

Science



**IT'S WHAT OUR KIDS
ARE TALKING ABOUT!**

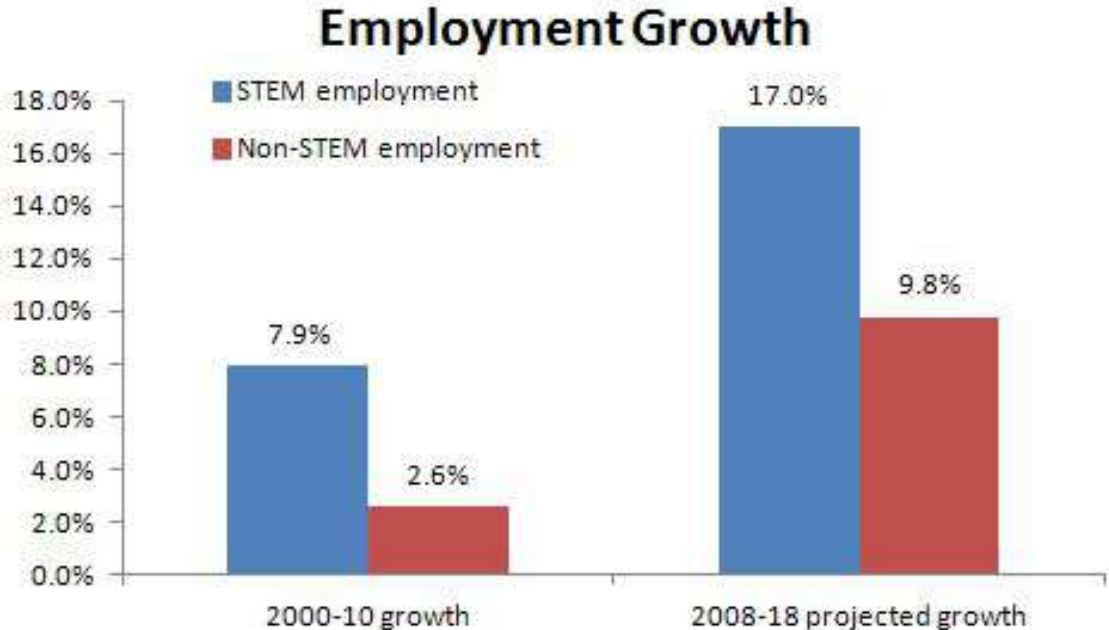


Katherine Hermens- DHS Biology
Ashley Holzauer- DUSD Secondary Science Coach
Kim Halket-DHS Counseling
Lenni Velez- DHS Assistant Principal

Why New Standards?

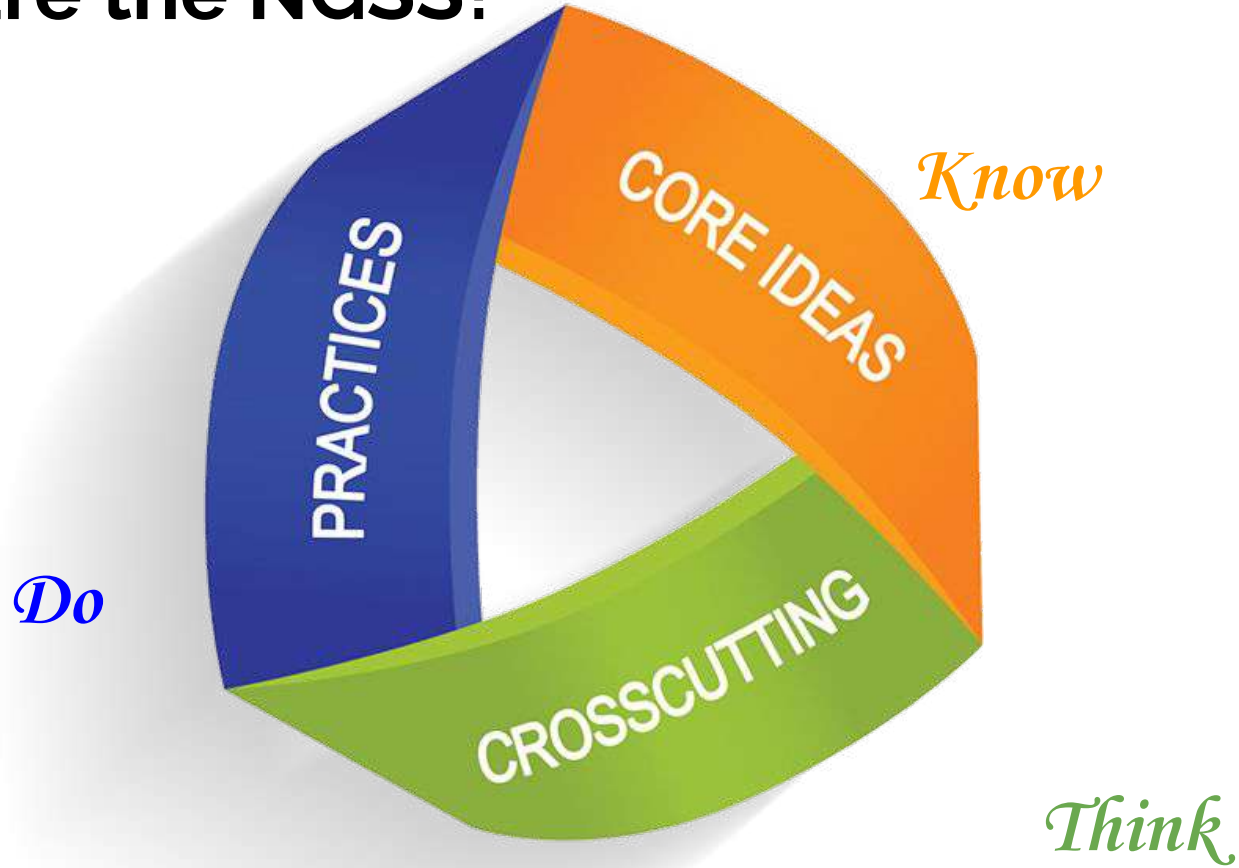


- STEM skills are increasingly emphasized
- Jobs requiring **significant** STEM skills are growing



Data table from US Department of Commerce

What are the NGSS?

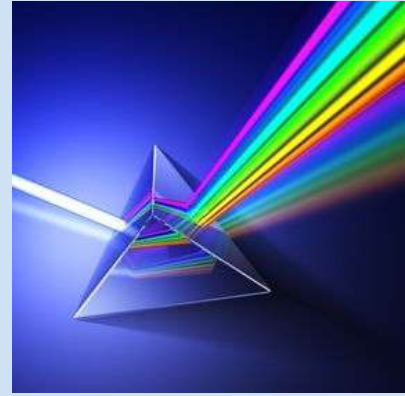


4 Key Subject Areas

Life Science (Biology)



Physical Science (Chemistry/Physics)



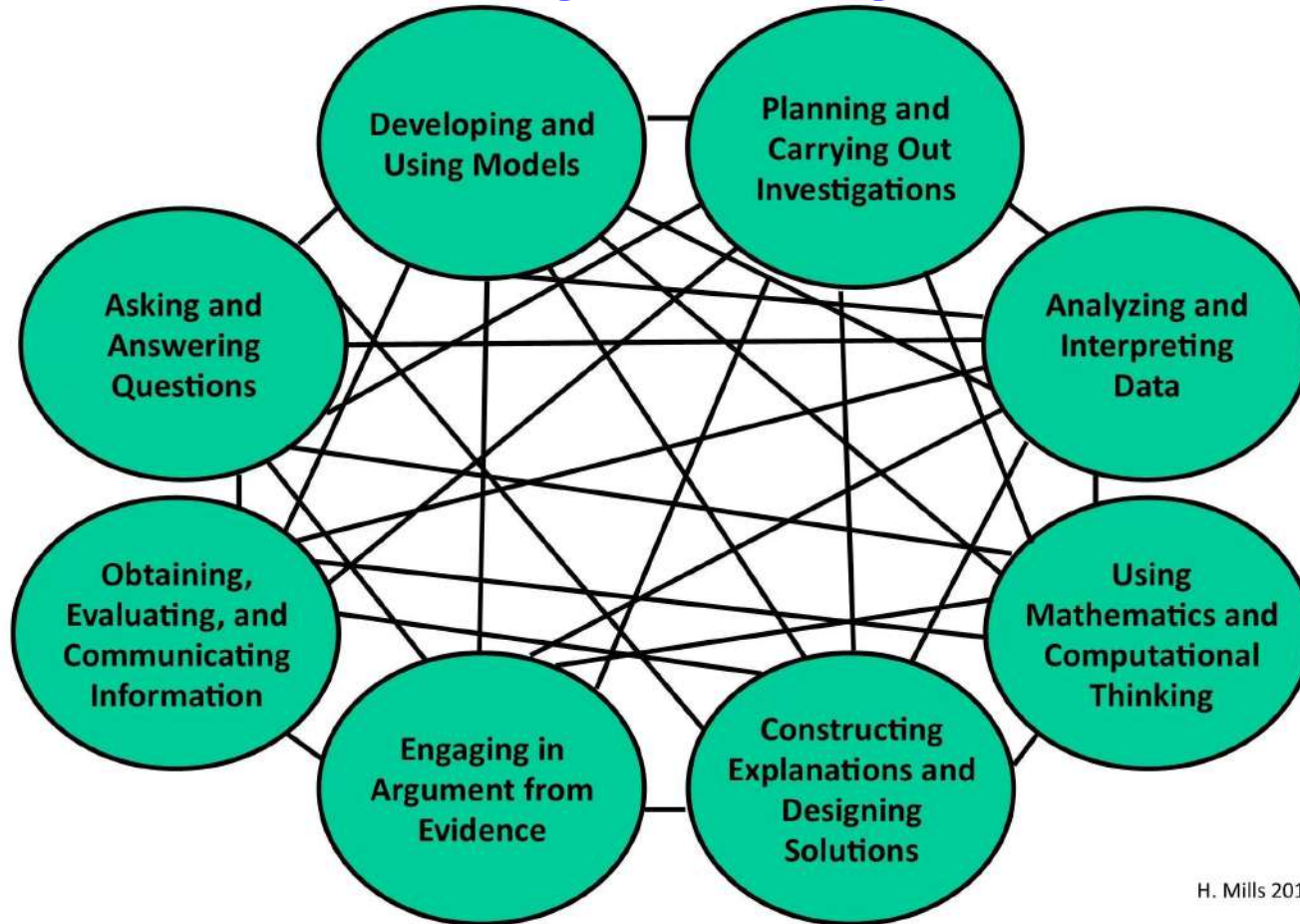
Earth and Space Science



Engineering and Technology



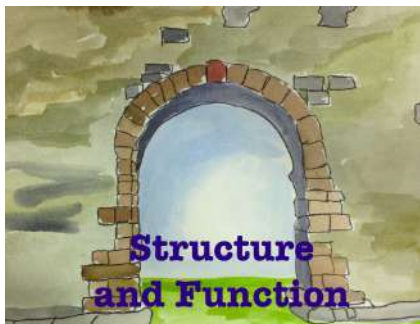
Science and Engineering Practices



Cross-Cutting Concepts (CCCs)



How Scientists View the World



NGSS & Common Core (CCSS)

- NGSS and Common Core State Standards are independent
- Standards aligned with Common Core mathematics and literacy

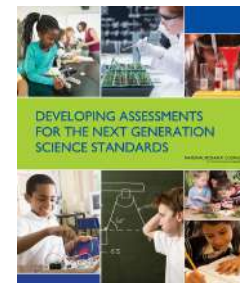


$\sqrt{-1}$ ❤️
Math

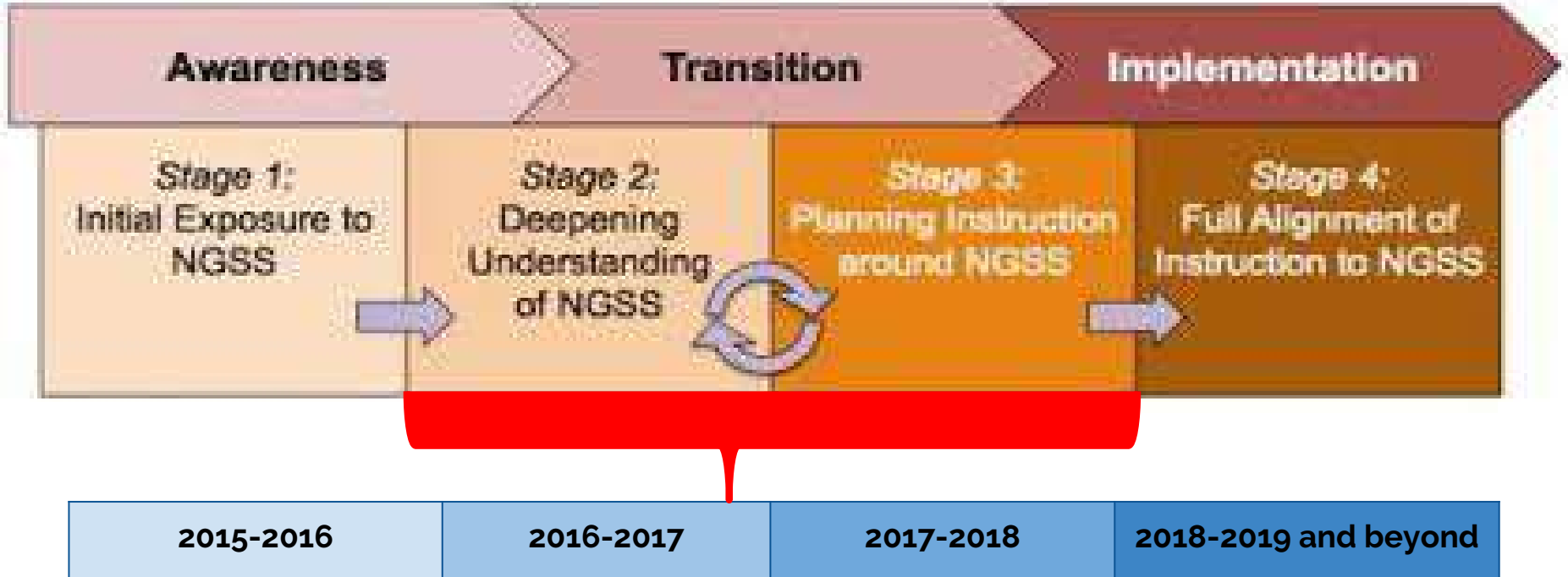
Shifts in Instructional Practices

1998 Standards-based Instruction	NGSS-based Instruction
Fact oriented	Process and skill-oriented
"Students know"	"Students are able to"
Memorization of facts	Facts support student-explanation
Teachers present information with one right answer	Student- driven discussion of open-ended questions using evidence
Content isolated	Content integrated

Adapted from National Research Council (2015). Guide to Implementing the Next Generation Science Standards (pp8-9). Washington, DC: National Academies Press. <http://www.nap.edu/catalog/18802/guide-to-implementing-the-next-generation-science-standards>



Transition to Next Generation Standards and Assessments



What is the timeline for state testing?

Spring 2017	Pilot Test	No results released
Spring 2018	Field Test	
Spring 2019	First Operational Test	Individual and school-specific scores released.

What does this mean for Dublin Students?

- Minor modification of previous 3-course graduation model **starting class of 2021**
- Course options now focus the foundational courses :
 - Biology
 - Chemistry or Earth Science (math-dependent)
 - any Physics course
- Foundational courses will integrate Earth and Space Science Standards.

What does this mean for Dublin Students?

- DHS students will still:
 - have choices within the foundational courses
 - be able to take classes outside the foundational course
 - be able to take 4 (or more) years of science
 - be able to pursue AP coursework
- DHS will continue to offer a variety of diploma options
- All students will continue to meet CSU/UC admissions standards.

NGSS-Aligned Course Sequences for DHS Three-Tiered Diploma

Diploma	Diploma with Distinction	Advanced Scholar Diploma
30 units of science: Must include Biology and any Physics course. Must also include Chemistry or Earth Science.	30 units of science: Must include Biology, Chemistry and any Physics course.	40 units of science: Must include Biology, Chemistry, any Physics course plus one more lab science course.

- **New requirements in effect for Class of 2021 and beyond**
- **Supports a broad foundation in the sciences**
- **Does not affect the classes of 2018-2020**

How are DHS teachers preparing for this implementation?

Teachers are:

- working closely with experts and early implementers
- redesigning curriculum & classroom environments
- expanding applications of the scientific & engineering practices
- integrating Earth Science



(THA-NK+YOU²)



**For additional
information, please
contact your
students' DHS
counselor.**

<http://dublinusd.org/Page/7721>