

Section A: AISI Cycle 4 Project Proposal/Plan
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Section A1a-c. Project Parameters

a. Project Title: Assessing and reporting creative and critical thinking in inquiry-based learning	
b. Project Proposed for Which School Years: 2009/2010 <input checked="" type="checkbox"/> 2010/2011 <input checked="" type="checkbox"/> 2011/2012 <input checked="" type="checkbox"/>	
c. School Authority Name: Calgary Science School	School Authority Code: 0045

Please review the AISI Principles and Operational Procedures before completing this template. AISI terminology is also included in the AISI Handbook for Cycle 4.

**Section A1d. Project Parameters
Schools Involved**

Make sure you save the estimated number of schools involved before specifying the actual figure

Number of Schools Involved: <input style="width: 50px; text-align: center;" type="text" value="1"/>
Selected School List: Calgary Science School

Section A1e. Project Parameters Students and Grades Involved

2009/2010	
Grade	Number of Students
Pre-K	
K	
1	
2	
3	
4	100
5	100
6	100
7	100
8	100
9	100
10	
11	
12	
Total	600

2010/2011	
Grade	Number of Students
Pre-K	
K	
1	
2	
3	
4	100
5	100
6	100
7	100
8	100
9	100
10	
11	
12	
Total	600

2011/2012	
Grade	Number of Students
Pre-K	
K	
1	
2	
3	
4	100
5	100
6	100
7	100
8	100
9	100
10	
11	
12	
Total	600

Section A1f. Project Type for Project

Alberta Education, school authorities, universities and other AISI users often want to undertake various analyses of AISI projects. This type of analytical work requires the capability to extract and group AISI projects accurately by various categories.

Targeted Students (maximum of 2 choices)		
Aboriginal/FNMI <input type="checkbox"/>	Disability <input type="checkbox"/>	Mild/Moderate /Severe <input type="checkbox"/>
All students <input checked="" type="checkbox"/>	ESL <input type="checkbox"/>	Special Needs <input type="checkbox"/>
At Risk <input type="checkbox"/>	Francophone <input type="checkbox"/>	Other <input type="checkbox"/> _____
Gifted <input type="checkbox"/>	Hutterite <input type="checkbox"/>	
Subjects (maximum of 2 choices)		
Aboriginal Studies <input type="checkbox"/>	French-Immersion <input type="checkbox"/>	Second Languages (other than French) <input type="checkbox"/>
All Core (LA, SS, Ma, Sc) <input type="checkbox"/>	French-Second Language <input type="checkbox"/>	Science <input type="checkbox"/>
All Subjects <input checked="" type="checkbox"/>	IOP <input type="checkbox"/>	Social Studies <input type="checkbox"/>
CALM/Health <input type="checkbox"/>	Language Arts Literacy <input type="checkbox"/>	Work Experience <input type="checkbox"/>
CTS <input type="checkbox"/>	Life Skills <input type="checkbox"/>	Other <input type="checkbox"/> _____
ESL <input type="checkbox"/>	Mathematics/Numeracy <input type="checkbox"/>	
Fine Arts <input type="checkbox"/>	Physical Education <input type="checkbox"/>	
French/Francophone <input type="checkbox"/>	RAP <input type="checkbox"/>	

Theme(s) (maximum of 2 choices)		
Assessment <input checked="" type="checkbox"/> Behavior Brain Research Multiple Intelligence <input type="checkbox"/> Career Education <input type="checkbox"/> Character/Citizenship <input type="checkbox"/> ECS/School Readiness <input type="checkbox"/>	Early Intervention <input type="checkbox"/> Health/Wellness <input type="checkbox"/> High School Completion <input type="checkbox"/> Meta-cognition <input type="checkbox"/> Parent/Community Involvement <input type="checkbox"/>	Resiliency <input type="checkbox"/> School Climate <input type="checkbox"/> Special Education Technology Integration/ICT <input checked="" type="checkbox"/> Transition Programs <input type="checkbox"/> Other <input type="checkbox"/> _____
Teaching Strategies/Programs (maximum of 3 choices)		
Advisory Program <input type="checkbox"/> Alternative Delivery <input type="checkbox"/> Animated Literacy <input type="checkbox"/> Assessment for Learning <input checked="" type="checkbox"/> Balanced Literacy <input type="checkbox"/> Computer Assisted Instruction (Assistive Technology) <input type="checkbox"/> Cooperative Learning <input type="checkbox"/> Differentiated Instruction <input checked="" type="checkbox"/> Distributed Learning <input type="checkbox"/> Enrichment <input type="checkbox"/>	Full Day Kindergarten <input type="checkbox"/> Guest Speakers <input type="checkbox"/> Guided Reading <input type="checkbox"/> Hand-on Experiences (Experimental Learning) <input type="checkbox"/> Home Reading <input type="checkbox"/> Independent Learning <input type="checkbox"/> Individual Programming <input type="checkbox"/> Learner Profiles (tracking) <input type="checkbox"/> Learning Styles <input type="checkbox"/> Multi-Grading <input type="checkbox"/>	Paraprofessional <input type="checkbox"/> Performance Assessment <input checked="" type="checkbox"/> Project Based Learning <input type="checkbox"/> Resource Room <input type="checkbox"/> Pyramid of Interventions <input type="checkbox"/> Reading Strategies <input type="checkbox"/> Safe & Caring Schools <input type="checkbox"/> Tutoring <input type="checkbox"/> Understanding by Design <input type="checkbox"/> Other <input type="checkbox"/> _____

A2. Project Description

- a. Provide an overview of the project (What do you plan to do and how?)

AISI Proposal Overview: Critical Questions and Key Outcomes

1. What is it we expect students to learn?

The Calgary Science School will engage students in relevant inquiry-based learning opportunities using integrative technology that honor the interdisciplinary nature of knowledge and understanding as outlined in the Alberta programs of study. *In particular, and with more focus this fourth cycle, the school will work towards increasing student engagement and better understanding how to assess and report thinking in inquiry-based learning methodology in the areas of critical (convergent) and creative (divergent) thinking.*

2. How will we know when students have learned it?

- A. Increased numbers of students will be authentically engaged in strong inquiry-based learning opportunities. They will have a deep understanding and appreciation for their course content that will be reflected in, and can be measured through their classroom artifacts and performance-based tasks.
- B. Students will attain high standards in their curriculum outcomes.

3. AISI Emerging Assessment Themes and Context: How will we respond when students don't succeed? As well, how will we respond when students already know what teachers are offering in the program?

- A. Teachers will incorporate and focus on innovative and ambitious inquiry-based learning methodology using integrative technology. They will do so by incorporating a variety of inquiry-based formative (performance based) assessment tools in curriculum planning and implementation to accommodate various types of learning needs and styles. As well, the school will broaden the understanding of assessment *for* learning in relation to assessment *as* and *of* learning.
- B. Teachers will explore critical (convergent) and creative (divergent) thinking instructional and assessment strategies through the various core course content areas, and complementary subjects so that they will be in tune with the needs of their students' learning.
- C. Teachers will differentiate their practice to motivate and facilitate authentic student learning in a variety of ways (technology integration, outdoor education, accommodating varying learning styles, etc.).

4. AISI Goals: How will we gather and interpret evidence of student learning in an inquiry-based program (in light of the above) to inform our practice and in turn provide optimal opportunities for student learning in our programs?

1. Teachers will incorporate and focus on designing collaboratively (with fellow teachers and/or their students) intellectually ambitious performance assessment tasks, as well as the tools (guidelines, rubrics, technologies, and other) for providing feedback and assessment for learning.
2. Teachers will find and develop student exemplars that demonstrate the expectations of the program while considering and then clarifying the standards and scope and sequence

of the graded programs in conjunction/relation with each other. These exemplars will consider the unique aspects of the student's creative and critical thinking within the task requirements.

3. Teachers will develop subject-based and cross-curricular portfolio assessment programs (showcase, documentation and process oriented—digital or otherwise), which will include a variety of evidence/artifacts that provide evidence as to the progress of learners for support of reporting to students and parents.

5. Related AISI Goal A: How will we facilitate professional development to achieve optimal student learning?

- A. We will recruit educational expertise (internal and external to the school) to facilitate professional development as it pertains to our goals.
- B. We will participate collaboratively in conferences in order to promote and sustain the subsequent dialogue and work as a group.
- C. We will research and incorporate a variety of resources (materials, literature and technology) into our programs to further enhance our focus areas at the school.

6. Related AISI Goal B: How will we share our work in education?

- A. We will establish strong professional learning communities (PLC's) focused on improving student learning that include the entire educational community (all educational stakeholders: parents, community leaders, educators, and students).
- B. We will promote professional collaborative outreach opportunities (educationally and professionally) within and beyond the invested educational and research communities.
- C. We will establish strong communication systems (one-way, two-way, and interactive—live and virtual) with the parents that promote strong relationships with our community as well as communicating learning outcomes and evidence of student learning.
- D. We will promote and facilitate opportunities for the six types of parent involvement in the school with the intention of developing relationships and communicating the goals of our school initiatives:
 - Type 1—Parenting: includes schools helping parents develop supportive home environments
 - Type 2—Communicating: [Schools and parents] provide volunteer recruitment and involvement activities at the school and in other locations
 - Type 3—Volunteering: [Schools and parents] provide volunteer recruitment and involvement activities at the school and in other locations
 - Type 4—Learning at home: [Schools and parents] offer parents information about how they can support their children academically
 - Type 5—Decision-making: [Schools] involve parents as decision-makers at the school site
 - Type 6—Collaborating with the community: helps schools, parents, and communities collaborate together to strengthen school programs and family support resources (Epstein et al., 1997, p. 4)

b. Indicate why the project is needed.

In inquiry-based programs, “much of the work in which students engage [is] of an open-ended nature, and [t]he route by which any child arrives at the finished product will vary and, to an extent, what is important is the reflection or moment of inspiration that has taken place along the route” (Black, et al., 2003, p. 70). In light of this, what then becomes important to our school is to find reference points for inquiry-based assessment for learning in these “greyer” areas of learning. We want to be more certain that students have achieved a high level of understanding and engagement through inquiry-based learning methodology in areas of study that involve creative and critical thinking. These areas are not always easily measurable, or measurable through traditional tools of assessment and evaluation. New images of performance based tasks and assessments are needed so that we can adequately assess the benefits of inquiry-based approaches to teaching and learning in technology rich environments.

c. How is this project innovative? Projects can be:

- a) Innovative projects focusing on themes that are brand new to a school authority
- b) Innovative projects that go into greater depth on current themes with new research, strategies, and measures
- c) Innovative projects that are collaborative, across school authorities focusing on common goals

Describe the innovation. What’s new and different for your School Authority?

The innovative part of this project will be to have the teachers work collaboratively to develop a better of understanding of inquiry-based learning and the assessment and reporting of this type of learning in conjunction with our three-year educational plan and charter renewal agreement goals: 1) inquiry-based learning; 2) one-to-one computing initiative; and 3) authentic student engagement. The goal of our school is to develop professional collaborative learning communities with all levels of educational community stakeholders. Professional development around these goals will be intensive utilizing the internal expertise of our school educational team in conjunction with partnerships such as Galileo, The Critical Thinking Consortium, and other. We also hope to measure the level of collaboration surrounding these topics using the work of DuFour, DuFour and Eaker (2009). It is important for these PLC’s to be embedded in the experience of other school divisions and remember to consider the importance of the intentionality and accountability of these professional learning community initiatives.

A3. School Community Involvement

As collaboration is an essential element for school improvement, project applications must reflect support of those who will implement the projects and include meaningful involvement of the school community. What are the indications that the project has meaningful involvement of the school community?

a. Indicate who participated in the consultation process.	b. Describe the participants’ involvement in the consultation and planning process.	c. Describe how the participants will be involved or support the implementation of the project.
Authority Administrators <input checked="" type="checkbox"/>	Helped facilitate the work of the staff to gather data for the direction of this initiative	Help lead the work of this initiative in consultation with the curriculum leaders and the CSS AISI Focus Group.

Business/Community Agencies <input checked="" type="checkbox"/>	Galileo Network; The Thinking Consortium; University of Calgary; and Mount Royal College	Professional collaborative outreach and networking Mentorship partnerships Student teaching programs
Parents <input checked="" type="checkbox"/>	Responded to our request for input about topics around assessment Helped to provide input for the new parent survey where questions about AISI are now part of this survey	Parent feedback will be pivotal to gauging the success of this project
Principals <input checked="" type="checkbox"/>	Helped to define the parameters and measures for the project	Will help to build a climate conducive for healthy and productive professional collaboration through PLC's
School Board <input checked="" type="checkbox"/>	Reviewed the AISI project and provided input	Will provide governance and recommendations where applicable
School Council <input checked="" type="checkbox"/>	Reviewed the AISI project and provided input	Will help implement parent sessions where sharing and training on the various topics within this initiative will be facilitated
Students <input checked="" type="checkbox"/>	Student measures and feedback help to direct the project Student learning is the key aspect of this project	Student success will be the key indicator of success for this project
Support Staff <input type="checkbox"/>		
Teachers <input checked="" type="checkbox"/>	Teachers presented their requests and needs in the area of inquiry-based learning Teachers were part of the planning process in that their ideas for professional development were acknowledged	Teachers will do the research for the project Teachers will implement the strategies informed by the research Teachers will gather evidence of success of the project from the educational stakeholders in the project, namely, the students

A4. Research

The requirement to reflect school improvement research as foundational to project development and implementation ensures there is a strong possibility for success.

- a. What research/literature base informs your project? At least 3 current references (preferably within the last five years) are required.

Author	Year	Title	Source (if not a book)
See (b)			
Black,P.J., & Wiliam, D.	1998	Inside the black box: Raising standards through classroom assessment.	Phi Delta Kappan, 80(2), 139-148.
Darling-Hammond, L. & Ancess, J.	1994	Graduation by portfolio at Central Park East Secondary School. New York: National Center for Restructuring Education, Schools, and Teaching, Teachers College, Columbia University.	
Falk, B., & Ort, S.	1997	Sitting down to score: Teacher learning through assessment	Presentation at the annual meeting of the American Educational Research Association, Chicago Il.
Goldberg, G. L., & Rosewell, B. S.	2000	From perception to practice: The impact of teachers' scoring experience on the performance based instruction and classroom practice.	Educational Assessment, 6, 257-290.
Murnane, R., & Levy, F.	1996	Teaching the new basic skills. New York: Free Press.	
Newmann, F.M., Marks, H.M., & Gamoran, A.	1995	Authentic pedagogy: Standards that boost student performance.	Issues in Restructuring Schools, 8, 1-4.
See "b" for more references			

- b. What other AISI projects inform this project? Include project numbers and names.

AISI Cycle Three References and Other References

AISI Cycle Three Project References

1. 30001: Using Assessment to Improve Student Learning: St. Albert Protestant Separate School district No. 6
2. 30037: Increasing Student Engagement: Medicine Hat School district No. 76
3. 30038: Building Student Learning Through Assessment: Peace River School Division No. 10
4. 30042: Assessment for Learning: Grande Prairie Roman Catholic Separate School District N. 28
5. 30068: Classroom Assessment and Student Learning: Elk Island Catholic Separate Regional Division No. 41
6. 30092: Making Connections—Authentic Assessment: Lethbridge School District No. 51

AISI Cycle Three Conference References

1. Inquiry-based hands-on science: Calgary Girls' School
2. Literacy, technology, and student engagement: What is the relationship?: Calgary School District, 19
3. Partnerships that impact student learning: Calgary School District, 19
4. Voices in assessment: Rocky View School Division, 41
5. Share fare: Teachers sharing assessment/differentiation for learning strategies: Edmonton School District, 7
6. Understanding by design and assessment for learning: Fort McMurray School District, 2833
7. Creating enhanced learning environments through differentiated instruction and technology integration: Wild rose School Division, 66
8. Engaging all learners through differentiation: Edmonton School District, 7
9. Refining assessment: Elk Island Public Schools RD, 14
10. Assessment and grading practices: The wow impact on a priority school: Palliser Regional Division, 26
11. The role of parents and community in supporting student success: University of Calgary
12. Assessment: Elk Island CSRD, 41
13. Critical thinking and inquiry: Elk Island PSRD, 14

Other Literary References

- AlSI (Alberta Initiative for School Improvement) cycle 3 handbook.* (2006). Retrieved November 21, 2008 from http://education.alberta.ca/media/616809/handbook_for_cycle3.pdf
- Alberta Education accountability pillar survey.* (2008). Retrieved November 21, 2008 from <http://education.alberta.ca/admin/funding/accountability/surveys.aspx>
- Audet, R. & Jordan, L. (2005). *Integrating inquiry across the curriculum.* Thousand Oaks, CA: Corwin Press.
- Belitz, C., & Lundstrom, M. (1998). *The power of flow: Practical ways to transform your life with meaningful coincidence.* New York: Three Rivers Press.
- Calgary Science School audited financial statements for the year ended August 31, 2008.* (2008). Calgary, AB: DCS Chartered Accountants.
- Calgary Science School charter renewal agreement.* (2005). Calgary, AB: Charter Agreement.
- Calgary Science School charter renewal agreement.* (2002). Calgary, AB: Charter Agreement.
- Calgary Science School charter renewal agreement.* (1997). Calgary, AB: Charter Agreement.
- Calgary Science School education plan.* (2008). Calgary, AB: Education Plan.
- Calgary Science School enhanced external collaboration proposal. (2007). Calgary, AB: Calgary Science School Society Board Proposal for Alberta Education.
- Calgary Science School policy manual.* (2008). Calgary, AB: Policy Manual.
- Calgary Science School task assessment model. (2007). Calgary, AB: Calgary Science School Initiative.
- Cates, W. M. (2007). One laptop for each middle schooler: Practical findings from a recent study. *Proceedings of the 2007 national convention of the Association for Educational Communications and Technology: Vol. 1: Selected research and development papers*, 30, 36-45.
- Charter schools handbook.* (2002). Edmonton, AB: Alberta Learning.
- Cross, C. (2003). Constructivism: Questions and inquiry based learning. *Manitoba Association of Education Journal*, 2 (1), 12.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience.* New York: HarperCollins.
- Dufour, R., & Eaker, R. (1998). *Professional learning communities at Work: Best practices for enhancing student achievement.* Alexandria, VI: Association for Supervision and Curriculum Development.
- Dyasi, H. (2004). What children gain by learning through inquiry. Retrieved September 5, 2008 from http://www.nsf.gov/pubs/2000/nsf99148/ch_2.htm
- Eaker, R., DuFour, R. & DuFour R. (2002). *Getting started: Reculturing schools to become professional learning communities.* Bloomington, Indiana: National Educational Service.
- Focus on inquiry: A teacher's guide to implementing inquiry-based learning.* (2004). Retrieved November 21, 2008 from http://www.education.gov.ab.ca/K_12/curriculum/bysubject/focusoninquiry.pdf
- Galileo Educational Network with Clifford, P., Friesen, S. & Lock, J. (2004). Coming to teaching in the 21st century. Retrieved for the purposes of this reference from the previous charter November 21, 2008 from <http://www.galileo.org/research.html#2004>
- Gulek, J. C. & Demirtas, H. (2005). Learning with technology: The impact of laptop use on student achievement. *Journal of Technology, Learning, and Assessment*, 3(2). Available from <http://www.jtla.org>
- Jacobsen, M., Saar, C. & Friesen, S. (2007). *Teaching and learning in a one-to-one mobile computing environment.* Calgary, AB: (Unpublished) Research Report.
- Lang, H., and Evans, D. (2006). *Models, strategies, and methods for effective teaching.* Montreal: Pearson Education, Inc.
- Llewellyn, D. (2002). *Inquire within: Implementing inquiry-based science standards.* Thousand Oaks, CA: Corwin Press, Inc.
- Louv, R. (2005). *Last child in the woods: Saving our children from nature-deficit disorder.* New York, NY: Algonquin Books.
- Marzano, R. (2007). *The art and science of teaching: A comprehensive framework for effective instruction.* Alexandria, VA: Association for Supervision and Curriculum Development.
- McKenzie, J. (2005). *Learning to question to wonder to learn.* Bellingham, WA: FNO Press.
- Newman, F. (2001). *Authentic intellectual work and standardized tests: Conflict or coexistence? Improving Chicago's Schools.* Chicago, IL: Research Report.

One-to-one mobile computing: Literature review (2006). Edmonton, AB: Alberta Education.

Province of Alberta school act. (2007). Edmonton, AB: Alberta Queen's Printer.

Re-stated by-laws of the Calgary Science School Society. (2008). Calgary, AB: Calgary Science School Society Board.

Rethinking classroom assessment with purpose in mind: Assessment for learning, assessment as learning assessment of learning. (2006). Western and Northern Canadian Protocol for collaboration in education.

Robinson, S. (2008). *Promising practices and core learnings in arts education: Literature review of K to 12 Fine Arts Program.* Edmonton, AB: Alberta Education.

Schlechty, P. (2002). *Working on the work: An action plan for teachers, principals, and superintendents.* San Francisco: Jossey-Bass.

Why teach with project learning?: Providing students with a well-rounded classroom experience. Retrieved November 21, 2008 from <http://www.edutopia.org/project-learning-introduction>

Walsh, J., and Sattes, B. (2005). *Quality questioning: Research-based practice to engage every learner.* Thousand Oaks, CA: Corwin Press.

Wikipedia. (2008). Qualitative research terminology. Retrieved November 21, 2008 from http://en.wikipedia.org/wiki/Qualitative_methods

c. Summarize how the above research and AISI projects inform the project design and implementation.

"The scientific mind does not so much provide the right answers as ask the right questions" (Claude Levi-Strauss).

Inquiry is defined as "to ask about," "to search into," or "to make investigation" (Websters II, 1984, p. 169). In essence, "The legion of ideas, beliefs, definitions, and descriptions of inquiry all boil down to one: *Inquiry is any activity aimed at extracting meaning from experience*" (Audet, 2005, p. 6). Much of this process involves the art and science of asking questions. "Sadly, most studies of classroom exchanges in the past few decades report that student questions are an endangered species" (McKenzie, 2005, p. 23). However, students at the Calgary Science School in this model of learning that directly supports the tenants of constructivism, are busily creating questions as actively as they are finding answers. They are implementing creative and critical thinking strategies that allow them to reach a new depth of learning and understanding.

What is most important in this inquiry-based learning environment is that the students are learning to activate information into some meaningful form, process and/or outcome (Lang & Evans, 2006; *Focus on Inquiry by Alberta Learning*, 2004). Research indicates that what is needed is a "comprehensive approach that allows for student construction of meaning while interacting with the context, the teacher, and other students" (Berman, 2001; Brandt, 1998; Brooks & Brooks, 1999, 2001; Caine & Caine, 1991, 1997; Jensen, 2005; Sousa, 2001; Sylwester & Margulies, 1998; Wolfe, 2001; all as cited by Marzano, 2007, pp. 20-31). The challenges then posed by this type of teaching methodology are the following:

- How will teachers differentiate their programs to optimize the creative and critical learning environments for students?
- How will teachers find authentic and credible evidence of what students are learning in an inquiry-based learning environments?
- How will the assessment instruments that we use or generate be able to substantiate the degree to which students are understanding their learning?
- If students are not learning, despite our efforts, then what?
- How will we integrate technology to support this program optimally?
- How will we educate the staff and other educational stakeholders (parents and community leaders) about the important elements of this AISI project: inquiry-based learning; assessment/evaluation methodology; creative and critical thinking models; and collaborative

approaches to teaching and learning?

- How will we share with others what we find, and collaborate in a larger educational arena?

Therefore, the research that we can glean from other AISI projects (Cycles 3—see above) and future AISI initiatives (TBA), professional collaborative outreach partnerships, and related literature will function to help us broaden our understanding of inquiry-based instruction in the areas of critical and creative thinking; and assessment and reporting where we have begun researching the following:

1. **Differentiated instruction** attempts to incorporate new educational research into a methodology that accommodates all learners. The three areas of research that are permeating the work of differentiated instruction are the following:

- a. Intelligences (habits of mind, Costa, 1991; multiple intelligences, Gardner, 1993; successful intelligences, Sternberg, 1996; emotional intelligence, Goleman, 1995; Goleman, 1998; and intelligence quotients, Covey, 2004; etc.)
- b. Thinking styles (creative and critical thinking taxonomies: Bloom, 1956; Quellmalz, 1985; Krathwohl's affective taxonomy, 1964; Williams's creative taxonomy, 1989; etc.)
- c. Brain-based research (Jensen, 1998; Hart, 2002; Sousa, 2003; Sousa, 2006 etc.)

2. Despite our efforts to **authentically engage** the students so that our program has “clear meaning and relatively immediate value to the student[s]...” (Schlechty, 2002, p. 1), they are sometimes only “ritually engaged” where the “assigned work has little or no inherent meaning or direct value [but they] associate it with extrinsic outcomes and results that are of value” (p. 1). It becomes the job teachers to help students move beyond this state of ritual engagement to a more purposeful and meaningful educational experience within these programs.

3. Thinking skills can be categorized in a multitude of ways, but for practical purposes they are often divided into two major groups: **creative thinking and critical thinking**.

This distinction is somewhat arbitrary because the two types of thinking are closely and irrevocably intertwined—creative thinking has critical components and critical thinking has creative elements...[People move] rapidly and often unconsciously..from divergence to convergence and back again...use both modes of thinking to solve problems, create new technologies, make new artefacts, and establish philosophies. (Parry and Gregory, 2003, pp. 160-162).

In general, critical thinking is typically convergent in nature and creative thinking is divergent.

4. The research done in conjunction with The Calgary Science School is some of the most current and thorough research being done on **One-to-One Learning** in North America, and it is this charter school's mandate to learn from this research and respond to the research in its educational goals. The research that the school is uncovering is that “[u]sing technology in and of itself [is] not enough to sustain student engagement beyond the initial novelty period” (Jacobsen, et al., 2007, p. 30). In fact, the program's success is linked to inquiry-based learning and an effort to have students authentically engaged in their own learning. These students were not willing to be “passive recipients of someone else's information” (ibid, p. 30).

5. It becomes particularly important for the teachers to be flexible in their **assessment practice**, and to be sensitive to the instruction of their students, knowing what encourages optimal learning and output in inquiry-based learning with a focus on formative assessment, while still being able to gauge some evidence of the learning journey in other ways (assessment *for, as* and *of* learning, Western and Northern Canadian Protocol, 2006) and in tandem with other teaching methodologies using broad-based forms of assessment and evaluation, and in turn, finding effective ways to report to students and parents.

6. **“Metacognition** is traditionally defined as the experiences and knowledge we have about our own

cognitive processes” (Flavell, 1977, p. 71). When students are metacognitive, they are able to reflexively plan, monitor, and evaluate (Fogarty, 1994) their “thinking” experiences.

Conscientious arts educators must engage in a fair amount of metacognition...It is only with programs requiring active involvement in the creative processes and critical analysis of the arts that their crucial role in the curriculum of every child is defensible. (Harris, 2003, p. 13)

These ideas expand when the different *types* of thinking are considered. These types of *brain capabilities* are often referred to as “intelligences” (Covey, 2004) or “learning domains” (Riggs, 1998) (see above Learning Domains). However, when the abilities within these domains are reflected upon, this process of understanding begins to resemble “meta-knowledge” (Flavell, 1977) in the form of “meta-processing” (Robinson, 2007)

7. **Professional collaborative outreach** will be an important component of this project. The main purpose of the professional collaborative outreach is to document and leverage the inquiry-based learning work currently being designed by teachers at the CSS, and utilize emerging technology to share and collaborate with like-minded schools and educators. The person/people working with PC Outreach will work with CSS teachers to enhance the learning being designed for students, and develop a professional network to extend the learning of both students and teachers beyond the walls of the school (see B5).

8. The most significant way of developing school improvement through **professional development** is by developing school capacity through **professional learning communities (PLC’s)** (Eaker, et al., 2002).

The hallmarks of strong professional collaboration are the following:

- Shared mission, vision, and values
- Collective inquiry
- Collaborative teams
- Action orientation and experimentation
- Continuous improvement
- Results orientation (DuFour, et al., 1998)

8. There appears to be a strong correlation between **parent engagement** and school quality (Sikes, 2007). When the parents are directly or indirectly involved, they help make connections because they have familial frames of reference with which to guide their children. It is important to consider the six different ways that parents can be involved in a school:

- Type 1—Parenting: includes schools helping parents develop supportive home environments
- Type 2—Communicating: [Schools and parents] provide volunteer recruitment and involvement activities at the school and in other locations
- Type 3—Volunteering: [Schools and parents] provide volunteer recruitment and involvement activities at the school and in other locations
- Type 4—Learning at home: [Schools and parents] offer parents information about how they can support their children academically
- Type 5—Decision-making: [Schools] involve parents as decision-makers at the school site
- Type 6—Collaborating with the community: helps schools, parents, and communities collaborate together to strengthen school programs and family support resources (Epstein et al., 1997, p. 4)

The Calgary Science School is actively working towards a program that helps to bridge the gap between the research on inquiry-based learning and practice (and the above elements) in the classroom and making this an essential part of the pedagogical culture of the school. “Enduring disposition are the principal goal of inquiry-based learning experiences because these ‘habits of mind and tendencies’ are what students need “to respond to categories of experiences across classes of situation” (Katz & Chard,

1994, p. 30, as cited by Audet, 2005, p. 14).

A5. Improvement Goals

- a. Describe the project goals and how they align with strategies and measures. Most of the goals should focus on student learning outcomes.

Student Learning Goals	Strategies	Measures
<p>Overarching Goals: The Calgary Science School will engage students in relevant inquiry-based learning opportunities using integrative technology that honor the interdisciplinary nature of knowledge and understanding as outlined in the Alberta programs of study. <i>In particular, and with more focus this fourth cycle, the school will work towards increasing student engagement and better understanding how to assess and report thinking in inquiry-based learning methodology in the areas of critical (convergent) and creative (divergent) thinking.</i></p> <p>1. Teachers will incorporate and focus on designing collaboratively (with fellow teachers and/or their students) intellectually ambitious performance assessment tasks, as well as the tools (guidelines, rubrics, technologies, and other) for providing feedback and assessment for learning.</p> <p>2. Teachers will find and develop student exemplars that demonstrate the expectations of the program while considering and then clarifying the standards and scope and sequence of the graded programs in conjunction/relation with each other. These exemplars will consider the unique aspects of the student's creative and critical thinking within the task requirements.</p>	<p>a) Assessment terminology will be explored so that they staff works with a common language.</p> <p>b) Cross-graded and single grade teaching teams will work together to respond to Goals 1 and 2.</p> <p>c) HLAT and CAMP exemplars will help begin a conversation about writing across the curriculum</p> <p>d) Rubrics will be found that contain key aspects of the performance criteria unique to key curriculum tasks.</p> <p>e) Assessment tools will be created with teachers and students to capture the key assessment criteria unique to key curriculum tasks.</p> <p>f) We will help students capture their own artifacts and processes in various assessment portfolio formats, considering how the transition to digital portfolios can be made.</p> <p>g) We will explore various technology programs that will facilitate digital assessment portfolios so that students can direct their own portfolios while being able to get</p>	<p>a) Accountability Pillars Survey</p> <p>b) CSS Teacher Inquiry Self Assessment</p> <p>c) Banks of assessment tools (rubrics and exemplars)</p> <p>d) Report cards</p> <p>e) CSS Annual Student Survey</p> <p>f) Numbers of assessment portfolios (digital)</p>

<p>3. Teachers will develop subject-based and cross-curricular portfolio assessment programs (showcase, documentation and process oriented—digital or otherwise), which will include a variety of evidence/artifacts that provide evidence as to the progress of learners for support of reporting to students and parents.</p>	<p>input from key educational and parent sources. h) We will examine how parents might best access this information, as it will serve as becoming a transparent form of assessment which is ideal for reporting evidence of learning to parents.</p>	
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Other Related Goals	Strategies	Measures
<p>A. Related Goal A: CSS will facilitate professional development to achieve optimal student learning</p> <p>B. Related Goal B: CSS will share our work in education with various educational stakeholders?</p>	<p>a) We will recruit educational expertise (internal and external to the school) to facilitate professional development as it pertains to our goals.</p> <p>b) We will participate collaboratively in conferences in order to promote and sustain the subsequent dialogue and work as a group.</p> <p>c) We will research and incorporate a variety of resources (materials, literature and technology) into our programs to further enhance our focus areas at the school.</p> <p>a) We will establish strong professional learning communities (PLC's) focused on improving student learning that include the entire educational community (all educational stakeholders: parents, community leaders, educators, and students).</p> <p>b) We will promote professional collaborative outreach</p>	<p>a) CSS Professional Development Rubric b) Multimedia examples of professional development c) Parent attendance in school initiatives d) CSS Parent Survey e) Parent survey and workshop anecdotal feedback</p>

	<p>opportunities (educationally and professionally) within and beyond the invested educational and research communities.</p> <p>c) We will establish strong communication systems (one-way, two-way, and interactive—live and virtual) with the parents that promote strong relationships with our community as well as communicating learning outcomes and evidence of student learning.</p> <p>d) We will promote and facilitate opportunities for the six types of parent involvement in the school with the intention of developing relationships and communicating the goals of our school initiatives</p>	
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b. How do these AISI goals relate to specific aspects or priorities in your Three-Year Education Plan?

These three CSS AISI Goals and AISI Related Goals are directly aligned with the CSS Charter Renewal and Education Plan Goals indicated here. The AISI Cycle 4 Goals serve to work under these overarching educational goals, and enhance them *by developing a focus in the area of assessment and reporting as indicated above.*

CSS Education Plan and Charter Agreement Goals:

1. The Calgary Science School engages students in relevant inquiry-based experiences that honor the interdisciplinary nature of knowledge and understanding.
2. Reciprocal learning between teachers and students will occur through the effective implementation of ubiquitous access to laptops in the One-to-One Computing Project initiated in 2006/2007, expanded 2007/2008, and implemented school wide in 2008/2009.
3. Students will be authentically engaged in their learning.

Section B – Project Measures

Projects must have an appropriate balance of local and provincial measures. Alberta Education encourages the use of readily available provincial measures that are appropriate for the project. The number of measures should be sufficient to demonstrate “evidence of success”. There is no minimum or maximum number of measures. Project measures must be aligned with improvement goals and appropriate to the nature of the improvement sought.

B1a. Quantitative Measures

Measures should be expressed as percentages, where possible. It is recommended that baselines be determined using a three-year average. Targets should be realistic and attainable, based on prior performance.

Measure <i>*Select from list (see Appendix) or add</i>	Description: Goal 1 Assessment Tasks and Rubrics Release time for collaborative work for AISI work			
Results	Target	Actual	N	Comments
Baseline		New	24	Percent of teachers taking advantage of PD opportunities for collaborative work around assessment
Year 1 (2009/2010)	TBD			
Year 2 (2010/2011)	TBD			
Year 3 (2011/2012)	TBD			

Measures should be expressed as percentages, where possible. It is recommended that baselines be determined using a three-year average. Targets should be realistic and attainable, based on prior performance.

Measure <i>*Select from list (see Appendix) or add</i>	Description: Goal 2 Exemplars—standards and scope and sequence Report Card Data			
Results	Target	Actual	N	Comments
Baseline		23.7%	600	% of students achieving “4” in the topic of inquiry will increase which requires increased use of creative and critical thinking skill
Year 1 (2009/2010)	30%			
Year 2 (2010/2011)	40%			
Year 3 (2011/2012)	50%			
Measure <i>*Select from list (see Appendix) or add</i>	Description: Goal 2 Exemplars—standards and scope and sequence Provincial Achievement Data			
Results	Target	Actual	N	Comments
Baseline		Grade 6 Sci 45.2% Math 25% SS 47.4% LA 35.7%	200	% of students achieving standard of excellence which requires increased use of creative and critical thinking skill
		Grade 9		

		Sci 39.5% Math 59.6% SS 59.6% LA 36.7%		
Year 1 (2009/2010)	55%			
Year 2 (2010/2011)	60%			
Year 3 (2011/2012)	65%			

Measures should be expressed as percentages, where possible. It is recommended that baselines be determined using a three-year average. Targets should be realistic and attainable, based on prior performance.

Measure <i>*Select from list (see Appendix) or add</i>	Description: Goal 3 Portfolio Assessment Number of digital portfolios			
Results	Target	Actual	N	Comments
Baseline		New	600	% of digital assessment portfolios will increase in the school
Year 1 (2009/2010)	TBD			
Year 2 (2010/2011)	TBD			
Year 3 (2011/2012)	TBD			

Measures should be expressed as percentages, where possible. It is recommended that baselines be determined using a three-year average. Targets should be realistic and attainable, based on prior performance.

Measure <i>*Select from list (see Appendix) or add</i>	Description: Related Goal A Professional Development CSS Professional Development Rubric			
Results	Target	Actual	N	Comments
Baseline		New	30	Rubric identifies performance indicators and standards of success in 4 categories on a scale of 1 to 4. % of 4's will increase over three years
Year 1 (2009/2010)	TBD			
Year 2 (2010/2011)	TBD			
Year 3 (2011/2012)	TBD			

Measures should be expressed as percentages, where possible. It is recommended that baselines be determined using a three-year average. Targets should be realistic and attainable, based on prior performance.

Measure <i>*Select from list (see Appendix) or add</i>	Description: Related Goal B Parent Involvement Parent volunteer attendance in key school initiatives			
Results	Target	Actual	N	Comments
Baseline		New	600	% of parent attendance in the following initiatives (1 representative per family): 1) Parent conference workshops on topics related to AISI; 2) Parent involvement in parent council and

				related committees
Year 1 (2009/2010)	TBD			
Year 2 (2010/2011)	TBD			
Year 3 (2011/2012)	TBD			

B1b. Survey Measures

Measures should be expressed as percentages, where possible. It is recommended that baselines be determined using a three-year average. Improvement targets should be realistic and attainable, based on prior performance.

Measure <i>*Select from list (see Appendix) or add</i>	Description: Goal 1 Assessment Tasks and Rubrics CSS Teacher Inquiry Self Assessment				
Results	Target	Actual	N	Response Rate	Comments
Baseline		24%	25	100	% of teachers who self-assess as advanced in the areas of assessment
Year 1 (2009/2010)	40%				
Year 2 (2010/2011)	60%				
Year 3 (2011/2012)	70%				

Measure <i>*Select from list (see Appendix) or add</i>	Description: Goal 2 Exemplars—standards and scope and sequence CSS Annual Student Survey				
Results	Target	Actual	N	Response Rate	Comments
Baseline		19.4% 19.2%	522	87	% of students who respond “very often” to the annual student survey to the following items: 1) “I use marking guides (rubrics) to judge and improve the quality of my work” and 2) “I get suggestions [classmates, parents, teachers, experts outside the school] to improve the quality of my work.”
Year 1 (2009/2010)	25%				
Year 2 (2010/2011)	40%				
Year 3 (2011/2012)	60%				

Measure <i>*Select from list (see Appendix) or add</i>	Description: Goal 3 Portfolio Assessment CSS Parent Survey				
Results	Target	Actual	N	Response Rate	Comments
Baseline		New	600	TBD	% who indicate satisfaction with school communication and reporting

Year 1 (2009/2010)	TBD				
Year 2 (2010/2011)	TBD				
Year 3 (2011/2012)	TBD				

Measure <i>*Select from list (see Appendix) or add</i>	Description: Related Goal A Professional Development Accountability Pillar Survey				
Results	Target	Actual	N	Response Rate	Comments
Baseline		93.8%	25	100	% of teachers in agreement with the following statements (strongly agree only): 1) "PD opportunities have effectively addressed my professional development needs"; 2) "PD opportunities have significantly contributed to my on-going professional development"; 3) PD opportunities have been focused on priorities of the jurisdiction".
Year 1 (2009/2010)	95%				
Year 2 (2010/2011)	97%				
Year 3 (2011/2012)	99%				

Measure <i>*Select from list (see Appendix) or add</i>	Description: Related Goal B Parent Involvement CSS Parent Survey				
Results	Target	Actual	N	Response Rate	Comments
Baseline		New	600	TBD	Newly developed parent survey indicating top satisfaction in areas of involvement as it pertains to 1) AISI awareness; 2) welcome in the school; 3) decision making in the school; and 4) communication satisfaction
Year 1 (2009/2010)	TBD				
Year 2 (2010/2011)	TBD				
Year 3 (2011/2012)	TBD				

Measure <i>*Select from list (see Appendix) or add</i>	Description: Related Goal B Parent Involvement Accountability Survey				
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Results	Target	Actual	N	Response Rate	Comments
Baseline		75.6	210	35	% of parents satisfied about their decision making in their child's/children's education
Year 1 (2009/2010)	80%				
Year 2 (2010/2011)	85%				
Year 3 (2011/2012)	90%				

B1c. Qualitative Measures

Qualitative data provide rich, transferable descriptions of individuals' experiences of educational phenomena, with a focus on process, meaning and human behaviours as they occur in context. Sources of evidence might include: interview transcripts, written reports (e.g., policy documents; observation field notes), focus group transcripts, video/audio recordings (e.g., documenting classroom activities), artifacts/documents/portfolios (e.g., personal/professional journals; artwork).

The "Current Situation" provides a baseline. The "Success Indicators" demonstrate how we know the "Desired Change" has been achieved. When reporting on these success indicators, plan to include a summary of qualitative evidence, rather than including all the raw data. For example, rather than including all the interview transcripts from the in-depth qualitative interviews conducted, include a summary of evidence-based themes from the data analysis.

Current Situation	Desired Change	Success Indicator(s) (You will be required to report on each success indicator identified.)
<p>Description: Goal 1 Assessment Tasks and Rubrics</p> <p>We currently have developed a couple of rubrics that we use school-wide for the purposed of assessing inquiry-based learning</p>	<p>We hope to create an assessment bank of tasks and associated rubrics that are 1) student collaborated; 2) teacher collaborated with a focus on student results.</p>	<p>Interpretations indicate that the number and caliber of tasks and rubrics will deepen and support learning more efficiently and effectively over time.</p>
<p>Description: Goal 2 Exemplars—standards and scope and sequence</p> <p>1) We are relying on past/out-dated exemplars; and 2) lacking a range of exemplars across the subject areas warrants attention.</p>	<p>We will create a bank of new student exemplars (internal and external) that help clarify the standards of expectations in the school program</p>	<p>The interpretation of these exemplars/artifacts will demonstrate an ever-expanding knowledge base of curriculum expectations and provincial and school standards/scope and sequences across grades and within subject areas</p>

<p>Description: Goal 3 Portfolio Assessment</p> <p>There are limited examples of assessment portfolios (digital and otherwise) in the school</p>	<p>We will increase the number of digital portfolios used in the school and have a variety of models to reference</p>	<p>We will create examples of digital portfolios and the tools used to assess them.</p>
<p>Description: Related Goal A Professional Development</p> <p>Teachers are exploring how to evaluate their own professional development through multi-media reflections or blogging.</p>	<p>We will develop an increased awareness of inquiry-based learning methodology indicators of success with a focus on student learning and in conjunction with our work with Galileo</p>	<p>Sample multimedia presentations will be reflective of their own work with student in inquiry-based learning with a focus on student learning.</p>
<p>Description: Related Goal B Parent Involvement</p> <p>We are not always sure of the parent knowledge and support of our work in AISI. We are not certain of their satisfaction with the connections to the work in AISI.</p>	<p>We will increase the parent awareness of school topics as they pertain to AISI. We will also increase the range of opportunities for parent involvement while increasing their satisfaction with the nature and depth of parent workshops and an annual parent conference.</p>	<p>We will provide interpretations of anecdotes (CSS Parent Survey and workshop feedback forms) demonstrating a high level of awareness and satisfaction with the school as it pertains to parent involvement opportunities and workshops/conference.</p>

B2. Plans for Key Strategies and Processes

Identify and explain the processes and strategies you plan to use to achieve your goals. Indicate the timeframe where applicable.

Category	Planned Strategies/Processes
<p>a. Instructional Strategies: Projects must identify instructional strategies to be used to improve student learning. (i.e., technology integration, clarifying and sharing learning outcomes with students, differentiated instruction, etc.)</p>	<ol style="list-style-type: none"> 1. Differentiating instruction to accommodate different learning styles, different inquiry-based approaches to teaching and learning; and broad-based assessment outcomes 2. Explore the standards of the highly engaged classroom (Schlechty, 2002) 3. Examine the language of critical (convergent) and creative (divergent) thinking, and promote skills and strategies to engage both types of thinking. 4. Find various ways that technology can support learning, assessment and reporting as they pertain to our AISI goals.
<p>b. Student Assessment: Projects must provide annual evidence of student learning and performance.</p>	<ol style="list-style-type: none"> 1. Look at the language of assessment, and be familiar with the terminology of assessment <i>for</i>, <i>as</i> and <i>of</i> learning. 2. Focus on assessment strategies that best fit the nature of the inquiry-based programs (formative assessment), while collaborating on and/or building innovative and ambitious assessment tasks and tools for this purpose.
<p>c. Project Management and Coordination: Projects require some type of support such as a project coordinator, consultant, or lead teacher. It is expected that Project Management and Coordination will represent approximately 5% of project expenses. The proposal should indicate a) who will be responsible for management, b) the proportion of his/her time that will be invested in this activity, and c) how the project will be managed.</p>	<ol style="list-style-type: none"> 1. There will be an AISI project manager 0.05 FTE leading this project. 2. There will be an AISI teacher 0.03 who will help facilitate professional development and work with an AISI Focus Group. This group of teachers will help disseminate and interpret information as the project progresses. 3. Part of the role of the AISI focus group will be to work with CSS Professional Collaborative Outreach, and work towards facilitating Related Goals A and B. 4. Parents will be involved in providing input and feedback for this initiative.
<p>d. Professional Development: School authorities must provide professional development as it is essential to the school improvement process. It is expected that Professional Development will represent at least 15% of project expenses. Professional Development includes resources, materials, external</p>	<ol style="list-style-type: none"> 1. We will recruit educational expertise (internal and external to the school) to facilitate professional development as it pertains to our goals. 2. We will participate collaboratively in conferences in order to promote and sustain the subsequent dialogue and work as a group. 3. We will research and incorporate a variety of resources (materials, literature and technology) into our programs

consultants, sub costs, travel, accommodation, facilities, other costs related to PD.	to further enhance our focus areas at the school.
<p>e. Parental & Community Involvement: There must be meaningful involvement of parents in planning the proposal.</p>	<ol style="list-style-type: none"> 1. We will establish strong professional learning communities (PLC's) focused on improving student learning that include the entire educational community (all educational stakeholders: parents, community leaders, educators, and students). 2. We will promote professional collaborative outreach opportunities (educationally and professionally) within and beyond the invested educational and research communities. 3. We will establish strong communication systems (one-way, two-way, and interactive—live and virtual) with the parents that promote strong relationships with our community as well as communicating learning outcomes and evidence of student learning. 4. We will promote and facilitate opportunities for the six types of parent involvement in the school with the intention of developing relationships and communicating the goals of our school initiatives.

<p>f. Knowledge Dissemination, Sharing and Communication: Projects must identify how what has been learned will be shared. Ways to disseminate new knowledge and practices include project documentation, workshops, events, conferences, promising practices for the AISI website, monographs, research briefs, and articles for the <i>School Improvement Scoop</i>, professional magazines, and journals.</p>	<p>Our AISI Cycle work will be shared in the following ways:</p> <ol style="list-style-type: none"> 1. Calgary Science School Professional Collaborative Outreach Coordinator will help develop reciprocal partnerships (see B5) 2. AISI workshops and meetings will be established throughout the year to provide ongoing dialogue and mentorship in the areas of growth 3. AISI will be communicated in various forms on the website, school newsletter, and other: <ul style="list-style-type: none"> • Establish CSS blog (sharing planning ideas, teacher interviews, examples of student work, rubrics, guest teacher blog posts) • Coordinate video-conferencing/Elluminate/Webinar sessions for teacher sharing • Build CSS twitter/blog community
<p>g. Networking: Project leaders are encouraged to use networks for knowledge dissemination and the exchange of information, ideas, and resources. Networks include face-to-face and digital communication.</p>	<ol style="list-style-type: none"> 1. We will collaborate with other communities and educational agencies and network with the above: <ul style="list-style-type: none"> • Widen network with Alberta and Canadian teachers in other divisions and cities • International opportunities (Global Nomads, Flat Classroom project, NGO's, ChristmasFuture) for collaboration • National Museums, Archives, Libraries, Canadian Historical Society • Galileo Network and The Thinking Consortium • Alberta Assessment Consortium 2. We will work with universities and teacher preparation programs: <ul style="list-style-type: none"> • Mount Royal College and University of Calgary • CSS cohort of student teachers • Use collaborative technologies (blogs, videoconferencing) to leverage relationships with additional universities/colleges
<p>h. Integration and Sustainability: Projects must indicate how educators will integrate what is learned: how they incorporate new practices, strategies, learnings, and key findings into their instructional repertoires. AISI projects are designed to have lasting impact on educational practices in schools. Proposals must indicate how the</p>	<ol style="list-style-type: none"> 1. We will build assessment protocol and rubrics that can be used on an ongoing basis in the future. 2. A student exemplar data-base will be created to support future dialogues of student expectations in the future. 3. We will educate the stakeholders about the importance of formative and related forms of assessment so that they can mentor other teachers in the future. 4. We will involve the educational community in the matters

<p>school authority plans to continue to benefit students and influence effective teacher practices in future years (beyond the AISI project).</p>	<p>of assessment and reporting so that they are well-versed on this process towards finding effective evidence of student learning (critical and creative thinking).</p> <p>5. We will build strong reciprocal relationships with our educational partners so that they will continue to work with our teachers beyond the project.</p>
<p>i. Project Evaluation Process: Evidence is more compelling if it is corroborated through multiple sources. Projects describe the evaluation methods and data sources they will use to determine the success of their project. Multiple methods (e.g., student assessment, surveys), data sources (students, parents, teachers), and levels (e.g., grades 1, 2, 3, etc.) are recommended.</p>	<ol style="list-style-type: none"> 1. This project will consider qualitative and quantitative evidence of success (see Section B1 for Measures). 2. It will use multiple forms of data collection. 3. It will require that we collect evidence of this project's success from all of the stakeholders involved in the project proposal with a focus on gathering student evidence and feedback.

B3. Staffing Requirements

Projects must identify the people who will be involved. Staff can include teachers and AISI Coordinators, other professionals, teaching assistants, administrative and support staff.

	FTE 2009/2010		FTE 2010/2011		FTE 2011/2012	
	AISI Funded	Funded From Other Sources*	AISI Funded	Funded From Other Sources*	AISI Funded	Funded From Other Sources*
Certificated Teachers (5% increase each year)						
Teachers	0.3 (\$30,970.68)		0.3 (\$32,519.22)		0.3 (\$34,145.18)	
AISI Coordinators	0.05 (\$4182.00)		0.05 (\$4223.82)		0.05 (\$4266.00)	
Other Personnel						
Professionals (e.g., Social Worker, Liaison Worker)						
Teaching Assistants						
Administrative Support Staff						
Other						
Total FTE	0.35		0.35		0.35	
Total \$ amount allotted for Staffing & Benefits	\$35,152.68		\$36,743.04		\$38,411.18	

*FTEs allocated for AISI projects that are not paid with AISI funds
If there are no FTEs please indicate with a "0".

Section B4. Budget & Financial Report
B4a. Estimated Project Budget

Revenue	2009/2010		2010/2011		2011/2012	
	Proposed Budget*	Working/ Actual YTD	Approved Budget (Proposed with 1%)	Working/ Actual YTD	Approved Budget (Proposed with 1%)	Working/ Actual YTD
A. Unexpended Funds at the beginning of year	0	0	0	0	0	0
B. AISI Funding	\$83,640.00	\$83,640.00	\$84,476.40	\$84,476.40	\$85,321.16	\$85,321.16
C. Funding from other sources	0	0	0	0	0	0
D. Approved AISI funding transferred to/from other AISI projects	0	0	0	0	0	0
Total Revenue	\$83,640.00	\$83,640.00	\$84,476.40	\$84,476.40	\$85,321.16	\$85,321.16
Comments on any of the revenue line items: AISI budget each year considers a 1% increase.						
Expenses	Proposed Budget*	Working/ Actual YTD	Approved Budget	Working/ Actual YTD	Approved Budget	Working/ Actual YTD
Project Management	5% \$4182.00	0	5% \$4223.82	0	5% \$4266.06	0
It is expected that Project Management will represent approximately 5% of project expenses. Check where applicable: AISI coordinator <input checked="" type="checkbox"/> Office Supplies <input checked="" type="checkbox"/> Travel Expenses <input checked="" type="checkbox"/>						
Staffing and Benefits (Cost of FTE's charged to this project, excluding AISI Coordinator).	0.3 FTE \$30,970.68	0	0.3 FTE \$32,519.21	0	0.3 FTE \$34,145.18	0
(Cost of FTE's charged to this project, excluding AISI Coordinator). Check where applicable: Lead Teacher(s) <input checked="" type="checkbox"/> Internal Consultants <input checked="" type="checkbox"/> Support Staff <input type="checkbox"/>						
Professional Development	38% \$31,759.32	0	37% \$31,842.960	0	37% \$31,927.44	0
It is expected that Professional Development will represent at least 15% of project expenses. Check where applicable: Resources/Materials <input checked="" type="checkbox"/> External Consultants/ Presenters Fees <input checked="" type="checkbox"/> Sub Costs <input checked="" type="checkbox"/> Travel/Accommodation/ Meals/Facilities <input checked="" type="checkbox"/> Other Related Costs <input checked="" type="checkbox"/>						
Instructional Materials/Resources	20% \$8364.00	0	18% \$7442.77	0	18% \$6450.37	0
Equipment	5% \$4182.00	0	5% \$4223.82	0	5% \$4266.06	0
It is expected that Equipment and Other Capital, together, will not exceed 10% of project expenses.						
Other Capital	5% \$4182.00	0	5% \$4223.82	0	5% \$4266.06	0
TOTAL EXPENSES	\$83,640.00	\$83,640.00	\$84,476.40	\$84,476.40	\$85,321.16	\$85,321.16
Comments on any of the Expense categories: FTE proposal considers 5% increment each year.						

B5. Attachment (Optional)

Please attach additional supplementary documents in this section that may be helpful in reviewing this project. (Excel spreadsheet, Word format or PDF)

Note: File should not exceed 1000KB in size or 20 pages single spaced.

Calgary Science School – Professional Collaboration Outreach

Overview

The main purpose of the Professional Collaboration Outreach is a mandate of our charter agreement. The intention of this work is to document and leverage the Inquiry Based Learning (IBL) and AISI work currently being designed by teachers at the CSS, and to utilize emerging technology to share and collaborate with like-minded schools and educators. The person or people working in PC Outreach will work with CSS teachers to enhance the learning being designed for students, and develop a professional network to extend the learning of both students and teachers beyond the walls of the school.

Possible Roles

Document IBL in classrooms

- Video-tape IBL practices
- Create “Learning Objects” – classroom examples, lessons, rubrics
- Document and share examples of the IBL planning process and student work

Planning of IBL projects

- Grade team planning meetings (with Galileo)
- Integrate technology into IBL projects (iMovies, Digital Storytelling, Student Blogs, Wikis, Graphic Design Project, Math and Science Simulations, Video Conferencing, Podcasting, Self-Assessments, Glogsters)
- Maintain awareness of current and emerging technologies
- Establish collaborative planning opportunities with wider Education community (co-planning with Skype, Google Docs, iChat)

Parent Relationships

- Plan CSS “Parent Conference” (Sept 2009)
- Use technology to extend relationships and communication with parents beyond the conference (CSS website, blog, Twitter)
- Create CSS inquiry video

CSS Website

- Plan and revise CSS website for outreach purposes
- Develop a wider audience for CSS using Professional Learning Network
- Create content for website

PD Coordination

- Continue planning PD days (teacher sharing, break-out sessions)
- Develop more complete PD implementation plan (clear steps for student/teacher/admin for Math/Science and Humanities team)
- Integrate clearer feedback loops for PD goals
- “Lunch and Learn” Technology Sessions

CSS Professional Network

- Establish CSS blog (sharing planning ideas, teacher interviews, examples of student work, rubrics, guest teacher blog posts)
- Coordinate video-conferencing/Elluminate/Webinar sessions for teacher sharing

- Build CSS twitter/blog community

Collaboration Opportunities

- CSS network is the basis for collaboration opportunities
- Widen network with Canadian teachers in other divisions and cities
- International opportunities (Global Nomads, Flat Classroom project, NGO's, ChristmasFuture) for collaboration
- National Museums, Archives, Libraries, Canadian Historical Society

Universities and Teacher Preparation Programs

- Mount Royal College and University of Calgary
- CSS cohort of student teachers
- Use collaborative technologies (blogs, videoconferencing) to leverage relationships with additional universities/colleges

Measures

- CSS teacher surveys
- Anecdotal experience of teachers/students/parents
- Galileo Inquiry Rubric (modification – Connecting with Experts changed to connecting with others/"sharing my learning")
- Create impact tool for measuring CSS outreach – potential survey for outside teachers
- Maintain relationship with PD participants from other schools

B6. Project Contacts

Key project contacts who can provide additional information about the project should be included.

	Surname	Given Name	Position	Business Address	City	Postal Code	Phone Number	Fax Number	E-mail Address
Primary Contact	Robinson	Shelley	A. Principal	5915 Lewis Dr. SE	Calgary	T3E 5Z4	403 282 2890 (115)	403 282 2896	Shelley.r@calgaryscienceschool.com
Additional Contact	Lonsberry	Darrell	Principal	same	same	same	Same (122)	same	Darrell.l@calgaryscienceschool.com

Note: Identify primary contact as the first one on the list

B7. Superintendent/CEO Certification

As part of the accountability process, the Superintendent/CEO must certify that the project meets requirements. Please note that the Superintendent will be required to complete this section on the online Extranet submission to Alberta Education.

Project ID:	Current Project Status:	
Does this project:	Yes	No
1. Address an identified need?	✓	
2. Address goals, strategies, schools, grades, etc., that are different from those addressed in Cycles 1, 2 and 3 (2000-2009)?	✓	
3. Have meaningful involvement of the community, including school councils?	✓	
4. Have the support of those who will implement it?	✓	
5. Have a research base?	✓	
6. Have processes in place for ongoing monitoring during the cycle?	✓	
7. Identify provincial and/or local (and quantitative or qualitative) measures that appear reasonable?	✓	
8. Have improvement targets that are achievable?	✓	
9. Identify strategies that have a reasonable chance of achieving the improvement goal(s) and target(s)?	✓	
10. Include a workable plan for knowledge dissemination and sharing?	✓	
11. Identify appropriate evaluation methods?	✓	
12. Have FOIP compliance regarding names in the proposal and/or attachments.	✓	
13. Superintendent/CEO Electronic Signature	✓	