

# Economic Impact Statement for Content Standards Revision Science

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## Economic Impact Statement for Content Standards Revision Science

### Executive Summary

Using a negotiated rulemaking process involving stakeholder groups, Superintendent of Public Instruction Denise Juneau has developed recommendations for the revision of the Montana Science Content Standards. The current science standards were adopted in 2006. In order to benefit students, it is important to implement standards that are based on current knowledge and understanding of best practices for science instruction to ensure that Montana schools provide students with the up-to-date, rigorous learning expectations across the range of science learning opportunities.

Three content areas or disciplines are included in the proposed standards: earth and space science, life science, and physical science. Students will learn science through the integration of content area ideas by focusing on crosscutting concepts which unite core ideas throughout the fields of science and engineering. The purpose of the crosscutting concepts is to help students deepen their understanding of the disciplinary core ideas and develop a coherent and scientifically-based view of the world.

The Office of Public Instruction (OPI) surveyed school districts in April-May 2016 about the impact of the proposed standards on district resources for staffing, instructional materials, curriculum development, and professional development. Sixty-five percent (65%) of respondents indicated that their district could implement the proposed standards using existing resources. Of the remaining respondents, many of these districts face challenges in meeting the *current* standards. A majority of the respondents in this group indicated that they have a shortage of time and materials for curriculum development and professional development. A smaller number face challenges finding teachers endorsed in the sciences and/or finding instructional materials.

The OPI has identified \$259,330 in school year 2016-17, \$218,830 in 2017-18, and \$64,330 in 2018-19 to support the implementation of the proposed science standards. In addition to this funding, the OPI will make a legislative request of an additional \$100,000 for the 2017 biennium to support the implementation. This funding will provide for face-to-face trainings in nine regions throughout the state and online professional development opportunities with the intent of providing all teachers at all grade levels with access to professional development opportunities to support science teaching and learning. The OPI will also develop a model curriculum guide and instructional resources to assist school districts with curriculum development. For those districts that are having trouble meeting the current standards, the statewide trainings and model curriculum guide may provide more support than the districts are presently receiving. The OPI estimates that not all school districts will be able to absorb, in their existing budgets, the cost of modifying their science curriculum to align with the proposed standards.

Based on the analysis of the survey results and the advice of the negotiated rulemaking committee, the OPI has concluded that the school district expenditures required under the proposed standards are substantial expenditures that cannot be readily absorbed into the budgets of existing district programs. Given resources that the OPI has identified, including a legislative budget request, it is believed that the agency can cover the expenditures to support the implementation of the proposed standards in Montana schools.

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### Introduction

Content standards are adopted by the Board of Public Education through the administrative rulemaking process. The content standards for thirteen academic subject areas are promulgated in Title 10, Chapters 53 and 54. The content standards are used by school districts to develop local curriculum and assessments in all the content areas that include the arts, career and technical, English language arts, English language proficiency, health enhancement, library media, mathematics, science, social studies, technology, traffic education, workplace competencies, and world languages. The K-12 content standards describe what students shall know, understand, and be able to do in these content areas.

This economic impact statement analyzes the impact of the proposed revisions to the Montana Science Content Standards as prescribed in [2-4-405, MCA](#). The proposed content standards are segregated into three disciplines: earth and space science, life science, and physical science.

### Affected Classes of Persons

*Describe the classes of persons who will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule. Refer to Section 2-4-405 (2)(a).*

The individuals who will be affected by the proposed science content standards are those persons who have responsibilities for implementing the science standards at the local level. These responsibilities include allocating resources for curriculum development and coordination, developing and adopting curriculum, delivering curriculum in the classroom, supporting students in meeting learning goals, and paying for any changes that are required by the standards. The affected classes include school administrators, teachers, school trustees, school business officials, parents, students, and taxpayers.

The beneficiaries of the proposed rule are students and the educators and parents who educate those students. In order to benefit students, it is important to implement standards that are based on current knowledge and understanding of best practices for science instruction to ensure that Montana schools provide students with the up-to-date learning expectations across the range of science learning opportunities. Integrating content area ideas, crosscutting concepts, the systematic practice for solving problems (engineering), and technology, the proposed standards support students' learning and understanding of how science is connected to their lives and the world around them.

Further benefits of the revised rules relate to the structure of the proposed standards. The Montana Science Content Standards of 2006 included six content standards with benchmarks at 4<sup>th</sup>, 8<sup>th</sup>, and 12<sup>th</sup> grades. The proposed standards integrate Montana's Indian Education for All and move from general content standards across all science disciplines to three distinct disciplines: earth and space science, life science, and physical science. The proposed standards are organized by grade level for grades K-5, and by grade band for grades 6-8 and 9-12. The benefit of having grade level standards from K-5 is to clarify learning expectations for the elementary teacher who is responsible for teaching all standards in all content areas. The 6-8 and 9-12 grade bands provide clarity of expectations while allowing flexibility of staffing and program delivery at those grade levels.

The proposed standards do not require that all schools offer courses in every discipline. While the Superintendent of Public Instruction is recommending changes to the science content standards, the science program delivery standards (ARM 10.55.1501) have not been changed.

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The proposed standards will also benefit higher education institutions who prepare Montana's pre-service teachers with alignment to high-quality, college-and-career ready learning expectations.

The costs of the proposed rules will be borne by local school districts and their taxpayers as well as the Office of Public Instruction (OPI). To support the implementation of the proposed standards, the OPI will provide professional development opportunities and include supplemental materials that districts can use to assist in curriculum development.

The OPI has teamed with higher education through two Math Science Partnership (MSP) grant projects and a Northwest Earth and Space Sciences Pipeline (NESSP) grant project to support Montana teacher leaders who can provide high-quality science professional development for science instruction in their respective schools and regions across Montana. Both the MSP projects, MSP-LEAD and the Montana Partnership with Regions for Excellence in STEM (MPRES), in conjunction with the NESSP project, support summer teacher leader institutes and online professional training throughout the year to cohorts of science educators who serve as coaches, mentors, and leaders for science teaching and learning in their schools, communities, and regions across Montana.

The OPI, with support from the MSP-LEAD, MPRES, and NESSP teacher leaders across Montana, will also provide workshops at state conferences for educators, provide regional and site-based workshops, help design a model curriculum guide and instructional resources accessible on the OPI website, and offer online professional development for educators through the OPI Teacher Learning Hub (Hub).

The Hub is an online interactive professional learning network dedicated to providing free high quality professional development and training for all K-12 educators throughout Montana. As part of the OPI's service to Montana schools, the Hub's readily accessible learning opportunities aim to minimize the time teachers spend away from their classrooms to attend trainings as well as save school districts money on professional development costs. The Hub offers facilitated and self-paced modules, as well as a video library with a variety of trainings that support instruction, positive school climate, and student success.

### Economic Impact

*Describe the probable economic impact of the proposed rule upon affected classes of persons, including but not limited to providers of services under contracts with the state and affected small businesses, and quantifying, to the extent practicable, that impact. Refer to Section 2-4-405 (2)(b).*

The Office of Public Instruction (OPI) conducted a survey of schools to assess the impacts of the proposed rule between April 12 and May 3, 2016. A total of 79 responses were received from superintendents, principals, district clerks, curriculum coordinators, teachers, and county superintendents. The respondents represented 30 counties and 55 school systems.

Fifty-one of the 79 respondents (65%) indicated that their district would be able to meet the proposed standards within existing resources. Two-thirds of the respondents (66%) indicated that the proposed standards would not require their district to substantially revise the district's current curriculum.

The majority of the respondents (92%) indicated that their school systems could meet the proposed standards with existing staff. The proposed rule does not require schools to hire additional science

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teachers. Specifically, the proposed rule is written in a manner that recognizes that elementary teachers (with an elementary endorsement) are most often the teachers who deliver the science education curriculum in grades K-5. Of the 6 respondents (8%) who expect to have a shortage of teachers endorsed to teach the proposed standards, five of these respondents are in districts that presently have a shortage of teachers who are endorsed in science. The issue of teacher shortages for science may be part of Montana's larger challenges with recruitment and retention of teachers in general, rather than a challenge associated with the proposed standards.

The OPI does not anticipate that providers of services under contract with the state or small businesses will be affected by the proposed rules. It is possible that school districts will replace existing instructional materials and supplies, which may be a minor benefit to local service providers.

### Cost to State Agencies

*Describe and estimate the probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenue. Refer to Section 2-4-405 (2)(c)*

The Office of Public Instruction (OPI), in accordance with 20-7-101, MCA, has incurred costs associated with the negotiated rulemaking process, including contracting with a facilitator and convening the rulemaking committee. The OPI also pays for rule filings and publication of notices with the Secretary of State for standards revision. The OPI does not anticipate any additional costs associated with the accreditation of schools. The new standards will be incorporated into the OPI's accreditation review process within the existing budget of the OPI.

The Board of Public Education is responsible for the adoption of content standards. The costs associated with board member attendance at public hearings will be paid within the existing budget of the Board of Public Education.

In addition to the costs associated with the rulemaking process, the OPI will incur costs associated with providing professional development opportunities. The OPI has budgeted \$542,490 for 2016-2019 (from sources at OPI) to assist with the implementation of the proposed rule. The OPI plans to offer free professional development online through the Teacher Learning Hub in addition to providing regional face-to-face and onsite trainings across Montana. The OPI has also committed funding to the teacher leaders in science initiative to support the implementation of the proposed standards.

### Cost and Benefits of the Proposed Rule

*Analyze and compare the costs and benefits of the proposed rule to the costs and benefits of inaction. Refer to Section 2-4-405 (2)(d).*

The Board of Public Education has adopted a regular cycle for review of content area standards. The purpose of the regular review of standards is to ensure that content standards reflect current knowledge and best practices for the each content area. The proposed science content standards provide clear benchmarks for what students should know as they move through the K-12 grades.

The majority of the costs associated with the proposed standards are for ensuring that teachers understand the new science standards, and have acquired current knowledge and best-practice

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instructional strategies to support engaged student learning and understanding in Montana K-12 classrooms. These proposed standards provide teachers and students a wide range of up-to-date science teaching and learning opportunities that connect science to our students' lives and the world around them.

The proposed standards will benefit teaching and learning in the following ways:

- The standards move from general content standards across all science disciplines to three distinct disciplines. These disciplines are earth and space science, life science, and physical science.
- The revised standards reflect that science education in Montana encompasses integration of content area ideas, crosscutting concepts, science and engineering practices, and technology.
- The revised science standards integrate Montana's Indian Education for All and the *Essential Understandings Regarding Montana Indians*, acknowledging the contribution of native tribes to Montana's rich artistic and cultural life.

The standards identify scientific ideas and practices that all students should learn by the end of high school in order to be prepared for college and careers. The standards are designed to make science education more closely resemble the way scientists work, think, and apply their knowledge to issues and problems they encounter in research and the workplace. Effective science instruction provides the opportunity for all students to engage in the critical thinking and problem solving that will prepare them for entry into any academic or career pathway.

Decades of research on what is known to be effective learning have led to the recommendations for the new science standards (Reiser, 2013). These standards support learning that develops critical thinking that involves science inquiry in exploring a problem, question, or situation; integrating all the available information about it; arriving at a solution or hypothesis; and justifying one's position (Warnick and Inch). These standards support science learning that "needs a keen power of observation; many times it is the miniscule, the incidental, or the tangential that holds the mystery of our inquiries. Science learners need to be able to detect, describe/report, and use relationships (i.e.: cause-effect; co-cause, co-effect, symbiosis) between phenomena" (Petress, 2016).

Additionally, the recently reauthorized Elementary and Secondary Education Act, commonly known as the Every Student Succeeds Act (ESSA), emphasizes the fundamental importance of providing all students access to science, technology, engineering and mathematics (STEM) education. With one hundred STEM references throughout, ESSA promotes a well-rounded education that engages students in rigorous, relevant, and integrated learning experiences focused on science, technology, engineering, and mathematics, which include authentic school-wide research (2016, Jolly).

The following addresses four areas of potential economic impact on school district operations and budgets.

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### **Personnel**

The proposed standards were developed with the expectation that the K-5 science curriculum will be delivered by elementary teachers with the 00 elementary endorsement. At the middle school and high school levels, districts will need teaching staff with endorsements in one of the sciences that fall under Physical Science, Life Science, and/or Earth and Space Science for high school as well as an elementary teaching certification for grades K-8 to meet the proposed standards just as they do with the current standards.

Six schools responded that the proposed science standards would require the district to hire additional teaching staff. Others commented that the grade level standards in grades K-5 would require additional instructional time with K-5 students. It is important to emphasize that there is no requirement in the proposed standards for additional instructional time be allocated to science. There are also no requirements for additional teaching endorsements. However, districts and teachers will need time to integrate the new standards into their curriculum and lesson plans.

The Office of Public Instruction (OPI) does anticipate that more time will be required for educators to increase their knowledge of science topics and to align curriculum and instruction to the proposed grade level standards. The OPI has developed a plan for providing professional development to educators and administrators who are responsible for delivering the science standards. This plan is outlined under the Professional Development section of this statement.

### **Curriculum and Instructional Materials**

A majority of the respondents (67%) indicated that they would not need to substantially revise their existing science curriculum to implement the proposed standards. The OPI will provide a model curriculum guide and instructional resources for the science standards once the proposed rule is adopted. The guide will be useful to districts as they begin the review and revision of their current science curriculum.

Districts are likely to follow a combination of one or more of four approaches to revise their curriculum and identify supporting instructional materials:

- Identify the gaps in their existing curriculum and make adjustments to align with the proposed standards;
- Adapt and adopt the model curriculum guide developed by the OPI;
- Adapt and adopt the curriculum materials provided by their local curriculum consortium or the Montana Small Schools Alliance; or
- Adapt and adopt curriculum materials that are aligned to the state standards and available online.

As stated in the previous section, it is likely that science teachers will need time away from their classrooms to work on curriculum development both at the school and through professional development opportunities. Districts will incur costs for substitutes and travel expenses to curriculum consortia meetings and conferences. The OPI plans to provide funding to support these efforts as described in the next section under Professional Development.

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If school districts determine that updated or additional instructional materials are needed to implement their revised curriculum, the cost of these instructional materials will be borne by the school district.

### **Professional Development**

The OPI anticipates that at least one elementary teacher at each school will need to be trained on the science standards. A common practice of school districts is to send one or two lead teachers to training; these teachers are then responsible for sharing information and resources with their colleagues to implement the necessary curriculum revisions. The lead teachers will need approximately three hours of professional development time to learn about the new standards.

Science teachers at the middle school and high school levels will also need to be trained on standards to support science courses in the three science disciplines: earth and space science, life science, and physical science.

Science teachers at every grade level will need access to professional development opportunities that will help integrate the new standards and instructional strategies into their curriculum guides. The OPI grant-funded teacher leaders in science projects will provide regional face-to-face trainings in nine locations around the state, as well as provide science standards courses on the OPI Teacher Learning Hub. The intent is that with face-to-face trainings and the Hub courses, all teachers at all grade levels will have access to science professional learning opportunities that support teaching and student learning based on the proposed science standards.

The OPI will cover the projected \$542,490 cost of these trainings from 2016 through 2019. With a 2017 Legislative request for \$100,000 for the biennium, the implementation of the proposed standards in all Montana schools will be supported with a total of \$642,490 over three school years, 2016-2019. Furthermore, many teachers are members of science professional organizations and will attend conferences and workshops offered by these associations, including the Montana Science Teachers Association, Montana American Chemical Society, Montana Association of Physics Teachers, Montana Learning Center, and the Montana Professional Teaching Foundation.

The OPI's implementation plan includes presentations through 2016-2019 at the following state conferences: Title I, Montana Behavioral Initiative, School Administrators of Montana, Montana Association of School Superintendents, MEA-MFT, and Indian Education for All Best Practices.

The OPI will provide a curriculum guide for the science standards once the proposed rule is adopted. The guide will be useful to districts as they begin the review and revision of their current science curriculum. The guide will also help districts incorporate Indian Education for All into their science curriculum.

If school districts determine that updated or additional instructional materials are needed to implement their revised curriculum, the cost of these instructional materials will be borne by the school district.

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The budget for implementing the OPI's professional development plan is shown below.

Professional Development & Resources	Funding sources	2016-2017	2017-18	2018-19
Teacher Leaders of Science	NESSP	\$100,000	\$100,000	\$ 50,000
Institutes/training and regional and online course and professional development workshops	MSP-LEAD	\$ 84,500	\$ 50,500	
	MPRES	\$ 50,000	\$ 50,000	
	OPI	\$ 16,830	\$ 14,330	\$ 14,330
Model curriculum guides	OPI	\$ 8,000	\$ 4,000	
Subtotal:		\$259,330	\$218,830	\$ 64,330
2017 Legislative Budget Request			\$ 75,000	\$ 25,000
Total:		\$259,330	\$293,830	\$ 89,330

The cost of inaction would compromise of the quality of educational opportunity in science for Montana students. The adoption of statewide science standards and expectations for what students should know reduces the science programs and course offerings disparities that may occur across the state.

### Less Costly or Less Intrusive Methods

*Are there less costly or less intrusive methods for achieving the purpose of the proposed rule? Refer to Section 2-4-405 (2)(e).*

No. The process for proposing, reviewing, and adopting academic content standards is prescribed in statute in 20-7-101, MCA and in Montana Administrative Procedure Act. It is not possible to have statewide implementation of standards without formal rule adoption.

The role of the Board of Public Education is to set standards that apply to all accredited schools. The proposed rules reflect a set of best practices identified by educators that establish a minimum level of quality for all schools to meet. While there are school district costs associated with the implementation of these standards by school districts, the Office of Public Instruction will offer and coordinate professional development opportunities in a manner to reduce the burden of costs on school districts.

The proposed rule for revising the science content standards includes the following Statement of Reasonable Necessity:

The Board of Public Education has determined it is reasonable and necessary to adopt, amend, and repeal rules relating to Science content standards pursuant to ARM 10.54.2503 Standards Review Schedule and 10.53.104 Standards Review Schedule. The board has determined that to stay consistent with the legislative intent of [20-1-102](#) and [20-9-309](#), MCA, it must review and make contemporary amendments to its standards. The Legislature recognizes the need to reassess educational needs on a cyclical basis and the board recognizes its standards represent the minimum standards. These standards are the basis upon which a quality system of education is built and maintained. The board strives to conform to a regular review cycle for every chapter of accreditation. The standards review process shall use context information, criteria, processes, and procedures identified by the Office of Public Instruction with input from representatives of accredited schools and in accordance with the requirements of 20-7-101, MCA.

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### Selection of Proposed Rule

*Analyze any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule. Refer to Section 2-4-405 (2)(f).*

In recent years, the Office of Public Instruction (OPI) has promoted educator best practices and updated information on science education. However, this has not reached all schools or all educators. With the adoption of the proposed science standards, all schools and educators will be seeking updated information and best practices in science education.

Montana's Science Standards have not been revised for 10 years. The OPI received requests from teachers and schools to revise the standards so schools could be assured they are providing quality science education. School districts are interested in revising their curriculum based on current science information and pedagogy. The Board of Public Education agreed to move forward with the Superintendent's request to begin the process for science standards revision.

### Efficient Allocation of Public and Private Resources

*Does the proposed rule represent an efficient allocation of public and private resources? Refer to Section 2-4-405 (2)(g).*

Yes, the proposed content standards will apply to all public and any private schools seeking accreditation by the Board of Public Education.

### Data Gathering and Analysis

*Quantify or describe the data upon which the economic impact statement was based and an explanation of how the data was gathered. Refer to Section 2-4-405 (2)(h).*

The Office of Public Instruction disseminated an electronic survey tool to all school districts in the state. The recipient list included superintendents, principals, district clerks, and county superintendents. Many school districts shared the survey tool with teachers and curriculum coordinators. The survey was available for 22 days. The existing standards and proposed standards were linked to the survey tool, so that respondents could compare the two. Please see the OPI [Content Standards Revision](#) webpage for more information.

Attached to this economic impact statement is a summary of the results from respondents. ([Attachment A](#))

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### Applicable Statute

**2-4-405. Economic impact statement.** (1) Upon written request of the appropriate administrative rule review committee based upon the affirmative request of a majority of the members of the committee at an open meeting, an agency shall prepare a statement of the economic impact of the adoption, amendment, or repeal of a rule as proposed. The agency shall also prepare a statement upon receipt by the agency or the committee of a written request for a statement made by at least 15 legislators. If the request is received by the committee, the committee shall give the agency a copy of the request, and if the request is received by the agency, the agency shall give the committee a copy of the request. As an alternative, the committee may, by contract, prepare the estimate.

(2) Except to the extent that the request expressly waives any one or more of the following, the requested statement must include and the statement prepared by the committee may include:

(a) a description of the classes of persons who will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule;

(b) a description of the probable economic impact of the proposed rule upon affected classes of persons, including but not limited to providers of services under contracts with the state and affected small businesses, and quantifying, to the extent practicable, that impact;

(c) the probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenue;

(d) an analysis comparing the costs and benefits of the proposed rule to the costs and benefits of inaction;

(e) an analysis that determines whether there are less costly or less intrusive methods for achieving the purpose of the proposed rule;

(f) an analysis of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule;

(g) a determination as to whether the proposed rule represents an efficient allocation of public and private resources; and

(h) a quantification or description of the data upon which subsections (2)(a) through (2)(g) are based and an explanation of how the data was gathered.

(3) A request to an agency for a statement or a decision to contract for the preparation of a statement must be made prior to the final agency action on the rule. The statement must be filed with the appropriate administrative rule review committee within 3 months of the request or decision. A request or decision for an economic impact statement may be withdrawn at any time.

(4) Upon receipt of an impact statement, the committee shall determine the sufficiency of the statement. If the committee determines that the statement is insufficient, the committee may return it to the agency or other person who prepared the statement and request that corrections or amendments be made. If the committee determines that the statement is sufficient, a notice, including a summary of the statement and indicating where a copy of the statement may be obtained, must be filed with the secretary of state for publication in the register by the agency preparing the statement or by the committee, if the statement is prepared under contract by the committee, and must be mailed to persons who have registered advance notice of the agency's rulemaking proceedings.

(5) This section does not apply to rulemaking pursuant to 2-4-303.

(6) The final adoption, amendment, or repeal of a rule is not subject to challenge in any court as a result of the inaccuracy or inadequacy of a statement required under this section.

(7) An environmental impact statement prepared pursuant to 75-1-201 that includes an analysis of the factors listed in this section satisfies the provisions of this section.

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### Attachment A

#### Summary of Survey Responses - Science

The Office of Public Instruction surveyed school personnel about the fiscal impact of the proposed Science standards between April 12 and May 3, 2016, and received 79 survey responses.

The 79 respondents represented 30 counties and 55 school systems and included the following school personnel.

<b>Role of Survey Respondents:</b>	<b>Total</b>
Science Administrator Retired	1
Business Manager	2
County Superintendent	0
Curriculum Coordinator	6
Principal	20
Superintendent	10
Supervising Teacher	1
Teacher	38
Unknown	1
<b>Total</b>	<b>79</b>

Below is a list of the Science survey questions.

Q1	Is your district able to meet the current science standards with existing staff?
Q2	Would the proposed standards, if adopted, require your district to substantially revise its current curriculum?
Q3	Do you anticipate that your district will be able to meet the proposed standards with existing resources?
Q4	Does your district have difficulty finding instructional materials to implement the current standards?
Q5	Will your district have difficulty finding instructional materials to implement the proposed standards?
Q6	Does your district have a shortage of teachers endorsed in science?
Q7	Will your district have a shortage of teachers endorsed in science?
Q8	Does your district have difficulty finding professional development opportunities for science educators?
Q9	Will your district have difficulty finding professional development opportunities for science educators?
Q10	Does your district have a shortage of time and resources to support curriculum development in science?
Q11	Will your district have a shortage of time and resources to support curriculum development in science?
Q12	Instructional Materials: Would the proposed standards impose a cost beyond that required to implement the current standards?
Q13	What increase in total dollars would be required to cover the cost associated with Instructional Materials?

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Q14	What new purchases would be needed?
Q15	Personnel: Would the proposed standards impose a cost beyond what is required to implement the current standards?
Q16	What increase in total dollars would be required to cover the cost associated with Personnel?
Q17	How many new hires would be needed?
Q18	Professional Development: Would the proposed standards impose a cost beyond those expenses already required to implement the current standards?
Q19	What increase in total dollars would be required to cover the cost associated with Professional Development?
Q20	What professional development would be needed?
Q21	How many teachers would need this professional development?
Q22	How many hours of professional development would be needed for each teacher?
Q23	Curriculum Development: Would the proposed standards impose a cost beyond what is required to implement the current standards?
Q24	What increase in total dollars would be required to cover the cost associated with Curriculum Development?
Q25	How many personnel would be involved in curriculum development?
Q26	How many hours of professional time would be needed in total for Curriculum Development?
Q27	YOUR TURN: Is there anything else you believe the OPI should consider in determining a fiscal impact for implementing new standards?

The following information is compiled from the survey responses.

Q1: Is your district able to meet the current science standards with existing staff?

73 districts can meet the current standards with existing staff. 4 districts are not able to meet the current standards with existing staff. (2 left blank)

Q2: Would the proposed standards, if adopted, require your district to substantially revise its current curriculum?

52 respondents (66%) said that the proposed standards would not require the district to substantially revise its current curriculum and 26 said the district would need to substantially revise. (1 left blank)

Q3: Do you anticipate that your district will be able to meet the proposed standards with existing resources?

51 districts (65%) responded that they could meet the proposed standards within existing resources. 4 of the remaining 28 districts had already indicated that they had difficulty meeting the current standards.

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Count of Q3	Q1			
Q3	No	Yes	(blank)	Grand Total
No	4	23	1	29
Yes		50	1	46
Grand Total	4	73	2	79

### INSTRUCTIONAL MATERIALS

Q4: Does your district have difficulty finding instructional materials to implement the current standards?

Q5: Will your district have difficulty finding instructional materials to implement the proposed standards?

17 of the 79 respondents (22%) expect to have difficulty finding instructional materials to implement the proposed standards. 4 of these have difficulty finding instructional materials currently. 62 respondents do not expect to have difficulty.

Count of Q4	Q5			
Q4	No	Yes	(blank)	Grand Total
No	11	13		24
Yes		4		4
Grand Total	11	17		28

### SHORTAGE OF TEACHERS WITH ENDORSEMENTS IN THE SCIENCE

Q6: Does your district have a shortage of teachers endorsed in the areas of science education?

Q7: Will your district have a shortage of teachers endorsed in the areas of science education?

6 of 79 respondents (8%) expect to have a shortage of teachers endorsed in the areas of science education. 5 of these have teacher shortages currently. 73 of all the respondents do not expect to have shortages.

Count of Q6	Q7		
Q6	No	Yes	Grand Total
No	22	1	23
Yes		5	5
(blank)			
Grand Total	22	6	28

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### PROFESSIONAL DEVELOPMENT

Q8: Does your district have difficulty finding professional development opportunities for science education staff?

Q9: Will your district have difficulty finding professional development opportunities for science education staff?

13 of 79 respondents (16%) expect to have difficulty finding professional development opportunities for Science education staff. 11 of these have difficulty finding professional development opportunities currently. 66 of all respondents do not expect to have difficulty.

Count of Q8	Q9		
Q8	No	Yes	Grand Total
No	15	2	17
Yes		11	11
Grand Total	15	13	28

### CURRICULUM DEVELOPMENT

Q10: Does your district have a shortage of time and resources to support curriculum development in the areas of science education?

Q11: Will your district have a shortage of time and resources to support curriculum development in the areas of science education?

22 of 79 respondents (28%) expect to have a shortage of time and resources to support curriculum development in the areas of science education. 15 of these have a shortage currently. 57 of all respondents do not expect to have a shortage of time and resources.

Count of Q10	Q11		
Q10	No	Yes	Grand Total
No	6	7	13
Yes		15	15
Grand Total	6	22	28