



## Elementary Science Program Adoption Process for 12.15.21 NHPS Board of Education Teaching & Learning

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### STRATEGIC PLAN : SY 2020-2024



#### Core Values

We believe...

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| <p><b>1 Equitable opportunities</b> create the foundation necessary for every child to succeed</p>                       | <p><b>3 High expectations</b> and standards are necessary to prepare students for college and career</p>                       |
| <p><b>2 A culture of continuous improvement</b> will ensure that all staff are learners and reflective practitioners</p> | <p><b>4 Collaboration</b> and partnerships with families and the New Haven community will enhance learning and achievement</p> |



#### Mission

To provide all students in New Haven Public Schools with personalized, authentic, and engaging learning experiences through creativity, exploration, innovation, critical thinking, problem-solving, and high quality instruction. To foster a culture of continuous improvement through collaborative partnerships with staff, families, and the New Haven community. To support students' growth and development by utilizing the Whole Child Framework.

#### Vision

Our vision is to be a premier urban school district that ensures access to equitable opportunities and successful outcomes for all students as they prepare for college, career, and life.

### Priority Areas for 2020-2024

<b>1</b>	<b>Academic Learning</b>	<b>2</b>	<b>Culture &amp; Climate</b>
<b>3</b>	<b>Youth &amp; Family Engagement</b>	<b>4</b>	<b>Talented Educators</b>
<b>5</b>	<b>Operational Efficiencies</b>		

# NEED



- **Outdated materials (circa 1999)**
- **Science Kit Center no longer viable**
  - **Move/Employee Issues, Partners**
  - **inconsistency in last few years**
  - **remaining kits out to schools**
- **Need for NGSS standards (2015) aligned,**
- **Need for fixed pacing not rotation to allow for literacy, math, social studies integration**
- **Need for school based materials for school customization.**
- **Groundswell of desire from schools, teachers for a new program**

# Next Generation Science Shifts

## Instruction

- 3 dimensions: Ideas, Practices, CrossCutting Concepts
- 5E Learning Cycle (Engage, Explore, Explain, Elaborate, Evaluate)
- Phenomena/Problem-based experiential Learning
- Students' evidence-based conclusions
- Figure things out, not learn about (sensemaking)
- Academic vocabulary/literacy linked to experiences.
- Discourse!
- Real World Connections/ Relevance, STEM Careers

## Assessment

- Need to Assess NGSS Ideas, Concepts and Practices
- Multi modal assessment
- Track Student Growth in all 3 dimensions
- Allow them to see learning and set goals
- Focus on big ideas, practices over specific words, facts.
- Integrated, performance assessments





# Opportunity: ESSER Funds

- **FUNDS AVAILABLE SPRING 2022**
- **Materials not Staff**
- **Estimate cost for each school to have its own kits and not rotate (4 kits per grade K-5, ~75 classes per grade, \$1200/kit with extra readers/language support = \$ 2.5 million initial cost**
- **~\$230K refurbishment per year**
- (roughly equal to previous total SRC cost per year)



# Program Selection

## Assumptions:

- **New Program to completely replace current materials**
- **Similar time allotment (100 min/week) but materials stay at building**
- **Includes hands on materials, fully aligned to NGSS**
- **Strong supports for multilingual learners, SPED, literacy, math**

## Preliminary examination of programs such as:

- **Amplify**
- **Smithsonian (Carolina)**
- FOSS (would have been in final three, but never replied, and was much lower rated)
- Little Scientists (didn't align to NGSS, no Spanish, small in scope)
- Building Blocks (piloted in 2018, little sense making/NGSS)
- STEM Scopes (piloted in 2018, too technology dependent, not full materials)
- Teach TCI (not NGSS aligned, no multilingual support)
- Savaas/Pearson\* (textbook/optional kit) (low rated)
- McGraw Hill\* (textbook/optional kits) (low rated)
- HMH\* (textbook/optional kits) (low rated)
- National Geographic Exploring Science (textbook) (low rated)





# Program Selection research

Annotated research bibliography, includes peer reviewed research studies on elementary science, other topics:

[https://docs.google.com/document/d/1rBxZz6vQjVdzkgHbmuC7tZ\\_pfdDmBcsk/edit](https://docs.google.com/document/d/1rBxZz6vQjVdzkgHbmuC7tZ_pfdDmBcsk/edit)

Research base on types of science programs most successful in elementary, including extensive LASER i3 study, (Accepted into USED WW Clearinghouse <https://ssec.si.edu/laser-i3> .

EDREPORTS <https://edreports.org/reports?s=science> plus reviews from statewide adoptions in California, Louisiana, Oregon (Amplify strongly rated, FOSS moderate, new Smithsonian not reviewed yet, others all weak on NGSS implementation.)



## Pilot Details: Amplify/Smithsonian

**Schools/Teachers selected for cross district diversity, principal response.**

**Materials sent mid Nov, teachers to finish by end of Jan, keep some student work, allow observation, participate in feedback roundtable**

- **6 Schools : FAME(Columbus) 1S, 3A, 3S, 5A, Clemente 1A, 1S, 3S, 5S, Celentano 1S, 3A, 5A, Beecher 5A, 5S, Barnard 1A, 1A, B Woods, 3A, 3S, 5S**
- **18 teachers: 6 grade 1 Light, 6 grade 3 Motion, 6 grade Stars**
- **3 each grade for Amplify and Smithsonian**
- **6 bilingual/Spanish classes**
- **6 teachers of color**
- **Each grade has one school where 2 grade partners are doing different kits to compare**



# Timeline of Process

Mar- Oct	Science department examines programs, winnows down to final 2
Oct 27	<b>ELEM SCIENCE COMMITTEE: Membership Invited: Science Supervisor &amp; Coach, 3 Principals, 4 Asst Principals, 4 Teachers, Magnet Coach, ELL Supervisor, Literacy Coach, Math Coach, SPED Coach, Parent, Higher Ed</b>
Nov 1	<b>Obtain complete sets of scope and sequence, research, alignment, assessments and full online access from Smithsonian, Amplify</b>
Nov 9	<b><u>COMMITTEE MEETING</u>: overview of process, NGSS , brainstorm of criteria, presentation needs. Review of access to program materials. (Note some also attended program teacher training on Nov 16, 18)</b>
Nov10- Feb 4	<b><u>PILOT: 18 teachers (3 per grade 1,3,5 Smithsonian, 3 per grade 1,3,4 Amplify)</u></b>
Nov 16, 18	<b>Training after school PD for pilot teachers by vendors (recorded)</b>
Nov-Feb	<b>Observing Teachers in Pilot, committee examines materials online</b>
Dec 1, 7	<b>COMMITTEE MEETING Each vendor does a presentation/intro to committee <u>Smithsonian</u>, Amplify</b>

# Timeline of Process

Dec 16	<b>COMMITTEE MEETING: Debrief presentations, Examine/discuss a Unit/Lesson to see NGSS standards alignment, has good lesson flow</b>
Jan 12	<b>COMMITTEE MEETING: Examine Unit/Lesson to see whether it is culturally appropriate/relevant to our students including supports for learners.</b>
late Jan	<b>Pilot Teacher Focus Group and examination of student work</b>
Jan 25	<b>COMMITTEE MEETING: Committee independently scores each vendor, meets to discuss overall fit to criteria</b>
Feb2-4	<b>COMMITTEE MEETING TBD: Consensus on recommendation</b>
Mid Feb	<b>Presentation to Executive Team</b>
Mid Feb	<b>Recommendation &amp; Final Decision</b>
Apr-Jun	<b>Train the Trainer PD (1-2 per school)</b>
Apr-Sep	<b>Purchase Materials and Teacher PD</b>
Jan-June	<b>Middle/High School Textbook/Materials Process</b>



# Committee Presentation Topics/Criteria

## Program foundation:

- Overall philosophy of the program (Research base? Examples of similar districts using program? Data results?)
- Alignment to NGSS standards, practices, etc.

## Overview of program components: physical and virtual:

- Include unit structure/ overview (spiraling), pacing, timing, what comes in kit)
- Technology access (required vs optional, etc..)
- Assessment : Types, modes,

## Teacher Support:

- Online, training, videos
- Ease of Use

## Support for learners:

- Embedded literacy (readers), academic vocabulary
- Math connections
- Special populations accommodations/modifications
- Multi language learner support (Spanish, etc..)
- Cultural relevance to urban population, attention to diversity, equity, inclusion

## Additional Criteria:

- Observations of pilot
- student work
- teacher/student feedback in focus groups
- examination of units/lessons

11

# QUESTIONS?



12