High School Physics

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OAKLAND UNIFIED SCHOOL DISTRICT

Community Schools, Thriving Students

Our Vision

All OUSD students will find joy in their academic experience while graduating with the skills to ensure they are caring, competent, fully-informed, critical thinkers who are prepared for college, career, and community success.

Our Mission

Oakland Unified School District (OUSD) will build a Full Service Community District focused on high academic achievement while serving the whole child, eliminating inequity, and providing each child with excellent teachers, every day.

Ask of the Board

- Approve adoption and purchase of *OpenSci Ed: Physics (Carolina Biological Certified Version)*.

Outline

- Background;
- Selection Process;
- Fiscal Impact; and
- Strengths & Supports.

State of Curriculum (2024-25)

	Elementary	Middle School	High School
English Language Arts	*EL Education* *Foundational Skills: SIPPS* (*Benchmark* for Dual Language)	*EL Education 2.0*	**ELA: FishTank**
Mathematics	Eureka2	Illustrative Mathematics	Illustrative Mathematics
Science	FOSS Next Generation	FOSS Next Generation	Biology Chemistry and Physics Pilot 24-25
History / Social Studies	3rd Gr. Oakland History 4-5 Gr. OUSD on Newsela	Pearson MyWorld Interactive	US/World/Econ/Gov

High Quality Materials

Pilot/Selection in Process

Lack of High Quality Materials

Background:

The adoption is an opportunity to:

- **Update and modernize** the learning and teaching experience for students & teachers. The current Physics curriculum was adopted in 2007.
- Provide all teachers with opportunity to **connect** and **collaborate** around common lessons and pedagogy.
- Offer teachers materials that align with **Next Generation Science Standards** and stakeholder feedback
- Offer multiple opportunities for **hands-on activities and investigations** to support development of **Science and Engineering Practices**
- Support science **literacy** and **discourse** skills
- Offer new teachers a **strong set of materials** to start their careers in OUSD.

Selection Process

- **2019 and 2022 groundwork:** Science teachers surveyed around curriculum and instructional; participation in field testing of unpublished curriculum

- **24 - 25 SY Steering Committee:** Coordinator and teacher leads Identified OSE: Physics as pilot option

- **Adoption Committee:** Gen Ed Teachers, Teachers supporting EL and Newcomers, and content experts

- **Additional stakeholder input:** SpED, students, Science Leads, Coordinators, Curriculum Field-testers

- **Deliberation:** The final deliberation brought together piloting teachers and other community members connected to Science education to weigh all feedback collected, and come to majority vote on recommendation.

Supporting Data - High School Physics

- **80% of teachers surveyed recommend adoption of OpenSci Ed: Physics**

- **Students said:**
  - The slides always look like that [pointing to the board] – they tell us what to do and it makes it easy to follow.
  - We do labs every week. I like most of them.

We had to fix a charger [after completing the unit on electricity]. I liked it. We had to explain why it wasn't working and fix it then explain what we did.

Student, Fremont HS

- **Teacher said:**
  - *The curriculum's strengths were in engaging students with an interesting introductory phenomena, providing multiple opportunities and methods for student engagement, exploration, and discussion.*
  - *Strengths of this curriculum include the driving questions and phenomena-driven units.*
  - *I do appreciate that there is real-world data to look at! That feels very valuable!*

OpenSci Ed: Physics Strengths

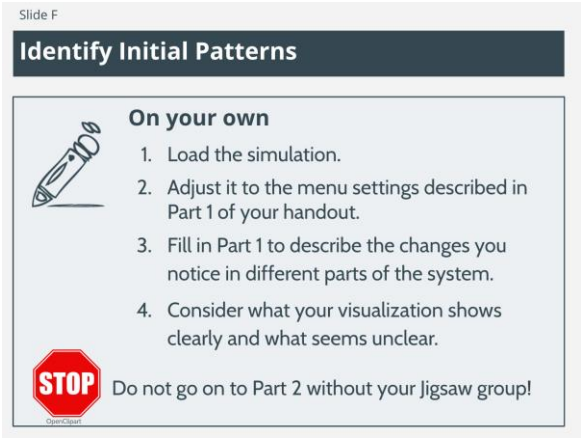
- **LOTS of hands-on materials organized into kits for each unit**

- **Units organized around:**
  - investigable phenomena
  - focal questions
  - storylines

- **Clear and useable teacher resources to support:**
  - literacy & discourse
  - diverse learners
  - assessments

Student and Teacher Experiences

- Clear guidelines to support hands-on activities


Slide F

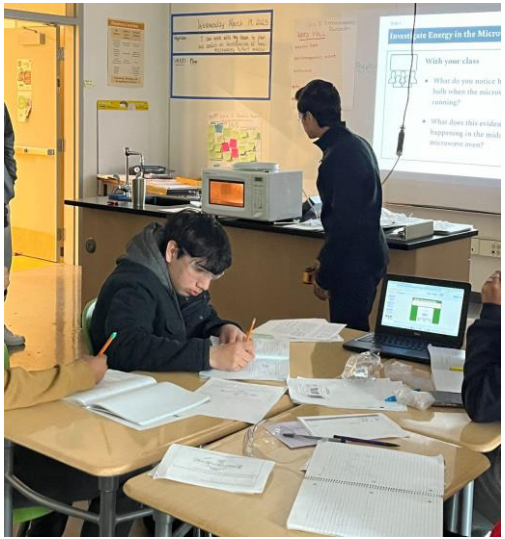
Identify Initial Patterns

On your own

1. Load the simulation.
2. Adjust it to the menu settings described in Part 1 of your handout.
3. Fill in Part 1 to describe the changes you notice in different parts of the system.
4. Consider what your visualization shows clearly and what seems unclear.

STOP

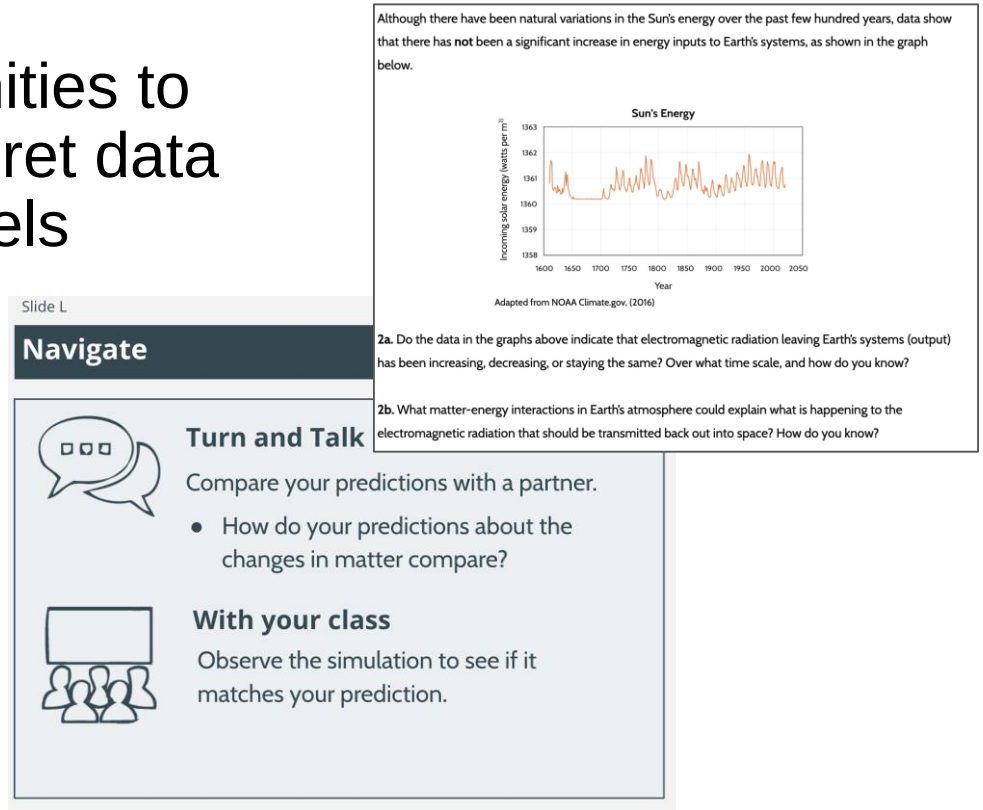
Do not go on to Part 2 without your Jigsaw group!



- Kit materials to support all activities and supplement equipment already in science classes

Student and Teacher Experiences

- Frequent opportunities to analyze and interpret data and evaluate models
- Teacher and student editions organized with prompts to guide reading, analysis, and discussion



Although there have been natural variations in the Sun's energy over the past few hundred years, data show that there has **not** been a significant increase in energy inputs to Earth's systems, as shown in the graph below.

Adapted from NOAA Climate.gov, (2016)

2a. Do the data in the graphs above indicate that electromagnetic radiation leaving Earth's systems (output) has been increasing, decreasing, or staying the same? Over what time scale, and how do you know?

2b. What matter-energy interactions in Earth's atmosphere could explain what is happening to the electromagnetic radiation that should be transmitted back out into space? How do you know?

Slide L

Navigate

Turn and Talk

Compare your predictions with a partner.

- How do your predictions about the changes in matter compare?

With your class

Observe the simulation to see if it matches your prediction.

“Thoughtfully selected phenomena generate the student questions, explanations, and ideas for investigations that motivate learning. Teachers elicit these ideas, coordinate collaboration, support investigations, and guide learning to deep conceptual understanding.”

-OpenSci Ed

Next Steps to Support Teachers

- Ensure ongoing PD to unpack curriculum resources
- Identify additional phenomena, local examples, and connections to our student populations to address teacher concerns raised during pilot and deliberation process
- Provide technical support around the use of the online portal

Ask of the Board

- Approve adoption and purchase of OpenSci Ed: Physics (*Carolina Certified Edition, Carolina Biological Supply Co.*)

Thank you

For more information, please reach out:

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Additional Slides

Not part of presentation

For additional information and/or in response to Board member questions

Community Schools, Thriving Students

OAKLAND UNIFIED SCHOOL DISTRICT

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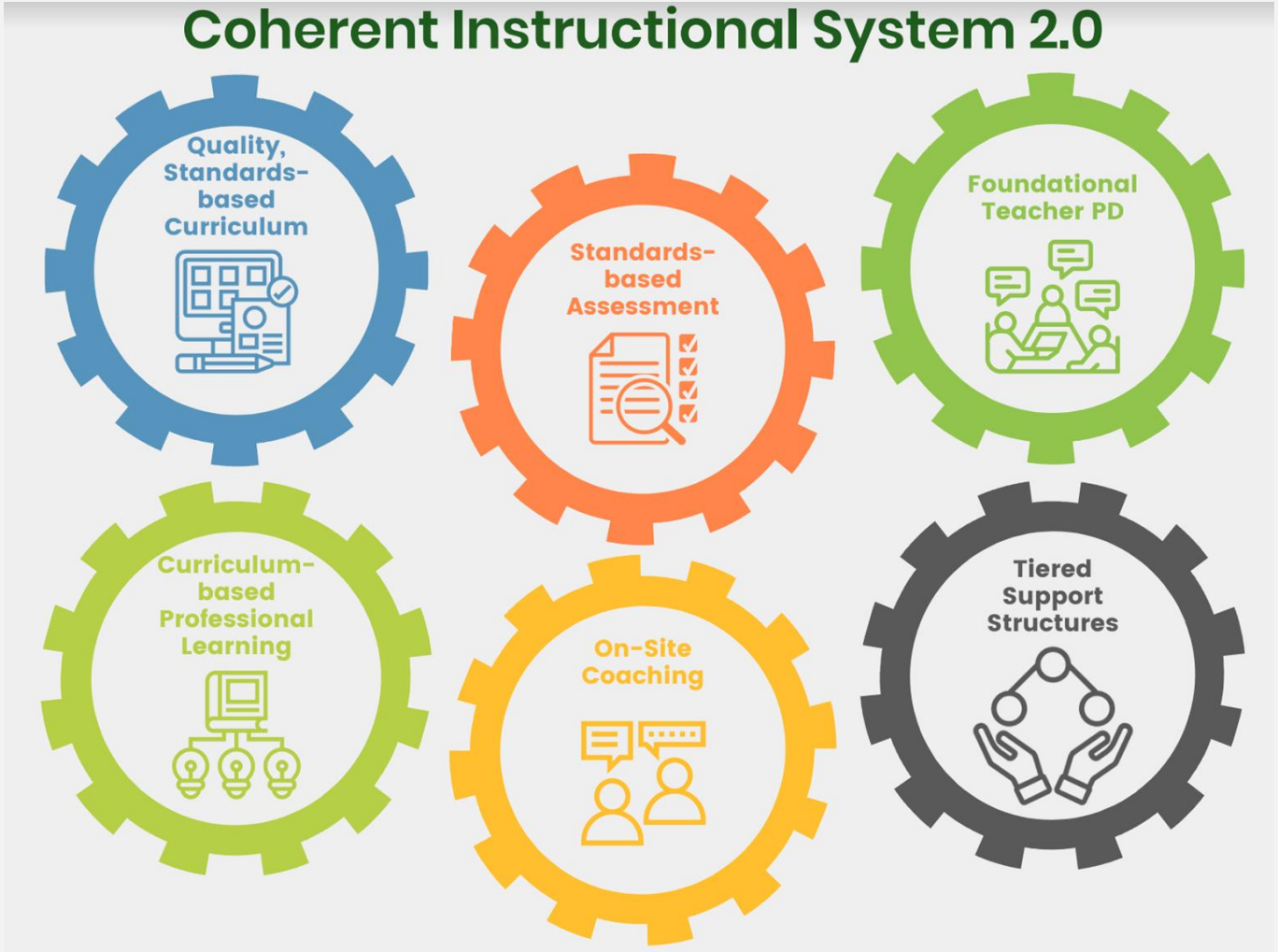
1011 Union Street, Oakland, CA 94607

www.ousd.org @OUSDnews

Coherent Instructional System 2.0



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High School Physics Fiscal Impact:

Years 1-3, 2025-2028 Instructional Materials

Year	Summary of Materials to be Purchased	Costs
2025-26	Student Editions Teacher Editions Digital Resources Complete Unit Kits *(vouchers for kits in progress)* Est. tax + shipping	**$345, 145.36**
2026-27	Kit and consumables refurbishment	**$57, 130.08**
2027-28	Kit and consumables refurbishment	**$57, 130.08**
	TOTAL =	**$459, 405.52**

High School Physics Fiscal Impact:

Years 1-3, 2025-2028 - Professional Learning

Year	Summary of Professional Learning Offerings	Costs
2025-26	Vendor provided professional Learning Standards & Equity Institute Foundational Curriculum Training Monthly 2nd Wednesday Series September & January PD Days	**$32, 000** **(includes $20,000 cost for vendor provided training)**
2026-27	Vendor provided professional Learning Standards & Equity Institute Foundational Curriculum Training Monthly 2nd Wednesday Series September & January PD Days	**$26, 000** **(includes $20,000 cost for vendor provided training)**
2027-28	Vendor provided professional Learning Standards & Equity Institute Foundational Curriculum Training Monthly 2nd Wednesday Series September & January PD Days	**$23, 000** **(includes $20,000 cost for vendor provided training)**
	Cost for direct vendor provided training	**$60, 000**
	OUSD costs for teacher stipends	**$21, 000**
	TOTAL =	**$81, 000**

Science Course Enrollment
(start of AY 24/25)

Class	Sections	Enrollment
Biology:	157	2646
Chemistry:	95	2072
Physics:	72	1389
Total:	**324**	**6107**

includes Gen Ed and SpED self contained classrooms

Science courses grades (MP 4, AY 24/25)