

OER Physics Agendas 2019-2020



oer.guhsd.net/physics

Day 4 Agenda

Next Meeting Date: Apr 20

1. Next "Open" [Curriculum Writing-April 20](#)
2. [OER Team Tasks Request Form](#)
3. Please check out - GUHSD Key Science Strategies:
 - o [Summary Table](#)
 - o [Driving Questions Board](#)
 - o [Question Formulation Technique](#)
 - o [Anchoring Phenomenon](#)
 - o [Collection of Student Talk Strategies](#)
 - o **Please use these links in the lesson plans for an easy reference**
4. Add [CA Physics Framework](#) "bookmarks" to unit resource docs:
 - o [EXAMPLE IS 1](#)
 - o IS 3 - [Energy](#)
 - o IS 4 - [Waves](#)
5. Storylines

- [Overview of storylines planning process](#)
 - o [One-pager template for storylines](#)
- [Phenomena resources](#)
- [Sites with storylines](#) (mostly Biology)
 - o Chemistry storyline exemplar: "[Why do some things get colder \(or hotter\) when they react?](#)"
- Universal Design for Learning (UDL) [Quick Reference](#)

a. Debrief later in the day for feedback?

Unit	PE's & Framework	Names
See what ideas people came up with, by unit, at the Deep Dive in May . Also see the OER Physics Course Pacing .		
Unit 1.1: Forces and Motion May deep dive rough draft/ideas	HS-PS2-1 HS-PS2-2 Framework p. 1160-1164	Don James Sonia
Unit 1.2: Minimizing Collisions May deep dive rough draft/ideas	HS-PS2-3 HS-ETS1-1, 1-4 Framework p. 1165-1166	Stephanie Curtis Jon Johnathon

Unit 3.1: Energy	HS-PS1-8 HS-PS3-2 Framework p. 1193-1196	Energy pictures
Unit 3.2: Energy Conversion Device	HS-PS3-3 HS-ETS1-1, 1-2, 1-3 Framework p. 1197, and 1182-1193	
Unit 2.1: Types of Interactions	HS-PS2-4 HS-PS2-6 Framework p. 1169-1173, and p. 1175-1177	
Unit 2.2: Magnetism & Electricity → Storyline doc <i>the team previously worked on</i>	HS-PS2-5 HS-PS3-5 Framework p. 1173-1175	Don S.
Unit 4: Waves and Electromagnetic Radiation	HS-PS4-1 HS-PS4-2 HS-PS4-3 HS-PS4-4 HS-PS4-5 Framework p. 1199-1206	

6. [Math Prerequisite](#) Discussion

- What topics are covered in IM 1
- [GUHSD Math FAQ](#)

Integrated Math I	Integrated Math II	Integrated Math III
Chapter 1: Functions Chapter 2: Linear Functions Chapter 3: Transformations and Solving Chapter 4: Modeling Two-Variable Data Chapter 5: Sequences Chapter 6: Systems of Equations Chapter 7: Congruence and Coordinate Geometry Chapter 8: Exponential Functions Chapter 9: Inequalities Chapter 10: Functions and Data Chapter 11: Constructions and Closure Link to more details	Chapter 1: Exploring Algebraic and Geometric Relationships Chapter 2: Justification and Similarity Chapter 3: Probability and Trigonometry Chapter 4: Factoring and More Trigonometry Chapter 5: Quadratic Functions Chapter 6: More Right Triangles Chapter 7: Proof and Conditional Probability Chapter 8: Polygons and Circles Chapter 9: Modeling with Functions Chapter 10: Circles and More Chapter 11: Solids Chapter 12: Counting and Closure Link to more details	Chapter 1: Investigations and Functions Chapter 2: Transformations of Parent Graphs Chapter 3: Solving and Inequalities Chapter 4: Normal Distributions and Geometric Modeling Chapter 5: Inverses and Logarithms Chapter 6: Simulating Sampling Variability Chapter 7: Logarithms and Triangles Chapter 8: Polynomials Chapter 9: Trigonometric Functions Chapter 10: Series Chapter 11: Rational Expressions and Three-Variable Systems Chapter 12: Analytic Trigonometry Link to more details

Day 3 Agenda - Nov. 19, 2019

Next Meeting Dates: Mar 9, Apr 20

[December 4 - Probeware Training](#)

2. Build NGSS Storylines for Units:

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3. Breakout groups?

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Unit 2.1: Types of Interactions	HS-PS2-4 HS-PS2-6 Framework p. 1169-1173, and p.	

	1175-1177	
Unit 2.2: Magnetism & Electricity → <i>Storyline doc the team previously worked on</i>	HS-PS2-5 HS-PS3-5 Framework p. 1173-1175	Don S.
Unit 4: Waves and Electromagnetic Radiation	HS-PS4-1 HS-PS4-2 HS-PS4-3 HS-PS4-4 HS-PS4-5 Framework p. 1199-1206	

Day 2 Agenda - Oct 16, 2019

Next Meeting Dates: Nov 19, Mar 9, Apr 20

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Day 1 Agenda - Sep 6, 2019

Next Meeting Dates: Oct 16, Nov 19, Mar 9, Apr 20

6. Welcome and goals for the year
 - a. Build NGSS physics storylines
 - i. Just FYI: Biology [storylines \(science.guhsd.net\)](http://science.guhsd.net)
 1. ECHS, GHHS, WHHS - using [iHub](#) Colorado storylines
 2. GHS, IDEA, MVHS - using [Illinois](#) storylines
 - b. Get input on Chemistry integration (Team Lead will also work on Earth resources)
7. Discussion: Physics ([with Chem integration](#))
 - a. Purpose
 - b. Individual read time
 - c. Discussion: Ideas? Items for consideration?
8. Curriculum review: [The Patterns Approach](#)
 - a. Each pick a unit and skim through it, clicking on a few activities
 - b. Review using the [Science OER Rubric](#)
 - c. **[CER support](#)**
 - d. Please make any brief comments below:

Unit 1	This is an interesting way to set the story of finding relationships within data when we graph the information, but I think that the stuff we use is a bit better or the same. This first unit doesn't really embed the physics standards very well, but does embed the mathematical computation standards as well as the finding patterns CCC. The pendulum experiment sounds interesting to implement in this part of the year, but the link brings you to a calendar instead of the activity. I like the claim, evidence, mathematical model, prediction and confidence with justification. NGSS standards are not clear throughout. We could use this and rework it, but wouldn't be able to use it as is.
Unit 2	Follows NGSS storyline very well. /Requires students to have a good background on using Google Sheets. It took me some time to really understand what the teacher wanted for wording like "coding" I took to mean inserting a calculation in the spreadsheet not writing computer programming code. Also requires a pretty mature mindset to stay engaged and read carefully, following written directions. The engineering component was very well thought out.
Unit 3	Meets 6/8 for student activities, Meets 7/9 for supplements-Meets $\frac{1}{2}$ in the core content, including sources. All doc. Are adaptable but the specific sequences make adaptability more difficult. Includes some scaffolding which is helpful.
Unit 4	This unit dives into the engineering design process via shoe design. The activity looks at cushioning and traction requirements for various types of shoes. Activity includes downloadable templates for student labs. Meets the standards in an engaging way.
Unit 5	Goes into waves. Does a good job at using medical connection to ultrasound. Has students create a plot to visualize the ultrasound based on wave behavior. Cool. Using the cell phone as a hook. The advantages of digital transmission is not clear.
Unit 6	This unit ties in magnetism and electricity to power production. Great overarching theme with a "50 year energy plan". A lot of it ventures into the neighborhood of ESS (renewable energy) and the electricity and magnetism parts of the unit (speakers and guitars) could probably be tailored more towards an ESS approach. Perhaps building a generator directly for a wind turbine and using those concepts to fortify the E&M concepts they incorporate. This unit makes better sense to me as an ESS unit with a dash of physics vs. how it's provided.
Unit 7	This unit covers topics on dark matter, dark energy, gravitational lensing, black holes is mentioned but there are no links to activities or simulations. Must be PBS Passport member to watch NOVA. Phet on Orbits of Sun, moon and earth system is good. Hailey's comet data mining that includes various information such as distance from the sun, velocity and gravitational force between Hailey's comet and the Sun. It is only a 4 day Unit and can go under Types of Interaction, under gravitation. The topics are engaging and modern.
General	NGSS standards are not very well labeled. Which units/activities are aligned to which standards? Where are the three dimensions? Great that there is a phenomenon/engineering project in each unit. Group consensus: Yes, meets requirements on the rubric for OER. Some really good science phenomena and engineering ideas. Not perfect and most teachers

would need to do significant tweaking.

9. Vet and add any GUHSD-written resources from deep dive and summer work
 - a. [Deep Dive shared resources](#)
 - b. [Summer work](#)

Google Docs

Steps for changing ownership

- a. Click link on resource doc
- b. Make Copy of Document
 - i. *If it's a Word Doc, try to Open in a Google Doc. If the formatting does not convert easily, mark it with a **bold (Word doc)** at the end and we will fix it later.

Remove "Copy of" from Title

Copy, Paste, and fill out the [Cover Page](#) if applicable

Add copied document to [OER Physics Unit Folder](#)

Make uer@guhsd.net the "Owner"

10. Build NGSS Storylines for Units:

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