

# 2024 Calendar of Student *Future Ready* Events



*Poetry Live!*



*Trades Day*



*Science Olympiad*



*Poetry & Prose On Stage*

Tulare County  
Office of Education

Tim A. Hire, County Superintendent of Schools  
[tcoe.org/StudentEvents](http://tcoe.org/StudentEvents)

## Information updates at [tcoe.org/StudentEvents](https://tcoe.org/StudentEvents)

The information in this booklet was finalized August 31, 2023. Any changes to the dates and/or locations of TCOE student events will be posted at [tcoe.org/StudentEvents](https://tcoe.org/StudentEvents). You are encouraged to check this webpage for updates on contacts, coaches' meetings, deadlines, and registration information.

## TCOE Student Events and the California State Standards

TCOE has always promoted student event participation as an avenue to providing a well-rounded educational experience. Now, we are able to further emphasize the importance of student events by directly aligning them to our 21st century standards. These focused and rigorous standards define the knowledge and skills students need for success in college and career. The standards call for an integrated curriculum that challenges students to think in complex ways and to apply the knowledge and skills they have acquired. Evidence of such learning can be demonstrated through the completion of a variety of assigned tasks, including TCOE Student *Future Ready* Events.

When applicable, TCOE Student *Future Ready* Events are coded in one or both of the following manners:

- Alignment to the College and Career Readiness (CCR) Anchor Standards, Mathematical Practices (MP), Science and Engineering Practices (SEP) in the Next Generation Science Standards (NGSS) and/or Artistic Processes in the California Arts Standards (CAS). Refer to the back of this booklet for CCR Anchor Standards, Mathematical Practices, Science and Engineering Practices and Artistic Processes in their entirety.
- Identification of the type of task associated with the event
  - Presentation: information is orally conveyed
  - Performance: a dramatic interpretation is included
  - Project: a product is produced prior to the day of the event
  - Problem Solving: a recommendation or solution is provided

## Theatre Company Workshops

Each spring, the Theatre Company will offer a variety of workshop and performance opportunities throughout the county, including training in dance, acting, vocal, and auditioning. To learn more about the 2023-24 opportunities available in your area, visit [tcoe.org/TheatreCo/Catalog](http://tcoe.org/TheatreCo/Catalog), or contact Bethany Rader at (559) 651-1482, ext. 3372, or [bethany.rader@tcoe.org](mailto:bethany.rader@tcoe.org).

## SCICON Open House - September

SCICON staff hosts an open house each year so that parents of sixth-grade students preparing for a trip to the outdoor education campus can tour the program. Families are welcome to bring picnic lunches. SCICON staff is available to answer questions. (Grade 6)

**Date TBA, 11:00 a.m. - 4:00 p.m.**

**No fee**

**SCICON Campus, 41569 Bear Creek Rd., Springville**

Contact: Dianne Shew at (559) 539-2642, or [dshe@tcoe.org](mailto:dshe@tcoe.org)

## Friday Night Live Lip Sync Contest - April

Dozens of middle and high school performers annually vie for awards in four categories: dance, lip sync, novelty, and showcase. Friday Night Live provides youth with fun, life-affirming activities promoting abstinence from alcohol, tobacco, drugs, gang participation, and violence. (Grades 6-8)

**Date TBA, 6:00 - 9:00 p.m.**

**No fee**

**Location TBA**

Contact: Brittaney Quinonez at (559) 651-0155, or [brittaney.quinonez@tcoe.org](mailto:brittaney.quinonez@tcoe.org)

*CAS: Creating, Performing, Responding, Connecting*

## Theatre Company's Summer Musical - July

### *Freaky Friday*

Students may audition each spring for the Theatre Company's annual summer musical. Opportunities also exist for students interested in playing in the orchestra and helping to design and construct the sets. (Grades 1-12, including graduating seniors)

**Auditions to be held April 29-May 4**

**Please visit [tcoe.org/TheatreCo](http://tcoe.org/TheatreCo) or TCOE social media platforms for updates.**

Contact: Bethany Rader at (559) 651-1482, ext. 3372, or [bethany.rader@tcoe.org](mailto:bethany.rader@tcoe.org)

*CAS: Performing, Responding, Connecting*

## Step Up Youth Challenge - September-April

The Step Up Youth Challenge takes place over the course of the school year, providing an opportunity for middle and high school teams to complete a project that will have a positive impact on their school and community (Grades 6-8 and 9-12).

**Challenge Advisor Training: Tuesday, September 5, 4:30 - 6:00 p.m.**

**No fee**

**TCOE Administration Building, 6200 S. Mooney Blvd., Visalia**

**Youth Summit (training for student teams): September 27 & 28,**

**9:00 a.m. - 1:00 p.m., TCOE Administration Building,  
6200 S. Mooney Blvd., Visalia**  
**Red Carpet Awards: Sunday, April 14, 6:00 - 8:00 p.m.**  
**Location TBA**

Contact: Kelley Petty at (559) 740-4303, or kelleyp@coe.org  
*CSS CCR Anchor Standards: Writing 1; Speaking and Listening 4;  
Project, Problem Solving, Presentation*

## High School Student Athlete Huddle - September 12

A conference for high school student athletes, the Student Athlete Huddle is designed to help participants develop leadership skills they can use in team building, positive communications, and goal setting. The conference features a dynamic keynote speaker and breakout sessions.

**Tuesday, September 12, 8:30 a.m. - 3:00 p.m.** **No fee**  
**TCOE Administration Building, 6200 S. Mooney Blvd., Visalia**

Contact: Gene Mendes at (559) 740-4303, or genem@coe.org

## College Night - September 12

An event for high school students and their parents who want to learn more about preparing for, and applying to, colleges. University and college representatives from around the country will be available to answer questions. (Grades 9-12)

**Tuesday, September 12, 5:30 - 7:30 p.m.**  
**Visalia Convention Center, 303 E. Acequia, Visalia**

Contact: Paula Terrill at (559) 651-0565, or paula.terrill@coe.org  
*CSS CCR Anchor Standards: Speaking and Listening 1, 3, 5, 6*

## TUPE/FNL Leadership Training - September 21

A training event for middle school students identified as campus leaders. Selected students learn how to engage fellow classmates in activities that encourage healthy choices and how to implement their training at school. (Grades 6-8)

**Thursday, September 21, 8:30 a.m. - 2:30 p.m.** **No fee**  
**Visalia Adventure Park, 5600 W. Cypress Ave., Visalia**

Contact: Brittaney Quinonez at (559) 651-0155, or brittaney.quinonez@coe.org  
*CSS CCR Anchor Standards: Writing 4, 8; Speaking and Listening 1; Project,  
Problem Solving*

## Tulare-Kings Trades Day - September 28

The Tulare-Kings Trades Day is a day of career exploration for high school students. The event introduces participants to industry career opportunities in construction, design, subcontracting, heavy equipment, engineering, and other skilled trades. Over 25 partners from the trades, industry, training and post-secondary programs will join together to provide hands-on activities for students to explore their industry, teaching skills such as hammering, concrete mixing, roofing, welding and more! (Grades 9-12)

**Thursday, September 28, 8:30 a.m - 12:30 p.m.** **No fee**  
**Porterville Fairgrounds, 2700 Teapot Dome Ave., Porterville**

Contact: College & Career at (559) 733-6101

## *Various Career Technical Education Model Curriculum Standards specific to Industry Sector*

### **Cardboard Challenge - October**

The Global Cardboard Challenge was inspired by the short film entitled Caine's Arcade and is a worldwide celebration of childhood creativity and the role communities can play in fostering it. TCOE encourages Tulare County students to participate in the Challenge by spending creative time at home or in the classroom engineering their own cardboard creations, then sharing pictures with TCOE to possibly be included on the Cardboard Challenge website. This Cardboard Challenge engages students in the 4Cs of 21st century learning: critical thinking, creativity, collaboration, and communication. (All grades)  
Contact: Juliana Davidian at (559) 651-3003, or juliana.davidian@tcoe.org

*CSS CCR Anchor Standards: Speaking & Listening 1, 4; CAS: Creating, Presenting*

### **CHARACTER COUNTS! Week - October 16-22**

A week-long celebration of the principles of CHARACTER COUNTS! in partnership with the *Visalia Times-Delta/Tulare Advance-Register*. Tulare County schools and communities participate by nominating students of good character. Top honorees will be featured throughout the week in the newspapers. (All grades)

**Nominations accepted August 16 - September 29**

**No fee**

online at <https://kidsofcharacter.tcoe.org>

**Provident-Salierno Family Foundation Awards Reception:**

**Wednesday, November 1, 6:00 p.m.**

**TCOE Administration Building, 6200 S. Mooney Blvd., Visalia**

**Students selected for a profile on KSEE24's *Your Character Matters* will be honored at a dinner Wednesday, May 15, 6:00 p.m.**

**TCOE Administration Building, 6200 S. Mooney Blvd., Visalia**

Contact: Kelley Petty at (559) 740-4303, or kelleyp@tcoe.org

### **Tulare County Red Ribbon Celebration - October 26**

Through a partnership between the Tulare County Office of Education, the Tulare County Health and Human Services Agency, and a myriad of other county and city resources, the 2023 Red Ribbon Celebration event allows students and families to participate in safe, educational, and fun activities without the use of alcohol, tobacco, or other drugs. In addition, the event showcases positive choices and opportunities for the youth of the Valley. (All grades)

**Thursday, October 26, 4:00 - 6:00 p.m.**

**No fee**

**Valley Strong Ballpark, Kids Corral/Toyota Terrace Area, 300 N. Giddings St., Visalia**

Contact: Alice Flores at (559) 651-0155, ext. 3611, or alicef@tcoe.org

*CSS CCR Anchor Standards: Speaking and Listening 1, 2, 3*

### **Anti-Bullying Conference - November 2**

Open to students in middle and high school, this conference is designed to empower attendees to develop safe, inclusive, and supportive schools. The event features a keynote speaker and breakout sessions on topics of diversity, building resiliency, creating cultures of kindness, teamwork, making healthy choices, leadership, and self-advocacy. (Grades 6-12)

**Thursday, November 2, 8:30 a.m. - 3:00 p.m.**

**No fee**

**Galaxy Theatres, 1575 Retherford St., Tulare**

Contact: Brittany Quinonez at (559) 651-0155, or [brittaney.quinonez@tcoe.org](mailto:brittaney.quinonez@tcoe.org)

*CSS CCR Anchor Standards: Writing 1; Speaking and Listening 4; Project, Problem Solving, Presentation*

## Expanding Your Horizons - November 4

A conference for young women to learn about career opportunities in the STEM fields: science, technology, engineering, and mathematics. The event provides students personal contacts with women working in STEM careers. (Grades 4-8)

**Saturday, November 4, 8:00 a.m. - 2:00 p.m.**

**Fee: \$20/student**

**Porterville College, 100 E. College Ave., Porterville**

Contact: Paula Terrill at (559) 651-0565, or [paula.terrill@tcoe.org](mailto:paula.terrill@tcoe.org)

*CSS CCR Anchor Standards: Speaking and Listening 1, 2, 3; CSS SEP 1, 2, 6, 7*

## Theatre Company Fall Musical - November 15-18

*Rudolph the Red-Nosed Reindeer JR*

The Theatre Company offers classes and performance opportunities to all Tulare County youth. Fall semester workshops culminate in a full-scale production. There are minimal course fees for classes and productions. (Grades 1-12)

**Five performances Wednesday - Saturday, November 15-18**

**Fee: \$50/student**

**Evening shows at 7:00 p.m., Saturday matinee at 2:00 p.m., Rotary Theater, 330 S. Dollner St., Visalia**

**Please visit [tcoe.org/TheatreCo](http://tcoe.org/TheatreCo) or TCOE social media platforms for updates.**

Contact: Bethany Rader at (559) 651-1482, ext. 3372, or [bethany.rader@tcoe.org](mailto:bethany.rader@tcoe.org)

*CAS: Performing, Responding, Connecting*

## Mock Trial - January 23 - February 13

This competition allows high school students to learn about the content and processes of the law. Through role-playing, studying a case, and preparing strategies and arguments for trial, students increase public speaking skills, analytic ability, and team cooperation. Local attorneys serve as judges and advisors. Winners advance to the California Mock Trial Finals. (Grades 9-12)

**Competition Rounds: Tuesdays & Thursdays**

**Fee: \$500/team**

**January 23, 25, 30 & February 1, 5:00 - 8:00 p.m., Visalia Courthouse, 221 S. Mooney Blvd.**

**Seni-Finals: February 6, 5:00 - 8:00 p.m., Porterville Courthouse, 300 E. Olive**

**Finals: Tuesday, February 13, 5:00 - 8:00 p.m.**

**Granite Hills High School Justice Center, 1701 E. Putnam Ave., Porterville**

Contact: Paula Terrill at (559) 651-0565, or [paula.terrill@tcoe.org](mailto:paula.terrill@tcoe.org)

*CSS CCR Anchor Standards: Reading 1; Writing 1; Speaking and Listening 4; Performance, Problem Solving*

## Academic Decathlon - January 25 & 27, 30, and February 3

A competition for high school students featuring a series of 10 academic tests and demonstrations, including art, economics, a written essay, an interview, language and literature, math, music, social science, speech, and a Super Quiz. Students compete in teams or as individuals. Winners compete in the California Academic Decathlon. (Grades 9-12)

**January 25, Online Essay Competition**

**Fee: \$600/team**

**January 27, Speech and Interview Competition**

**9:00 a.m. - 1:00 p.m., TCOE Conference Center, 6200 S. Mooney, Visalia**

**January 30, Online Objective Testing**

**February 3, SuperQuiz and Awards Ceremony**

**9:00 a.m. - 1:00 p.m., TCOE Conference Center, 6200 S. Mooney, Visalia**

Contact: Paula Terrill at (559) 651-0565, or paula.terrill@tcoe.org

*CSS CCR Anchor Standards: Reading 1; Writing 2, 9; Speaking and Listening 5; CSS Mathematics Practices 1; Problem Solving, Performance*

## Poetry Live – February 2

Poetry Live! is a new series of events that offers students in grades 6-12 the opportunity to not only recite poems written by great poets, but to write and recite their own original works as well. Poetry Live! will feature three events that students can choose to participate in: Poetry Out Loud, Poetry Out Loud Junior and Poet's Own Voice. (Grades 6-12)

**Friday, February 2, 6:00 - 8:00 p.m.,**

**No fee**

**Arts Consortium, Visalia**

Contact: Paula Terrill at (559) 651-0565, or paula.terrill@tcoe.org

*CSS CCR Anchor Standards: Reading 1, 2, 3, 4, 5, 6; Speaking and Listening 1, 2, 3, 4, 5, 6; Language 1, 2, 3, 4, 5, 6; CAS: Performing, Responding, Connecting*

## National History Day-Tulare County - February 8

National History Day makes history come alive for Tulare County students by engaging them in the discovery of the historic, cultural and social experiences of the past as they connect them to the future. NHD-TC inspires students through exciting county, state, and national competitions and transforms teaching through project-based learning curriculum and instruction. (Grades 4-12)

**Thursday, February 8, 8:00 a.m. - 3:00 p.m.**

**Fee: \$20/student**

**TCOE Administration Building, 6200 S. Mooney Blvd., Visalia**

**Feedback Day (for finalists): Tuesday, February 15, 8:00 a.m. - 4:00 p.m.**

**TCOE Administration Building, 6200 S. Mooney Blvd., Visalia**

Contact: Paula Terrill at (559) 651-0565, or paula.terrill@tcoe.org

*CSS CCR Anchor Standards: Writing 3, 4, 5; Speaking and Listening 3; CAS: Creating, Performing/Presenting/Producing, Responding, Connecting*

## Circle J-Norris Ranch Field Science Day - February 16

The Field Science Day is open to classes of middle and high school students, and

community college students. Come conduct original research and collect data on vernal pool ecosystems, measure water levels, and monitor the animals that depend on the pools. Reservations required. (Grade 7-12)

**Friday, February 16, 9:00 a.m. - 2:00 p.m.**

**No Fee**

**Circle J-Norris Ranch, 41893 Yokohl Valley Dr., Springville**

Contact: Amanda Driver at (559) 539-2263, or circlej@tcoe.org

*Interactions, Energy and Dynamics HS-L2.4, LS2.C, LS4.D;  
SEP Using Mathematics and Computational Thinking;  
CA Environmental Principles and Concepts 2, 4, 5*

## Anti-Tobacco/Marijuana Challenge Bowl - February 27

Students participate in a game show-style competition, answering questions on topics including the tobacco industry and the health effects of smoking. The event gives students valuable information about the dangers of tobacco and marijuana – before they enter middle school and are presented with the temptation to smoke. (Grades 6-7)

**Tuesday, February 27, 8:30 a.m. - 2:30 p.m.**

**Fee: \$30/team**

**Galaxy Theatres, 1575 Retherford St., Tulare**

Contact: Brittaney Quinonez at (559) 651-0155, or brittaney.quinonez@tcoe.org

*CSS CCR Anchor Standards: Speaking and Listening 1; Reading 1, 4;  
CSS SEP: 1, 3, 6, 8*

## Growing Health Leaders Conference - February 29

Growing Health Leaders is the TK Healthcare Partnership's annual conference focusing on career exploration for High School students in healthcare pathway programs.

Students will attend multiple sessions led by industry professionals of in-demand health occupations. (Grades 9-10)

**Thursday, February 29, 8:30 a.m - 1:30 p.m.**

**No fee**

**TCOE Administration Building, 6200 S. Mooney Blvd., Visalia**

Contact: College & Career at (559) 733-6101

*Speaking and Listening 1, 2, 4, 5, 6; Writing 1-9; Problem Solving, Project, Presentation; Various Career Technical Education Model Curriculum Standards specific to Industry Sector*

## Student Art Exhibition - March

The annual Student Art Exhibition showcases the county's talented young artists. Artwork submitted in a digital format will be displayed in a public online gallery during the month of March, which is Arts Education Month. Entries are judged by local artists and those pieces receiving a "Best of Show" will be highlighted. (Grades PK-12)

**Registration due: December 1**

**No fee**

**Artwork submission and forms due: January 19**

**Virtual exhibition opens March 1**

Contact: Juliana Davidian at (559) 651-3003, or juliana.davidian@tcoe.org

*CAS: Creating, Presenting, Responding, Connecting.*

## STEAM Expo - March 2

The STEAM (Science, Technology, Engineering, Arts, and Mathematics) Expo allows students, families, and community members to participate in a variety of STEAM-related activities. Students in grades 3-12 may participate in the Tulare County Science & Engineering Fair portion of the event. The top winners in this competition (grades 6-12) qualify for the California Science and Engineering Fair. Featured speakers, informational booths, and hands-on activities will be available throughout the day. (Grades 3-12)

**Tulare County Science & Engineering Fair event  
STEAM Expo**

**Fee: \$20/project  
Free to the public**

**Saturday, March 2, 10:00 a.m. - 3:00 p.m.**

**TCOE Administration Building, 6200 S. Mooney Blvd. and TCOE Planetarium & Science Center, 11535 Ave. 264, Visalia**

Contact: Paula Terrill at (559) 651-0565, or paula.terrill@tcoe.org for Science Fair information; Juliana Davidian at (559) 651-3003, or juliana.davidian@tcoe.org for Expo information.

*CSS CCR Anchor Standards: Reading 1, 2, 4, 7-10; Speaking & Listening 1-6; Writing 1, 2, 4-10; Problem Solving, Project, Presentation; CSS SEP: 1-8; CAS: Creating, Connecting*

## Tulare County Spelling Championship - March 7

Students in grades 4-8 face off in a virtual, oral spelling competition. Schools hold their own spelling bees and select students to attend the county-wide championship. The county champion has the opportunity to go on to the Scripps National Spelling Bee in Washington, D.C. (Grades 4-8)

**Thursday, March 7, 9:00 a.m. - 3:00 p.m.**

**Fee: \$45/school**

**TCOE Administration Building, 6200 S. Mooney Blvd., Visalia**

Contact: Brook Killingsworth at (559) 733-6326, or brookk@tcoe.org

*CSS CCR Anchor Standards: Speaking and Listening 2, 4*

## Science Olympiad (Division B/C) - March 9

Individual students and teams compete in events focusing on the various science disciplines. Events balance science facts, processes, skills, and science applications. The top four middle and high school teams advance to the NorCal State Science Olympiad. (Division B - Grades 6-9; Division C - Grades 9-12)

**Saturday, March 9, 8:00 a.m. - 5:00 p.m.**

**Fee: \$200/team**

**Ridgeview Middle School, 3315 N. Akers St., Visalia**

Contact: Paula Terrill at (559) 651-0565, or paula.terrill@tcoe.org

*CSS CCR Anchor Standards: Reading 1, 2, 10; Writing 2, 7; Project, Problem Solving; CSS SEP: 1-8*

## Math Super Bowl - March 12

Middle school students participate in a day-long series of mathematical challenges. Students compete for individual and team awards. (Grades 7-8)

March

**Tuesday, March 12, 8:00 a.m. - 1:00 p.m.****Fee: \$45/team****Visalia Convention Center, 303 E. Acequia, Visalia**

Contact: Paula Terrill at (559) 651-0565, or paula.terrill@tcoe.org

*CSS Mathematics Practices: MP1, MP2, MP3, MP5, MP6, MP7;  
Problem Solving*

## Biodiversity Days - March 16

Join us for a day of nature exploration with activities for the whole family: BioBlitz, wildlife habitat planting, guided nature walks, birding, hiking, and much more. This event is bilingual and co-sponsored with Alianza Ecologista. Registration required.

**Saturday, March 16, 9:00 a.m. - 3:00 p.m.****No fee****Location: Circle J-Norris Ranch, 41893 Yokohl Valley Dr., Springville**

Contact: Amanda Driver, (559) 539-2263, or circlej@tcoe.org

*CSS SEP: 1, 2, 3, 4 & 5*

April

## Young Authors' Faire - April

Student authors submit their work and then participate in reading and commenting on the work of other students. Parents, teachers, and members of the community also read and comment on the submitted work. (Grades K-8)

**Online registration due: February 3****No fee****Books due: Friday, March 10****Virtual exhibition opens March 27**

Contact: Juliana Davidian at (559) 651-3003, or juliana.davidian@tcoe.org

*CSS CCR Anchor Standards: Writing 3; Language 1, 2; Project,  
CAS: Creating, Performing/Presenting, Responding, Connecting*

## Poetry and Prose - April 10, 11, 12, 16, 18 & 19

Students present poetry to a public audience and judges at this county-wide oral interpretation event. Oral and written assessments are offered to each student, along with personalized certificates denoting their rank of Superior, Excellent, Very Good, or Good. (Grades K-8)

**March 10-12 & 16-19, 9:00 a.m., 10:15 a.m., 11:30 a.m., & 1:00 p.m.****No fee****TCOE Administration Building, 6200 S. Mooney Blvd., Visalia**

Contact: Brook Killingsworth at (559) 733-6326, or brookk@tcoe.org

*CSS CCR Anchor Standards: Reading 4, 5; Speaking and Listening 6;  
CAS: Performing, Responding, Connecting*

## Tulare-Kings College and Career EXPO - April 12

The College and Career EXPO provides students the opportunity to compete in college- and career-oriented competitions and spend some time on a college campus. College and Career EXPO builds upon the momentum that students and schools are creating in college and career awareness, exploration, and preparation. The event is open to all students in academies or pathways. (Grades 9-12)

**Friday, April 12, 8:30 a.m. - 2:00 p.m.****No fee****College of the Sequoias Visalia and Tulare campuses**

Contact: College &amp; Career at (559) 733-6101

*Speaking and Listening 1, 2, 4, 5, 6; Writing 1-9; Problem Solving, Project, Presentation; Various Career Technical Education Model Curriculum Standards specific to Industry Sector*

## Huddle Jr. Middle School Student-Athlete Conference - April 17

A conference for middle school student-athletes, the Huddle is designed to help participants develop leadership skills they can use in team building, positive communications, and goal setting. The conference features a dynamic keynote speaker and breakout sessions incorporating Pursuing Victory with Honor principles.

**Wednesday, April 17, 8:30 a.m. - 3:00 p.m.**

**No fee**

**TCOE Administration Building, 6200 S. Mooney Blvd., Visalia**

Contact: Gene Mendes at (559) 740-4303, or genem@tcoe.org

## SCICON Barbecue & Wildflower Festival - April 21

Each spring, SCICON opens its beautiful campus in the Sierra foothills above Springville to the public for a day of free tours, activities, and entertainment. The program also sells tickets for a delicious barbecue luncheon. Proceeds benefit the SCICON program. Open to all ages.

**Sunday, April 21, 11:00 a.m. - 4:00 p.m.**

**No admission/activities fee**

**SCICON Campus, 41569 Bear Creek Rd., Springville**

**Lunch available for purchase**

Contact: Dianne Shew at (559) 539-2642, or dshe@tcoe.org

## Make A Difference - TEACH Conference - April 26

In partnership with Fresno States, the Make a Difference - TEACH Conference is an event to learn about a variety of careers in education. Students will hear from professionals and college programs that could make their interest in this field a reality. (Grades 9-12)

**Friday, April 26, 8:30 a.m. - 1:00 p.m.**

**No fee**

**TCOE Administration Building, 6200 S. Mooney Blvd., Visalia**

Contact: College & Career at (559) 733-6101

*Various Career Technical Education Model Curriculum Standards specific to Industry Sector*

## Science Olympiad (Division A) - April 27

Individual students and teams compete in a variety of challenging events that allow students to apply their understanding of science and engineering content and practices. Students will utilize the 21st century skills – communication, creativity, critical thinking, and collaboration – as they navigate the series of events. (Grades 3-6)

**Saturday, April 27, 8:00 a.m. - 2:00 p.m.**

**Fee: \$100/team**

**Ridgeview Middle School, 3315 N. Akers St., Visalia**

Contact: Paula Terrill at (559) 651-0565, or paula.terrill@tcoe.org

*CSS CCR Anchor Standards: Reading 1, 2, 4, 7-10; Speaking & Listening 1-6; Writing 1, 2, 4-10; Project, Problem Solving; CSS SEP: 1-8*

## Reading Revolution - May 2 & 10

To promote literacy and the joy of reading, Reading Revolution is open to teams of elementary and middle school students. The teams answer questions drawn from a limited list of titles released in the fall. Following school-wide competitions, schools send their top team to contend at the county event.

(Grades 4-6, 7-8)

**Elementary (Grades 4-6): Thursday, May 2, 8:00 a.m. - 4:00 p.m. Fee: \$25/team**

**Middle School (Grades 7-8): Friday, May 10, 8:00 a.m. - 4:00 p.m.**

**TCOE Administration Building, 6200 S. Mooney Blvd., Visalia**

Contact: Paula Terrill at (559) 651-0565, or paula.terrill@tcoe.org

*CSS CCR Anchor Standards: Reading 1, 2, 6, 10; CAS: Creating, Performing/ Presenting, Responding, Connecting*

## Slick Rock Film Festival - May 10

This competition provides the opportunity for middle and high school students to enter videos in over a dozen categories. The best videos will receive an award and be presented to the public at the film festival. More information, including rules and deadlines, is available at [tcoe.org/SlickRock](http://tcoe.org/SlickRock). (Grades 7-12)

**Friday, May 10, 9:00 a.m. - 8:30 p.m., Fox Theater, 300 W. Main St., Visalia No fee**

Contact: Kathleen Green-Martins at (559) 737-6350, or kgreen@tcoe.org

*CSS CCR Anchor Standards: Speaking and Listening 4, 5; Writing 5; CSS VAPA Standards: a, b, c, d, e; CAS: Creating, Performing/Producing, Responding, Connecting*

## Tulare County Physics Day - May 16

Tulare and Kings County eighth-grade students head to the Porterville Fair and the midway rides armed with worksheets, calculators, and accelerometers for lessons in physics. (Grade 8)

**Thursday, May 16, 10:00 am – 1:00 pm**

**No fee**

**Porterville Fairgrounds, 2700 W. Teapot Dome Ave., Porterville**

Contact: Juliana Davidian at (559) 651-3003, or juliana.davidian@tcoe.org

*CSS CCR Anchor Standards: Speaking and Listening 1; Language 1, 6; CSS SEP: 1-8*

## Young People's Concerts - May 20

For over 60 years, the Young People's Concerts have provided an opportunity for Tulare County students to attend a live orchestra performance courtesy of the Sequoia Symphony Orchestra. Beginning in the 2023-24 school year, elementary students from across the county will have the opportunity to perform alongside the orchestra as part of Carnegie Hall's Weill Music Institute Link Up program. Through Link Up, students in grades 3-5 spend the school year learning to play recorder instruments. Their learning culminates in the spring at the Fox Theatre as they sing, dance, and play their instruments along with the orchestra. (Grades 3-5)

**Monday, May 20, Times TBA**

**No Fee; Reservation Required**

**Fox Theater, 300 W. Main St., Visalia**

**Link Up Program Registration Deadline**

**September 15**

Contact: Kate Stover at (559) 741-0809, or kate.stover@tcoe.org

*CAS: Performing, Responding, Connecting*

## Oak Forest Research & Restoration Internship @ UC Merced/SCICON Field Station - June 5-9

Circle J-Norris Ranch is seeking technicians to set up oak forest research plots and assist with its oak forest restoration project. This intern experience is perfect for high school students who enjoy nature and are interested in science and ecology. Interns will increase scientific and outdoor leadership skills in navigation, safety, teamwork, map reading, record keeping, and troubleshooting problems. High school students and recent graduates may apply. Must attend all five days. (Grades 9-12)

**Monday-Friday, June 5-9, 8:00 a.m. - 1:00 p.m.**

**Student stipend: \$250**

**Location: UC Merced/SCICON Field Station at Circle J-Norris Ranch, 41893 Yokohl Valley Dr., Springville**

Contact: Amanda Driver at (559) 539-2263, or [circlej@tcoe.org](mailto:circlej@tcoe.org)

*NGSS Ecosystems: Interactions, Energy and Dynamics LS2.A, LS2.C, LS4.D; SEP Using Mathematics and Computational Thinking. CA Environmental Principles and Concepts: 2, 4, 5*

## Theatre Company's OnStage Summer Camp - June 12-30

Elementary students are invited to participate in a three-week summer camp designed to strengthen their vocal, acting, and dance skills. Students rehearse Monday-Friday, 9:00 - 11:00 a.m. The summer camp culminates with a production for parents and family members of the selected musical. (Grades 1-6)

**June 12-30, 9:00 - 11:00 a.m.**

**Fee: \$100/student**

**TCOE Doe Avenue Complex, 7000 Doe Avenue, Visalia**

**Student scholarships available to offset participation fee.**

Contact: Bethany Rader at (559) 651-1482, ext. 3372, or [bethany.rader@tcoe.org](mailto:bethany.rader@tcoe.org)

*CAS: Performing, Responding, Connecting*

## Circle J - Norris Ranch

An outdoor campus located near SCICON, Circle J provides a wide range of field study options for grades K-12, as well as community college students. Programs are designed to expand appreciation of the environmental and aesthetic values of the outdoors and to increase understanding of the relationship between humans and nature.

**Additional 2023 Family Events (pre-registration required for each)**

**Location: Circle J-Norris Ranch, 41893 Yokohl Valley Dr., Springville**

**Contact: Amanda Driver at (559) 539-2263, or [circlej@tcoe.org](mailto:circlej@tcoe.org)**

**Family Astronomy Nights**

Friday, September 15, 7:00 - 9:00 p.m.

Friday, November 3, 6:00 - 8:15 p.m.

**SCICON and Circle J Christmas Bird Count****Sunday, December 17****8:00 a.m. - 12:00 p.m. (SCICON) or 1:00 p.m. - 3:00 p.m. (Circle J)**

Enjoy an evening under Circle J's dark skies viewing planets, constellations, and star clusters. Under the direction of amateur astronomers, navigate to deep sky objects using our five telescopes. No cost; donation box available. Program limited to 20 participants.

**Planetarium & Science Center**

A multimedia facility designed to provide unique and exciting learning experiences which supplement and reinforce the classroom curriculum, the Sam B. Peña Planetarium and Science Center offers a variety of programs throughout the school year at no cost to Tulare County students. Out-of-county schools may attend for a small fee. (Grades K-8)

**Reservations required.**

For a listing of programs and shows, including evening public shows, call (559) 737-6334 or visit [tcoe.org/planetarium](http://tcoe.org/planetarium).

**SCICON**

SCICON is the nationally-recognized outdoor science and conservation school located above Springville. Fifth- and sixth-grade students visit for one-day or week-long experiences in natural science and conservation. Students also experience SCICON's natural history museum, raptor center, planetarium and observatory, and tree nursery.

**Reservations required.**

Contact: Dianne Shew at (559) 539-2642, or visit [tcoe.org/scicon](http://tcoe.org/scicon).

**Theatre Company's OnStage Program**

The Theatre Company provides the directors and all the resources a school needs – including costumes, props, and backdrops – to produce a 35-minute musical involving up to 50 students. The well-known children's musicals offered are ideal for after school programs, fundraisers, and more. (Grades K-8)

Contact: Bethany Rader at (559) 651-1482, ext. 3645, or [bethany.rader@tcoe.org](mailto:bethany.rader@tcoe.org)

**Tulare County History of Farm Labor & Ag Museum**

Located within the Tulare County History of Farm Labor & Agriculture Museum in Visalia's Mooney Grove Park, this 60-seat theater offers a variety of TCOE-produced videos on the various ethnic groups that settled in Tulare County to farm and ranch. Teachers are encouraged to contact museum staff to schedule visits. (Grades K-12)

Contact: Amy King at (559) 733-6616, or [aking1@co.tulare.ca.us](mailto:aking1@co.tulare.ca.us)

**Volunteer Opportunities**

TCOE Student Events require a great deal of support from educators, parents, and community members. Volunteers are crucial to the success of these events as they serve various roles, such as judges, scorers, and monitors. To donate your time or talent, visit [tcoe.org/volunteer](http://tcoe.org/volunteer).

## College and Career Readiness Anchor Standards K-12

The College and Career Readiness (CCR) standards define general, cross-disciplinary literacy expectations that must be met for students to be prepared to enter college and workforce training programs ready to succeed. Students advancing through the grades are expected to meet each year's grade-specific standards, retain or further develop skills and understandings mastered in preceding grades, and work steadily toward meeting the more general expectations described by the CCR standards.

### Reading

#### Key Ideas and Details

1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
3. Analyze how and why individuals, events, and ideas develop and interact over the course of a text.

#### Craft and Structure

4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
6. Assess how point of view or purpose shapes the content and style of a text.

#### Integration of Knowledge and Ideas

7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
9. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

#### Range of Reading and Level of Text Complexity

10. Read and comprehend complex literary and informational texts independently and proficiently.

### Writing

#### Text Types and Purposes

1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

#### Production and Distribution of Writing

4. Produce clear and coherent writing in which the development, organization, and style

are appropriate to task, purpose, and audience.

5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

#### **Research to Build and Present Knowledge**

7. Conduct short, as well as more sustained, research projects based on focused questions, demonstrating understanding of the subject under investigation.
8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

#### **Range of Writing**

10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

## **Speaking and Listening**

#### **Comprehension and Collaboration**

1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.

#### **Presentation of Knowledge and Ideas**

4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

## **Language**

#### **Conventions of Standard English**

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

#### **Knowledge of Language**

3. Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

#### **Vocabulary Acquisition and Use**

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.
5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

6. Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

## Standards for Mathematical Practice

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with long-standing importance in mathematics education. The first of these are the NCTM (National Council of Teachers of Mathematics) process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council’s report *Adding It Up* – adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one’s own efficacy).

### 1. Make sense of problems and persevere in solving them

Mathematically-proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically-proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically-proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

### 2. Reason abstractly and quantitatively

Mathematically-proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize – to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents – and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

### 3. Construct viable arguments and critique the reasoning of others

Mathematically-proficient students understand and use stated assumptions, definitions, and

previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose.

Mathematically-proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and – if there is a flaw in an argument – explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

#### **4. Model with mathematics**

Mathematically-proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically-proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

#### **5. Use appropriate tools strategically**

Mathematically-proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically-proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically-proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

#### **6. Attend to precision**

Mathematically-proficient students try to communicate precisely to others. They try to

use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

## 7. Look for and make use of structure

Mathematically-proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see  $7 \times 8$  equals the well-remembered  $7 \times 5 + 7 \times 3$ , in preparation for learning about the distributive property. In the expression  $x^2 + 9x + 14$ , older students can see the 14 as  $2 \times 7$  and the 9 as  $2 + 7$ . They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see  $5 - 3(x - y)^2$  as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers  $x$  and  $y$ .

## 8. Look for and express regularity in repeated reasoning

Mathematically-proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation  $(y - 2)/(x - 1) = 3$ . Noticing the regularity in the way terms cancel when expanding  $(x - 1)(x + 1)$ ,  $(x - 1)(x^2 + x + 1)$ , and  $(x - 1)(x^3 + x^2 + x + 1)$  might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically-proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

## Connecting the Standards for Mathematical Practice to the Standards for Mathematical Content

The Standards for Mathematical Practice describe ways in which developing student practitioners of the discipline of mathematics increasingly ought to engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years. Designers of curricula, assessments, and professional development should all attend to the need to connect the mathematical practices to mathematical content in mathematics instruction.

The Standards for Mathematical Content are a balanced combination of procedure and understanding. Expectations that begin with the word “understand” are often especially good opportunities to connect the practices to the content. Students who lack understanding of a topic may rely on procedures too heavily. Without a flexible base from which to work, they may be less likely to consider analogous problems, represent problems coherently, justify

conclusions, apply the mathematics to practical situations, use technology mindfully to work with the mathematics, explain the mathematics accurately to other students, step back for an overview, or deviate from a known procedure to find a shortcut. In short, a lack of understanding effectively prevents a student from engaging in the mathematical practices.

In this respect, those content standards which set an expectation of understanding are potential “points of intersection” between the Standards for Mathematical Content and the Standards for Mathematical Practice. These points of intersection are intended to be weighted toward central and generative concepts in the school mathematics curriculum that most merit the time, resources, innovative energies, and focus necessary to qualitatively improve the curriculum, instruction, assessment, professional development, and student achievement in mathematics.

### **Scientific and Engineering Practices**

Standards and performance expectations that are aligned to the science framework must take into account that students cannot fully understand scientific and engineering ideas without engaging in the practices of inquiry and the discourses by which such ideas are developed and refined. At the same time, they cannot learn or show competence in practices except in the context of specific content. The term “practices” is used instead of a term such as “skills” to emphasize that engaging in scientific investigation requires not only skill but also knowledge that is specific to each practice.

The eight practices of science and engineering that the Framework identifies as essential for all students to learn and describes in detail are listed below:

### **Practice 1: Asking Questions and Defining Problems**

A practice of science is to ask and refine questions that lead to descriptions and explanations of how the natural and designed world works and which can be empirically tested.

Engineering questions clarify problems to determine criteria for successful solutions and identify constraints to solve problems about the designed world. Both scientists and engineers also ask questions to clarify the ideas of others.

### **Practice 2: Planning and Carrying Out Investigations**

Scientists and engineers plan and carry out investigations in the field or laboratory, working collaboratively as well as individually. Their investigations are systematic and require clarifying what counts as data and identifying variables or parameters.

Engineering investigations identify the effectiveness, efficiency, and durability of designs under different conditions.

### **Practice 3: Analyzing and Interpreting Data**

Scientific investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists use a range of tools – including tabulation, graphical interpretation, visualization, and statistical analysis – to identify the significant features and patterns in the data. Scientists identify sources of error in the investigations and calculate the degree of certainty in the results. Modern technology makes the collection of large data sets much easier, providing secondary sources for analysis. Engineering investigations include analysis of data collected in the tests of designs. This

allows comparison of different solutions and determines how well each meets specific design criteria – that is, which design best solves the problem within given constraints. Like scientists, engineers require a range of tools to identify patterns within data and interpret the results. Advances in science make analysis of proposed solutions more efficient and effective.

### **Practice 4: Developing and Using Models**

A practice of both science and engineering is to use and construct models as helpful tools for representing ideas and explanations. These tools include diagrams, drawings, physical replicas, mathematical representations, analogies, and computer simulations.

Modeling tools are used to develop questions, predictions and explanations; analyze and identify flaws in systems; and communicate ideas. Models are used to build and revise scientific explanations and proposed engineered systems.

Measurements and observations are used to revise models and designs.

### **Practice 5: Constructing Explanations and Designing Solutions**

The products of science are explanations and the products of engineering are solutions. The goal of science is the construction of theories that provide explanatory accounts of the world. A theory becomes accepted when it has multiple lines of empirical evidence and greater explanatory power of phenomena than previous theories.

The goal of engineering design is to find a systematic solution to problems that is based on scientific knowledge and models of the material world. Each proposed solution results from a process of balancing competing criteria of desired functions, technical feasibility, cost, safety, aesthetics, and compliance with legal requirements. The optimal choice depends on how well the proposed solutions meet criteria and constraints.

### **Practice 6: Engaging in Argument from Evidence**

Argumentation is the process by which explanations and solutions are reached. In science and engineering, reasoning and argument based on evidence are essential to identifying the best explanation for a natural phenomenon or the best solution to a design problem.

Scientists and engineers use argumentation to listen to, compare, and evaluate competing ideas and methods based on merits.

Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to identify strengths and weaknesses of claims.

### **Practice 7: Using Mathematics and Computational Thinking**

In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; statistically analyzing data; and recognizing, expressing, and applying quantitative relationships.

Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Statistical methods are frequently

used to identify significant patterns and establish correlational relationships.

### Practice 8: Obtaining, Evaluating, and Communicating Information

Scientists and engineers must be able to communicate clearly and persuasively the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity.

Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations as well as orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to acquire information that is used to evaluate the merit and validity of claims, methods, and designs.

## NGSS

HS-LS2-2. Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.

HS-LS4-6. Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.\*

MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

MS-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to in-creses and decreases of specific traits in populations over time.

## Environmental Principles and Concepts (EPCs)

Principle 1: People depend on natural systems.

Principle 2: People influence natural systems.

Principle 3: Natural systems change in ways that people benefit from and can influence.

Principle 4: There are no permanent or impermeable boundaries that prevent matter from flowing between systems.

Principle 5: Decisions affecting resources and natural systems are complex and involve many factors.

## California Arts Standards

In 2019, the California State Board of Education adopted new Arts content standards for students in pre-kindergarten through grade 12. The California Arts Standards (CAS) include the five Arts disciplines: Dance, Media Arts, Music, Theatre, and Visual Arts. The standards are organized around four artistic processes (creating, performing/presenting/producing, responding, and connecting). The artistic processes are divided into eleven anchor standards that repeat through each arts discipline and all across all grade levels. The artistic processes are defined as follows:

- **Creating** (all arts disciplines) - Conceiving and developing new artistic ideas and work.
- **Performing** (dance, music, theatre) - Realizing artistic ideas and work through interpretation and presentation.

- **Presenting** (visual arts) - Interpreting and sharing artistic work.
- **Producing** (media arts) - Realizing and presenting artistic ideas and work.
- **Responding** (all arts disciplines) - Understanding and evaluating how the arts convey meaning.
- **Connecting** (all arts disciplines) - Relating artistic ideas and work with personal meaning and external context.

# Tulare County Office of Education

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