

**SCIENCE PROGRAM
SIX-YEAR INSTRUCTIONAL PLAN
June 9, 2008**

ABSTRACT

In the implementation of the six-year plan, the science program will focus on the following goals:

- Provide a well-articulated, standards-based science curriculum to all ASD students.
- Provide standards-based science content and pedagogy support to all new-to-district as well as experienced teachers of science.
- Provide ongoing standards-based science support in content and pedagogy, to teachers of science at all grade levels.
- Strengthen the science/literacy link through the increased use of science notebooks and science trade books in science classes.
- Develop science instructional leadership in all schools.
- Develop assessments that reflect state performance standards and GLE's.
- Increase parent and community awareness of, and participation in, the science education of the ASD students.
- Continue with successful programs, such as: Sea Train, Robotics, Outdoor Week, and Science Olympiad.

Science Six-Year Instructional Plan FY07 to FY12

Year 1 FY 2006 - 2007	Year 2 FY 2007- 2008	Year 3 FY 2008 - 2009	Year 4 FY 2009 - 2010	Year 5 FY 2010 – 2011	Year 6 FY 2011 - 2012
<p>Goal 1:</p> <ul style="list-style-type: none"> ▪ Increase achievement of all students ▪ Reduce achievement gap 					
<p>ASD K-6 Science kits are taught by more teachers each year as measured by kit material use.</p>	<p>↑ 3% more teachers</p>	<p>↑ 3% more teachers</p>	<p>↑ 3% more teachers</p>	<p>↑ 3% more teachers</p>	<p>↑ 3% more teachers</p>
<p>Increase number of teachers participating in professional development offerings relating to Science.</p> <p><i>Each year, offer Science kit professional development three times each year targeting new-to-grade-level teachers but open to all teachers.</i></p> <p><i>Each year, offer content and pedagogy professional development responsive to teacher and school needs and reflective of national recommendations: e.g., GLOBE, Project Learning Tree, Project Wild, Inquiry, Safety, Science Notebooks, Climate Change, AP Biology, AP Chemistry, Science and Civics, NEED, Science Fair How-to's, Curriculum Guides and GLE's, and Technical Drawing.</i></p>	<p>↑ 5% more teachers in Science professional development</p> <p><i>Continue with Saturday workshops and begin to develop alternative ways to provide the training to teachers, e.g., DVD's, online courses.</i></p> <p style="text-align: center;">→</p> <p><i>Begin to develop alternative methods of providing professional development to teachers.</i></p>	<p>↑ 5% more teachers in Science professional development</p> <p><i>Continue with Saturday workshops and as well as continue to develop and implement alternative ways to provide the training to teachers, e.g. DVD's, online courses, Channel 13, and podcasts and Web 2.0 tools.</i></p> <p style="text-align: center;">→</p> <p><i>Continue to develop and implement alternative ways to provide the training to teachers, e.g. DVD's, online courses, Channel 13, and podcasts and Web 2.0 tools.</i></p>	<p>↑ 5% more teachers in Science professional development</p> <p style="text-align: center;">→</p> <p style="text-align: center;">→</p> <p style="text-align: center;">→</p>	<p>↑ 5% more teachers in Science professional development</p> <p style="text-align: center;">→</p> <p style="text-align: center;">→</p> <p style="text-align: center;">→</p>	<p>↑ 5% more teachers in Science professional development</p> <p style="text-align: center;">→</p> <p style="text-align: center;">→</p> <p style="text-align: center;">→</p>

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<p>Develop K-12 Science curriculum guides.</p> <p><i>Develop storylines for each kit, K-6.</i></p> <p><i>Conduct 9th grade Integrated Science professional development on the curriculum guide and GLE's.</i></p> <p><i>Conduct curriculum review and develop curriculum guides for Biology.</i></p>	<p><i>Develop a science kit curriculum guides <u>template</u> for Grades 3 and 4.</i></p> <p><i>Conduct 9th grade Integrated Science instructional materials review <u>pilot</u>.</i></p> <p><i>Conduct curriculum review and develop curriculum guides for Biological Sciences, Natural Science of Alaska, Chemistry, and Conceptual Chemistry.</i></p> <p><i>Conduct curriculum review, and develop curriculum guides and materials review for high school Physical Sciences and other electives.</i></p>	<p><i>Begin development of <u>Develop curriculum guides for Grades 5 and 6- K-6.</u></i></p> <p>9th grade Integrated Science curriculum is in place and implemented in the classroom.</p> <p><i>Conduct 9th grade Integrated Science instructional materials review.</i></p> <p><i>Conduct materials review for Biology, Biological Sciences, Natural Science of Alaska, Chemistry, and Conceptual Chemistry.</i></p> <p><i>Conduct curriculum review and develop curriculum guides for Biological Sciences, Natural Science of Alaska, Chemistry, and Conceptual Chemistry.</i></p> <p>Physical Sciences and electives curriculum guides in use by high school Science teachers.</p>	<p><i>Develop curriculum guides for Grades K, 1, and 2.</i></p> <p><i>Continue development of curriculum guides for Grades K-6.</i></p> <p>9th grade Integrated Science curriculum is in place and implemented in the classroom.</p> <p><u>Biology, Biological Sciences, Natural Science of Alaska, Chemistry, and Conceptual Chemistry</u> curricula in place and implemented in the classroom.</p> <p><i>Conduct materials review for Biology, Biological Sciences, Natural Science of Alaska, Chemistry, and Conceptual Chemistry.</i></p> <p><i>Conduct curriculum review, and develop curriculum guides and materials review for high school Physical Sciences and other electives.</i></p>	<p><u>Biology, Biological Sciences, Natural Science of Alaska, Chemistry, and Conceptual Chemistry</u> curricula in place and implemented in the classroom.</p> <p><u>Physical Sciences and electives curriculum guides in use by high school Science teachers.</u></p>	

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			<p>Conduct curriculum review, and revise curriculum guides and materials review for 7th and 8th grade Integrated Sciences.</p>	<p>7th and 8th grade IS curriculum guides in use by middle school Science teachers.</p> <p><u>Conduct curriculum review, and revise curriculum guides and materials review for 7th and 8th grade Integrated Sciences.</u></p> <p>Conduct curriculum review, and revise curriculum guides and materials review for grades 4-6.</p>	<p>7th and 8th grade IS curriculum guides in use by middle school Science teachers.</p> <p>Grades 4-6 curriculum guides in use by elementary school Science teachers.</p> <p>Conduct curriculum review, and revise curriculum guides and materials review for grades K-3.</p>
<p>Science AP courses reflect national curriculum and are taught with rigor and effective pedagogy.</p> <p>Continue to work with Project APpeal to focus on AP professional development, AP course development, and vertical curriculum alignments in Science.</p>	<p>—————→</p> <p>AP Science training and Vertical team meeting time as requested.</p>	<p>—————→</p> <p>AP Science training and Vertical team meeting time as requested.</p>	<p>—————→</p> <p>AP Science training and Vertical team meeting time as requested.</p>	<p>—————→</p> <p>AP Science training and Vertical team meeting time as requested.</p>	<p>—————→</p> <p>AP Science training and Vertical team meeting time as requested.</p>
<p>Higher numbers of K-12 teachers are incorporating literacy into their Science teaching as measured by teacher surveys and numbers of teachers participating in professional development using Science notebooks.</p> <p>Infuse literacy into K-12 Science teaching.</p> <p>Each year, provide professional development in Science and literacy:</p>	<p>↑ 5% numbers of teachers using Science notebooks</p> <p>—————→</p> <p>—————→</p>	<p>↑ 5% numbers of teachers using Science notebooks</p> <p>—————→</p> <p>—————→</p>	<p>↑ 5% numbers of teachers using Science notebooks</p> <p>—————→</p> <p>—————→</p>	<p>↑ 5% numbers of teachers using Science notebooks</p> <p>—————→</p> <p>—————→</p>	<p>↑ 5% numbers of teachers using Science notebooks</p> <p>—————→</p> <p>—————→</p>

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<ul style="list-style-type: none"> ▪ <i>Embedded in Science kit trainings</i> ▪ <i>ASD Summer Academy, June</i> ▪ <i>School-based study groups</i> ▪ <i>Credit classes</i> ▪ <i>Peer mentoring through Science notebook forum and Science teacher leaders, i.e., Science kit trainers and Science Contact Teachers.</i> <p><i>Maintain and replenish leveled readers and trade books in Science kits, K-6.</i></p>	<p><i>Replenish trade books.</i></p>	<p><i>Replenish trade books.</i></p>	<p><i>Replenish trade books.</i></p>	<p><i>Replenish trade books.</i></p>	<p><i>Replenish trade books.</i></p>
<p>Goal 2: Supportive and Effective Learning Environment</p>					
<p>K-6 students in high mobility schools have continuity of Science instruction.</p>	<p><i>High mobility Title I schools placed on uniform Science kit rotation schedule.</i></p>	<p style="text-align: center;">—————→</p>	<p style="text-align: center;">—————→</p>	<p style="text-align: center;">—————→</p>	<p style="text-align: center;">—————→</p>
<p>Initiate a Web-based Science teachers' exchange site for curriculum ideas.</p>	<p><i>Continue development of website. <u>Communicate with teachers via a regular newsletter.</u></i></p>	<p><i>Continue development of website and incorporate use of <u>Web 2.0 tools.</u></i></p>	<p><i>Maintain and update website. <u>Communication links via a variety of methods.</u></i></p>	<p style="text-align: center;">—————→</p>	<p style="text-align: center;">—————→</p>
<p>Instructional leadership at schools promotes good Science teaching.</p>	<p style="text-align: center;">—————→</p> <p><i>Provide information to K-12 principals on powerful Science pedagogy <u>and science assessment</u> through area principal meetings as well as in individual meetings.</i></p>	<p style="text-align: center;">—————→</p> <p><i>Provide information to K-12 principals on powerful Science pedagogy <u>and science assessment</u> through area principal meetings as well as in individual meetings.</i></p>	<p style="text-align: center;">—————→</p> <p><i>Provide information to new K-12 principals on powerful Science pedagogy <u>and science assessment</u> through individual meetings.</i></p>	<p style="text-align: center;">—————→</p> <p><i>Provide information to new K-12 principals on powerful Science pedagogy <u>and science assessment</u> through individual meetings.</i></p>	<p style="text-align: center;">—————→</p> <p style="text-align: center;">—————→</p>

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<p><i>Continually develop Science teacher leaders from the Science kit trainers, Science contact teachers, and department chairs with targeted professional development, e.g., Science Notebook Forum, Standards-Based Report Card Committee, workshop for kit trainers, and building a presence for Science Network.</i></p>	<p>→</p>	<p>→</p>	<p>→</p>	<p>→</p>	<p>→</p>
<p>Goal 3: Public Accountability</p>					
<p>Science assessments reflect state performance standards, authenticity, and best instructional practices.</p>	<p>Continue developing end-of-unit performance-based assessments for Science K-12 that are available online and in kits for use by teachers.</p> <p><u>Identify benchmarking assessments currently in place for elementary science.</u></p>	<p>Develop and Revise end-of-unit performance-based assessments for Science K-12 that are available online and in kits for use by teachers.</p> <p><u>Pilot, revise and refine benchmarking assessments currently in place for elementary science.</u></p>	<p><u>Implement benchmarking assessments with professional development and support for effective use in elementary science.</u></p> <p><u>Pilot, revise and refine benchmarking assessments for middle school science.</u></p>	<p><u>Implement benchmarking assessments with professional development and support for effective use in middle school science.</u></p> <p><u>Pilot, revise and refine benchmarking assessments for high school science.</u></p>	<p><u>Implement benchmarking assessments with professional development and support for effective use in high school science.</u></p>

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<p><i>Define measurement topics, and essential skills for Grade 1-6 for Standards-Based Report Cards.</i></p>	<p><i>Develop rubrics for grades 1-6 for Standards-Based Report Cards.</i></p>	<p><i>Define measurement topics, and essential skills for Grades 7 and 8 for Standards-Based Report Cards.</i></p> <p><i>Develop and pilot science rubrics and faceplates with identified elementary school teachers. Alternatives to using the technology interface will be explored.</i></p>	<p><i>Develop rubrics for grades 7 and 8 for Standards-Based Report Cards.</i></p> <p><i>Expand pilot of science rubrics and faceplates with identified elementary school teachers.</i></p>		
<p>Involve parents and community in Science education.</p> <p><i>Continue to support and promote events such as: Science Fair, Outdoor Week, Salmon in the Classroom, Sea Train, Robotics, Exploravision, FIRST Lego League, Community in the Classroom, Science Olympiad; and to inform every teacher multiple times during the year of both community and national partner opportunities for scientific learning.</i></p>	<p>→</p> <p>→</p>	<p>→</p> <p>→</p>	<p>→</p> <p>→</p>	<p>→</p> <p>→</p>	<p>→</p> <p>→</p>