WRITING GRANTS

INTRODUCTION

Incorporating digital microscopes into a grant or writing a specific grant for digital microscopes.

- MicroSight digital microscopes are an effective tool that can incorporate technology into the science curriculum. This is essential in today's world as much of the future workforce will revolve around STEM occupations. Often funding limits the addition of these types of resources. A way to access funding is through grants – national, state, science organizations, district mini-grants, etc. To include the use of MicroSight digital microscopes in grants, we have provided some information and thoughts that might help you through the process.

ABSTRACT

The project abstract should present a concise summary of the project. It should be no longer than a page. The specific grant you are seeking will tell you precisely what to include in this portion.

General example:

The (name of school or organization) is seeking a grant to better integrate technology into the science curriculum/STEM program with the objective of engaging students in a higher level of critical literacy as well as prepare them for STEM occupations that are prevalent in today's workforce. MicroSight digital microscopes will be an integral part of this project as a vehicle to enhance students' critical thinking. With the use of digital microscopes, students will develop the ability to engage in higher level thinking and problem solving as well as to become collaborators in the process to gain knowledge. (possible research statement). Funding in the amount of _____ is requested for the purchase of MicroSight digital microscopes, stands, ancillary materials and laptops.

PURPOSE/RATIONALE

No more than one page. Give sound/logical reasons MicroSight digital microscopes are needed to enhance the literacy environment.

General example:

21st century literacy involves the development of curriculum that engages students in higher levels of critical thinking. Deeper thinking in the literacy setting allows students to analyze, question, collaborate and problem solve. Opportunities for students to develop these skills are a focus of science/STEM curriculum in schools across the nation. The integration of science and technology provides the framework for students to prepare themselves for real life experiences in both personal and professional environments.

A vehicle to enhance the science and technology connection is the MicroSight hand-held digital microscope. Unlike the traditional microscope, the digital microscope uses a USB connection with computers and Chromebooks to project the images being observed. This results in a higher level of engagement for the students in both whole class and small group settings.

The integration of technology with digital microscopes includes opportunities for increased hands-on activities, collaboration, and interactivity among the learners. Interactivity among student groups is heightened when students use the software associated with the digital microscopes to capture digital still and motion video of their observations. Having continued access to their images provides a higher level of sustainability of the subject being studied. The traditional science tools do not offer the same accessibility.

The digital microscope is a technological instrument that enhances curiosity which motivates and engages learners to become critical thinkers and problem solvers. This, in turn, prepares them for real world life.

STATEMENT OF NEED

What are the needs of your specific educational environment? Provide specifics for your district, school, classroom, etc. Prioritize the academic but describe sociological, economical, emotional, and/or cultural issues as they pertain to the purpose of the grant. It is important to include why this grant request will work more effectively than the current practices in the district/school.

Guidelines:

- Use clear and concise statements supported by evidence – qualitative and/or quantitative - on why the project needs to be undertaken.
- Don't editorialize – state facts.
- Base on rational terms – not emotional appeals.
- Target the local population for which the needs occur. *Explanation:* If this need is a national problem provide evidence that it is a local one as well.
- Confirm that data used is current, not out of date.

HOW THEY (DIGITAL MICROSCOPES) WILL BE USED

(specific to the needs statement)

- Integrate science and technology in the classroom to ensure students' awareness of the connectivity in today's world.
- Implement inquiry based instruction across grade levels.
- Enhance learning environment and increase opportunities for authentic hands on experiences in science.
- Increase viewing of objects in whole class and small group settings.
- To engage students in higher levels of collaboration and problem solving in the content of science.

EXPECTED OUTCOMES

(suggestions and/or based on needs and goal statements)

- Integration of science and technology. Results in enhanced student processes and products.
- Increased opportunities for authentic hands-on experiences.
- Increased student collaboration which enhances critical thinking and problem solving.
- Improved attitude toward science and STEM subjects and occupations.
- (Others as they apply to the specific needs and goals of your grant proposal)

HOW WILL YOU MEASURE THIS?

- Federal/State standardized or criteria based assessments
- Ongoing observations of student engagement with science and the digital microscopes
- Developed Products
- Learning Logs
- Portfolios
- Etc.

SAMPLE BUDGET

Include in the budget all expenses for your project, including necessary training costs. You may want to include a brief narrative of expenses along with a table of individual cost components.

General example:

The budget includes funds for five MicroSight digital microscopes per grade level (3-5) to be shared by the classrooms at each grade level. Also included are three new laptops per grade level (3-5) to enhance small group collaboration and engagement.

Item	Price	Quantity	Total
1.3 MicroSight (5 per grade levels 3-5)	**$199**	**15**	**$2,985.00**
Metal Z Stands (5 per grade levels 3-5)	**$39**	**15**	**$585.00**
HP Pavilion 15.6" 1080 Touchscreen Laptop (3 per grade levels 3-5)	**$500**	**9**	**$4500.00**
Mega Specimen Observation Kit (1 per teacher at each grade levels 3-5)	**$129**	**12**	**$1548.00**
			Total: $9618.00

NGSS Standards can be supported by the use of the digital microscope in this project. Following is a sampling by grade level involving inquiry. Specific standards will apply to the unit being studied.

KINDERGARTEN – SCIENCE AND ENGINEERING PRACTICES

Analyzing and Interpreting Data

- Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. **(K-LS1-1)**

Planning and Carrying Out Investigations

- Make observations (firsthand or from media) to collect data that can be used to make comparisons. **(K-PS3-1)**

1ST GRADE – SCIENCE AND ENGINEERING PRACTICES

Constructing Explanations and Designing Solutions

- Use materials to design a device that solves a specific problem or a solution to a specific problem. **(1-LS1-1)**

2ND GRADE – SCIENCE AND ENGINEERING PRACTICES

Planning and Carrying out Investigations

- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. **(2-PS1-1, 2-LS2-1)**
- Make observations (firsthand or from media) to collect data which can be used to make comparisons. **(2-LS4-1)**

3RD GRADE – SCIENCE AND ENGINEERING PRACTICES

Analyzing and Interpreting Data

- Analyze and interpret data to make sense of phenomena using logical reasoning. **(3-LS4-1, 3- LS3-1)**

Developing and Using Models

- Develop models to describe phenomena. **(3-LS1-1)**

4TH GRADE – SCIENCE AND ENGINEERING PRACTICES

Engaging in Argument from Evidence

- Construct an argument with evidence, data, and /or model. **(4-LS1-1)**

Constructing Explanations and Designing Solutions

- Identify the evidence that supports particular points in an explanation. **(4-ESS1-1)**

5TH GRADE – SCIENCE AND ENGINEERING PRACTICES

Planning and Carrying out Investigations

- Make observations and measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon. **(5-PS1-3)**

Developing and Using Models

- Develop a model to describe phenomena. **(5-LS2-1)**

MIDDLE SCHOOL – SCIENCE AND ENGINEERING PRACTICES

Developing and Using Models

- Develop a model to predict and/or describe phenomena. **(MS-PS1-1, MS-PS1-4)**
- Develop and use a model to describe phenomena. **(MS-LS1-2)**
- Develop a model to describe unobservable mechanisms. **(MS-ESS2-4)**

Obtaining, Evaluating, and Communicating Information

- Gather, read, and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence. **(MS-PS1-3)**

Analyzing and Interpreting Data

- Analyze and interpret data to determine similarities and differences in findings. **(MS-PS1-2)**

Constructing Explanations and Designing Solutions

- Undertake a design project, engaging in the design cycle to construct and /or implement a solution that meets specific design criteria and constraints. **(MS-PS1-6)**
- Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future. **(MS-LS1-5)**

Planning and Carrying Out Investigations

- Conduct an investigation to produce data to serve as the basis for evidence that meet the goals of an investigation. **(MS-LS1-1)**

Engaging in Argument from Evidence

- Use an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem. **(MS-LS1-4)**

Asking questions and Defining Problems

- Ask questions to identify and clarify evidence of an argument. **(MS-ESS3-5)**

HELPFUL LINKS

Tips for successful grant proposals

- https://blog.eie.org/top-tips-for-getting-and-writing-a-stem-grant
- http://www.dreambox.com/blog/writing-winning-stem-grant-guide
- https://edudownloads.azureedge.net/msdownloads/Microsoft_STEM_Grant_White_Paper_04102018.pdf
- https://mhanys.org/wp-content/uploads/2018/12/Grant-Proposal-Developing-a-Strong-Need-Statement-1.pdf
- http://www.csun.edu/~sk287035/coursework/610/grant%20proposal.pdf

Digital Microscopes: Enhancing Collaboration and Engagement in Science Classrooms with Information Technologies

- https://www.citejournal.org/volume-7/issue-4-07/science/digital-microscopes-enhancing-collaboration-and-engagement-in-science-classrooms-with-information-technologies/

Why is STEM Important? Why Do We Keep Talking About It?

- https://www.idtech.com/blog/why-is-stem-important

How Do American Students Compare to Their International Peers?

- https://www.theatlantic.com/education/archive/2016/12/how-do-american-students-compare-to-their-international-peers/509834/

There's one big problem that's causing the US to fall behind in math and science

- https://www.businessinsider.com/americans-lag-behind-in-science-2015-12

SOUTHERN SCIENCE SUPPLY

www.southernsciencesupply.com

LET US KNOW HOW WE CAN HELP

TO BRING MICROSCOPES INTO YOUR CLASSROOMS

For questions, ideas or any additional indformation, please reach out to us. We pride ourselves on supporting you 110%.

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