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School District U-46

K-5 Science Curriculum and Resource Adoption for 2024 - 2025

Board of Education Presentation

Presenters

Deborah McMullen, Coordinator of K-12 Science & Planetarium

Celia Banks, Director of Curriculum and Instruction

Brian Tennison, Assistant Superintendent for Teaching and Learning

April 22, 2024



Purpose

This proposal is to request funding for the adoption of a resource and professional development for K-5th grade science. This will support the Science Specialist in providing rigorous three-dimensional learning to all students enrolled in U-46 elementary schools.

Alignment to Strategic Plan

U46 STRATEGIC PLAN AUG 2022 Revised



Student Success

It is our responsibility to ensure all students are engaged in rigorous learning, receive quality core instruction, and can develop the skills they need for better life chances and opportunities. By helping students develop self and peer agency, they will develop a growth mindset as they learn to expand their perspectives.

Effective & Engaged Staff

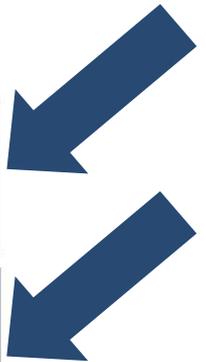
We will value, develop, recruit, and retain a forward-thinking, highly qualified, and diverse workforce. We will establish a robust process for measuring employee engagement to identify and proactively address employee engagement issues.

Culture, Climate & Community

We will engage in meaningful and effective relationships with our students, families and the greater community and will ensure that our schools are welcoming and inviting places for all of our U-46 students and families. We will become a choice district that inspires families to join us.

Excellence, Efficiency & Accountability

We will advocate for and utilize systems and resources that promote fiscal equity, operational excellence, efficiency and accountability. It is our moral imperative to change until all our systems measurably work for all students.



Rationale

- Starting in the **2024-2025 school year**, K-5th grade science will be provided as a **special**.
- A needs assessment of the **K-5 Science Curriculum** revealed the need to include **all Next Generation Science Standards (NGSS)** and find a resource that is NGSS aligned.
- This is especially important in the 3-5 grade band as every standard in NGSS for that grade band will be on the Illinois Science Assessment.

Process

- The district science team who has been working on curriculum and assessment revisions began the work to identify a new resource based on the results of a needs assessment
 - Ten resources were reviewed by the staff of the Office of K-12 Science and Planetarium and the district science team using a rubric to ensure consistency
 - Two finalists were identified
 - Team was expanded to include instructional coaches and the teachers in their buildings to try out the resources
 - Surveys were completed to identify first and second choice
 - STEMscopes was selected for resource adoption
- Tentative Agreement was ratified into a contract including the decision to make science a “special”, taught by a science specialist

Team

District Science Team Members who worked on K-5 Science Curriculum and Resources Adoption

<u>Teacher Name</u>	<u>Teaching Assignment</u>	<u>School</u>
Charity Dilberti	6th Grade 2 Way DL	Century Oaks
Theresa Pietrusiak	6th Grade GE	Washington
Julio Martinez Suarez	KDG 1 Way DL	Coleman
Karla Matus	KDG 1 Way DL	Lincoln
Becky Mulligan	6th Grade/ Computers	Sycamore Trails/Abbott
Irene Osario	6th Grade 2 Way DL	Otter Creek
Peggy Hernandez	K-12 Planetarium Teacher	Districtwide
Heather Fellows	Director for Professional Development	Districtwide
Carolyn Rodgers	8th Grade Science (Gifted)	Eastview
Sara Henry	K-6 Rigor/ Equity Coach	Willard
Michele Seyller	K-6 Rigor/ Equity Coach	Channing
Vince Fosco	K-12 District Science Coach	Districtwide

District Science Team

- 25 members from across the district, grades K-12
- General education, Special Education, English Language Learners, and Dual Language
- The teachers were organized into grade band teams. The grade band groupings were k-2, 3-5, 6-8, high school, and Advanced Placement.
- Worked six weeks on writing/revising the common assessments, two weeks providing feedback on the work of a different team and the final two weeks using the feedback to make final edits.

Procedures and Timeline

SY 2019-2020	<ul style="list-style-type: none">● K-12 gap analysis completed● Call to Committee application process identified district science team
SY 2020-2021	<ul style="list-style-type: none">● District science team participated in 12 hours of Next Generation Science Standards and writing 3D assessments professional development
SY 2021- 2022	<ul style="list-style-type: none">● Revised K-5 science common assessments based on teacher feedback collected
SY 2022-2023	<ul style="list-style-type: none">● Continued revision of the K-5 science common assessments based on teacher feedback collected● K-5 science curriculum revised● Resources were identified to review
SY 2023-24	<ul style="list-style-type: none">● Gap analysis created in 2019 was used to update the K-5 science curriculum● All identified resources were vetted using a rubric developed by the Office of K-12 Science & Planetarium Staff● Two resource finalists were selected and shared widely across elementary schools● Final selection was nearly unanimous

Proposal Recommendation

The Office of K-12 Science and Planetarium recommends the approval of the curriculum revisions to K-5 Science to support the implementation of science as a “Special”.

- Three units (**Life, Physical, Earth and Space**); a unit will be taught and assessed within each trimester
- K-12 curriculum scope and sequence referenced to ensure alignment
- Supports student success on the Illinois Science Assessment
 - It has been revised and includes all standards in the 3-5 grade band

Professional development will be needed for our science specialist that is ongoing and job embedded.

Additional storage for materials and supplies for transporting materials to classrooms will also be needed.

Recommended Resource

The Office of K-12 Science and Planetarium in collaboration with the district science team recommends **STEMscopes** as the curricular resource to support our science specialists in the implementation of the K-5 Science Curriculum.

- Begins with a phenomenon, provides an inquiry-based storyline to support students' sense making and provide resources for assessment and feedback
- 5E learning model is at the core of instruction, emphasizing hands-on, inquiry-based learning using the provided hands-on kits
- Integrates real-world science and engineering problems
- Includes Intervention and Acceleration (I + A)



Recommended Resource

- Provides grade level reading resources.
- **STEMscopias** will be made available to each classroom.
- Scored very high in the area of gender, ethnic-cultural bias and other stereotyping.
- Available in both English and Spanish.
- Collects student evidence in a way that makes providing feedback specific and timely.
- Provides choices for how a student could show evidence of mastery.
- The culminating activity for each unit are Claim, Evidence and Reasoning assessments that lend themselves to academic teaming and accessing each student's progress.



Recommended Supplementary Materials

Mystery Science (Discovery Education) will also be purchased to fill in gaps as a supplement.

- Kindergarten will not have access to this supplement
- Most needed in 3rd and 4th grades

Additional supplies that will be needed for elementary science include, but are not limited to, the following:

- Storage Cabinets with Locks
- Carts
- Tote Trays
- Various Office Supplies

Recommendations for Implementation

School Year	
SY 2023-24	<ul style="list-style-type: none">● Purchase and distribute materials● Train elementary science specialists
SY 2024-25	<ul style="list-style-type: none">● Implement new curriculum and resources● Job embedded support of elementary science specialists● Utilize common assessment data to support instruction and provide PD● Offer summer PD for elementary science specialists
SY 2025-26	<ul style="list-style-type: none">● Monitor the implementation of curriculum and resource utilization● Job embedded support of elementary science specialists● Utilize common assessment data to support instruction and provide PD● Offer summer PD for elementary science specialists

Cost

Item	# of Years of Access	Quantity	Unit Cost	Total Cost
STEMscopes (see quote for details)	6 years			\$5,295,700.86
Mystery Science from Discovery Education	6 years			\$334,800.00
STEMscopes Professional Development	3 years			\$178,000.00
Other Estimated Costs Carts, Portable containers/storage units				\$67,000.00
Total				\$5,875,500.86

Cost

-Estimated Annual Cost of Consumables

- Consumable workbooks are included in the bid
- Consumable kit replacement \$250.00 per grade level x 6 grades x 40 schools = approximately \$60,000.00 annually

-Estimated Per-Pupil Cost (14,382 pupils) = \$385.23

-Estimated Per-Pupil Cost Per Year = \$4.17

Professional Development

STEMscopes

- Early learner play-based PD for Kindergarten
- 1st-5th Platform
- Assessment
- Virtual Check In
- Office Hours
- New Hires (after August) virtual check in
- Advanced Science Inquiry

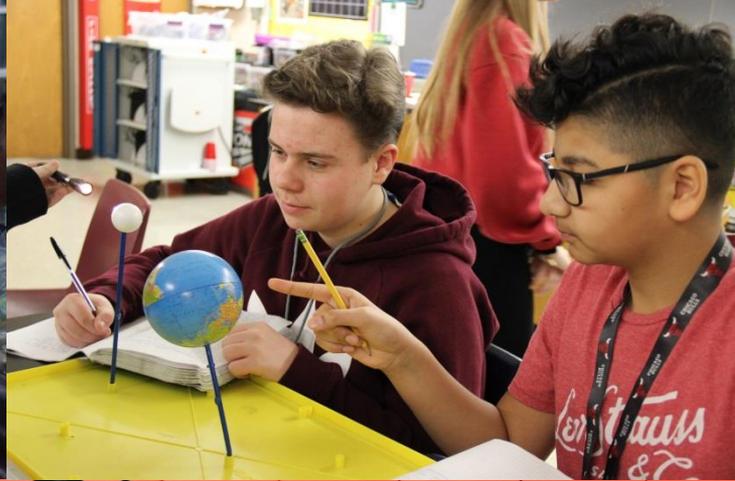
Professional Development

Office of K-12 Science and Planetarium

- Elementary science specialists
- NGSS Overview
- Instructional Strategies for
 - Maximizing extended time
 - Bridging gaps in time
- How to plan and assess inquiry instruction
- Schedule support
- 6th Grade

Plans for the Evaluation of Change

The Office of K-12 Science and Planetarium has a very strong process for using common assessment data to analyze the impact of professional development, resource utilization, and implementation of the K-5th grade science curriculum and curricular resources. The Illinois Science Assessment results will also be used to measure achievement in science.



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