




# 1ST-GEN SCHOLARS

<http://1st-genscholars.org/>



Changing the  one student at a time; it begins with you.

# Dr. Carmen Cruz

## 1ST-Gen Scholars, Chief Program Officer K20 STEM Education Programs

- **Bio:** *I am a 1ST-Gen STEM Educational Leader, I received a Bachelor's Degree from Washington State University in 2006, a Master's Degree in Educational Leadership from Stephen F. Austin State University (SFA) in 2015, and my Doctorate in Educational Leadership at SFA, in 2018. I possess over ten years of teaching experience in formal and informal K20 educational settings in Title I Schools and Districts in Houston, Texas. I have dedicated my career to underrepresented students. I have developed STEM curriculum/programs for local, regional, national, and global organizations. I serve on the Editorial Review Board for the Journal of Hispanic Higher Education and a current member and reviewer for the following organizations: Journal of Transformative Leadership and Policy Studies, American Educational Research Association, the Association of the Study of Higher Education, NASPA Student Affairs Administrators in Higher Education, and the University of New Mexico Mentoring Institute.*
- *As you go through life, always remember, one should never give up. **ALL educational dreams truly can come true, inclusive of STEM—sí se puede, adelante!***





# 1ST-GEN Scholars K20 Programs/Services

<http://1st-genscholars.org/>



We facilitate student K12 STEM workshops in schools, communities, and for organizations.



We facilitate K12 Teacher STEM Professional Development Workshops for school, universities, and organizations



We facilitate Middle-High School STEM Career Workshops, College Readiness, etc. for schools and organizations.



We facilitate Middle School Student Tech Workshops to teach youth to Code for schools and organizations.



We facilitate workshops/talks for 13+ students, universities and community colleges to increase Persistence & Retention.

Contact us, we would love to work with you to Accelerate the STEM Pipeline and Empower the next generation of leaders.

# @TXGCP Girls in STEM Summit Workshop

## Positively Buzzing STEAM: Electrical Engineering

---

Agenda: 50 Minutes

1:30-2:20

- TEKS Unpacked
- Thinking Maps
- STEAM Workshop Lesson
- Check for Understanding
- Exit Ticket
- Thank you, please contact us, we would love to work with you, visit us at:

<http://1st-genscholars.org/>



# Why STEM Education?

---



- Diversity, Equity, and Inclusion
- Differentiation, Learning is NOT “one size fits all”
- Collaborative Learning Environments
- 21<sup>st</sup> Century Skills
- Bridge the Gender Divide, Girls CAN DO STEM TOO!!!
- Close academic achievement gaps
- Assist students in realizing all that could be
- Promote Higher Order Thinking Skills
- Access to Postsecondary Education
- “If we teach today's students as we taught yesterday's, we rob them of tomorrow.” —John Dewey



# Unpacking the TEKS: Interdisciplinary STEM for Today's Lesson

\*Aligned with  
STAAR Assessed  
Curriculum at  
Grade 5

ELPS???

## Grade 3

- **Math: 3.8(A)** summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals
- **Science: 3.6(A)\*** explore different forms of energy, including mechanical, light, sound, and thermal in everyday life

## Grade 4

- **Math: 4.9(A)** represent data on a frequency table, dot plot, or stem-and-leaf plot marked with whole numbers and fractions
- **Science: 4.6(C)\*** demonstrate that electricity travels in a closed path, creating an electrical circuit

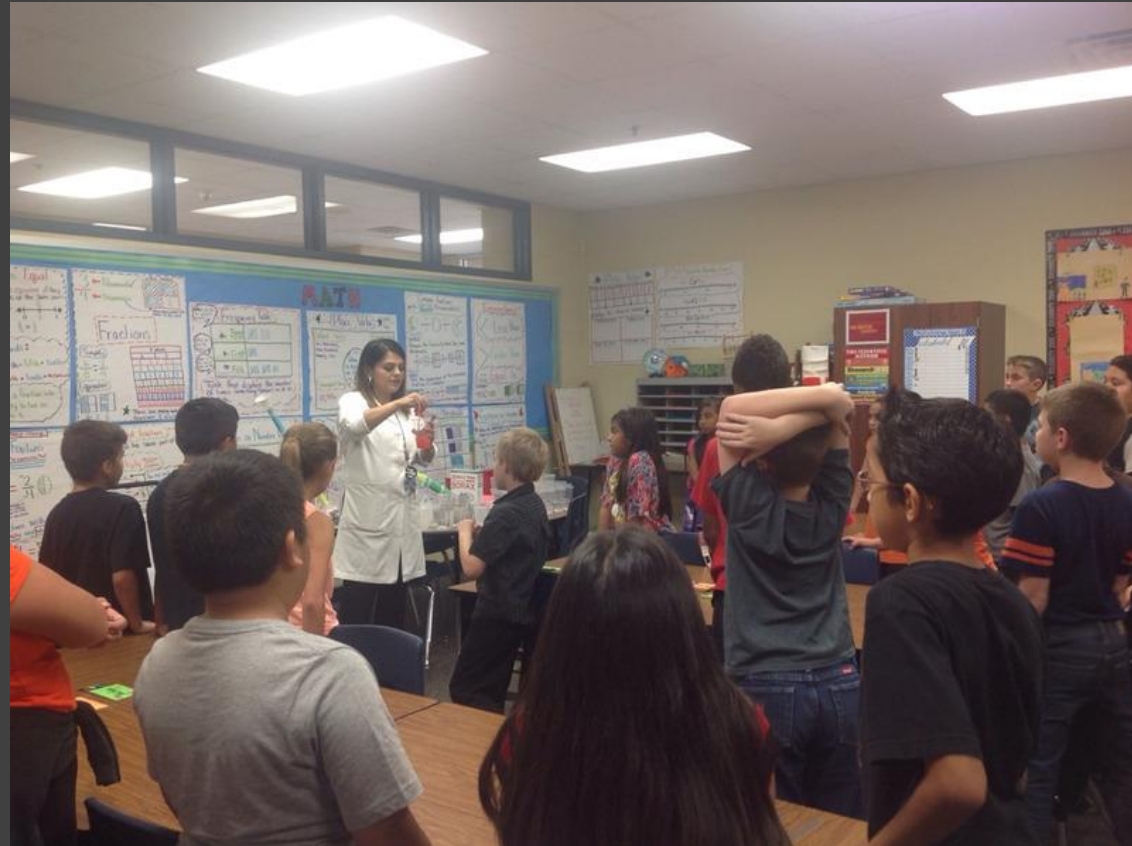
## Grade 5

- **Math:5.9(A)** represent categorical data with bar graphs or frequency tables and numerical data, including data sets of measurements in fractions or decimals, with dot plots or stem-and-leaf plots
- **Science: 5.6(B)** demonstrate that the flow of electricity in closed circuits can produce light, heat, or sound



# Why Thinking Maps?

---





# Positively Buzzing Hands-On STEAM Lesson: Electrical Engineering





# How could we check for student understanding of TEKS?

---



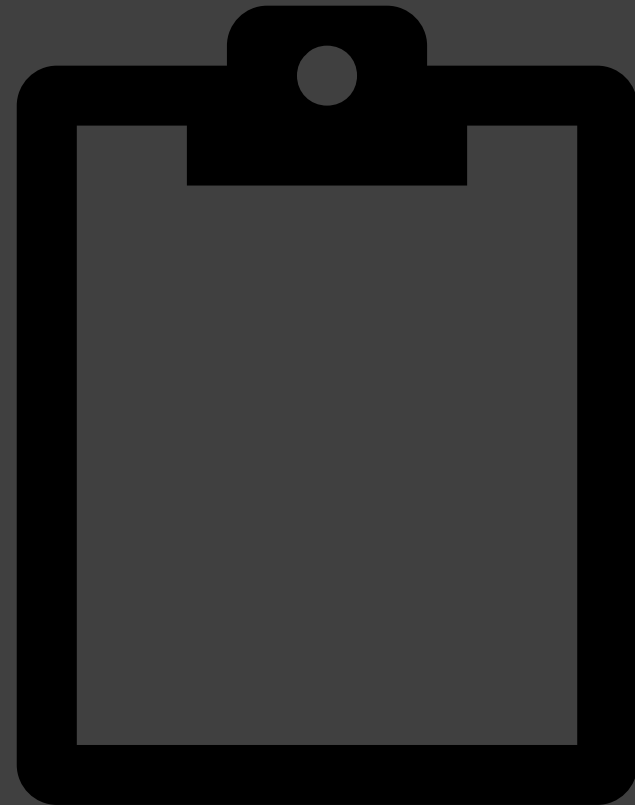
- Formative Assessment
- Summative Assessment
- Journal Reflections
- Exit Tickets
- Kahoot
- Jeopardy
- Thinking Maps Activities
- Activity Extensions
- Activity Challenges
- There are other ways to check for understanding without having to present students with worksheets or a long paper test.



# Exit Ticket

---

- Please take a few minutes to complete our survey.
- Visit our website, we would love to work with you:  
<http://1st-genscholars.org/>



# 1ST-GEN SCHOLARS

<http://1st-genscholars.org/>



Thank You  
Dr. Carmen Cruz



(830) 396-9213



[contact@1st-GenScholars.org](mailto:contact@1st-GenScholars.org)




<http://1st-genscholars.org/>



@1stGscholars



1stgscholars

Changing the  one student at a time; it begins with you.