# AUSD Theory of Action for Instructional Programs: BaySci

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# BaySci History & Status

- Third year of implementation
- ▶ 26 teachers trained, 21 currently active (K-5)
- Teacher leadership training through Lawrence Hall of Science
- Teacher leaders provide site based support and science professional development
- Additional secondary science teachers participating in leadership

# NGSS Science and Engineering Practices

Practice 1: Asking Questions and Defining Problems **Practice 2: Developing and Using Models** Practice 3: Planning and Carrying Out Investigations **Practice 4: Analyzing and Interpreting Data Practice 5: Using Mathematics and Computational Thinking** Practice 6: Constructing Explanations and Designing Solutions Practice 7: Engaging in Argument from Evidence Practice 8: Obtaining, Evaluating, and Communicating Information

# AUSD Vision & Mission for Science

#### VISION

AUSD will provide a comprehensive and high quality science program that prepares all students for success in rigorous post-secondary science courses or careers. AUSD students will use their understanding of the natural world to solve important problems, improve their lives and make their world a better place.

#### MISSION

AUSD teachers and administrators must plan together to realize this vision. We know that students need a high level of scientific understanding to succeed in school and to be prepared for the demands of the 21<sup>st</sup> Century.



# What Scientists and Engineers Do



FIGURE 3-1 The three spheres of activity for scientists and engineers.

# **CCSS** Overlay

 M1. Make sense of problems & persevere in solving them
 M6. Attend to precision
 M7. Look for & make
 use of structure
 M8. Look for & express
 regularity in repeated
 reasoning

Math

S2. Develop and use models M4.Model with mathematics

S5. Use mathematics & computational thinking

E2. Build a strong base of knowledge through content rich texts

E5. Read, write, and speak grounded in evidence M2. Reason abstractly & quantitatively

M3 and E4. Construct viable arguments & critique reasoning of others

S7. Engage in argument from evidence

S6. Construct explanations & design solutions
S8. Obtain, evaluate & communicate information
E3. Obtain, synthesize, and report findings clearly and effectively in response to task and purpose

M5. Use appropriate tools strategically E6. Use technology & digital media strategically & capably

E1.Demonstrate independence in reading complex texts, and writing and speaking about them

E7. Come to understand other perspectives & cultures through reading, listening, and collaborations

S1. Ask questions & define problems S3. Plan & carry out investigations S4. Analyze & interpret data

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# Example FOSS Lesson

2<sup>nd</sup> Grade Physical Science Strand Balance and Motion Module

# FOCUS QUESTION

Which top design will spin for the longest period of time? <u>Words to Use</u>

top rotational motion spin torque axis stable balanced static



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### **Prior Focus Questions**

How do you know when something is balanced?

How many ways are there to make a stable position?

How do you balance an object on a single point?

What are tops and how do you get a top to start rotating?



### DATA/EVIDENCE COLLECTION What will it look like?



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### Next Steps: Implementing the Vision and Mission for Science

- Share vision with stakeholders
- Principals walking classrooms
- Science focused Instructional Rounds
- Continue Professional Development
  - Includes site administrators and teachers
  - New Foss materials
  - Intersection of science and NGSS with CCSS ELA and Math
  - Notebooking best practices
- System of materials management in place

# Instructional Materials Update

	13-14	14-15	15-16	16-17
K-5 FOSS rollout:	Physical Science	Life Science	Earth Science	≈\$4,000
CCSS/NGSS aligned	≈\$78,500	≈\$89,450	≈\$75,000	
6-8 FOSS rollout:	Phase I	Phase II	Phase III	≈\$4,000
CCSS/NGSS aligned	≈\$52,000	≈\$18,000	≈\$18,000	
K-8 Sustainability: Consumable supplies, live organisms	≈\$10,000	≈\$10,000	≈\$10,000	≈\$10,000
PD	≈18,950	≈24,350	≈\$15,000	≈\$10,000
Preparation and	\$18,000	\$20,700	≈\$7,000	Reimbursement from
substitute or hourly	Reimbursed by	Reimbursed by	Reimbursed by	LHS* is currently
payment	grant from LHS*	grant from LHS*	grant from LHS*	unknown
Total	≈\$136,450	≈\$116,100	≈\$101,000	≈\$28,000

Expenditures to support implementation of K-8 inquiry-based science program.

\*LHS = Lawrence Hall of Science BaySci Program

### Conclusion

The Board of Education is an essential component in the vision and mission to make science more visible to our community and fostering support.

There will be a Board of Education update in May 2015.