

Implementation of the Revised Mathematical and Science Standards, AF

Agency: 350 Office of Superintendent of Public Instruction
Budget Period: 2009-11

Recommendation Summary Text (Short Description):

This budget request is designed to fund actions necessary to successfully implement the revised mathematics and science standards that were required to be developed and implemented by the 2007 Legislature.

The request has three components:

- 1) **Mathematics Instructional Materials Funding:** New funding is requested to reimburse school districts for the purchase of recommended core mathematics instructional materials (i.e. textbooks) and supplemental instructional materials that are aligned with the revised standards. Funds are not requested, at this time, for science instructional material since the revised science standards have not been developed. A total of \$30 million in new funds is requested for this purpose in the 2009-11 biennium. In addition, \$15 million will be requested for OSPI's FY 09 supplemental budget request so that new materials may be purchased in spring 2009 as school districts prepare for the 2009-10 school year.
- 2) **Professional Development Allocations to Districts:** \$39.1 million was provided to school districts in the 2007-09 biennium to provide professional development opportunities for a limited number of teachers to understand and begin implementation of the revised mathematics and science standards. It is requested that funding for professional development continue in the 2009-11 biennium with recommended changes in the uses of these funds and how the funds are allocated to school districts. The Schools for the Deaf and Blind, state agencies, should also be included in this allocation.
- 3) **OSPI Standards and Instructional Material Dissemination and Training:** A continuation in current level funding is requested for OSPI to disseminate the revised standards and instructional material review results, provide training for school district and ESD mathematics and science coaches and trainers, and conduct other related activities. A total of \$3,752,800 is requested for these activities, which is \$881,200 less than the \$4.6 million that was appropriated in the 2007-09 biennium to OSPI. With this funding, OSPI will continue to implement the Legislative expectations regarding dissemination of the new math and science standards, develop curricular recommendations, and provide training on the revised standards for both mathematics and science,

The fundamental principle inherent in this request is that the state has an obligation to students, parents, and teachers to ensure that every teacher in the state who teaches mathematics and science has access to instructional materials and professional development that includes the mathematical and science skills and knowledge included in the revised standards. Beginning in the 2009-10 school year, elementary and middle school students will be assessed on the revised mathematics standards, and high school students will be assessed the following year. It is critical that students are

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provided an opportunity to learn the content in the new standards before they are assessed.

Fiscal Detail

Operating Expenditures		FY 2010	FY 2011	Total
Math Instructional Materials Allocations	001-01	\$15,000,000	\$15,000,000	\$30,000,000
Updated Professional Development Allocation	001-01	(\$643,260)	(\$50,395)	(\$693,655)
OSPI Funding for math and science standards and instructional materials dissemination and training	001-01	\$1,940,400	\$1,949,808	\$3,890,208
Total	001-01	\$16,297,140	\$16,899,413	\$33,196,553

Staffing	FY 2010	FY 2011	Annual Avg.
Total FTEs Requested	2	2	2

Package Description

Background

The 2007 Legislature required the Superintendent of Public Instruction (OSPI), in conjunction with the State Board of Education (SBE), to revise the state's K-12 mathematics and science standards. It also required OSPI to recommend no more than three math and science core curricula for the elementary, middle, and high school grade spans, issue a request for proposals for online mathematics instructional material, conduct a survey of school district mathematics instructional materials in use and current adoption cycles, and to revise the mathematics WASL.

Standards: At this point in time, revised K-12 mathematics standards have been developed and adopted. The process for revising the science standards has begun, and is scheduled to be completed in December 2008. However, the standards cannot be adopted until the Legislature has an opportunity to take action on the standards, which means the superintendent will not likely be able to adopt the standards until the end of the 2009 session (mid-April, 2009).

Instructional materials review: A review of K-8 mathematics core instructional material was completed in August 2008 and the Superintendent of Public Instruction plans to present her recommendations for recommended K-8 core material to the State Board of Education at its September 23-24 meeting. The State Board is scheduled to provide comments back to the superintendent in November, and a decision on the final recommendations is anticipated in December 2008. The instructional materials review for high school mathematics core instructional material and supplemental material is scheduled to occur this fall, with a final decision anticipated in mid-winter 2009.

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The review of science instructional material is required to be completed by May 15, 2009. However, the review cannot begin until after the 2009 Legislature has an opportunity to take action on the standards.

At this time, we do not know how alignment of the instructional materials in use for science compares to revised standards. Assuming that the revised science standards are approved following the close of the 2009 Legislative session, OSPI plans to complete a review of core/comprehensive and supplemental science instructional materials to determine the degree of alignment the materials have to the revised standards. Depending on this alignment, and given timelines for completion this biennium, the state may need to invest in science core materials later in the biennium.

	Potential Final Approval of Core Curricula Recommendations
Mathematics K-8	December 2008
Mathematics High School	Spring 2009
Science K-12	Summer 2009

Online mathematics Request for Proposals: OSPI, in coordination with the State Board of Education, also was directed by the Legislature to issue a "Request for Proposals" for online instructional materials that are aligned with the revised mathematics standards. The request for proposals will be issued in late-September, and results will be compiled and available in December 2008.

School district survey of current mathematics curricula in use: OSPI also was directed to conduct a statewide survey of school districts to determine what mathematics instructional materials they are currently using and their textbook adoption cycles. This survey will be conducted this fall, and results will be available in November 2008.

Mathematics and Science WASL: In addition, OSPI was directed to modify the mathematics WASL in grades 3-8 by 2010 to incorporate the revised standards and to develop and administer end-of-course exit exams for Algebra I, Geometry, Integrated I, and Integrated II (a.k.a. Mathematics I and II) courses by 2011. It also will be necessary to revise the science WASL once the revised science standards are developed.

OSPI mathematics and science standards funding: \$4,634,000 was provided by the Legislature to OSPI for the 2007-09 biennium to complete the tasks listed above.

Mathematics and science professional development funding: The 2007 Legislature allocated \$39,132,426 for the 2007-09 biennium to school districts to support professional development of mathematics and science teachers and mentors.

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Specifically, funding was provided as follows:

- For fourth and fifth grade teachers, funds were provided for the equivalent of two professional development days for both school years in the biennium. During the 2007-2008 school year, funds were to be used to support the development of basic mathematics and science knowledge and instructional skills. For the 2008-2009 school year, the funds are to be used to implement the revised mathematics and science standards.
- For middle school and high school mathematics and science teachers, the equivalent of three additional professional development days was provided. During the 2007-2008 school year, funds were to be used in support of the development of basic mathematics and science knowledge, instructional skills, and understanding assessments. For the 2008-2009 school year, funds are to be used to implement the revised mathematics and science standards.
- In addition, one mathematics and one science teacher at each middle and high school were funded to receive five additional professional development days and \$1500 for training expenses for the purpose of implementing mathematics and science courses that add rigor to courses in schools.

Current situation

1) Mathematics Instructional Materials Funding

As noted above, the Superintendent of Public Instruction has adopted revised K-8 and high school mathematics standards. These standards were developed after reviewing exemplary standards in other states and nations and results from the National Math Panel and the National Council of Teachers of Mathematics (NCTM) Focal Points. The revised standards reflect widespread agreement that mathematics standards must be more focused at each grade-level and build sequentially as students progress in their mathematical knowledge. The revised standards include prioritized core mathematical concepts and are intended to introduce and fully develop these concepts in specific grades. This is a significant change from the current standards, which tend to include multiple concepts in each grade that are repeated in subsequent grades. In addition, the revised standards have a greater emphasis on basic skill development.

As a result of these revisions, many of the core instructional materials in grades K-8 that were developed based on the earlier standards are not well aligned with the revised standards. To ensure that teachers have instructional material aligned with the new standards, it will be necessary for school districts to either purchase new core material and/or purchase material to supplement their core programs.

Based on a preliminary review, which will be refined prior to December 1, the vast majority of students in the state are not taught using the three highest ranking elementary and middle school core programs. More definitive data regarding which core instructional material is being used and school district plans for purchasing new material will be available when results of a survey of school districts is completed this fall.

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The per pupil cost of purchasing elementary, middle and high school core instructional materials ranges from \$50 to \$70. The per pupil cost of supplemental materials ranges from \$30 to \$50.

As directed by the Legislature, OSPI and the State Board will issue a "Request for Information" in mid-September to determine the availability and feasibility of providing aligned instructional material online. Results of the RFI will be available in late-November. If the response from the on-line RFI indicates that an on-line version of the recommended curricula are, or could be made available at a lower cost, then the estimated cost for instructional material will be lower.

Proposed Solution

The purchase of new instructional materials historically has been the responsibility of school districts and funds for this purpose have been provided as part of the "Non-employee related cost" (NERC) allocation. However, the legislatively required change in the standards, the rapid inclusion of the standards in new and revised state assessments, and recent findings that the NERC allocation that is available for instructional materials is meager at best, argues that the state has a responsibility to fund the purchase of new material.

For these reasons, it is recommended that the state reimburse school districts for the purchase of the "recommended" core curricula approved by OSPI and the State Board of Education. These funds also could be used to purchase supplemental materials that are "recommended" materials aligned to new standards.

School districts would be eligible to receive up to \$50 per student for 90% of the district's K-12 student population for the purchase of new core and/or supplemental materials where the district demonstrates it is using "recommended" materials. Funding is requested for only 90% of the district's student population because that is the estimated percentage of students taking mathematics each year.

Reimbursement would be available at the end of FY 09 (June 30, 2009), FY 10 (June 30, 2010), and FY 11 (June 30, 2011). School districts that have already purchased the recommended core materials, or that purchase the material prior to June 30, 2009, could file an application prior to June 30, 2009. Districts that purchase materials after June 30, 2009, would have an opportunity to file an application during the 2009-11 biennium. If funding exceeded the amount allocated for the fiscal year, reimbursement would be postponed until the following fiscal year.

A total of \$45 million is requested that would be allocated over the three-year period (\$15 million/year).

The reimbursement process would be similar to the process used in the 2007-08 school year for diagnostic assessments, in which school districts applied on-line through the OSPI iGrants system and received funds through their monthly apportionment. The application for reimbursement/purchase of mathematics instructional materials would be very short and would require districts to demonstrate that with the funding they had

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purchased one of the recommended curricula and/or supplemental materials that are strongly align to the revised standards.

2. Professional Development Allocation to School Districts

Distribution of the revised K-8 standards and statewide teacher training on the revised standards began in June 2008, and distribution and training on the high school standards will begin in September 2008. This training, which is implemented collaboratively by the ESDs, school districts, higher education, and OSPI, will continue to be offered throughout the 2008-09 and 2009-10 school years.

During the 2009-11 biennium, professional development and training will be more widely available on the revised mathematics and science standards and continued funding will be necessary to successfully implement these standards. *However, training will be needed for all teachers who teach mathematics and science, including K-3 teachers and teachers at the Schools for the Deaf and Blind, who were not funded in 2007-09.* In addition, the need for the professional development will include not only training on the revised standards, but also include training on new instructional materials and their alignment with the revised standards and on the content of the revised mathematics and science statewide assessments (including the new mathematics end-of-course exit exams).

Proposed Solution

It is recommended that \$20 per student be provided to school districts and the Schools for the Deaf and Blind for both years of the biennium that would be used for the professional development of teachers who provide mathematics and science instruction. School districts with fewer than 50 students would receive an allocation of \$1,000.

These funds could be used: 1) to fund the salary of teachers who participate in training; 2) to pay for presenters and related costs of trainings conducted by school districts; 3) for registration and other costs to attend training sessions conducted by ESDs, colleges/universities, OSPI and other organizations; 4) for substitute teacher costs; and 5) for other professional development costs required to successfully implement the revised mathematics and science standards.

The \$20 per student equates to two days per elementary teacher (one for science and one for mathematics) and one day for each mathematics and science teacher. However, districts have flexibility on how this funding is divided and used in order to target funding to teachers implementing new materials, or in greatest need to learn the new standards.

3. OSPI Standards and Instructional Material Dissemination

During the 2007-09 biennium, OSPI was provided \$4.6 million for the revision and implementation of the mathematics and science standards, as well as to identify the curricular recommendations for mathematics and science. For mathematics, a portion of these funds were used for development and revision of the standards, OSPI staff and consultant time, basic (core) and supplemental instructional materials reviews, printing and dissemination of the standards, and delivery of training to mathematics educators

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by a cadre of 300+ professional development facilitators (including facilitator stipends and printing of standards).

In the 2009-11 biennium, funds will be needed to support continued implementation and dissemination of the revised K-12 mathematics and science standards and to support implementation of the recommended mathematics and science curricula. Training on the K-8 mathematics standards will continue into summer 2009 and the following school year, while focused statewide and regional training efforts will begin for the high school mathematics standards and the science standards in summer 2009 and continue through the next two school years. The goal is to train 100% of K-12 mathematics and science educators on the revised standards and specific mathematical and science content contained within them.

Later in the upcoming biennium, OSPI will have to conduct another curricula materials review. Otherwise, the state eliminates incentive for publishers to update their materials to our standards and compete to provide better alignment than the alignment initially identified.

Proposed Solution

The estimated cost of these activities for science and mathematics totals \$3,890,208, which is over \$700,000 less than the amount (\$4,634,000) allocated for work related to the revision of the mathematics and science standards in the 2007-09 biennium.

These funds would be used to:

1. pay approximately 600 mathematics and science trainers to deliver 8 days of training to teachers @ \$275/day (inc. travel);
2. print K-12 mathematics and science standards training materials for teachers;
3. print additional copies of the standards; and
4. pay expenses (e.g., contractor, reviewer stipends) to conduct additional core and supplemental instructional materials reviews during the 2010-11 school year.

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Narrative Justification and Impact Statement

What specific performance outcomes does the agency expect?

The purchase of instructional materials and the professional development opportunities that would be provided in this decision package are expected to significantly increase the number of students meeting the mathematical and science standards as measured by the Washington Assessment of Student Learning (WASL).

Performance Measure Detail

Results of the mathematics and science WASL will be used to track the success of this request.

Is this decision package essential to implement a strategy identified in the agency's strategic plan?

Objective 1.2 of the OSPI Strategic Plan is to ensure that all students meet or exceed the achievement standard of proficiency in mathematics and science. Specifically, the strategic plan focuses on increasing the percentage of students meeting standard in mathematics and science as measured by the WASL. In order to achieve these results, it is critical that all mathematics and science educators throughout Washington have access to and a deep understanding of the revised standards and the instructional materials that align with them. In addition, it is critical for schools to have the funds necessary to purchase the materials they need in order to provide quality instruction for all students.

Reason for change:

The fundamental principle inherent in this request is that the state has an obligation to students, parents, and teachers to ensure that every teacher in the state who teaches mathematics and science has access to instructional materials and professional development that includes the mathematical and science skills and knowledge included in the revised standards. Beginning in the 2009-10 school year, elementary and middle school students will be assessed on the revised mathematics standards, and high school students will be assessed the following year. It is critical that students are provided an opportunity to learn the content in the new standards before they are assessed.

Does this decision package provide essential support to one of the Governor's priorities?

Through the Washington Learns report, the Governor identified seven key strategies for gaining a competitive edge in mathematics and science. The first strategy focuses on developing mathematics and science instructional materials. While work is under way to learn about the ability of companies to embark in this work (through the aforementioned Request for Proposals), it is critical that school districts have access to, and the ability to purchase instructional materials aligned with Washington standards as soon as possible. The other strategies include bringing world-class mathematics and science into our classrooms and building mathematics and science instructional expertise. This proposal supports continuing the strong foundation supported by the 2007-09

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Legislature to provide financial resources to school districts to support teachers in implementing strong mathematics and science instruction that is aligned with Washington's revised, world-class standards.

Does this decision package make key contributions to statewide results? Would it rate as a high priority in the Priorities of Government process?

Yes, this decision package is designed to provide school districts the necessary resources to achieve one of the critical elements of the Governor's education priority: "...target the skills and knowledge needed to compete in a global economy."

What are the other important connections or impacts related to this proposal?

This proposal should be closely linked with state decisions regarding mathematics and science assessments (WASL and End of Course exam requirements, specifically). It is important that schools have the resources available to teach the revised standards in order to ensure their students are sufficiently prepared for these state assessments.

Impact on Other State Programs

What alternatives were explored by the agency, and why was this alternative chosen?

Consideration was given to not requesting funding to reimburse school districts for the cost of mathematics instructional material, but this alternative was rejected because of the policy decision to revise the standards was made at the state-level by the Legislature. In addition, OSPI was directed to quickly develop and administer revised mathematics assessments that will be used to hold schools, school districts, and students accountable for mathematics achievement beginning in 2010 for grades 3-8 and 2011 for high school.

In addition, various allocation formulas were considered for both the mathematics instructional material and professional development funding. In both cases, the formulas that are recommended are intended to provide a balance between the flexibility needed to accommodate the varying needs of different districts *and* the statewide goal of ensuring mathematics and science teachers have the training and instructional material to successfully provide students an opportunity to learn the revised standards.

Consideration also was given to increasing the NERC allocation by the amount requested for the mathematics instructional materials. Based on a recent OSPI analysis, an increase in NERC funding for instructional materials is needed and should be funded. However, because of the immediate, targeted need created by the state decision to revise the mathematics standards, this more targeted allocation is recommended.

What are the consequences of not funding this package?

If funding is not provided, the implementation of the revised standards will vary from district-to-district, from school-to-school, and from classroom-to-classroom. It is likely that some districts will have, or will be financially able to purchase new instructional

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material and professional development that is aligned with the new standards, while other districts will not have the financial resources to do so. As a result, some students will be provided an opportunity to learn the standards, while others will not.

What is the relationship, if any, to the state's capital budget?

None.

What changes would be required to existing statutes, rules, or contracts, in order to implement the change?

None.

Expenditure Calculations and Assumptions:

1. Mathematics Instructional Materials: The amount of \$50 per student was used for this calculation since the range that districts spend on core instructional materials ranges from \$50-70 and the range for supplemental materials is \$30-50. \$50 per student is a reasonable allocation to allow flexibility for districts to purchase core and/or supplemental materials based on their unique district situation. The total amount was based on 90% of the K-12 student population taking math in a given school year (900,000 students).
2. Professional Development Allocations to Districts: The primary assumption in the professional development allocation was that the Legislature would not likely allocate more funds in the 2009-11 biennium than it did in the 2007-09 biennium. In addition, the calculation was simplified by making it based on a per student amount versus a per teacher amount and is based on carryforward amounts.
3. OSPI Standards and Instructional Materials Dissemination and Training: The total amount of \$3,752,800 was generated based on current costs (OSPI staffing support, training materials development/printing/dissemination, training costs including minimal support to professional development facilitators) related to dissemination and training of the revised mathematics standards, and anticipated similar costs for science.

Object Detail

		FY 2010	FY 2011	Total
A	Salary and Wages	\$160,000	\$163,200	\$323,200
B	Employee Benefits	\$48,000	\$48,960	\$96,960
C	Contracts	\$1,470,000	\$1,470,000	\$2,940,000
E	Goods/Services	\$256,400	\$261,528	\$517,928
G	Travel	\$6,000	\$6,120	\$12,120
J	Equipment	\$0	\$0	\$0
N	Grants	\$14,356,740	\$14,949,605	\$29,306,345
	Interagency Reimbursement	\$0	\$0	\$0
	Other	\$0	\$0	\$0
Total Objects		\$16,297,140	\$16,899,413	\$33,196,553

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Expenditures & FTEs by Program

Activity Inventory Item	Prog	Staffing			Operating Expenditures		
		FY 2010	FY 2011	Avg	FY 2010	FY 2011	Total
A008 Curriculum and Instruction – Programs	021	0	0	0	\$15,000,000	\$15,000,000	\$30,000,000
A020 Professional Development	021	0	0	0	(\$643,260)	(\$50,395)	(\$693,655)
A009 Curriculum and Instruction – State Coordination	010	2	2	2	\$1,940,400	\$1,949,808	\$3,890,208
Total Activities		2	2	2	\$16,297,140	\$16,899,413	\$33,196,553

Six-Year Expenditure Estimates

Fund	09-11 Total	11-13 Total	13-15 Total
General Fund – State	\$33,196,553	To be determined	To be determined
Expenditure Total	\$33,196,553	TBD	TBD
FTEs	2	0	0

Distinction between one-time and ongoing costs:

The mathematics instructional materials reimbursement is a one-time cost. The need for professional development on the implementation of the revised mathematics and science standards will be substantially less in subsequent biennia.

Budget impacts in future biennia:

Once the science standards are revised, there may be a need to purchase additional science instructional material. In addition, while there is an immediate need to purchase instructional materials because of the revised standards, there is a longer-term need to periodically update the material (e.g. every six years).