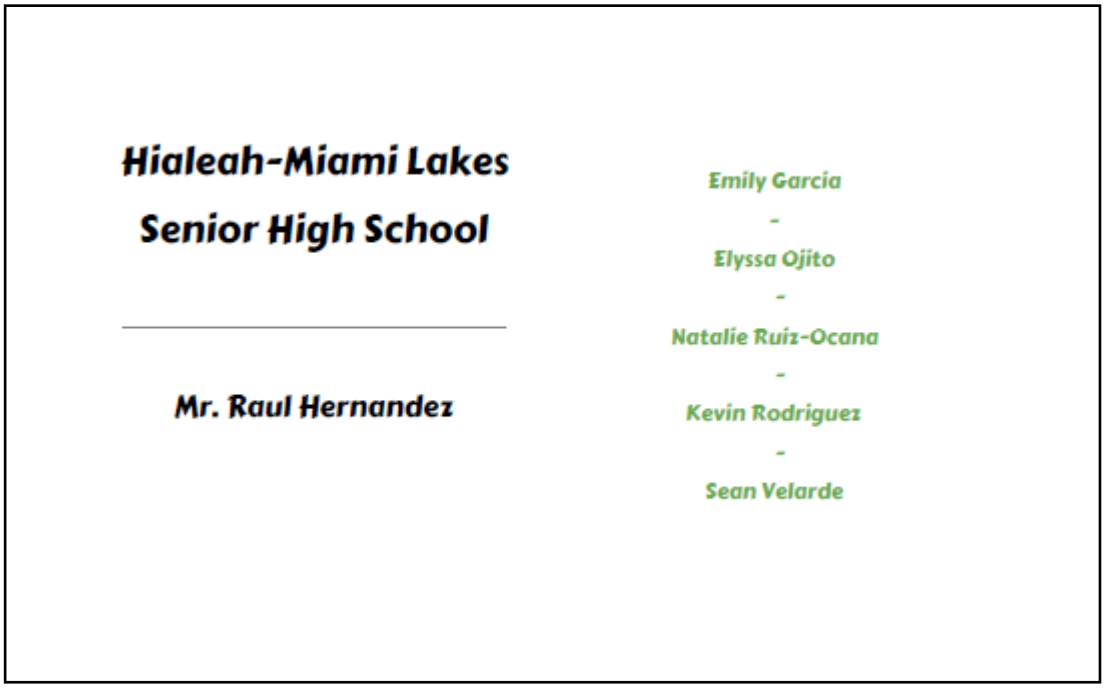
Special Merit – Ingenious Use of Pantry Ingredients

Emily Garcia, Elyssa Ojito, Natalie Ruiz-Ocana, Kevin Rodriguez, and Sean Velarde

Hialeah-Miami Lakes Sr. High School



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Challenge 4
Green Cuisine
Pantry-based Cookbook

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Special Merit – Overall Presentation

Nicole Norono, Giovanna Lopardo, and Julian Parke

Miami Springs Sr. High School

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THE FAIRCHILD CHALLENGE®

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Challenge 5

Environmental Debate Tournament

The Fairchild Challenge Environmental Debate Tournament provides a powerful forum for students to build life-long skills and engage in real world issues. During this year's virtual event, **students will refine the art of persuasion as they assess and anticipate two different perspectives of local, national and international environmental issues.** Team members will increase their civic awareness by participating in this British Parliamentary style debate.

Challenge 5
Environmental Debate
Tournament

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FIRST PLACE

Daniel Perez and Luke Yang

Miami Palmetto Sr. High School

Challenge 5
Environmental Debate
Tournament

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SECOND PLACE

Gianna Hutton and Julian Orrego

Miami Palmetto Sr. High School

Challenge 5
Environmental Debate
Tournament

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Special Merit – Best Rebuttals

Gianna Hutton

Miami Palmetto Sr. High School

Challenge 5
Environmental Debate
Tournament

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Special Merit – Most Articulate

Bella Gonzalez

TERRA Environmental Research Institute

TERRA
ENVIRONMENTAL RESEARCH INSTITUTE

Challenge 5
Environmental Debate
Tournament

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Special Merit – Most Persuasive

Joshua Burke

TERRA Environmental Research Institute

TERRA
ENVIRONMENTAL RESEARCH INSTITUTE

THE FAIRCHILD CHALLENGE®

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Challenge 6

Green Treasures – Fairchild's Pharmacy

Throughout the course of history people from all over the world have turned to specific plants for their healing properties many of which have been incorporated into contemporary medicine. **To date, nearly 18,000 plant species have documented medicinal uses several of which are on display at Fairchild.** These plants are not only beautiful to look at but are traditionally used to create natural remedies for the treatment of many common ailments. **Students were asked to research three of the plants on the provided list below and create a podcast describing the medicinal uses of each plant found in Fairchild's living collection**.

Challenge 6
Green Treasures
Fairchild's Pharmacy

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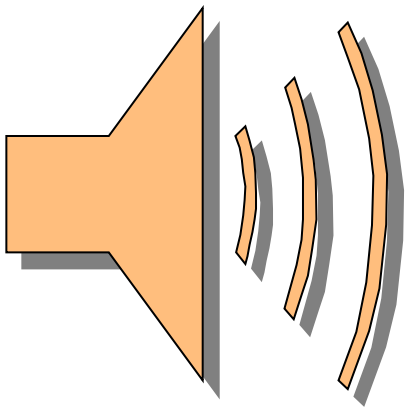
FIRST PLACE

Miami Palmetto Sr. High School



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Challenge 6
Green Treasures
Fairchild's Pharmacy

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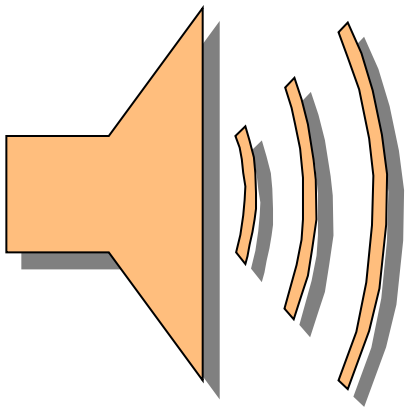
Changing the way we understand and live with nature

SECOND PLACE

Maria Munoz and Justin Sanchez

iMater Preparatory Academy High School



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Challenge 6
Green Treasures
Fairchild's Pharmacy

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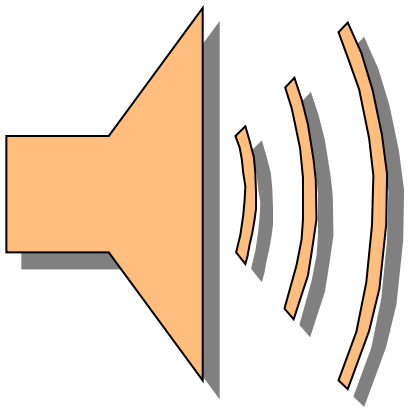
Special Merit – Unique Plant Selection

Rocco Lulinski and Sophia Gumbiner

Dr. Michael M. Krop Sr. High School



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Challenge 6
Green Treasures
Fairchild's Pharmacy

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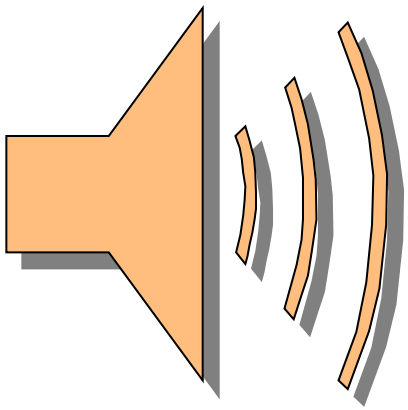
Special Merit – Educational Content

Lucia Alonso

Miami Sr. High School



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Challenge 6
Green Treasures
Fairchild's Pharmacy

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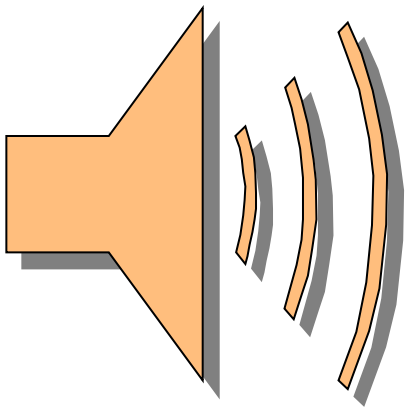
Special Merit – Best Production

Julie Casanovas, Elizabeth Saumell, Kaden Ovcarich, Adonis Carmona, and Dylan Lake

Miami Springs Sr. High School



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Challenge 7

The Million Orchid Project

This year's challenge students will help restore rare native orchids in their yards and neighborhood. **Students will receive *Encyclia tampensis* orchids** and the necessary materials to attach them on trees. These seedlings were grown by students at Fairchild laboratory and on STEMLab, our mobile tissue culture laboratory. As the plants become established, **students will also collect demographic data including tree type, orientation, root attachment, and growth rates.** This important data will help guide ongoing conservation efforts by Fairchild scientists to re-establish these lost species in south Florida. Data will be collected every two weeks using the OrchidTracker mobile application. **Based on the student findings, schools produced a tri-fold growing and care guide for this species that may be used to inform the general public about the program.**

Challenge 7
The Million Orchid Project

THE FAIRCHILD CHALLENGE®
Changing the way we understand and live with nature

FIRST PLACE

iMater Preparatory Academy High School

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Challenge 7
The Million Orchid Project

THE FAIRCHILD CHALLENGE®
Changing the way we understand and live with nature

SECOND PLACE

Mater Lakes Academy High School

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Challenge 7
The Million Orchid Project

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Special Merit – Attention to Detail

G. Holmes Braddock Senior High School

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Challenge 7
The Million Orchid Project

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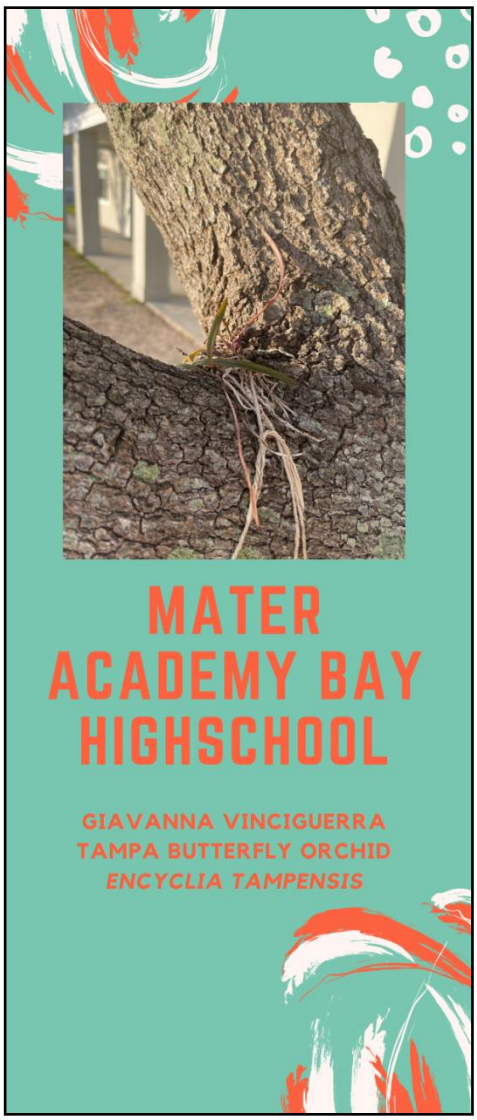
Changing the way we understand and live with nature

Special Merit – Professional Layout

Mater Academy South High School



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Challenge 7
The Million Orchid Project

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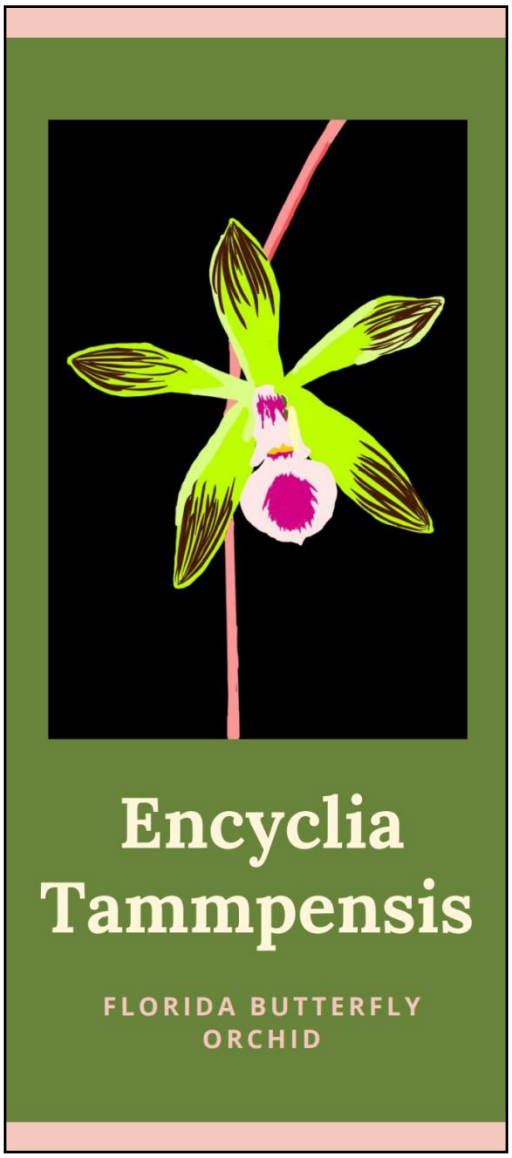
Special Merit – Artistry

Miami Springs Senior High School



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