



Board Meeting Date: 4/8/2024

Title: Programming Update for K-5 STEAM and 9-12 EVP

Type: Discussion

Presenter(s): Dr. Randy Smasal, Assistant Superintendent; Jody De St Hubert, Director of Teaching and Learning; Steven Cullison, EVP Coordinator; Mark Carlson, Curriculum Coordinator; Cara Rieckenberg, Highlands Elementary School Principal; and Dr. Ann Marie Thomas, STEM Consultant with Lego

Description: Two program updates provided in this report speak to progress on Strategic Initiative A. Advancement of Excellence, Growth and Readiness. The first subpart of this initiative includes the design and delivery of curriculum, instruction and assessment focused on content rigor, critical thinking, student engagement and continuous improvement to assure academic achievement and student growth. The second subpart is to provide a coherent and differentiated educational experience that effectively engages and appropriately challenges every student academically. The report provides data and background to show how K-5 STEAM programming and the Edina Virtual Pathway Program are enhancing this strategic initiative across the district.

Recommendation: No recommendation is being made at this time. This presentation is an informational update for the board.

Desired Outcome(s) from the Board: Please bring forth questions you have for the presenters.

Attachment(s):

- See attached report

The following board update report is organized into two sections: elementary STEAM (Science, Technology, Engineering, Art and Mathematics) programming and Edina Virtual Pathway (EVP).

STEAM Update

The STEAM update includes the following sections:

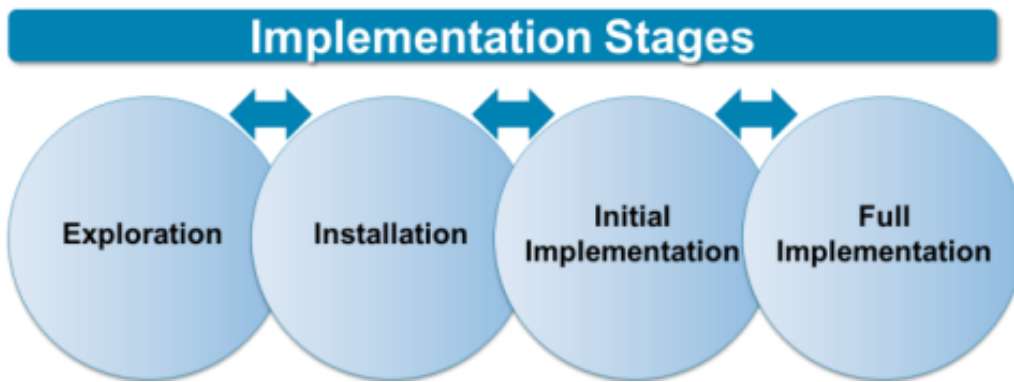
- Elementary STEAM Design Team Membership
- Implementation Science
- EPS STEAM Programming Model
- STEAM Cornerstone Project Development
- Timeline and Next Steps
- Budget Considerations

STEAM Design Team Membership

Role	Member
Classroom Teachers	Allison Knoph, Zach Prowell, Jeremy Kigin, Caitlin Bickel, Bryanna Carlson, Marissa Friedrich, Molly O'Keefe, Rebecca Huberty
Media Specialists	Krista Winkel, Ashley Krohn, Laurie Holland, Elizabeth Ortiz Perez, Lynnea West
Specialist Teachers	Zachary Baker, Jenna Courtney, Leanne French Amara, Shandra Prowell
Teaching and Learning Staff	Mark Carlson, Jamie Hawkinson, Matt Flugum, Deb Richards
Administration	Dr. Randy Smasal, Dr. Cara Rieckenberg, Jody De St Hubert
STEAM Consultant	Dr. AnnMarie Thomas

Implementation Science

As we engage in continuous improvement in our programming in Edina Public Schools (EPS) we use Implementation Science to inform our review process and ensure success with any change. Implementation Science helps to effectively translate proven educational practices into real classroom application, considering the specific context of each school and district. As we have engaged in the elementary STEAM review, we have followed the Implementation Science phases.



Exploration

During the Exploration phase, we first pulled together a design team of administrators, Teaching and Learning staff and teachers from classrooms, media and other specialist areas. The team explored many options and examined what other STEAM programming looked like across the country. The input of all the different stakeholders was very helpful as we worked towards a programming model that would be a good fit for Edina and provide equitable access to all students across all buildings.

Installation - STEAM Programming Model

As part of the process of designing STEAM programming the team wanted to make sure that the new model was advancing students towards our Portrait of a Well-Rounded Edina Graduate (Appendix I). To help ensure this, the design team focused on four key concepts for STEAM work: Inquiry, Authenticity, Integration, and Professional Partnerships.

Finally, the team agreed on three aspects needed for a strong STEAM program for EPS students.

1 - A continued strong core base in literacy and numeracy

- It is critical that all students receive a strong core instructional base in literacy and numeracy. STEAM programming will not replace direct instruction in these areas but will provide an opportunity for students to apply their literacy and numeracy skills through integration with other subjects in authentic ways.

2 - Consistency across all buildings through a universal grade level STEAM project

- Every grade level will have a STEAM Cornerstone Project that will be the same at each school to ensure all students will have equitable access to this project
- The Cornerstone Projects are in development by Edina teachers for Edina teachers. The projects focus on four key concepts: Inquiry, Authenticity, Integration and Professional Partnerships (Appendix II).
- These Cornerstone Projects must be accessible to all students.

3 - Each building will develop additional STEAM projects based on our adopted standards and the four key concepts of Inquiry, Authenticity, Integration and Professional Partnerships in order to best leverage their unique sites and resources.

- EPS will have consistency around the Cornerstone Projects and the adopted curricular resource, Mystery Science, that has been approved through the curriculum review cycle.
- Each building will begin to create their own additional STEAM lessons centered around a theme by incorporating aspects of the four key concepts (inquiry, authenticity, integration and professional partnerships) to help students access other curricular areas and apply literacy and numeracy. This will be a guided and supported process as part of the STEAM review.

Through this model, we have a strong core base of literacy and numeracy, consistent accessible STEAM Cornerstone projects and additional site developed STEAM projects aligned to standards and designed to foster development of skills identified in the Portrait of a Well-Rounded Edina Graduate.

Installation - STEAM Cornerstone Project Development

In the fall of 2023, the STEAM Design Team decided we needed to prioritize the creation of Cornerstone Projects at each grade level 3-5. To accomplish this task a smaller group of classroom teachers explored ideas from the larger group and drafted concepts into actionable structured lessons that could be delivered by teachers in the classroom.

This work is complex and requires teachers to be able to create something that is accessible to all of their colleagues. These projects needed to be explicit enough such that EPS can expect the delivery of the project to be consistent throughout the elementary schools. As part of this process the leadership team developed a rubric and a checklist to help teams develop these cornerstone projects. The rubric provided project design teams with feedback on the depth of implementation of the four key concepts: Inquiry, Authenticity, Integration and Professional Partnerships. In addition, a checklist was developed to ensure the product that was created could be delivered by all teachers.

Each of these projects is rooted in Mystery Science lessons. The Mystery Science resource provides a foundation to build from and opportunity to integrate multiple standards across multiple content areas. The cornerstone projects range in length from 10 and 14 lessons and will each center around a particular theme. The 5th grade team selected a theme related to Space. The 4th grade team selected a topic of Renewable Energy and the 3rd grade team is advancing work around the theme of Life Cycle. These teams begin initial implementation during the 24-25 school year. Initial

implementation means that some teachers will be actively piloting the projects, with attention to providing feedback and gathering data for continuous improvement of the projects prior to full implementation. 5th grade is further along in the lesson development and thus all 5th grade teachers will be participating in this initial implementation phase with a lens that they are closer to full implementation.

Each project team has met with our consultant Dr. Ann Marie Thomas to help with the development process. Dr. Thomas has been working with EPS through the exploration phase, has met with our STEAM leadership team and has a deep understanding of the type of Marquee STEAM programming EPS is developing. Her design expertise at the university level and as a consultant has been invaluable to each of the project teams in their development work.

Timeline and Next Steps for Cornerstone Projects

The timeline for the implementation of STEAM Programming has been impacted by the newly enacted READ Act by the Minnesota Legislature. This act has a significant impact on the capacity of our teachers to complete this work and actively engage in training and support for implementation. As we move towards full implementation of STEAM at the K-5 level, we still have several steps we will need to complete to ensure a successful implementation. This includes the language translation of cornerstone projects to French and Spanish. Below is a timeline indicating the next steps and the projected year in which they will occur.

Tasks	24-25	25-26	26-27	27-28
Initial Implementation 3-5 Cornerstone Projects				
PD for 3-5 teachers to support implementation				
Building level STEAM lesson development				
Full Implementation of 3-5 Programming				
Continued refinement and improvement 3-5				
Development of K-2 Cornerstone Projects				
Early Implementation of K-2 Cornerstone Projects				
PD for K-2 Teachers to support implementation				
Continued refinement and improvement K-2				
Full Implementation				

When fully implemented, all classrooms will have a Cornerstone Marquee STEAM Project that will be consistently applied across all grade levels in the appropriate language for the classroom. Teacher teams within buildings will be applying the four key concepts of Edina Marquee STEAM programming to develop lessons using adopted materials and we will continue to have a consistent foundation of core instruction in

literacy and numeracy using best practices with the opportunity to apply these skills in STEAM lessons and cornerstone projects.

Building Level STEAM Lesson Development:

This aspect of the STEAM review will enter into the exploration phase during the fall of the 2025-2026 school year. A key step in exploration is to identify needs, resources and assets within each site community. This layer of STEAM will be an exciting component for individual buildings. It is also critical that we wait to fully engage in this aspect of the STEAM review until staff has engaged in professional development on the 3-5 Cornerstone Projects. This is to ensure a deep understanding of both Mystery Science as a consistent resource and the Edina 4 Key Concepts of STEAM. When both leadership and staff have these understandings then they will be better able to leverage unique site resources while maintaining a consistency in STEAM instructional practices.

Budget Considerations:

A critical component to review during exploration is financial capacity. During the exploration phase of STEAM Cornerstone Project development the following were determined to be costs that would be incurred:

- Expert consultation
- Design team compensation
- Project development compensation
- Material costs
- Partnership costs

Estimated costs over a three year period of time for Cornerstone Project development in grades 3 through 5 from 2022 to 2025 are:

- Expert consultation: Estimated Total - \$12,000
- Design team compensation: Estimated Total - \$8,000
 - Substitute Teachers for Full Day Sessions: \$4,000
 - Additional Meeting Time Outside of Contracted Day: \$4,000
- Project development compensation: Estimated Total - \$12,000
 - STEAM Project writing compensations: \$12,000
- Estimated additional costs for the development of K-2 Cornerstone Projects - \$50,000-\$60,000
- STEAM material costs: This is dependent on the Cornerstone Projects themselves, so this line item is under development and is being created within the Teaching and Learning capital budget. With capital budget changes in 2023-24 and 2024-25, the shift to full implementation in 2025-26 not only supports added time for professional development, but also added time for responsible fiscal planning.
- Partnership cost:

- This is also under development for Cornerstone Projects in 3rd and 4th grade.
 - EdFund has been a critical partner in supporting the 5th grade Space Cornerstone Project costs and will continue to do so into the future.
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EVP Background Information

EVP, like all schools in the district, exists to support the district's Mission and Vision and to further its Strategic Plan. The program uniquely contributes by providing instruction in a different setting and different modality than in-person schools, resulting in:

- Opportunities to advance critical thinking and student engagement in order to appropriately challenge every student (Strategy A.1).
- A differentiated educational experience (Strategy A.2).
- A learning environment that supports equity by eliminating structural barriers to success (Strategy B.3).
- Development of skills for students for healthy lifestyles including living effectively with technology and assured access to wellness programs (Strategy C.3).
- An environment that is conducive to learning (Strategy C.4).
- Responsiveness to enrollment trends while retaining current students (Strategy D.5).
- Strong financial stewardship through careful spending and student retention (Strategy E.5).

EVP serves high school students who can be divided into two groups: comprehensive (full-time online students) and supplemental (EHS students taking one or more online classes alongside their in-person classes). Families of comprehensive students select online learning for a variety of reasons including scheduling flexibility and a strong desire to participate in a rigorous Edina Curriculum experience. Supplemental students predominantly select online classes for scheduling flexibility.

Success Metrics

A number of metrics have been identified in order to evaluate the degree to which the Edina Virtual Pathway is providing a rigorous and engaging learning experience.

1. Retention of learners as monitored through Enrollment patterns.
2. Academic achievement measured using grades, graduation rates, FastBridge assessments, and MCAs grades
3. Satisfaction of stakeholders including students, families, and staff.

4. Fiscal responsibility.

These indicators may be viewed as minimum requirements for success and continued viability of EVP; however, the goal is to exceed these expectations and to operate one of the most innovative and rigorous online programs in Minnesota.

Enrollment

The secondary level has averaged 67 full-time (comprehensive students) this year, nearly double the rate of enrollment for 22-23. Of the 77 current comprehensive EVP students:

- 20 returned from the previous year
- 45 attended at EHS, South View or Valley View last year
- 21 enrolled directly to EVP
- 7 are Edina residents who were not attending EPS until enrolling with EVP
- 56 are open-enrolled

This year, 722 EHS students have enrolled in an EVP course as a supplement to their in-person education, roughly a 40% increase over 2022-2023.

These numbers demonstrate a growing demand for online learning in Edina among high school-aged students, and the value of offering an in-house option from an enrollment standpoint.

Academic Measures

Grades

Students achieving passing grades in courses will have demonstrated proficiency in the associated graduation standards.

Grades:

- 2022-2023
 - Passing grades S1: 85% ; Passing grades S2: 95%
- 2023-2024
 - Passing grades S1: 93%; Passing grades S2: (in progress)

Graduation Rates

EVP's reported graduation rate for Spring of 2023 was 62% (The N value of students has been excluded due to small cell size and being potentially identifiable.)

For 2024, EVP has 29 seniors. EVP's staff coordinates with students and families to ensure that parents/guardians are up-to-date regarding their child's progress in their

classes and their status relative to graduation. Academic support for students is on-going.

*MCA*s

An important area of growth for EVP at the secondary level is to increase participation rates in standardized testing (a challenge faced by many online programs throughout the state). Rates of participation in the MCA test in 2023 were too low to provide a meaningful evaluation of student proficiency. The implementation of incentives not only for participation, but for success in MCA tests this year for EVP students is expected to yield meaningful progress. Testing is currently underway.

FastBridge

Last year, and this fall, FastBridge was only used at the secondary level for students enrolled in Online Pre-AP English 9. This spring, English 10 began using it for assessments as well.

FastBridge (Secondary Comprehensive):

- 2022-2023 (n value excluded due to small cell size)
 - aReading: 33% met or exceeded in fall (District: 70%); 50% in winter (District: 83%)
- 2023-2024 (n value excluded due to small cell size)
 - aReading: 71% met or exceeded in fall (District: 76%); 50% in winter (District: 73%)

Recently, to support a group of learners who were receiving additional reading support while in-person and who transferred to EVP, an online version of College Reading Readiness was added.

Satisfaction of Stakeholders

It is vital that programs incorporate stakeholder voice, and no measurement of Edina Virtual Pathway's progress or success could be complete without asking the students, families, and teachers for their perspectives.

In 2023, 84% of EVP students communicated that they were satisfied or very satisfied with their experiences in EVP. Families reported at rates of 78% or higher that they felt their child's online education was rigorous, that their child felt valued, and that they were satisfied with their child's online education.

In March of 2024, EVP families and students were surveyed again.

- 94.8% of students described themselves as "satisfied" or "very satisfied" with their online classes (n=21). This is an increase from 84.4% the prior spring.

- 86.3% of parents and guardians described themselves as “satisfied” or “very satisfied” with their child’s online education (n=23). This is an increase from 78.6% the prior spring.
- 60.8% of parents or guardians agreed or strongly agreed with the statement their child’s online classes were rigorous. Only 14% disagreed with the statement, with the remainder “neutral” on the question (n=23). The prior spring, 78.6% indicated that they agreed with the statement.
- Families communicated that they felt that EVP’s teachers (78.2%) and program/administration (78.3%) communicated clearly and were responsive to family needs (n=23). This is essentially unchanged from the response to the question a year earlier.

Increasing response rates for surveys such as this would be a valuable next step.

Teachers reported unanimously last year that they were provided with the resources to do their work successfully, and this year unanimously reported that they felt “trusted to work in the way that they think is best.”

Financial Impact

In the 2022-2023 school year, \$673,270 was spent on EVP. This is considerably less than the amount which was budgeted, \$826,243. The school generated about \$706,650 in new revenue by attracting open-enrolled full-time students. It should be noted that these numbers include the operation of EVP’s elementary program. Overall, EVP contributed positively to the district’s financial health.

For the 2023-2024 school year, \$510,112 was budgeted. Due to an increase in enrollment, revenue generation is projected at about \$907,000. This same increase in enrollment, due in part to a teacher compensation model that is tied to student counts, has led to higher anticipated expenditures of \$520,223. This is \$10,000 over allocation, but, next to the revenue generation, still reflects a substantial net positive for EPS for 2023-2024.

EVP will operate its first summer school program this year. Enrollment is expected to be modest, and the overall impact on the school and district budget is expected to be positive, but negligible.

Edina Virtual Pathway contributes to the financial wellness of the district by helping to retain the enrollment of students who might otherwise leave the district in order to learn online. Some of the 44 students who moved from in-person to online may have done so permanently, while others may take advantage of the opportunity temporarily during a time of need, whether to participate in athletics or to manage their health. Over the last

few years, grades 9 and 10 at EHS have been at capacity. Whenever a student in a grade level that is full moves to EVP, it creates an opening at the in-person high school. Additionally, when EHS students take their online classes through EVP instead of from other providers, the cost to the district is lower, savings which are important, but not reflected in this model.

Recent Changes and Next Steps

In the January update to the School Board, EVP highlighted the following changes for the 2023-2024 school year: securing a dedicated counselor and reassigning a paraprofessional from the shuttered elementary program to the secondary program; modernizing attendance procedures to ensure accuracy and reduce burdens on students and staff; twelve new course offerings (with six more slated for next year); and the introduction of summer offerings.

Since then, EVP hosted the first annual Minnesota Online Educator Summit, drawing professionals from 21 districts throughout the state.

To help families make informed enrollment decisions, EVP and EHS are collaborating around a more thoughtful process by which students considering a move from EHS may propose to do so. Before a change in enrollment is accepted, a meeting including the student and family, staff from EHS who know the student, representation from EVP, and, when appropriate, a cultural liaison will be held. This effort will reduce the likelihood that a student who is better served in-person will make a change which disrupts their academic process. Additionally, a process is in development to, where possible and in the best interest of the student, allow a student to transfer back to EHS if it is determined to be best.

This semester EVP began providing weekly progress updates for all families indicating not only grades, but week-over-week changes in percentages in classes.

A change in MDE reporting guidance has provided an opportunity to adjust EPS's approach to Edina High School's supplemental online students. A proposal to split the supplemental and comprehensive online classes is under development. In this proposal, online classes for EHS students would be under the purview of the EHS admin. The Edina Virtual Pathway school would be entirely composed of comprehensive students and its Supervisor would increase his focus on building and growing that part of the program. This change would make it easier for EHS staff, students, and families to track student progress alongside their in-person classes and would provide opportunities for EVP to increase its course offerings without disrupting in-person enrollment numbers.

Conclusion

As previously reported to the school board, by the end of the 2023-2024 school year, the following accomplishments will signal a second successful year of EVP at the high school level:

1. Increased passing rates for classes.
2. Increased graduation rate.
3. Increased rates of satisfaction by stakeholders as reflected by surveys with higher participation rates, allowing for reliable feedback.
4. Further improved procedures around course changes and enrollment, indicated in part by feedback from counselors.
5. Stable comprehensive enrollment numbers, while also implementing improved efforts to identify and redirect students who may be less likely to thrive in an online learning environment.
6. Continued fiscal responsibility while more fully utilizing funds allocated to support student learning.
7. An increase in the number of courses which are taught as a part of a teacher's regular work day, rather than as an overload, for 2024-2025.
8. Successful implementation of online summer offerings in 2024.

Of the measures of success listed above, meeting expectations around the graduation rate is that which is less clearly on-pace. The EVP team is collaborating with students and families through in-person study opportunities, online tutoring, and counselor and admin meetings to shepherd our seniors to commencement.

EVP is well on-pace to meet the other delineated measures. Increased support and always improving instructional practices led to a higher percentage of passing grades year-over-year for semester one. Stakeholder satisfaction continues to be high, though improving response rates for surveys remains an opportunity. The processes for course changes and enrollment have been dramatically streamlined. Enrollment is growing quickly, contributing to a positive impact on the district financially. Course offerings are increasing, and summer school is a go.

Appendix II:

STEAM Unit Rubric

Criteria/Definition	1	2	3	4
<p>Inquiry</p> <p>Inquiry is an approach to learning that involves a process of exploring the natural or material world, asking questions, making discoveries, and testing those questions in the search for new understanding. The 5E Instructional Model is the framework of Inquiry in Edina.</p>	<p>The unit does not incorporate any elements of inquiry instruction.</p>	<p>The unit incorporates some elements of inquiry instruction, such as providing students with opportunities to ask questions, but lacks student directed learning and is primarily teacher directed. Some evidence of the use of the 5e instructional model.</p>	<p>The unit incorporates inquiry elements throughout, with students having clear opportunities to ask questions, and includes some student directed learning. Most elements of the 5e instructional model are evident.</p>	<p>The unit is highly inquiry-based and driven by student curiosity, with students having multiple opportunities to ask questions, design and implement investigations, and analyze data to draw conclusions. The 5e instructional model is fully used.</p>
<p>Authenticity</p> <p>students are engaged in solving meaningful, real world issues and problems. In Edina, Authenticity is grounded in purpose, allows for multiple entry points, and creates integrated opportunities to apply previous learning.</p>	<p>The unit does not incorporate any authentic elements.</p>	<p>The unit incorporates some authentic elements, such as using real-world data or problems, but could be more authentic.</p>	<p>The unit incorporates real-world data or problems, or provides students with opportunities to apply their learning in real-world contexts; however it may have limited impact outside the classroom.</p>	<p>The unit is authentic, incorporating multiple authentic elements including the arts or PE standards. The students will understand how their work impacts the greater community.</p>
<p>Integration</p> <p>Connects different areas of study. In Edina, Integration promotes flexible and critical thinking while offering multiple methods for students to demonstrate knowledge, skills, and competencies.</p>	<p>The unit does not integrate Science standards with standards from any other subject areas.</p>	<p>The unit integrates Science standards with standards from another subject area, is missing standards from the arts or PE and/or the integration is superficial.</p>	<p>The unit integrates Science standards with standards from another subject area and the arts or PE standards in a meaningful way, with clear connections between the standards.</p>	<p>The unit integrates Science standards with standards from another subject area and standards from the arts or PE in a highly meaningful way, with deep connections between the standards.</p>
<p>Professional Partnership</p> <p>Partners:</p> <ul style="list-style-type: none"> ● District, Community, Global ● STEAM Professionals ● Content expertise in the classroom through professionals in the field ● Career Exposure 	<p>Unit provides no potential partnership opportunities.</p>	<p>The unit incorporates a professional partnership, but the partnership is not well-defined or does not advance the objectives to the unit.</p>	<p>The unit incorporates a well-defined professional partnership that does not advance the objectives to the unit.</p>	<p>The unit incorporates an exemplary professional partnership that advances the objectives to the unit and provides students with a unique learning experience.</p>

Checklist for Lesson Design

- **Standards Articulation**
 - Clearly articulate specific standards that will be assessed for learning in the unit. (should be between 3 and 6 standards)
 - A list of other grade level standards that students will apply or practice during the unit.
- **Project Narrative**
 - A general overview of the project with a brief description of what the students will be doing in the unit. This should help interest the reader in the unit. Similar to the unit overview in the Mystery Science Pacing Guide
- **Lesson Outline** (Should be 10-14 45-60 minute lessons that focus on the core outcome try not to include pre-work as the lessons)
 - An overview of what students will be doing in each lesson of the unit. Example
 - This should include learning targets for the lesson
 - Connections to the overall unit.
- **Formative Assessment**
 - Check ins for student learning occur frequently throughout lessons/units of study.
- **Teacher Resources**
 - Slide Deck, Peardeck or other presentation tool that has clear teacher notes embedded throughout the presentation explaining the ‘why’, background etc.
 - Any additional teacher resources
 - Supplies needed for the unit
- **Student Resources**
 - Any resources students will need for each lesson, worksheets, graphs, maps, links to readings, videos, etc.
- **Final Product or Assessment:**
 - A link describing the final product which allows students to choose a way to demonstrate their learning. OR
 - A link to the assessment should be included.
 - A checklist/guide/rubric for assessing the product.
- **Mystery Science**
 - Clearly state what lessons from Mystery Science will be part of the unit.