



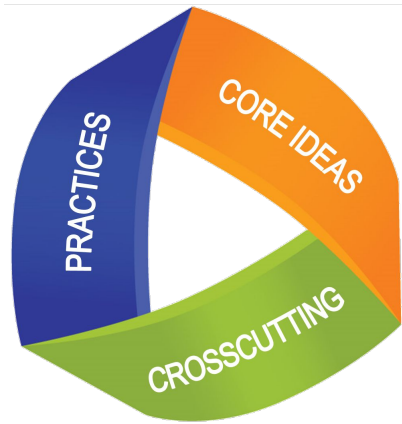
TUHSD Science

Preliminary Course Sequence Proposal

Next Generation Science Standards

TUHSD Science Task Force, Feb 2017



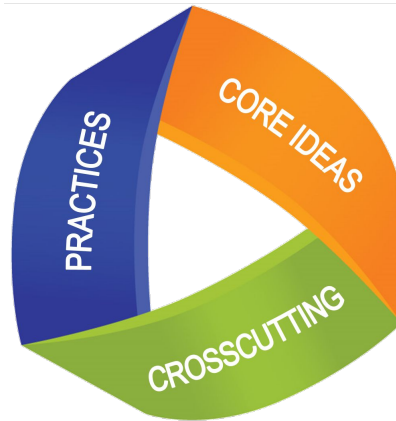


New Science Standards (NGSS)

What is new with NGSS?

“All Students, All Standards”

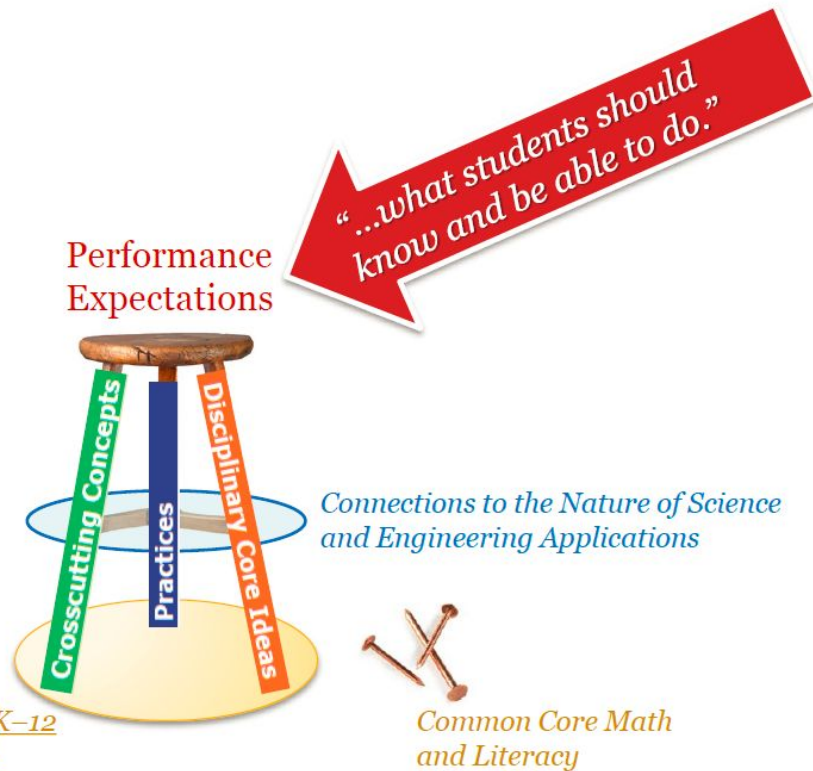
All aspects of courses include all 3 dimensions.



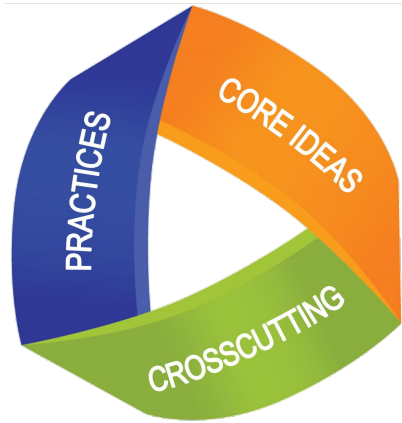
*Chemistry and physics standards for all.
Engineering for all.*

*Science concepts and practices build from K-12
Deeper understanding and application of content*

NGSS + Performance Expectations



- ★ 3 dimensional learning supports performance expectations as the ultimate goal of NGSS.
- ★ Each Performance Expectation embeds all three dimensions.
- ★ Instruction is designed to explicitly incorporate all three dimensions.



New Course Sequence Proposal

to replace Integrated Science

in Fall 2018

Proposed Required Course Sequence

9th Grade

(Fall 2018)

Physics in the
Universe

*Physics, Earth, Space

10th Grade

(Fall 2019)

The Living
Earth

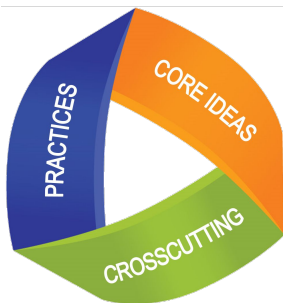
*Bio and Earth

11th Grade

(Fall 2020)

Chemistry in
Earth Systems

*Chemistry and Earth



“All Students, All Standards”

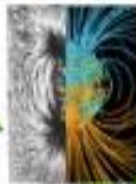
All NGSS-aligned courses are UC ‘d’

Course 1: Physics in the Universe (9th grade)

Forces & Motion



Forces at a distance



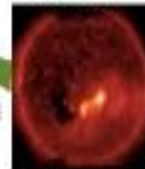
Planetary Motion



Origins of our Universe



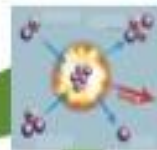
Star Stuff



Energy Conversion



Nuclear Processes



Electromagnetic Spectrum



Radiometric Dating



Earthquake Waves



3 course model

**Physics in the
Universe**

Seafloor age evidence
of plate tectonics

Wave
propagation

Gravity

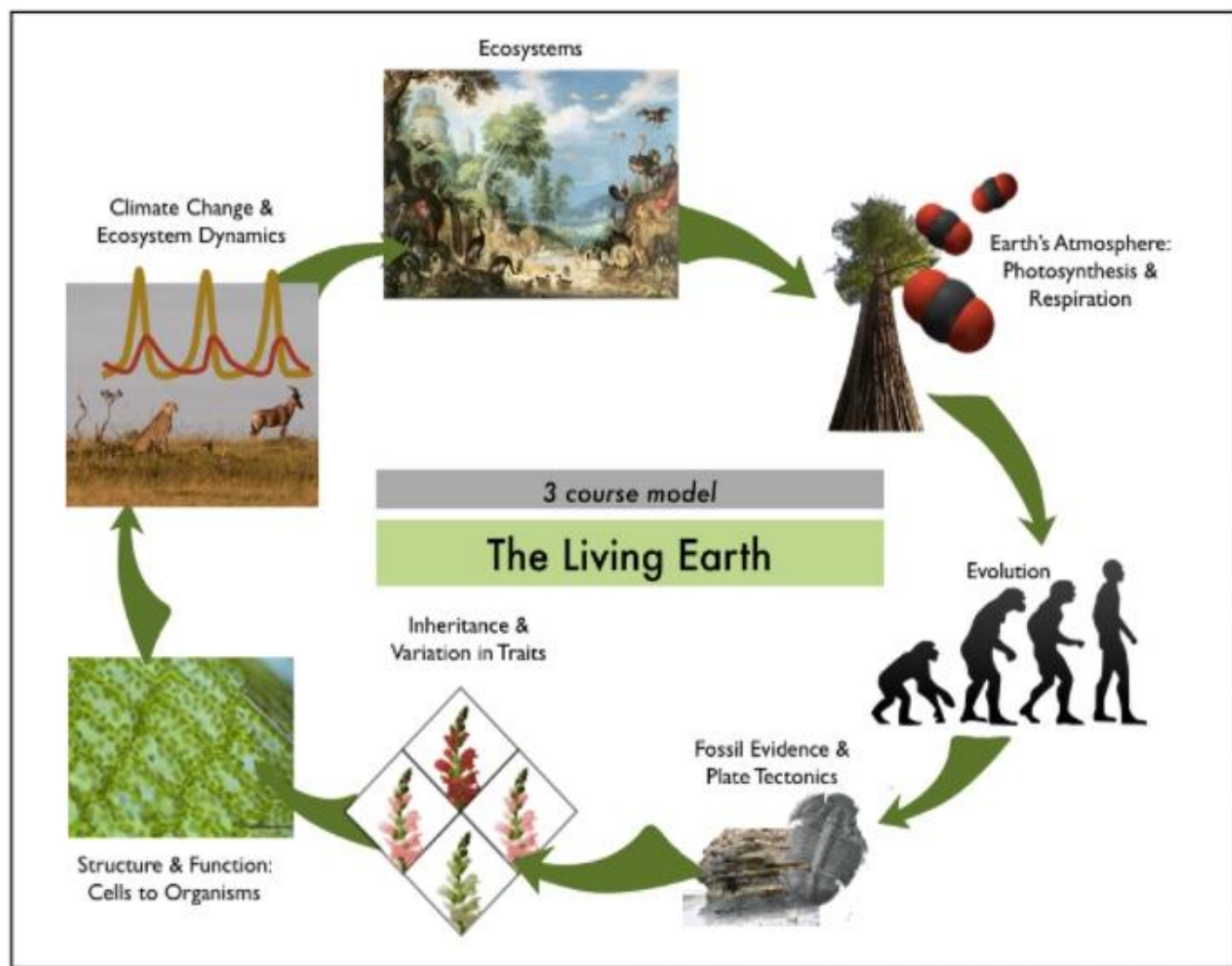
Gravity

Fusion

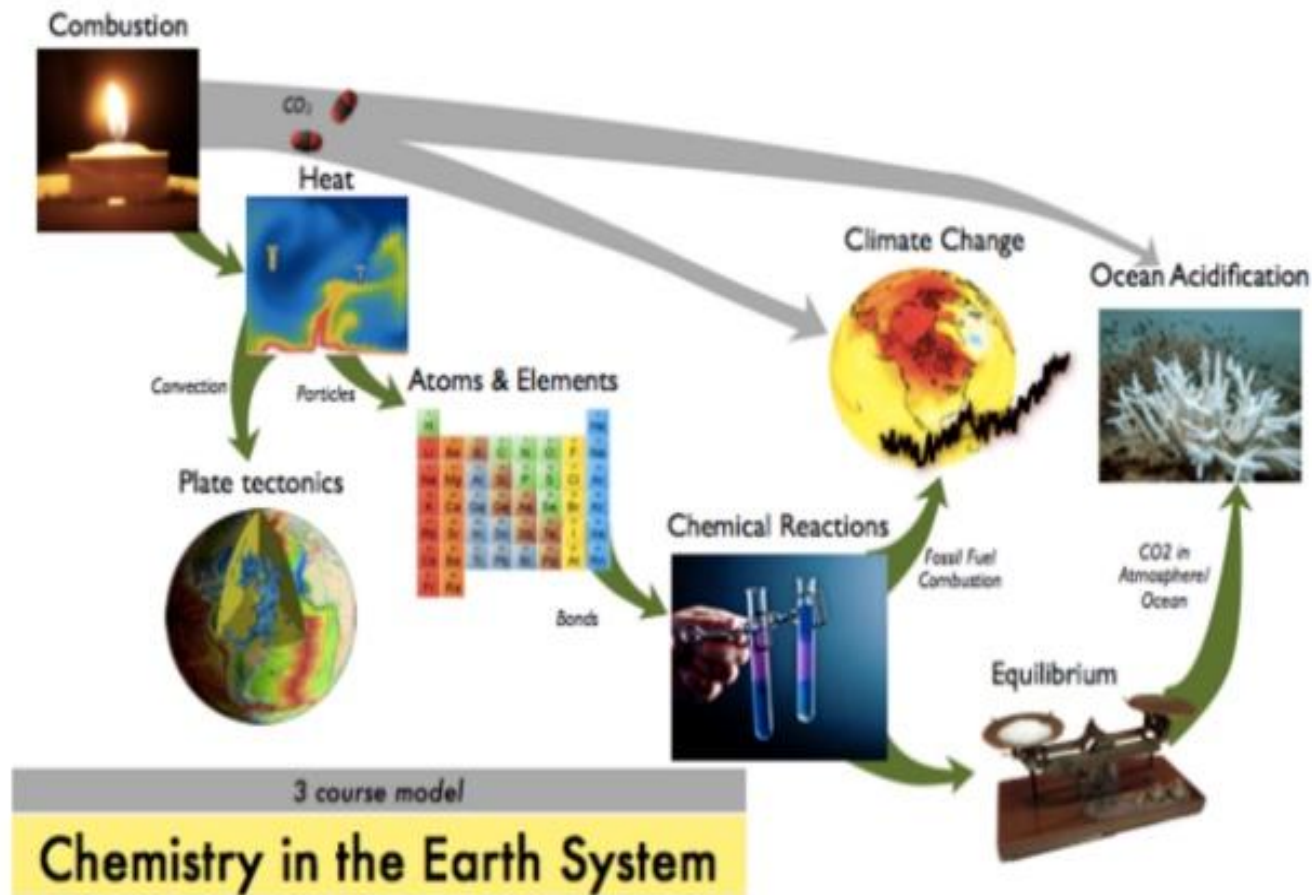
Fission

Decay

Course 2: The Living Earth *(10th grade)*



Course 3: Chemistry in the Earth System (11th Grade)



Benefits of Proposal

- **Better Prepared:** ALL students will complete ALL foundational sciences, and faster. Provides early access to rich science electives or other interests.
- **Completed in 3 years:** CA recommends 3 or 4 years to complete NGSS.
- **Minimal Impact:** Presently, 97% of TUHSD students take 3 or more years of science.
- **UC Approval:** Graduation requirements will meet UC/CSU recommended requirements for “D” lab science
- **Acceleration Opportunities:** Students who meet pre-reqs will have the option to double-up.
- **More Elective Options:** Students complete foundational sciences (Bio, Earth, Chem, Physics) in 3 years; present model requires 4 years.
- **Student Support:** Students who need additional support will receive it.

Accelerated Pathways are available! For example...

9th Grade

10th Grade

11th Grade

Physics in the
Universe

*Physics, Earth, Space

The Living
Earth

*Bio and Earth

Science
Electives

AP Options Available

Chemistry in
Earth Systems

*Chemistry and Earth

Or...

Accelerated Pathways are available! For example...

9th Grade

10th Grade

11th Grade

Physics in the
Universe

*Physics, Earth, Space

The Living
Earth

*Bio and Earth

Chemistry in
Earth Systems

*Chemistry and Earth

Science
Elective

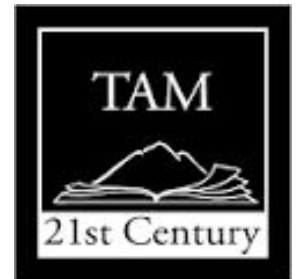


What happens in the 12th Grade?

- We will continue to offer our wide range of elective options, including AP!
- Elective options will be accessible to students in the 10th and 11th grade who meet course prerequisites, and want to accelerate!!

Astronomy
Biomedical Sciences/H
Ecology
Environmental Science
Marine Science
Physiology/H
Sustainable Agriculture

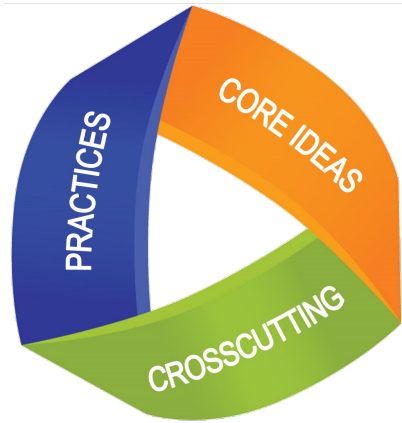
AP Biology
AP Environmental Science
AP Chemistry
Independent Science Research
Physics/H/AP(?)



What happens if I need more support?

- The purpose of intervention is to ensure all students learn the same high academic standards, through additional, personalized and/or differentiated support. For example... (these are examples only)

In the Classroom	Additional Supports
Quality Instruction Engaging Labs Anchored in Local Phenomena Frequent Formative Assessment Re-Teaching Clarity of Learning Goals Inclusive Classroom Cultures Collaborative Group Work Teacher Collaboration Equitable Practices	Re-Teaching and/or Re-Assessing in Tutorial or SMART periods Interventions in Literacy, Math, and Science and Engineering Practices Student Support Teams Collaboration with Parents, Counselors Potential Support Class Option Peer Tutors Summer Intensives Community Partnerships



Please provide us
feedback by
Friday, March 3rd!

www.tamdistrict.org

New Science Standards (NGSS)

Questions?