The Development and Implementation of a Summer Program to Help Make Nature Natural for African American Children

Sherry S. Herron, Ph.D.

THE GLOBE PROGRAM
CONNECTING THE NEXT GENERATION OF SCIENTISTS

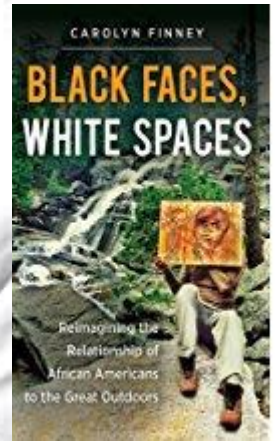
THE UNIVERSITY OF SOUTHERN MISSISSIPPI

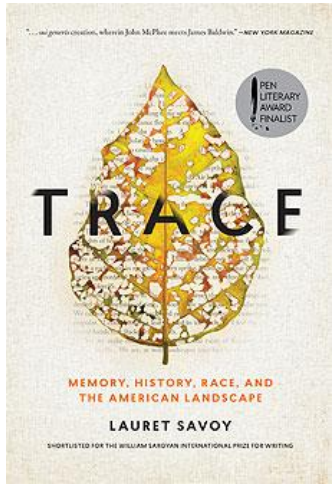
Goals

- Develop and implement a program for African American children who attend a set of summer camps in a city in South Mississippi which would…
  - Provide campers with **living** and **virtual** role models
  - Increase campers' knowledge of nature
  - Increase campers' comfort level in nature
  - Increase campers' knowledge of STEM careers related to nature
- Provide a service-learning opportunity to undergraduate and graduate African American students

Why me? I am a white woman of privilege from the Deep South!

Special thanks to Carolyn Finney, Lauret Savoy, and Angela Tucker for intellectual foundation.





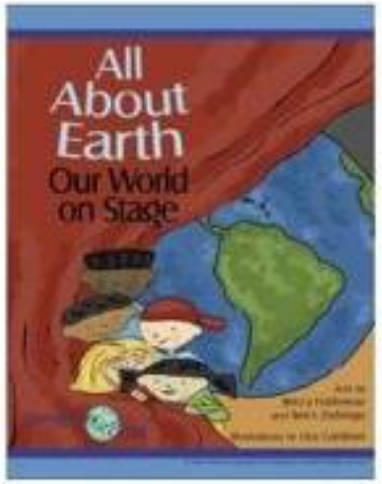
cpb Corporation for Public Broadcasting

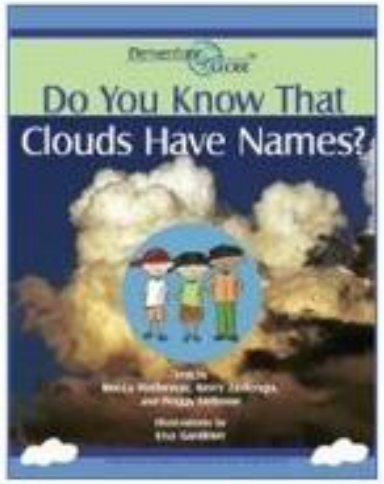
NEW YORK STATE OF OPPORTUNITY. Council on the Arts

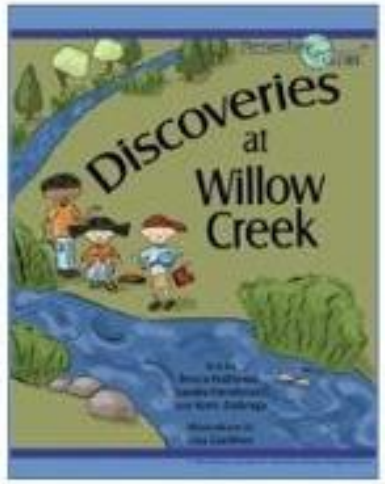
NMC NATIONAL MINORITY CONSORTIA

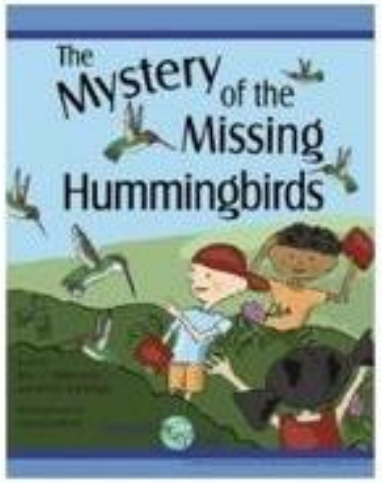
MacArthur Foundation

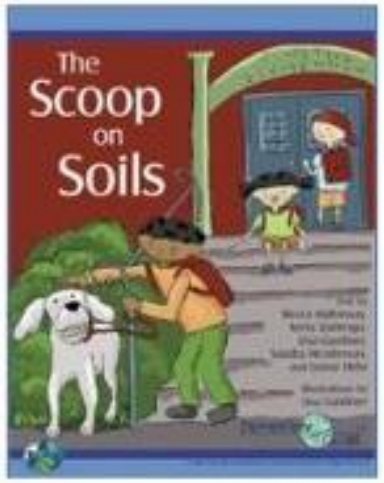
Content and process sources

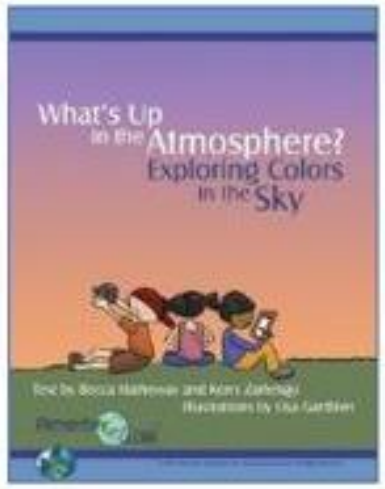








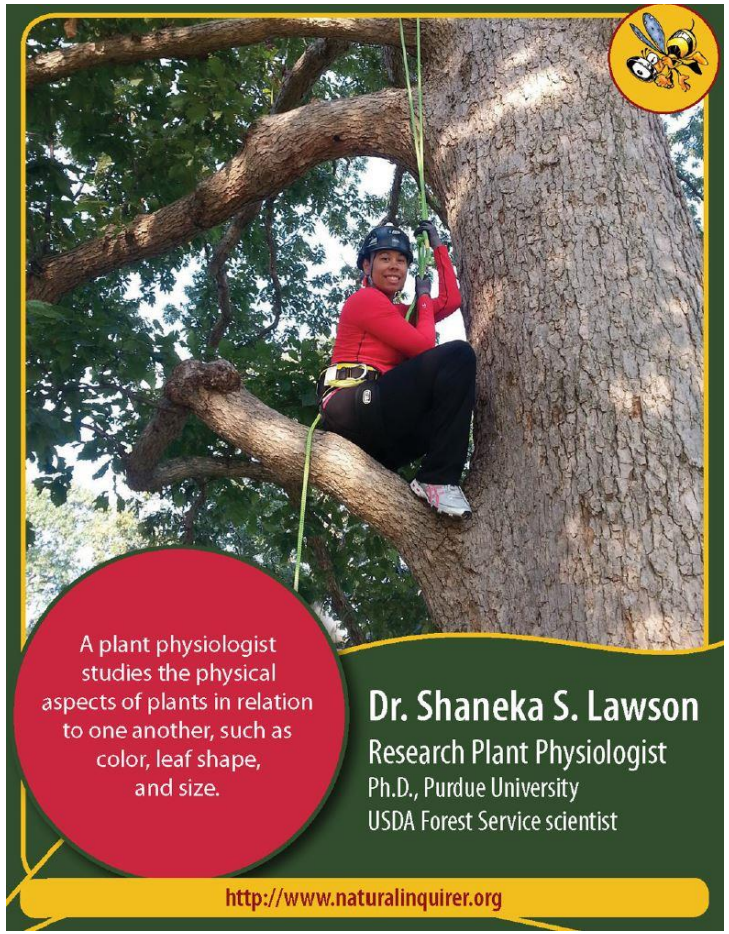


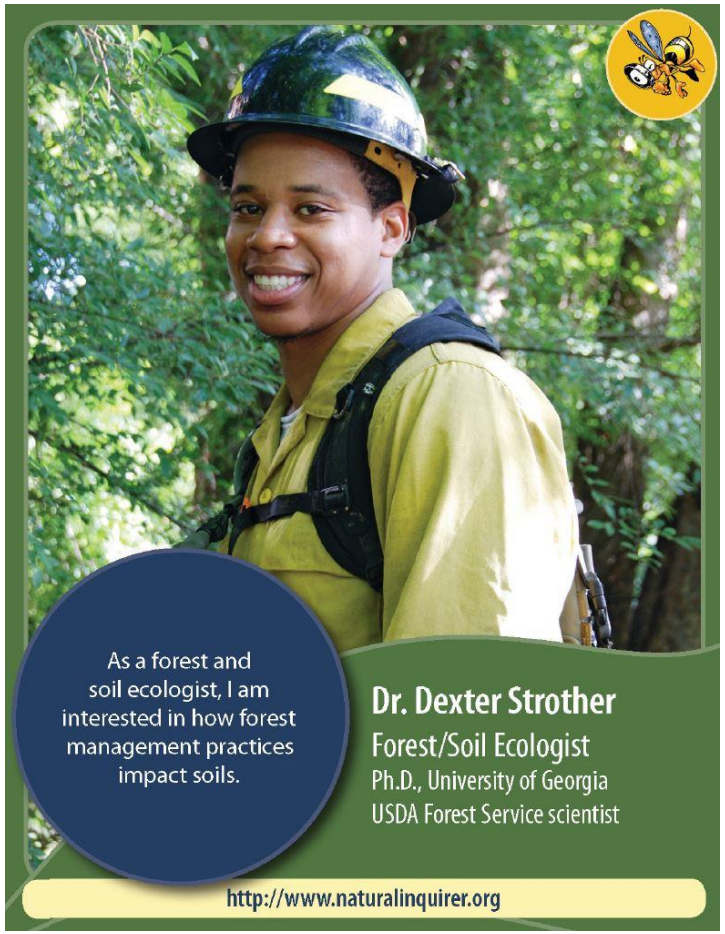


The Storybooks were written by Hatheway, Gardiner, along with Zahlengo, Henderson, Hehr, and Lenome (2006, 2015). The Teacher Implementation Guide contains background information, lesson plans, and activity sheets (Hatheway, B. & Gardiner, L., 2017).

Content sources

12 cards featuring Black Scientists from The Natural Inquirer (U.S. Forest Service) were enlarged to poster size and laminated.





Content sources
9 more posters were produced in parallel format

- Dr. Drew Lanham: author, poet and wildlife biologist, Clemson University
- Shelton Johnson: Yosemite National Park Ranger
- Dr. Vernard Lewis: Cooperative Extension Entomologist, UC - Berkeley
- Dr. Alexandra Harmon-Threatt: Pollination Ecologist, University of Illinois at Urbana-Champaign
- Rue Mapp: Founder of Outdoor Afro, UC: Berkeley Graduate
- Dr. Marshall Shepherd: Atmospheric Sciences, University of Georgia
- Dr. Monica White: Sociologist, University of Wisconsin-Madison
- Dr. Warren Washington: Climate and Global Dynamics, U.S. National Center for Atmospheric Research
- Donny Adair: African American Hunting Association, LLC

Content sources

- NASA poster *Women of Color* was mounted with identification on the back (Wild, F., 2016). Katherine Johnson, Dorothy Vaughan, and Mary Jackson, the women on which the movie *Hidden Figures* was based, were pointed out.
- NASA poster *Superstars of Science: Your Attitude Determines Your Altitude* was mounted with identification on the back (NASA, 1994). This poster showcases Black men and women.

Content sources: children's books about nature that included representation of black children (or none)

- *Habitats*, NatGeo
- *Weather and Seasons*, NatGeo
- Under One Rock: Bugs, Slugs, and Other Ughs by Anthony D. Fredericks (2001)
- Habitats by Fran Downey (2010)
- Weather and Seasons by Cory Phillips (2006)
- In a Nutshell by Joseph Anthony (1999)
- *Up in the Garden and Down in the Dirt* by Kate Messner (2015)
- Emily Morgan's series *Next Time You See the Moon* (2014), *...the Sunset* (2016),… *a Cloud* (2016),… *a Pill Bug* (2013),… *a Maple Seed* (2014),… *a Firefly* (2013), and *...a Spiderweb* (2015)
- Cathryn Sill's series *About Arachnids: A Guide for Children* (2006), *About Reptiles:...* (2003), *About Birds:...* (2014), *About Mammals:...* (2014)
- *Our very own tree* by Lawrence Lowery (2015)
- *The life and times of the ant* by Charles Micucci (2006)

Content and process sources

- GLOBE activities included: *Cloudscape*, *Sky Observers Daytime Sky Report*, *See the Light*, *All Year Long: Big Picture View* and *Zoomed-in View*, *Getting to Know Soil*, and *Earth System Play* (Hatheway, B. & Gardiner, L., 2017).
- Planted seeds and watered the sprouts throughout the camp
- Investigated the flight of maple seeds
- Observed an ant farm and a worm farm
- Explored the grounds to find spiders, worms, pill bugs, trees, etc.
- Observed artifacts such as bones, shells, and taxidermy mounts.

Overview of Process

- Agreements made with Osceola Youth Development Center (YDC) and City of Hattiesburg Parks & Rec
- IRB approval obtained
- Interns recruited with the help of the Coordinator of Greek Life
- Intern selected by interview and paragraph submission
- Orientation session and site visits conducted before camp
- 10 Interns worked in pairs at one of the four sites for 20 mornings in 1.5-hour sessions
- Interns administered Pretests and Posttests: Comfort with Nature and Career Aspirations
- Number of campers ranged from about 8 to 18 at each site and fairly stable
- Interns met with Dr. Herron each Friday afternoon to debrief and prepare for following week
- One morning designated as NASA Day for all campers to attend as a large group
- Closing session with interns and Dr. Herron

Typical Daily Schedule

While sitting on a tarp or at a picnic table under a tree or awning, campers…

- Listened to the selected storybook (or portion of it) and ask questions.
- Walked, observed, or interacted with the selected objects in nature.
- Drew, wrote, or colored the selected activity sheet.
- Observed the photo of a scientist who works in nature and heard about their life, education and career.

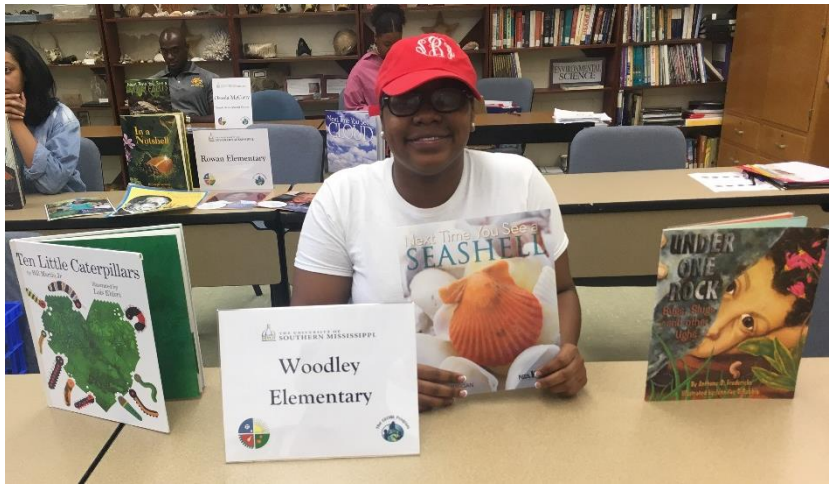
Interns

Shanelle Payton and Perry Overstreet

Donaven and Erianna Henderson

Interns

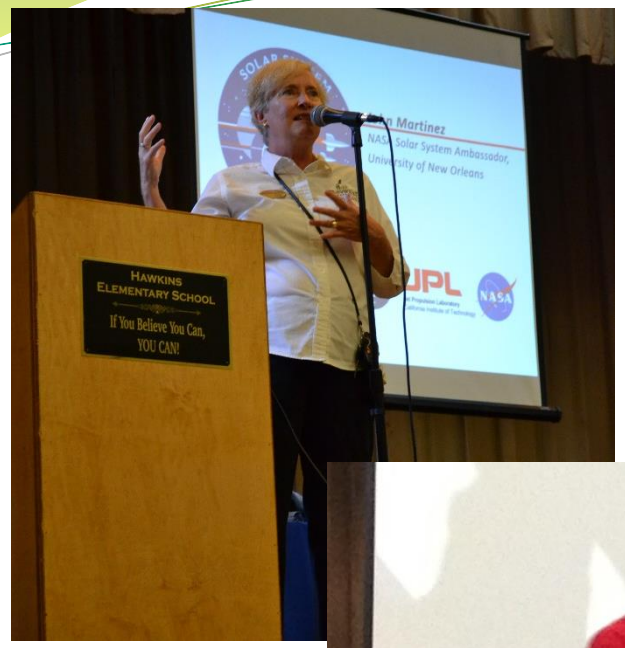
Savannah Beans, Kayla Prince, Imani Stevens, Milon Roberts, Chris Burney



Interns and Campers at 2 sites

Interns and Campers at 2 sites

Nature Walks



Dr. Herron welcomes campers coming together in auditorium.

NASA educators invite campers to participate in demonstrations.

NASA
National Aeronautics
& Space Administration

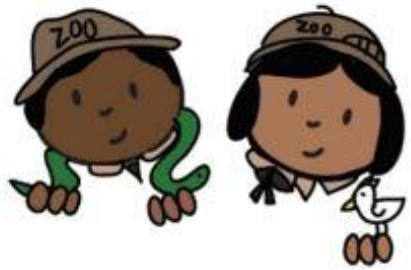
Pilot Instruments for pre and post

Figure 4. African American Children's Comfort in Nature

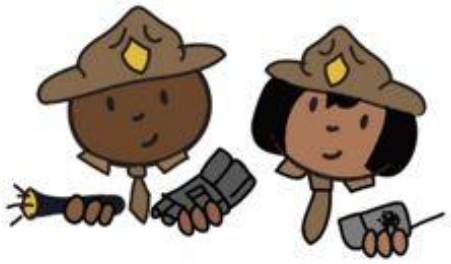
Let's think about where you like to play – either by yourself or with friends. If you like to pl sit, swing, or sing outside, where do you like to go? Look at your paper. Circle the face you might make when thinking about going outside.

What do I see when I play outside?

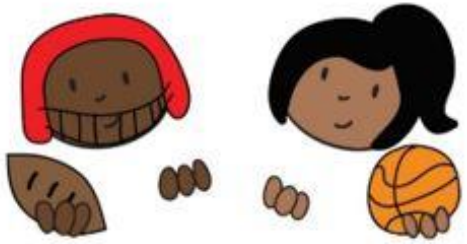
Figure 5. African American Children's Career Aspirations: two of the six cartoon career characters that relate to nature and two of the six that do not



ZOOKEEPER



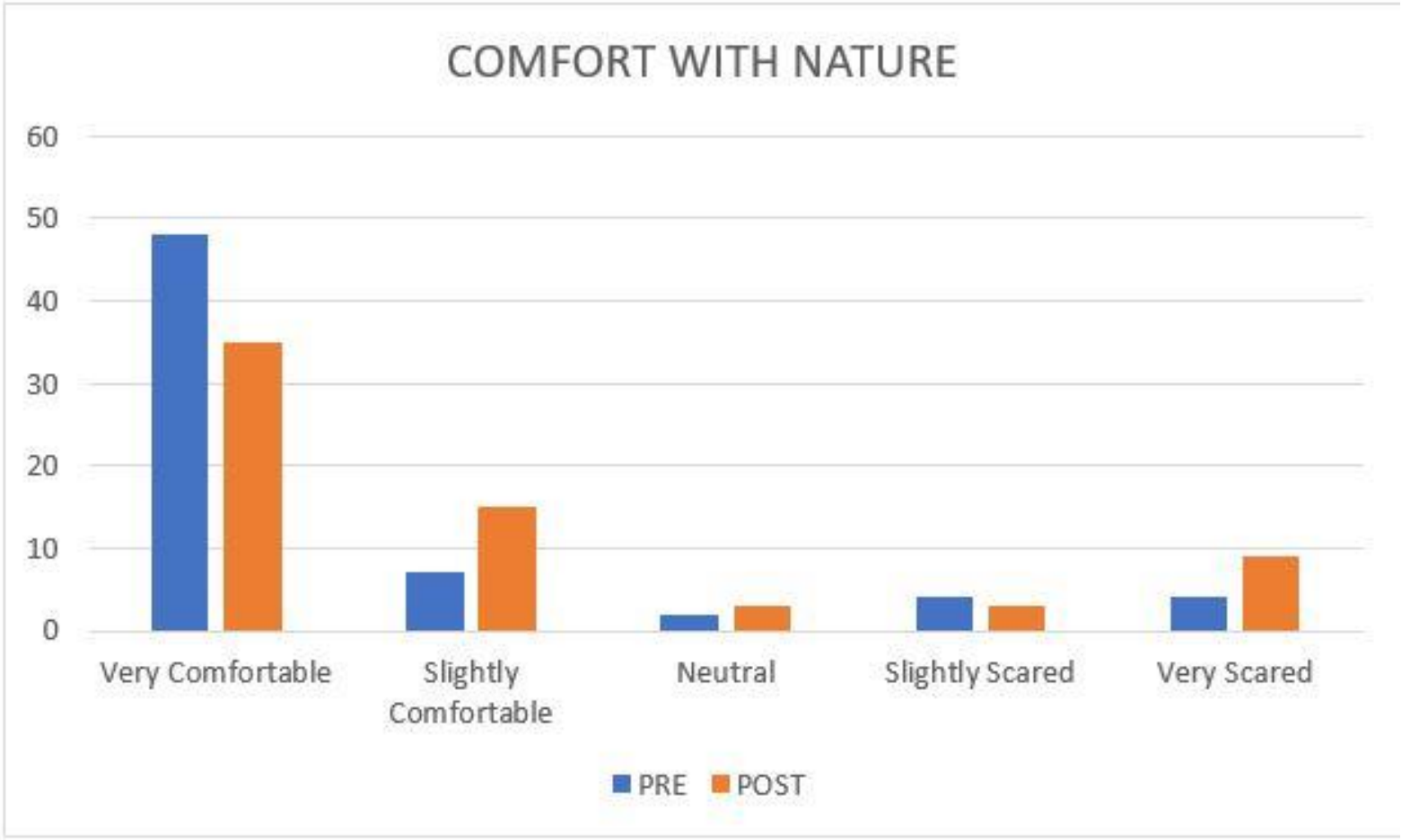
PARK RANGER



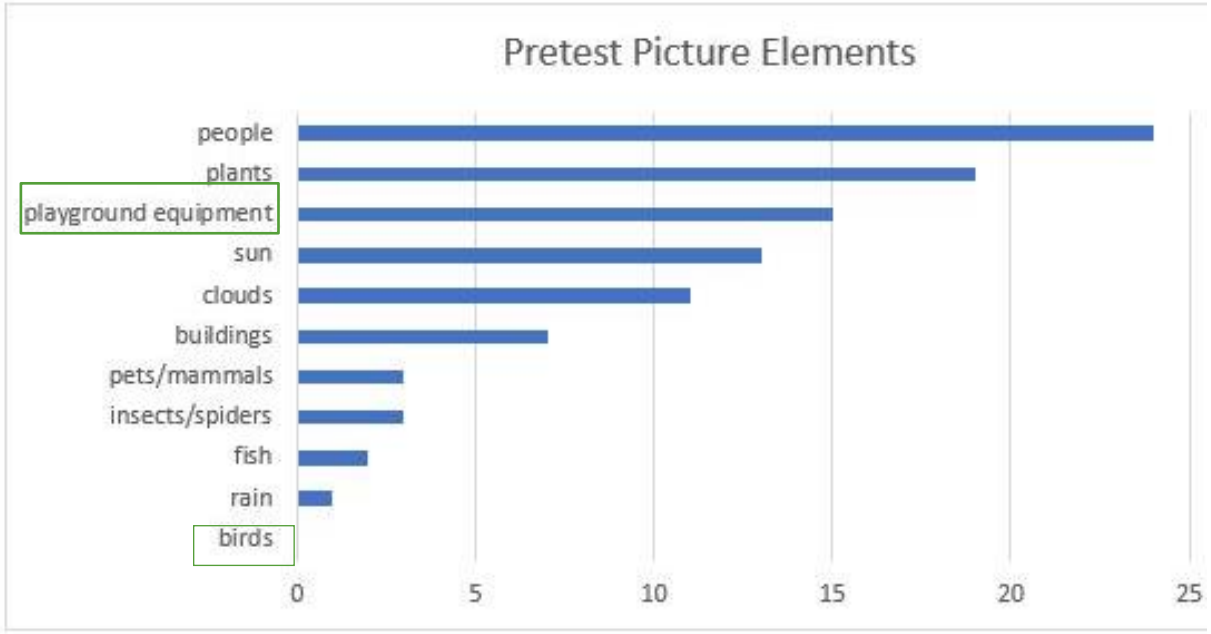
ATHLETE

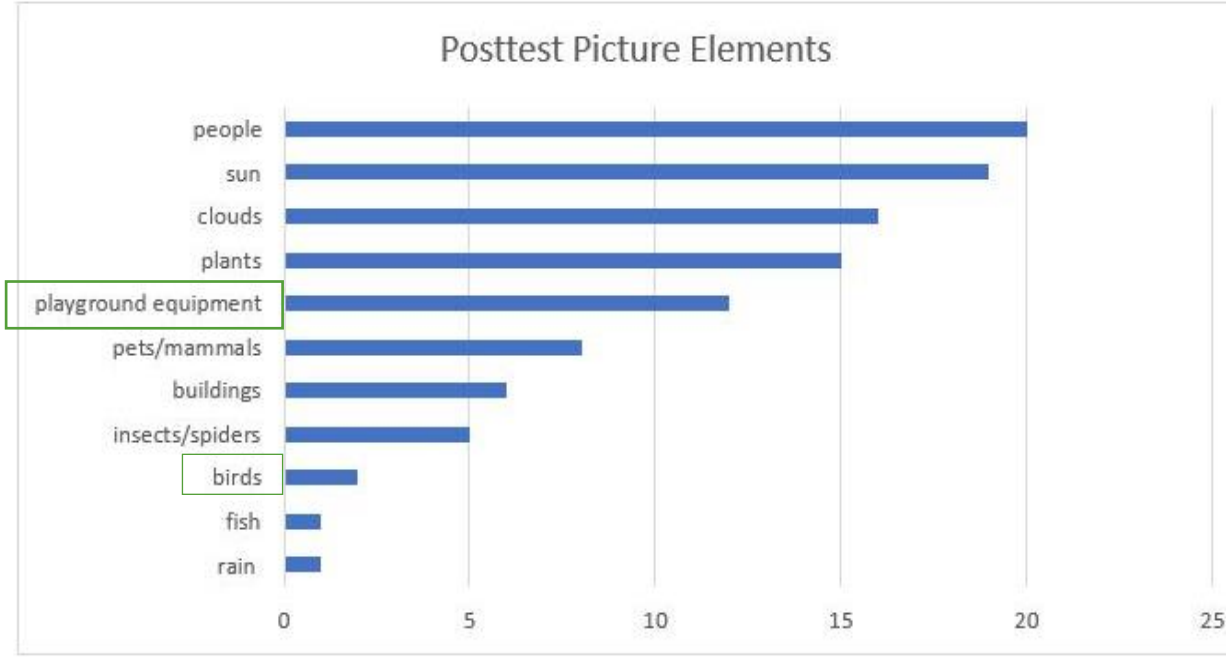
MUSIC ARTIST

Figure 6. Responses to the Comfort with Nature Pre- and Posttests

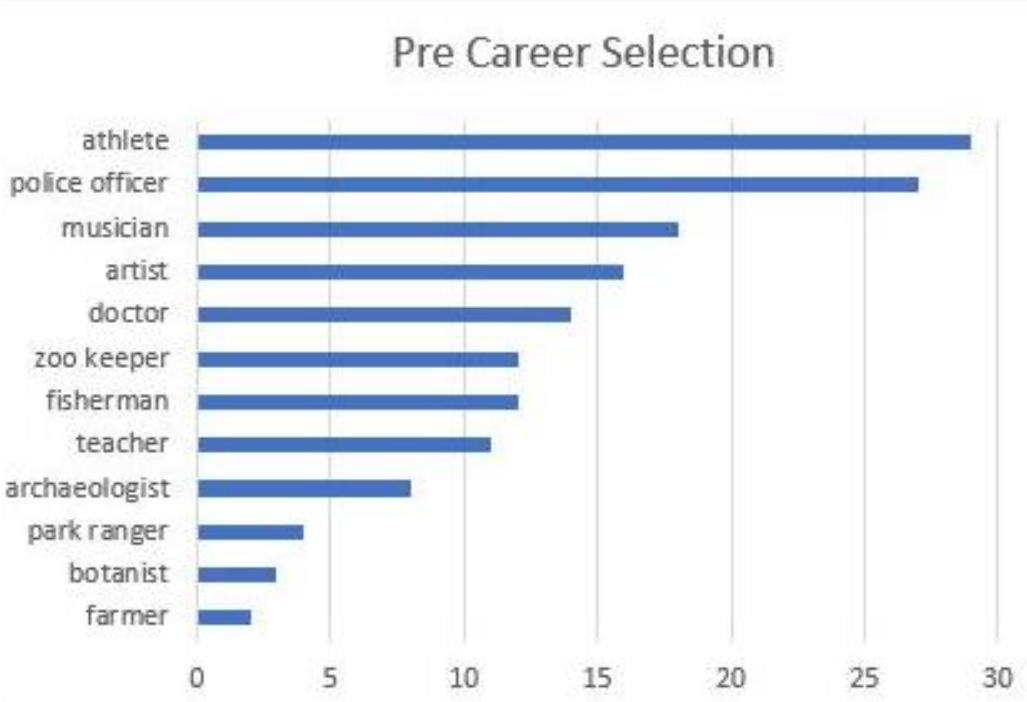


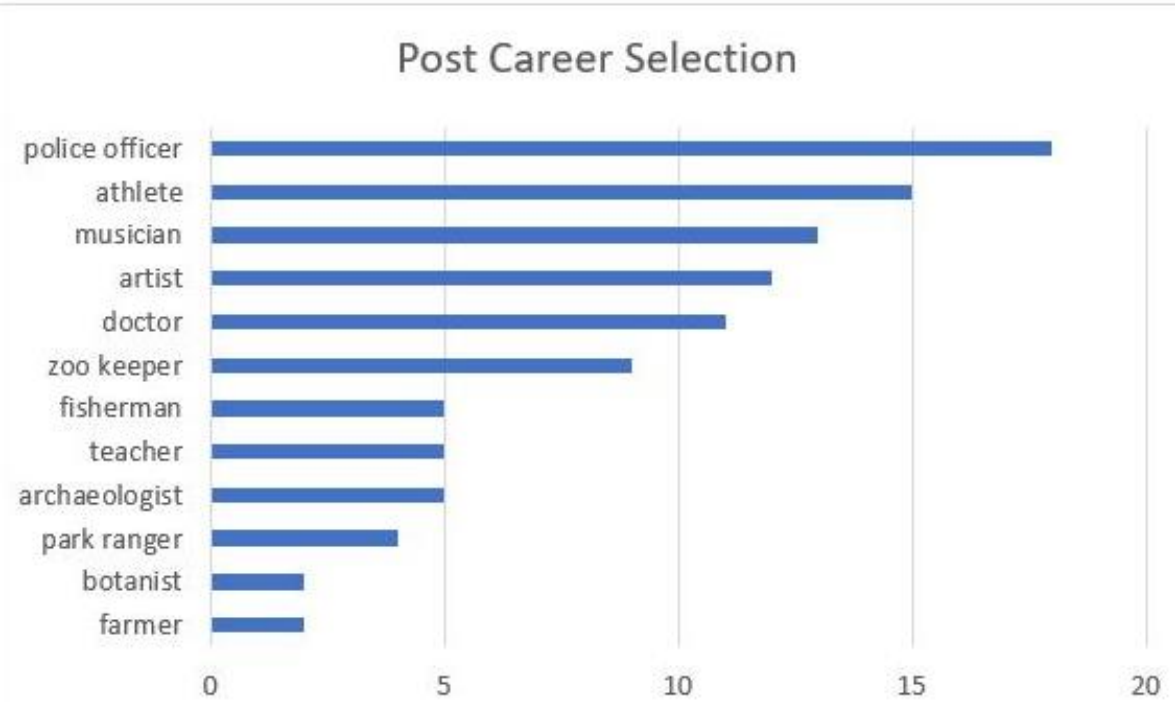
Comfort with Nature Drawings



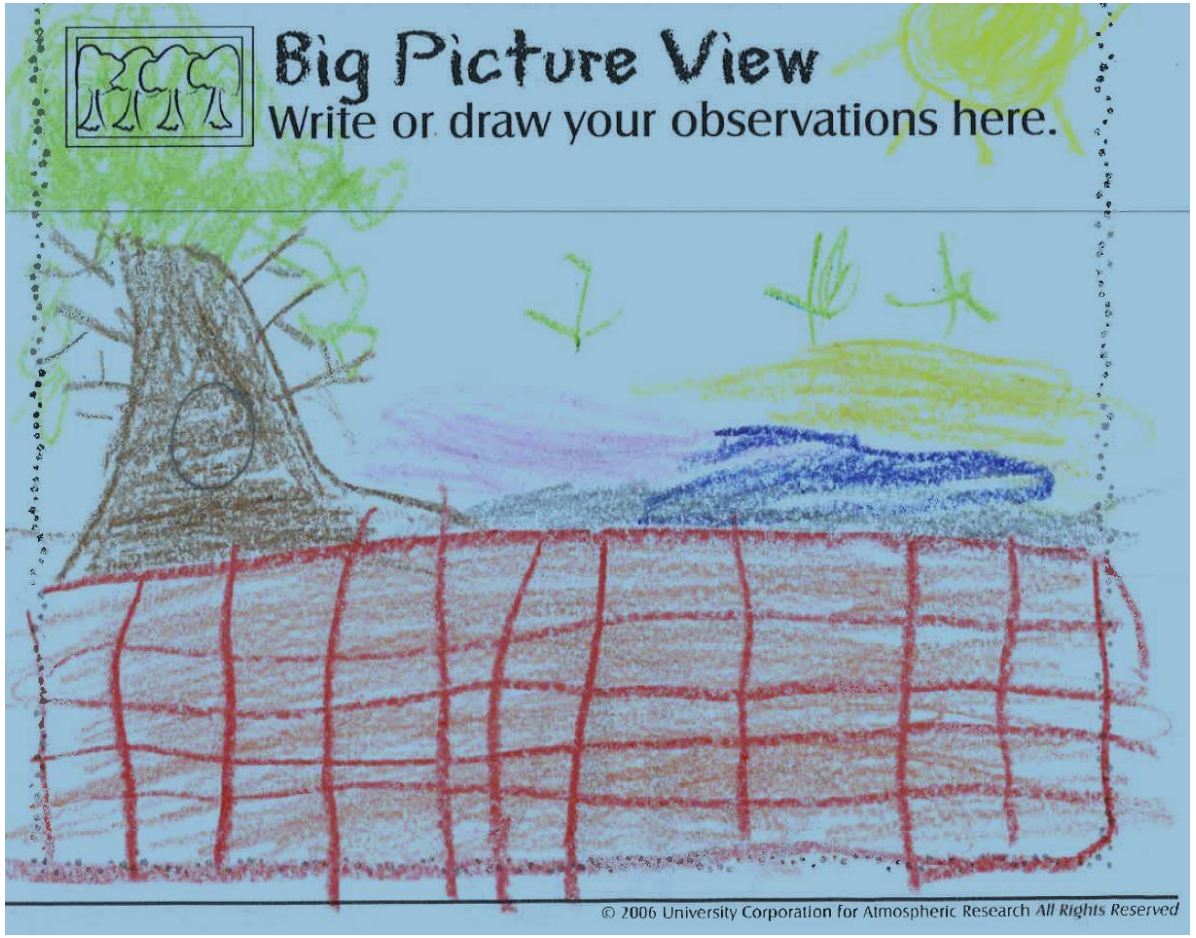


Career Aspirations





Memory Books



Cover of Memory Book and Intern Certificate

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

A Summer Program for Hattiesburg Children 2017

Center for Science and Mathematics Education

The GLOBE Program

Elementary GLOBE

Perry Overstreet

Has successfully served as an intern by leading the

Elementary GLOBE Summer Camp

in Hattiesburg, MS during the month of June 2017.

Sherry S. Herron, Ph.D.
GLOBE Partner

Sponsored by: NASA NSF Supported by: Implemented by: UCAR

Results: Comfort in Nature

- Unexpected results! Of 65 campers, 48 (74%) circled the happiest face and 7 (11%) circled the smiley face on the pretest.
- Of 65 campers, 35 (54%) circled the happiest face and 15 (23%) circled the smiley face on the posttest. Thus, the vast majority indicated what we considered some level of comfort in nature both pre (85%) and post (77%).

Results:
Comfort in Nature Drawings

- Pre-test drawings were separated into 10 categories with 2 as non-living elements (buildings and playground equipment).
- People ranked 1st and plants ranked 2nd in elements drawn on the pre-test.
- Only 22 of the 98 (22%) pre-test elements drawn were not related to nature.

- Post-test drawings were separated into 11 categories with 2 as non-living elements (buildings and playground equipment).
- People ranked 1st and the sun ranked 2nd in elements drawn on the post-test.
- Only 18 of the 104 (17%) post-test elements drawn were not related to nature.
- Clouds moved up from 5th on pre to 3rd on post.
- Birds were not drawn at all on the pre-test but ranked 9th on the post-test.

Conclusions: Career Aspirations Pre and Post

- Athlete ranked 1st in pre-test with police officer 2nd.
- Police officer ranked 1st in post-test with athlete 2nd.
- Pre: n=156; 115 (74%) selected non-nature careers; 41 (26%) selected careers in nature.
- Post: n=101; 74 (73%) selected non-nature careers; only 27 (27%) selected careers in nature.
- We did not expect police officer to be ranked at or near the top. This may be due to the fact that Hattiesburg police participate in the annual summer camps for youth by joining them in playing sports.

Conclusions

- There was no noticeable change in Comfort in Nature or in Career Aspirations pre and post.
- The number and nature of the drawings pre and post demonstrated an increased awareness of nature.
- Might this have been due to the order of the illustrations?
- The researcher suspects that thinking about playing outside is not the same construct as comfort in nature?

Acknowledgements

- The GLOBE Program and all my GLOBE colleagues
- Tarabeth Sappington, graphic designer
- Johnelle Goins, USM Kennard Washington and Greek Life Coordinator
- Janet Baldwin, Director of Osceola McCarty YDC
- Hattiesburg Parks & Rec
- Emily Lymon, Administrative Assistant
- The committed interns
- GA Kendrick Buford