



Physics Adoption Committee

APRIL 23, 2025

Agenda

- ▶ Review Data
- ▶ Determine if we have enough information to decide
- ▶ Next steps



Team Norms

- ▶ Keep an open mind
- ▶ Time for technology breaks
- ▶ Be honest
- ▶ Assume positive intentions
- ▶ Listen for understanding
- ▶ Ask questions



Consensus Process



- ▶ Thumbs Up: I think it's a good decision and will advocate for it.
- ▶ Thumbs Sideways: I am comfortable with the proposal but might want to discuss some minor issues.
- ▶ Thumbs Down: I still need to discuss certain issues and suggest changes that should be made.

Bellevue School District Physics Courses

- ▶ **Physics** – conceptual physics, geared towards access to all and aligned to NGSS
- ▶ AP Physics 1 - Represents the first semester of a year-long algebra-based, college level physics. Alg 2 concurrent or pre-requisite
 - ▶ AP Physics 2 - Represents the second semester of a year long algebra-based, college level physics sequence.
- ▶ AP Physics C (Mechanics) – Represents the first semester of a year-long calculus-based, college level physics. Calculus concurrent or pre-requisite

Why new materials now?

- ▶ Current materials are loosely aligned to Washington State 2003 Standards
- ▶ Adopted text in 2000
- ▶ Developed materials from 2005-2010
- ▶ Next Generation Science Standards are WA state's standards – adopted in 2013
- ▶ WCAS is an NGSS assessment – Spring 2018
- ▶ 11th grade comprehensive science assessment

Overview Adoption Process – Committee Tasks

1. Reviews materials using evaluation criteria
2. **Review feedback data** from students, teachers, community
3. Determines **recommendation** to the Instructional Materials Committee (IMC) – consensus process
4. **Implementation** start following School Board approval to begin district-wide use

Prior Activities

- ▶ 2016 - Physics teachers looking at NGSS aligned resources
- ▶ 2021-22 - One teacher tried out PEER Physics, and recommended use. Not on timeline for adoption
- ▶ 2023-24
 - ▶ Timeline arrived for adoption process
 - ▶ Out of sync order of units
 - ▶ Not enough time for full adoption process (pilot two units, etc)
 - ▶ Agreed on order of units for 24-25
 - ▶ Tried out OpenSciEd Physics (field test unit) and did not recommend continuing.
 - ▶ Developer and a teacher previewed Experience Physics (Savvas) – traditional program, light on NGSS
 - ▶ Returned to consider PEER Physics for Fall 2024 Experimental Use



Timeline *Draft* –

Date	Task
02/26/25	Begin adoption committee orientation, look at NGSS, look at evaluation docs
03/26/25	Use the evaluation docs to review PEER Physics, review data collection plan
04/23/25	Review Teacher and Student Survey Data, review Evaluation data, determine if we have enough evidence to make a recommendation



Data Collection Plan



1. Committee Evaluation Tool
2. Pilot teacher survey
3. Pilot student survey
 - Focus groups
4. Pilot parent feedback
 - Focus parents from pilot classrooms

1. Committee Evaluation

- ▶ NGSS Alignment
 - ▶ Storyline/Phenomenon/Solve Relevant Problems
 - ▶ Student sense-making
 - ▶ Integration of Three Dimensions
- ▶ Assessment
- ▶ Inclusive Educational Practices
- ▶ Instructional Planning and Support

1. Committee Evaluation

- ▶ Read over the summary and let me know if there are additional comments that need to be incorporated.

1. Discussion – Committee work

- ▶ Observations
- ▶ Inferences
- ▶ Major barriers? (red flags)
- ▶ Information to note for implementation

Data Analysis

1. What do I directly observe?

- 91% of students said they figured things out in collaboration with others.

Observation

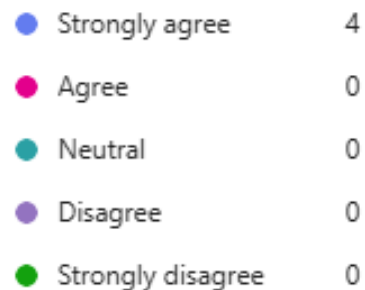
2. What sense do I make from this data?

- Students must do a lot of group work.

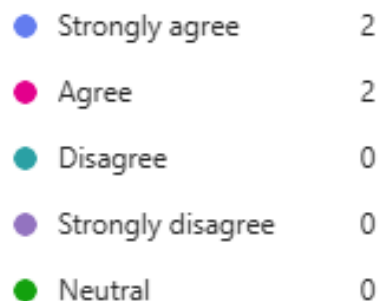
Inference

2. Pilot Teacher Survey (1)

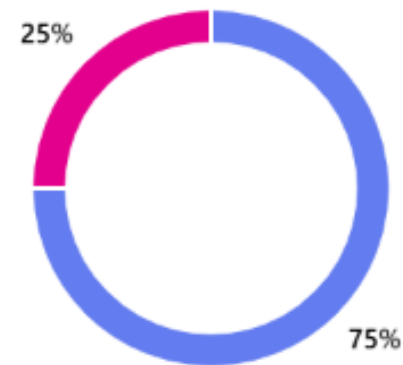
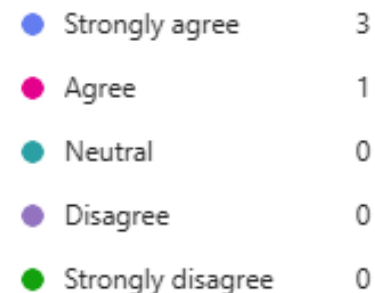
1. The *classroom activities* from PEER Physics helped students understand the physics concepts in the unit.



2. The *electronic tools* from PEER Physics helped students understand the physics concepts in the unit.



3. I knew why students were asked to do what we did in class each day in PEER Physics.



2. Pilot Teacher Survey (2)

4. Learning about physics concepts in PEER Physics made students curious and questions came to mind.

Strongly agree	2
Agree	2
Neutral	0
Disagree	0
Strongly disagree	0



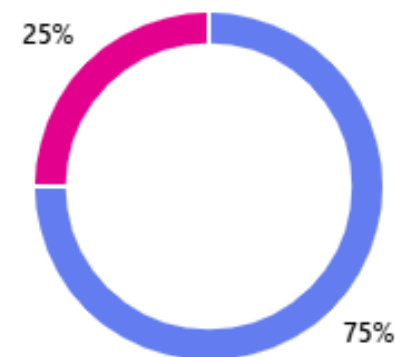
5. The main purpose of our classwork in PEER Physics was to develop an explanation or design a solution for a phenomenon.

Strongly agree	4
Agree	0
Neutral	0
Disagree	0
Strongly disagree	0



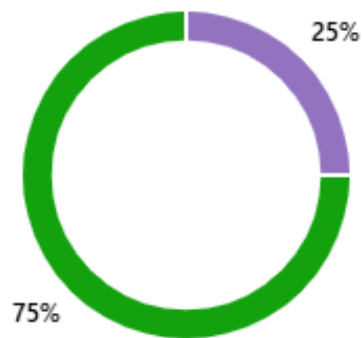
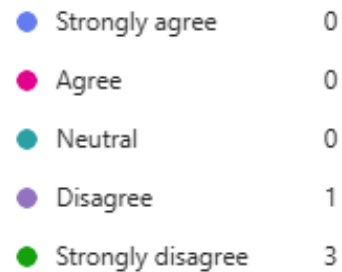
6. The classroom activities in PEER Physics gave students a chance to use what they already know about doing science, science thinking or science knowledge.

Strongly agree	3
Agree	1
Neutral	0
Disagree	0
Strongly disagree	0



2. Pilot Teacher Survey (3)

7. The classroom activities in PEER Physics focused most
ly on memorizing science knowledge.



Engineering and math sections are optional sections that can be added to sections. I have tried a couple math modeling sections and would like to add more the next time I teach it.

Some of the frequency of these practices vary depending on the unit, but throughout the curriculum these practices are used well and purposefully

8. During the PEER Physics unit, how often do you recall doing each of the following science and engineering practices?

Multiple times per week Weekly Every other week Monthly Never

asking questions about science ideas

designing solutions to problems

developing a model to explain a phenomenon

planning and carrying out experiments

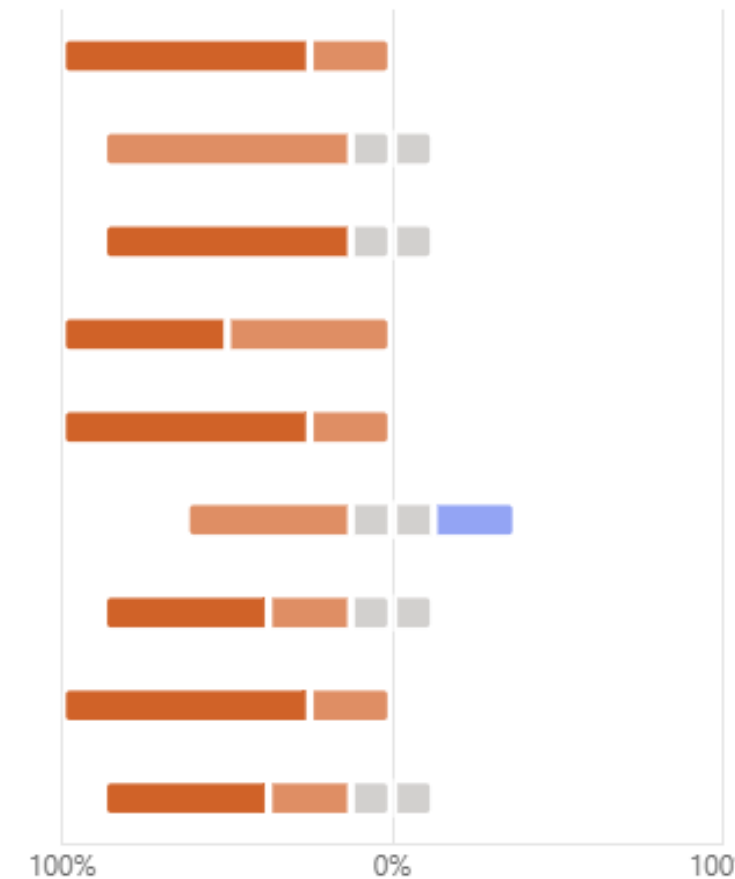
analyzing and interpreting data

using math to understand or explain science ideas

explaining science ideas

supporting and defending a scientific argument using evidence

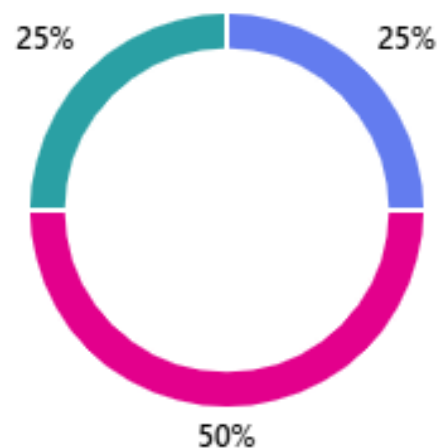
researching and communicating information



2. Pilot Teacher Survey (4)

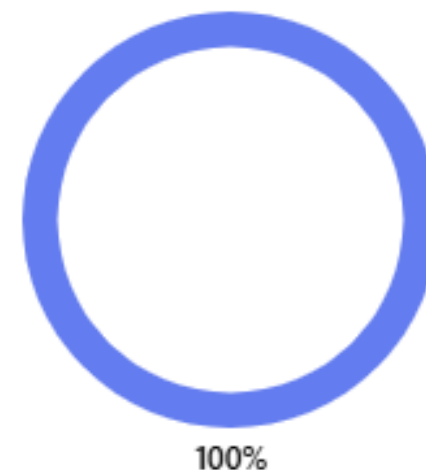
10. Students connected their learning from the physics materials from PEER Physics to their life outside of school.

Strongly agree	1
Agree	2
Neutral	1
Disagree	0
Strongly disagree	0



11. Students figured things out in collaboration with others in the PEER Physics material.

Strongly agree	4
Agree	0
Neutral	0
Disagree	0
Strongly disagree	0



2. Pilot Teacher Survey (5)

Responses

PEER is fantastic. The many hands-on experiments provide bases for MLL students and students with 504s/IEPS to engage and build learning on. The consensus activities (like debates) have shown some of the best conversations about physics topics I have seen. When assessing students and talking with them, the majority have an intuitive, deep understanding of the topic by the end of the unit and are able to use academic vocabulary and apply the principles to new topics. The format also helps students develop skills of working in a group, working through frustration, and other essential aspects of executive functioning.

As a first year teacher, working off of the PEER Physics curriculum has made a lot of sense for me to plan than, for example the Chemistry Master Course. The materials provided are very useful to understand what and where in learning we are at and they also often explain the why.

Students talk a lot in this course - or we try to get them to! This does seem like the best way for them to process their learning so they really do learn the content.

2. Pilot Teacher Survey (6)

The data I have taken on students' reaction to the curriculum is split. A lot of students feel uncomfortable with this curriculum because the teacher is more of a facilitator and doesn't answer questions. I think that sentiment will likely show up in student responses, and (even though it is a negative reaction) should encourage us to move forward with the curriculum. Students need to learn how to evaluate evidence, make claims, reference experiments, and figure things out on their own or with their peers-- this is essential for their future, not just in physics, but all sciences, college, at their jobs, and in life in general.

This is so much better than any other physics curriculum I have seen. Students cannot go through this course without engaging with science.

2. Discussion – Pilot Teacher Survey

- ▶ Observations from the data
- ▶ Inferences from the data
- ▶ Does the data present any major barriers?
- ▶ How does the data inform our implementation planning?

3. Pilot Student Survey (1)

Student Survey Questions	Strongly agree	agree	disagree	strongly disagree	Total % SA/A	Total % D/SA
The <i>classroom activities</i> helped me understand the physics concepts in the unit.	25%	62%	10%	3%	87%	13%
The <i>electronic tools</i> (OneNote pages, simulations) helped me understand the physics concepts in the unit.	12%	69%	17%	2%	81%	19%
I knew <u>why</u> we did what we did in class each day.	21%	49%	21%	8%	70%	29%
Learning about the phenomena in the curriculum made me curious and questions came to mind.	12%	54%	29%	6%	66%	35%
The main purpose of our classwork was to develop an explanation or design a solution for a phenomenon.	17%	66%	14%	2%	83%	16%
The classroom activities gave be a chance to use what I already know about doing science, science thinking or science knowledge.	24%	61%	12%	3%	85%	15%
The classroom activities focused mostly on memorizing science knowledge.	7%	42%	46%	5%	49%	51%

3. Pilot Student Survey (2)

Student Survey Questions	Strongly agree	agree	disagree	strongly disagree	Total % SA/A	Total % D/SA	Not Sure
In the future, I can imagine myself choosing a career related to science or engineering.	14%	20%	19%	20%	34%	39%	27%
What we learned in this unit matters to me personally.	6%	40%	39%	16%	46%	55%	
What we learned in this unit matters to my community.	6%	45%	39%	11%	51%	50%	
I connected my learning from physics class to my life outside of school.	8%	48%	31%	12%	56%	43%	
In this lesson, I figured things out in collaboration with others.	31%	60%	5%	4%	91%	9%	

3. Pilot Student Focus Group (1)

The conversation revolves around the experiences of students using the new Peer Physics curriculum, which emphasizes problem-solving and collaboration. Speaker 1 and Speaker 3 appreciate the hands-on approach, which allows for deeper understanding and application of concepts. They discuss the differences from past biology and chemistry classes, noting the slower pace and more self-directed learning in Peer Physics. Challenges include the lack of immediate feedback and the difficulty of applying learned concepts to test questions. The teachers' flexible assessment methods, including interviews, are seen as beneficial. Both speakers plan to pursue science-related careers, with Speaker 1 aiming for teaching and Speaker 3 considering occupational therapy.

The discussion centered on the new "PEER physics" curriculum, which emphasizes evidence, empowerment, and reasoning. Speakers shared mixed experiences, noting the curriculum's collaborative nature but criticizing the slow pace and lack of immediate answers to questions. They compared it to previous science classes, highlighting the need for more concrete answers and faster progress. The curriculum's focus on critical thinking and social-emotional learning was appreciated, but some felt it hindered traditional science learning. The speakers also discussed the importance of accurate information and the challenges of applying new teaching methods.

3. Pilot Student Focus Group (2)

Positives:

- Hands on
- Evidence based reasoning
- Group work
- Applicable
- Easy to follow
- Satisfaction with figuring it out
- Like the packet

Challenges:

- Discomfort with figuring it out rather than being told
- Too easy
- Too packet focused
- Too slow

3. Discussion – Pilot Students

- ▶ Observations from the data
- ▶ Inferences from the data
- ▶ Does the data present any major barriers?
- ▶ How does the data inform our implementation planning?

4. Parent Feedback (1)

3. What was your overall impression of the instructional material used in Physics this year? (5 stars = Exceptional)

[More details](#)

3.25

Average Rating



Level 5  2

Level 4

Level 3

Level 2  1

Level 1  1



4. Parent Feedback (2)



This instructional model is problematic for certain learners, particularly when instructors fail to provide feedback or assistance after the investigation process. Effective implementation requires adaptable teachers who provide feedback and accommodate different learning styles to ensure students are well-prepared and confident. While the model has value, it may not be suitable for all subjects, such as basic physics, where direct instruction is crucial.

The new curriculum appears similar to the current one but seems more thorough and focused on teaching critical thinking alongside physics concepts. It aims to bring the subject to life for students by helping them understand its practical applications.

4. Discussion – Parent Feedback

- ▶ Observations from the data
- ▶ Inferences from the data
- ▶ Does the data present any major barriers?
- ▶ How does the data inform our implementation planning?

Overall Discussion

- ▶ Observations from the data
- ▶ Inferences from the data
- ▶ Does the data present any major barriers?
- ▶ How does the data inform our implementation planning?



Do we have enough evidence to
make a recommendation?



Consensus Process



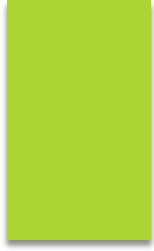
- ▶ Thumbs Up: I think it's a good decision and will advocate for it.
- ▶ Thumbs Sideways: I am comfortable with the proposal but might want to discuss some minor issues.
- ▶ Thumbs Down: I still need to discuss certain issues and suggest changes that should be made.



Next Steps



- ▶ Instructional Materials Committee (IMC) – May
 - ▶ Curriculum developer presents
 - ▶ Consists of representatives from community, central office, teachers
 - ▶ Role of the committee is to review that the process was followed
 - ▶ Supports or doesn't support the recommendation for new materials
- ▶ School Board
 - ▶ IMC presents materials to the Board for approval
 - ▶ Only after Board approval will implementation commence



Thank you!!