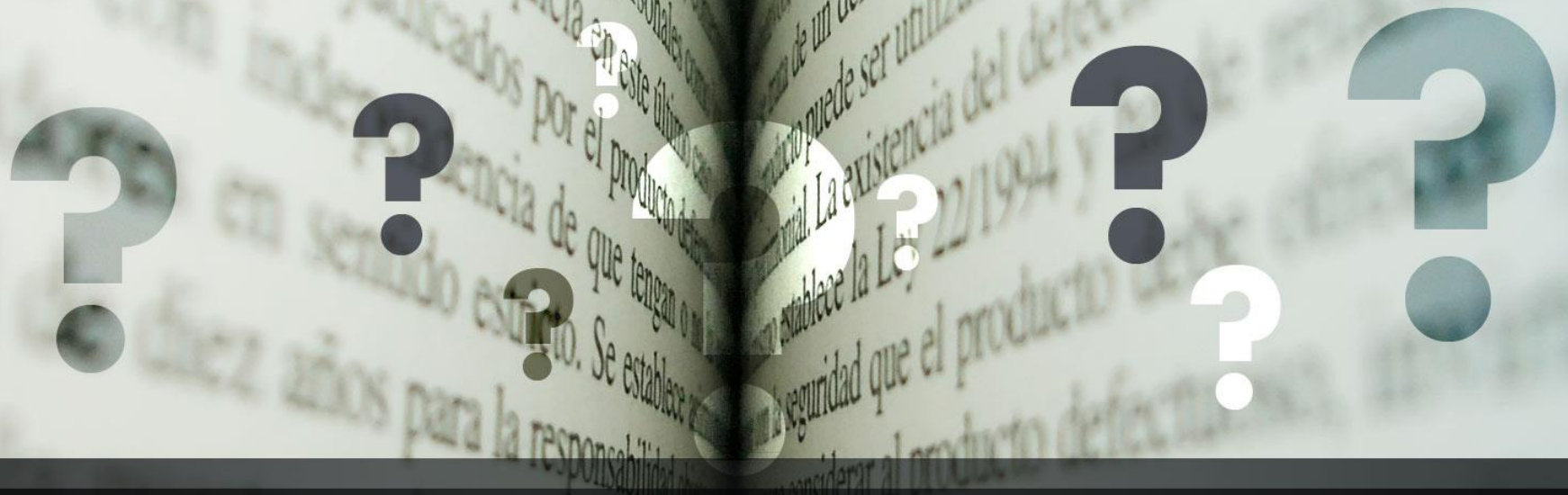


**Sun West School Division
21st Century Learning**

**Danielle Jamieson
Shirley Barclay**



Inquiry in Action

Using Inquiry to Engage Students

Workshop Overview

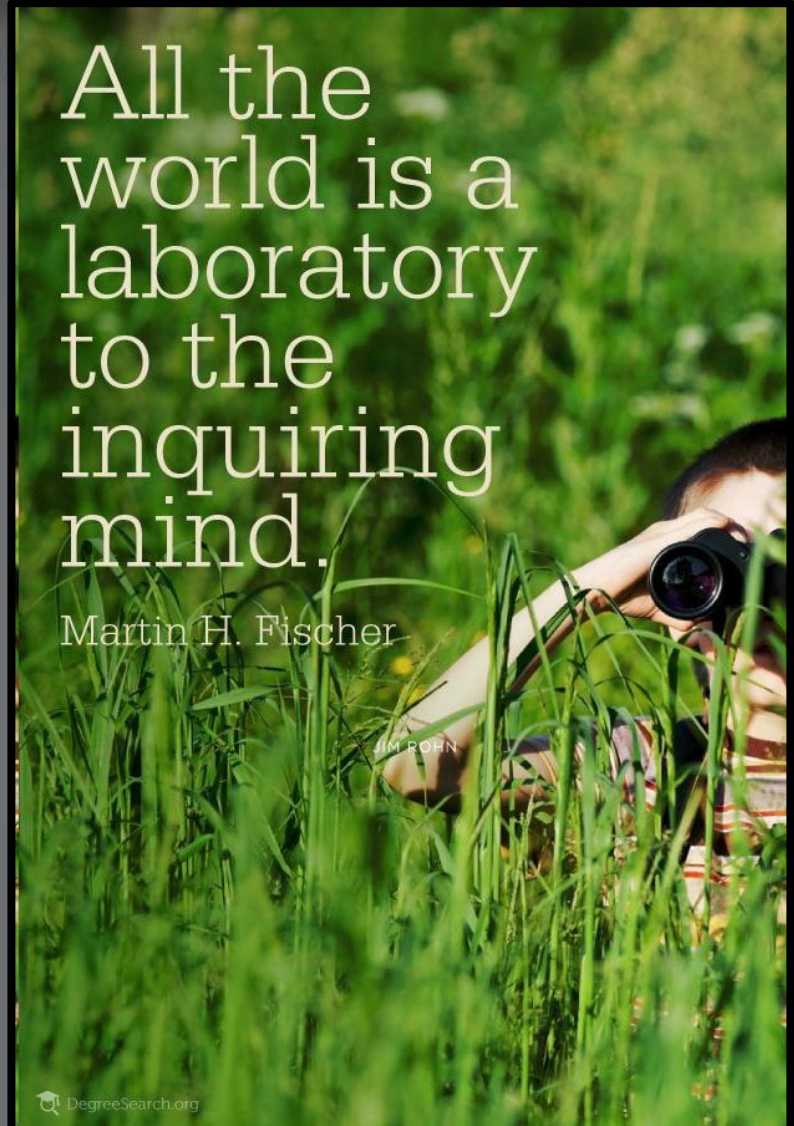
- Activating, acquiring and applying the Inquiry process
- Developing Essential Questions
- Building Inquiry into any curriculum
- Resources to incorporate into your planning
- Setting up Inquiry so your assessment aligns with outcomes
- Critical and creative tools to support Inquiry

4 P Strategy

- **Person**
- **Place they teach**
- **Teaching Position**
- **Purpose and hopes from the workshop**

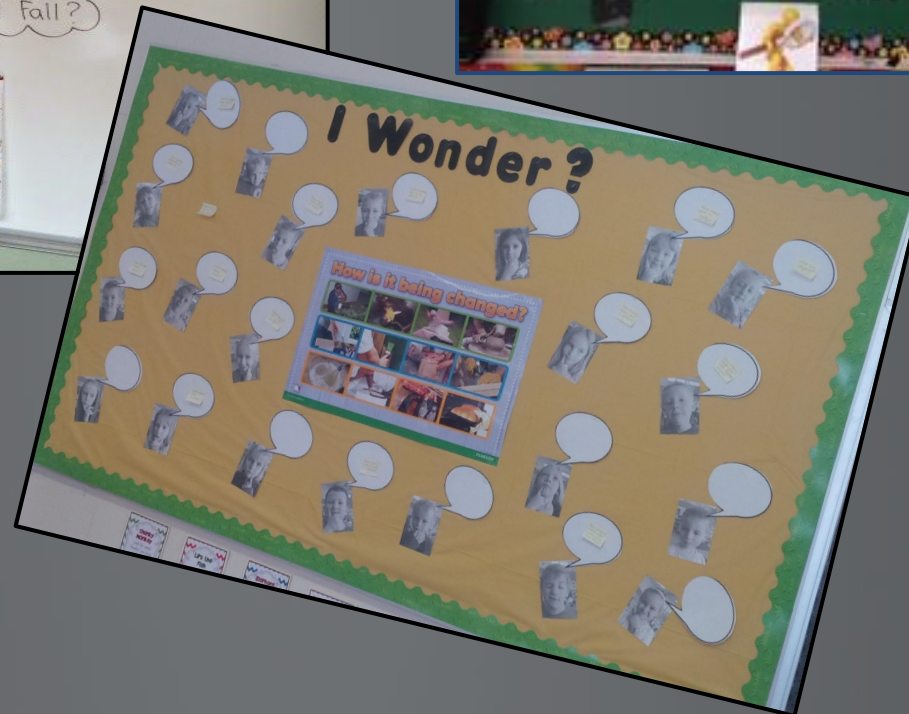
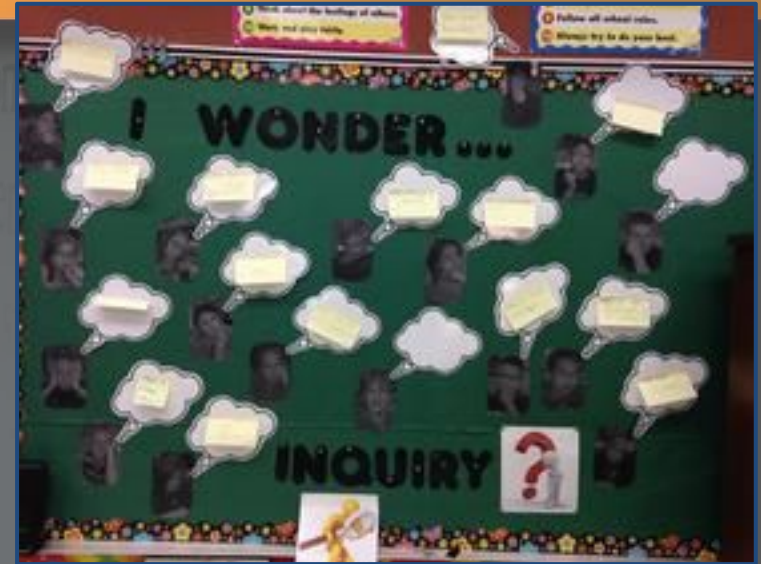
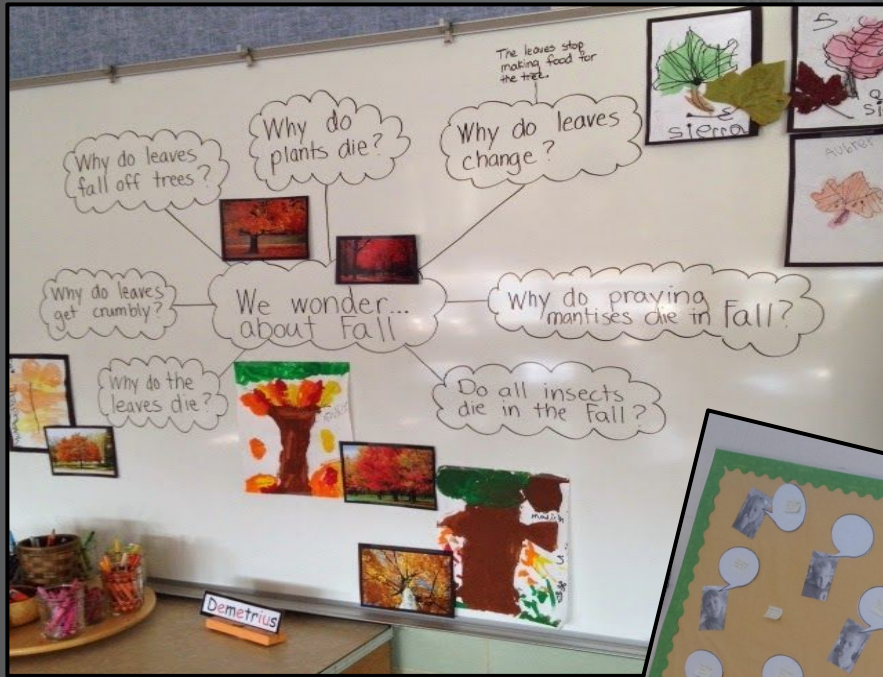
All the world is a laboratory to the inquiring mind.

Martin H. Fischer

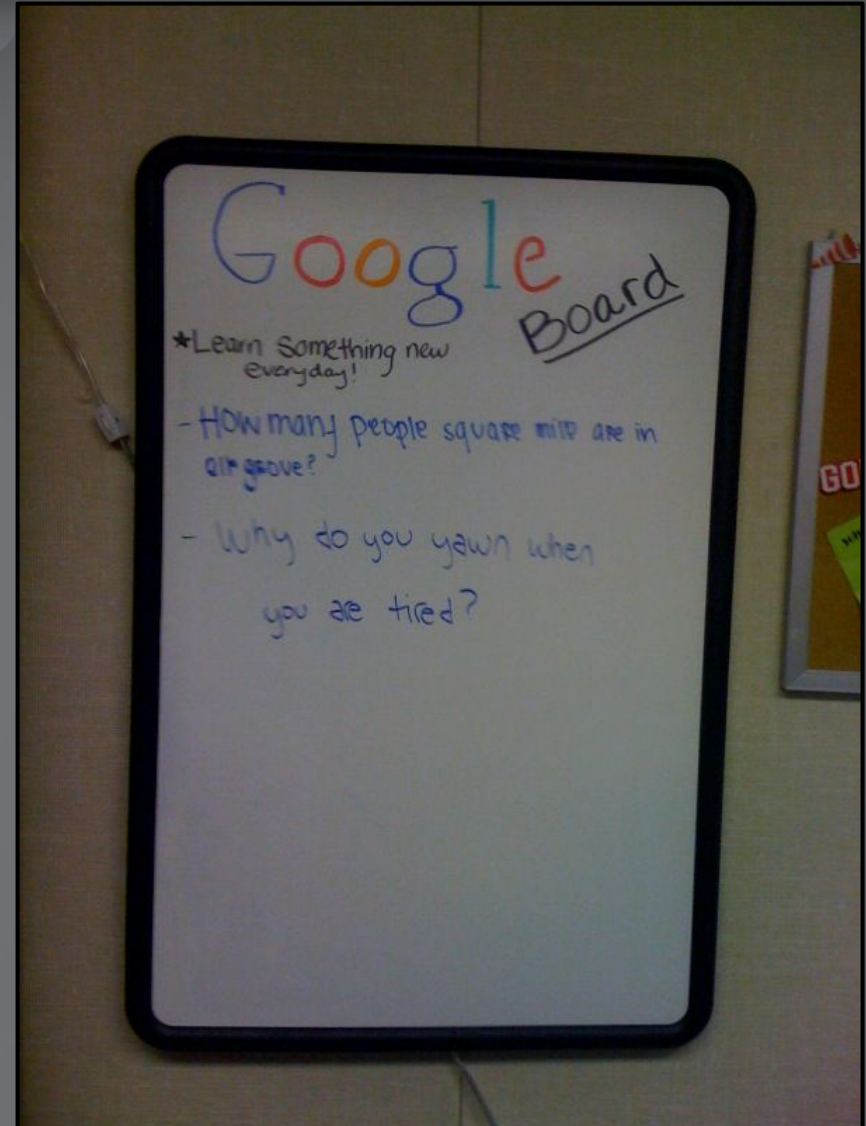


Four Corners

- 1.** I am familiar with the term “Inquiry” but I’m not really comfortable with it yet.
- 2.** I have tried ‘Inquiry” a little. I’m starting to get more comfortable with it.
- 3.** I’ve tried the “Inquiry” approach and am eager to learn more.
- 4.** I just need to refine and expand my “Inquiry” planning skills.



Google Board



Time to Construct Background

- Video
- Text
- Pinterest
- Twitter
- Articles
- Search engines





Investigating and Building Inquiry Knowledge

1. In which ways does this article, video, reading confirm my understandings of inquiry learning?
2. What are some ways in which this article challenges your understanding of inquiry learning?
3. What are some things you are still wondering?

- <https://www.youtube.com/watch?v=Y0cl-RR5lQ8&feature=youtu.be>
- <https://www.youtube.com/watch?v=V35TaPc2Gwc>
- <http://sps-inquirycircles.wikispaces.com/>
- <https://www.youtube.com/watch?v=WSAQAOzMGVE>
- http://ssla.ca/Inquiry%20Gallery%20-%20Webinars?&_suid=1373841682461017565894084310507
- <http://www.cea-ace.ca/education-canada/article/exploring-big-questions>
- <http://blog.scs.sk.ca/hann/Learning%20from%20Practice%20Presentation.pptx>
- http://blog.scs.sk.ca/hann/archives/st_anne_schools_inquiry-based/
- <http://www.naturalcuriosity.ca/>

What did you notice?

With a table partner, do one or more of the following:

- Ask a question
- Clarify something you misunderstood
- Make a comment
- Make a connection
- State something you found important

Your partner responds by:

- Answering your question or asking a follow-up question
- Making an additional comment or connection
- Helping clarify understanding the content/meaning

A blue square with a black border containing the text "Say Something" in a white, cursive script font.

Say
Something

What Is Inquiry?

- Inquiry-based learning is a constructivist approach, in which students have ownership of their learning. It starts with exploration and questioning and leads to investigation into a worthy question, issue, problem or idea.
- It involves asking questions, gathering and analysing information, generating solutions, making decisions, justifying conclusions and taking action.

What Is Inquiry?

“Inquiry is a way of looking at the world, a questioning stance we take when we seek to learn something we don’t yet know.”

(Diane Parker, *Planning for Inquiry: It's Not an Oxymoron!* Urbana, IL: NCTE, 2007, p. 1).

Why Promote Inquiry?

- To encourage learners to think for themselves
- To explore their thinking
- To facilitate their understanding
- To encourage higher-level thinking.

(Diane Parker, *Planning for Inquiry: It's Not an Oxymoron!*)

Why Inquiry?

“...to raise children into citizens who think clearly and deeply, who have gained knowledge and acquire judgment, and who take action with humanity in mind.”

-Stephanie Harvey and Harvey Daniels,
2009, p. x.



Inquiry-based Approach to Teaching

Characteristics of an inquiry-based approach to teaching include:

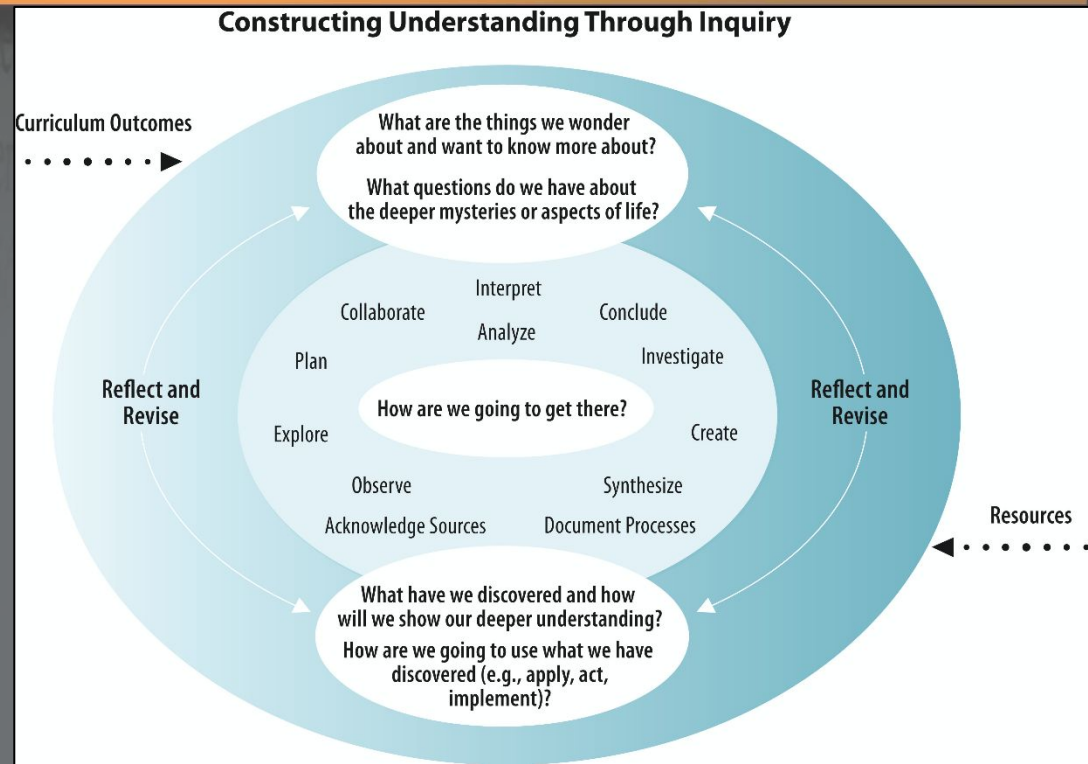
- Focus on a few ideas or areas for inquiry (e.g., extinction versus dinosaurs) in great depth
- Select a focus with the greatest potential to spark thinking and controversy

Inquiry-based Approach to Teaching

Characteristics of an inquiry-based approach to teaching include:

- Continually ask students to make tentative judgements about understanding
- Use disciplines as a repository of information in addressing pressing concepts or issues
- Employ large quantities of data from diverse sources
- Draw on firsthand experiences of students and teachers (adapted from S. Engle and A. Ochoa, 1988, p. 128-129).

Saskatchewan Model



“Inquiry is a philosophical stance rather than a set of strategies, activities, or a particular teaching method. As such inquiry promotes intentional and thoughtful learning for teachers and children” (Mills and Donnelly, 2001, p. xviii).

Teaching as Inquiry

- Providing sufficient opportunities to explore, engage with, practise, and transfer new learning. In this process teachers ask:
 - What is important, given where my students are at (focusing inquiry)
 - What strategies (evidence-based) are most likely to help my students learn this?
 - What happened as a result of the teaching and what are the implications for future teaching?

Higher Level Thinking

- What did I do? (Remember/Knowledge)
- What knowledge, skills, and strategies did I use to complete the task? (Understand/Comprehension)
- What steps did I take to achieve this? (Analysis)

Higher Level Thinking

- What are my strengths and what would I like to learn more about or develop my skills and strategies more in? (Evaluation)
- How will I use this new knowledge and these new skills and strategies? (Create)



Planning for Inquiry

As teachers plan for inquiry, some questions should continually drive their thinking and decision-making including:

- How can I help my students realize that they have questions and that their questions matter?
- How can I create a classroom environment that supports my students' inquiries without directing them?

Planning for Inquiry

As teachers plan for inquiry, some questions should continually drive their thinking and decision-making including:

- How can I help my students connect their inquiries to questions and issues of deeper personal and social significance?
- How can I help my students share their learning in interesting, relevant, authentic ways?

(Diane Parker (2007) *Planning for Inquiry: It's Not an Oxymoron!* Urbana, IL: NCTE, p. 13.)

Contextualizing Inquiry

- Units can be thought of as opportunities to explore, define, and make sense of “big ideas”.
- Most units/modules can include some element of inquiry.
- An inquiry is determined by a combination of what students want to know and what will meet the expectations of the audience for their inquiry (Rycik and Irvin, 2005, pp. 203-204).

Inquiry-oriented Instruction Curriculum Models

Structured (Teacher-Led)

- Students investigate a teacher-presented question through a prescribed procedure

Guided (Shared)

- Students investigate a teacher-presented question using student designed/selected procedures

Open (Student-Led)

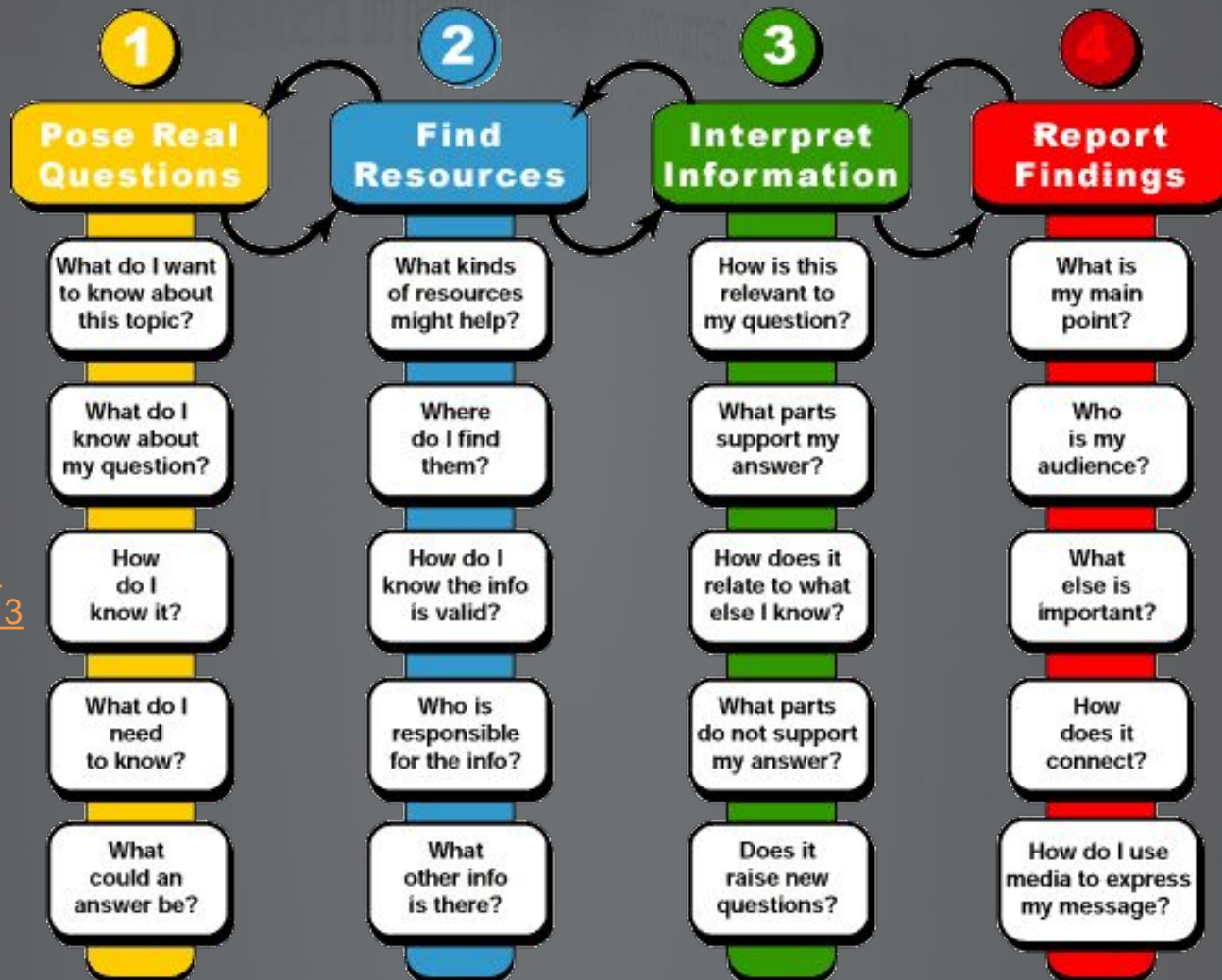
- Students investigate questions that are student formulated through student designed/selected procedures

The 5Es of Inquiry



<https://prezi.com/xwlaapumqr5d/meeting-the-needs-of-contemporary-learners/>

The Inquiry Process



<http://blogs.kqed.org/mindshift/2013/10/the-inquiry-process/>

Top Ten Tips for Inquiry-Based Learning



Paper Twist



Discipline-Based Inquiry



<http://galileo.org/>

Focus on Inquiry

downloadable PDF available at:

<http://inquiry.galileo.org/download-focus-on-inquiry/>

Human Graph



Essential Questions

I wonder what are they wondering?

What do you wonder as you look at the photo?

How can we formulate questions to make them essential?

What are the characteristics of essential questions?

What are some Questioning strategies?



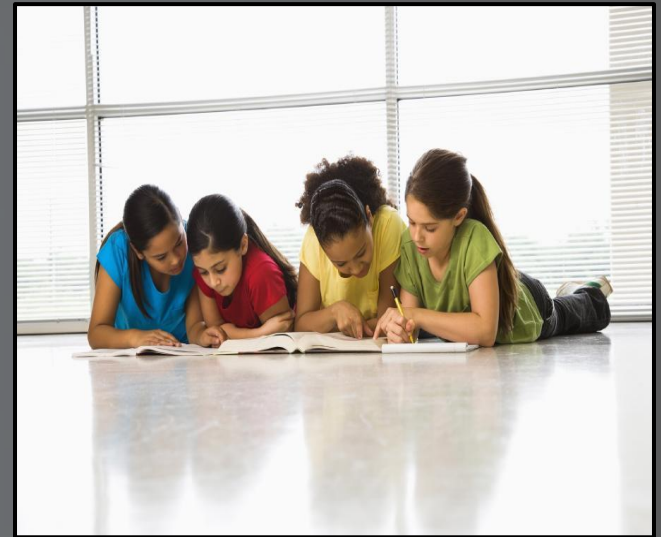
What Is an Essential Question?





An Essential Question:

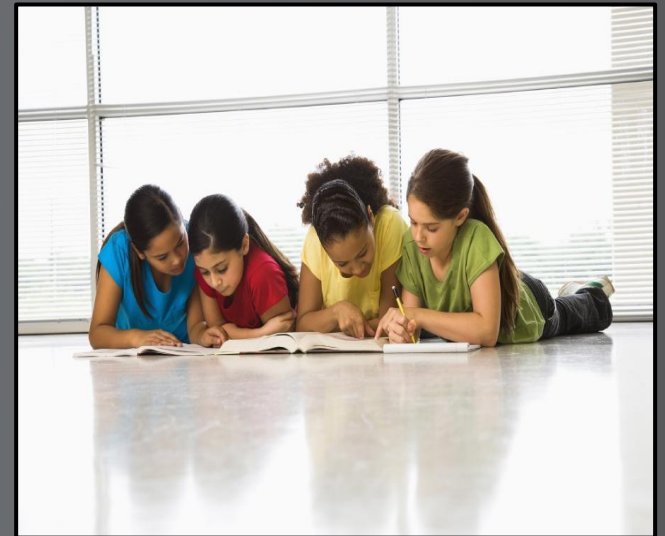
- Provokes thoughtful, lively discussions, creates new understandings, and causes more questions
- Solicits information-gathering and evaluation of data
- Encourages students to produce original ideas rather than predetermined answers





An Essential Question:

- Helps students conduct problem-related research
- Encourages critical thinking, not just memorization of facts
- May not have an answer



Example

- How do the arts shape, as well as reflect, a culture?
- What do effective problem solvers do when they get stuck?
- Is there ever a “just” war?



Non Example

- What common artistic symbols were used by the Incas and the Mayans?
- What steps did you follow to get your answer?
- What key event sparked world War I?

Your turn ... what do you think- Essential or Non-Essential?

- What are examples of animals adapting to their environment?
 - How do effective writers hook and hold their readers?
 - In what year was the second world war?
- Yes/No
 - Yes/No
 - Yes/No



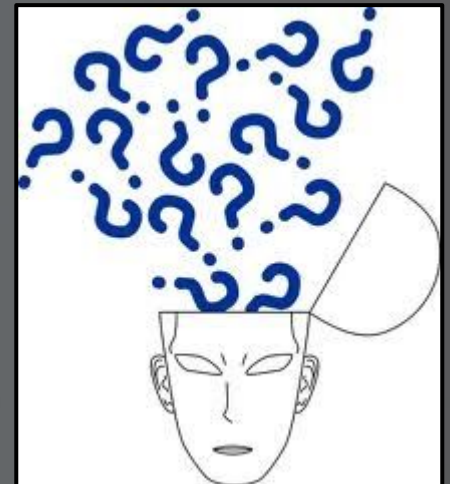
How did you do?

1. **NO** - This is a useful question for helping students understand the concept of adaptation in various manifestations; however, there are specific answers that could be found in a book
2. **YES** - A rich question for exploring the many facets of effective writing, including different genres, audience/purpose connections, writer's voice, and organizational structures
3. **NO** - A factual question with a single correct answer.



Examples of Open-ended Questions

- How would you...?
- What would result if...?
- How would you describe...?
- How does...compare with...?
- What is the relationship between...?
- What would happen if...?
- How could you change...?
- Why do you believe...?
- What is your opinion of...?
- What choice would you have made...?
- What would you do differently?
- How would you go about solving the problem...?
- If you were in this position what would you do?
- Why do you/don't you support...?
- What could improve...?



Understandings

- The geography, climate and natural resources of a region influence the economy and the lifestyle of the people living there.
- People have different dietary need based on age, activity level, weight, and health considerations.

Essential Question:

- How does where you live influence how you live?
- How can a diet that is “healthy” for one person be unhealthy for another?



Non Essential Questions, but needed

- Questions that lead
 - What is the symbol for Mercury?
- Questions that guide
 - Why must the answer be less than zero?
- Questions that hook
 - Are we drinking the same water as our ancestors?
- Need these to check for basic understanding
- Help to steer the student toward target
- To engage, spark interest, capture imagination



How Do You Write an Essential Question?

1. If the content is the “Answer”... then what were the questions that led to the answers?
2. We have to interrogate the content and come to understand the meaning and importance.



Begin with Enduring Understandings

1. Identify the Outcomes that need to be learned
2. Convert the Outcome(s) into Enduring Understandings, more commonly known as Big Ideas.
3. Writing Enduring Understandings/ Big Ideas

Begin with Enduring Understandings

- Determine what the students need to understand about this standard
- Determine the big ideas that the students need to understand beyond this outcome
- Begin each statement with "Students understand that...Or I CAN..." and complete the sentence with two or more concepts from your outcome
- Write big ideas in "kid friendly" language so all your students can understand what they will be learning.

Create Essential Questions



- Determine how many Essential Questions you will need
- 1 or 2 for a lesson, between 3 and 5 for a unit of study that ranges 3-12 weeks
- Frame your questions in "kid friendly" language. Make them engaging and thought provoking.
- Write essential questions with **"how"** or **"why"** instead of "what"

Create Essential Questions


- Sequence your questions so they lead naturally from one to another
- Post these questions in your room as a learning focus for your students
- Remember: If a question is too specific, or could be answered with a few words or a sentence, they are probably not essential questions

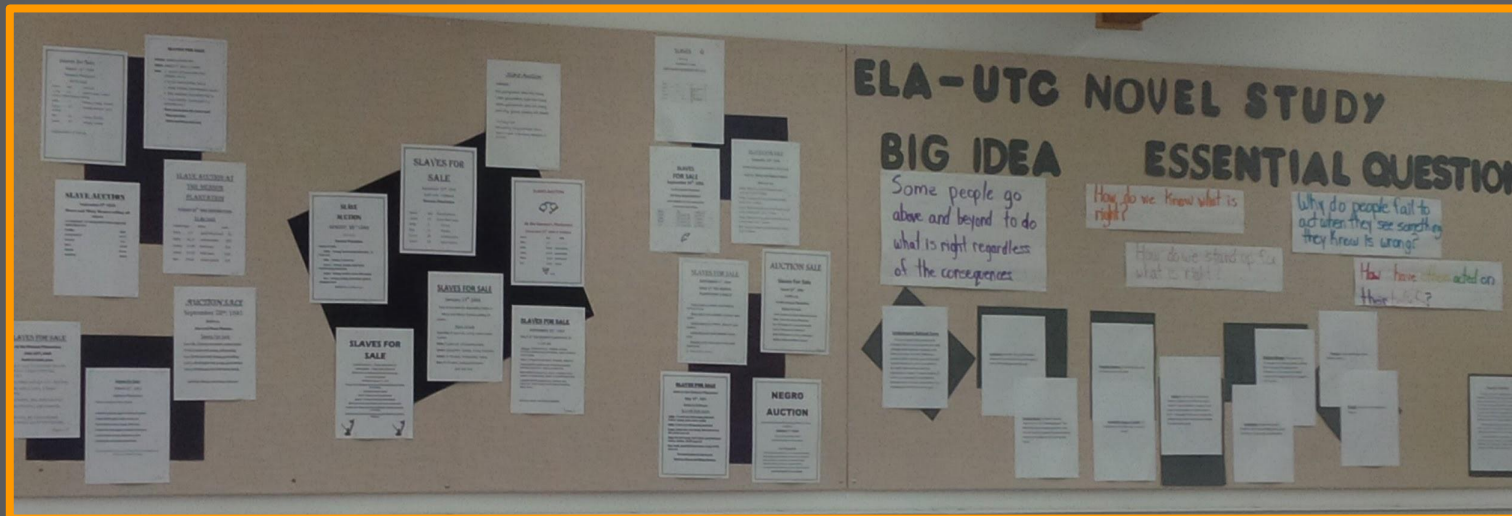


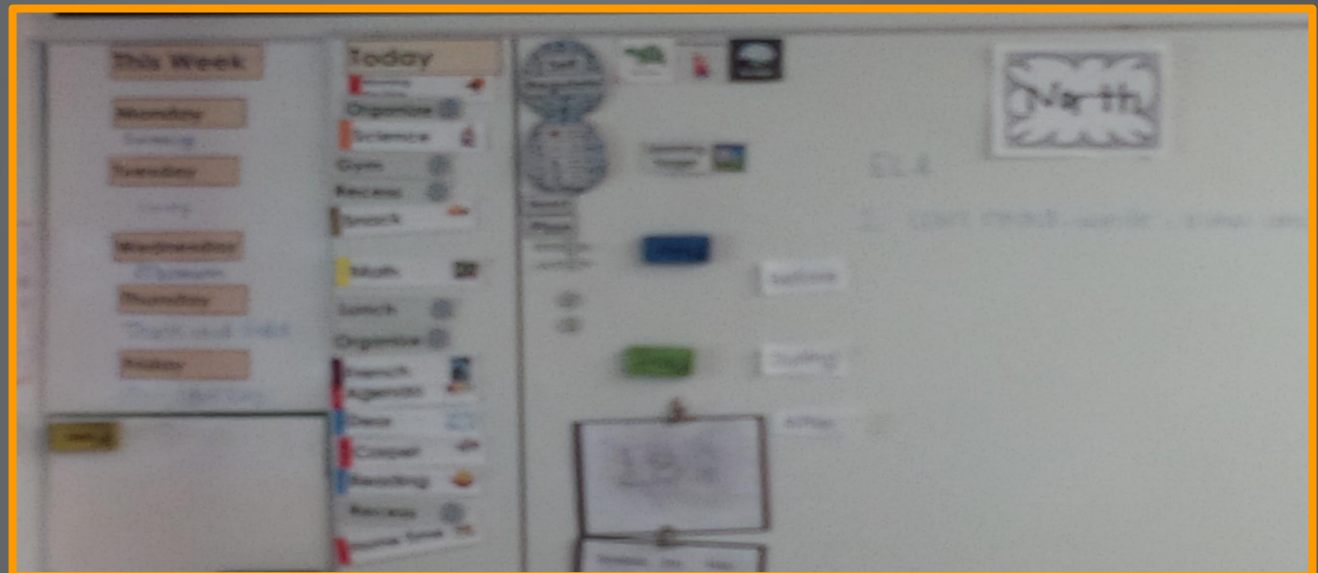
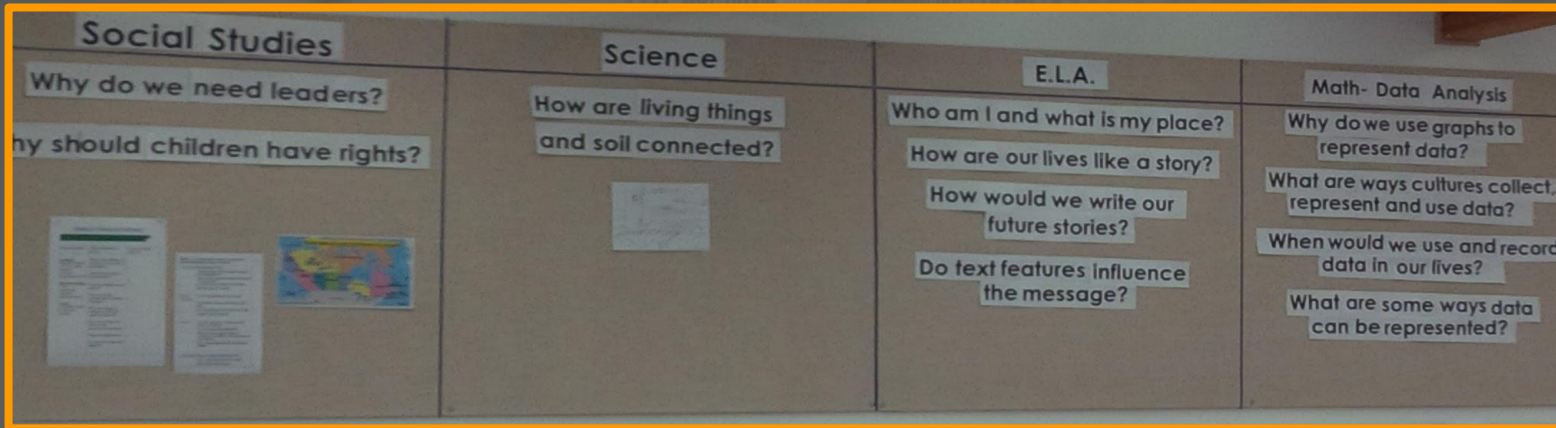
Social Studies 7

Outcome: RW7.3

- Assess the ecological stewardship of economies of Canada and the circumpolar and Pacific countries.
- Explain the role of barter, trade, and sharing in traditional economies in Canada and the circumpolar and Pacific rim countries.
- Investigate the influence of resources upon economic conditions of peoples in circumpolar and Pacific Rim countries.

- 
- What does sustainability look like? Give examples
 - Compare the economies of two circumpolar countries.
 - If your trading partners were no longer, could you continue your sustained economy? Explain and or create a solution to this.
 - What does sustainability look like?
 - Other ideas







“How Questions”

- **Examples:**

- What are some sustainable solutions to environmental problems in your neighborhood, and **how** could they be implemented?



"What if Questions"

- **What if** questions are hypothetical, questions which ask you to use the knowledge you have to pose a hypothesis and consider options.
- Examples:
 - "**What if** the Cultural Revolution had never happened?"
 - "**What if** students didn't have to go to school?"



“Should Questions”

A Moral or Practical Decision based on Evidence

- **Should** questions make a moral or practical decision based on evidence.
- Examples:
 - “**Should** we clone humans?”
 - “**Should** we discontinue trade with countries that abuse human rights?”



"Why Questions"

Understand Cause and Effect

- **Why** questions ask you to understand cause and effect. "Why" helps us understand relationships; it helps us get to the essence of an issue.
- Examples:
 - "**Why** do people abuse drugs?"
 - "**Why** is the death rate higher in one Third World country than another?"



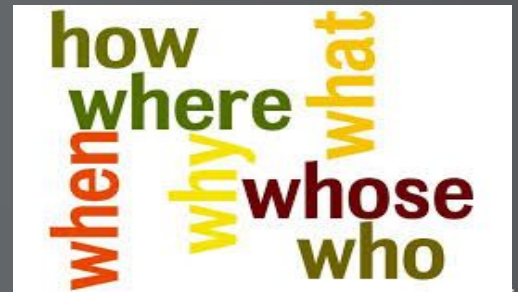
Skinny vs. “Fat” Questions

- **What are Fat Questions?**

- Open-ended questions, which can be argued and supported by evidence.

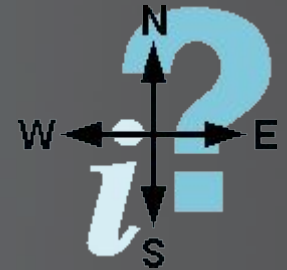
- **Examples:**

- Skinny Question: "When was the Declaration of Independence signed?"
- Fat Question: "What would have happened had we not signed it?"



Characteristics of 4 Types of Classroom Questions

- Questions that Hook
- Questions that Lead
- Questions that Guide
- Essential Questions





Seven Characteristics

- 1. Is open-ended; which means not one answer**
- 2. Is thought-provoking and intellectually engaging, often creating discussion and perhaps debate**
- 3. Calls for higher order thinking (HOT), analysis, inference, evaluation, prediction.**



Seven Characteristics

4. Points toward important, transferable ideas within and sometimes across disciplines
5. Raises additional questions and further inquiry
6. Requires support and justification, not just an answer
7. Recurs over time, meaning the question can be revisited again and again.

Weiderhold's Question Matrix

	Event	Situation	Choice	Person	Reason	Means
Present	What is?	Where / When is?	Which is?	Who is?	Why is?	How is?
Past	What did?	Where / When did?	Which did	Who did?	Why did?	How did?
Possibility	What can?	Where / When can?	Which can?	Who can?	Why can?	How can?
Probability	What would?	Where / When would?	Which would?	Who would?	Why would?	How would?
Prediction	What will?	Where / When will?	Which will?	Who will?	Why will?	How will?
Imagination	What might?	Where / When might?	Which might?	Who might?	Why might?	How might?

WALT	1	2	3	4	5
We are learning to develop effective questions.	I can make a statement. I need help to ask a question.	I can ask and answer a simple closed question.	I can ask an open question and attempt to find answers using key words.	I can sort questions into groups according to set criteria.	I can use the Matrix to create a variety of question types on any given theme to suit the intended purpose.

Saskatchewan School Library Association

<https://ssla.wikispaces.com/Showcase+2008>

<http://goo.gl/yPhTvy>

<http://goo.gl/UjjDqx>



Exploration of Curriculum

- ELA Curricula - Outcomes and Inquiry related indicators
- Assessment across the Inquiry Cycle - Alberta Community School
- Guiding Questions for Deeper Understanding from Saskatchewan Curricula
- Instructional Repertoire across the Inquiry Cycle - Alberta Community School
- Planning for Inquiry Cyclical Template
- Jeff Wilhelm - Inquiry Sequence for Unit Planning
- Planning for Inquiry in Social Studies/ELA - UbD
- Planning for Inquiry Sample Units (various grade levels) - resource table
- Thinking Routines - http://www.visiblethinkingpz.org/VisibleThinking_html_files/VisibleThinking1.html

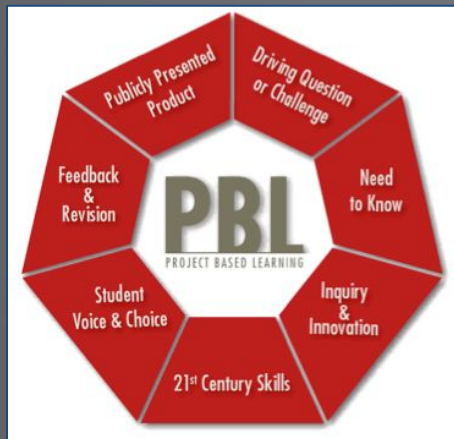
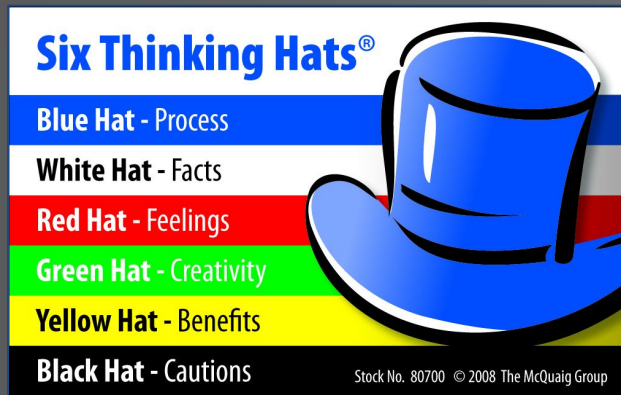
Putting It All Together

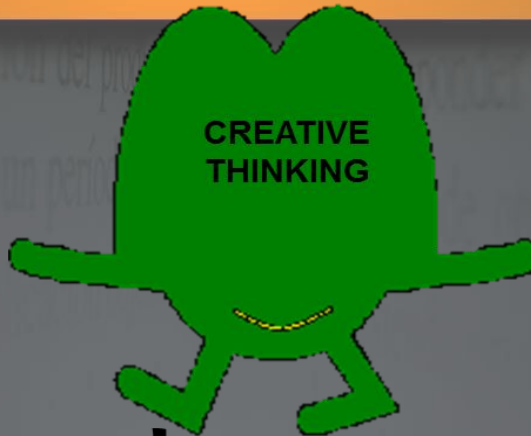
- Thinking skills and critical challenges can be built into every-day work to strengthen student skills.
- The skills needed for Inquiry are addressed in the ELA curriculum which is a good model to use.
- Students need to be taught the skills they will need when inquiring.
- Assessment of Inquiry and Critical Challenges focuses on the Outcomes and Indicators.

Connecting Inquiry to Practice

- Think about a subject area you teach, what is a topic that you currently address?
- How do you currently introduce this topic to your students?
- In what ways do students identify areas for investigation?
- In what ways do students build knowledge about this topic?
- In what ways do students share their information?

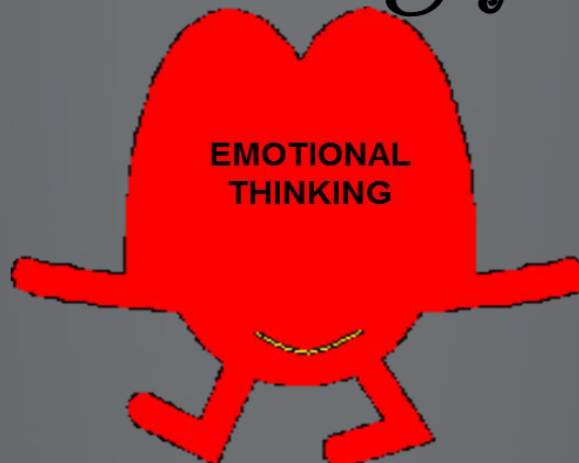
Tools to support Inquiry





De Bono's

6 Thinking Hats



Making Connections - Changing Your Lens

Making Connections

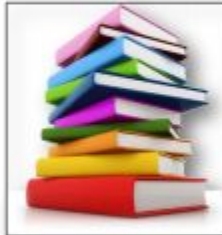
Personal
Experiences



School Subjects



Other Books



Community



General
Knowledge



People



<http://www.teacherspayteachers.com/Store/LearnToLoveTeach>

Student Flip-Chart Based on... Bloom's Taxonomy



A user-friendly learning tool that deepens understanding and activates critical thinking.

Free resource from TpT:
<https://www.teacherspayteachers.com/Product/Blooms-Taxonomy-Flip-Chart-Freebie-660065>





Plus-Minus-Interesting

A Strategy to Foster Critical Thinking

What's good +	What's bad -	What's interesting ?

The Steps in Inquiry

1

Ask - Finding the question that matters, which can be developed by either you or your teacher.



2

Investigate - Gathering information and researching the question.



3

Create - Shaping the new information into an idea and creating a product (artifact, paper, presentation, etc.).



4

Discuss - Sharing discoveries with others in a positive classroom community.



5

Reflect - Looking over your insights and asking what you have learned, what you should/could have done differently, and if new questions have developed.



Research **WISEly**



WONDER

- Ask questions
- Identify your problem
- Analyze the problem and ask questions



INVESTIGATE

- Gather information
- What are the key words?
- What are the best sources?
- Search for information
- Record notes and sources



SYNTHESIZE

- Organize your information
- Summarize your findings
- Draw conclusions
- Make inferences
- Use graphic organizers to arrange your information



XPRESS

- Decide on the best way to communicate your findings
- Create a first draft
- Prepare a bibliography
- Revise the first draft
- Prepare the final product
- Evaluate your process AND the product



PWIM



- Recorded webinar - Sun West website - under the staff tab, Professional Learning - scroll to the bottom of the page
- Also available on the Reading Strategies wiki: link to webinar, PowerPoint, handouts

Extending Inquiry Beyond the Four Walls

Kids Go Global

- www.kidsgoglobal.net

Project Noah

- www.projectnoah.org

Saskatoon Public Schools Inquiry Circles

- <http://sps-inquirycircles.wikispaces.com>

Saskatchewan History Online

- www.saskhistoryonline.ca

Assessment in Inquiry

Guiding Questions for Assessment:

- Are the learning goals for the task clear and visible to all learners?
- Have you included students in setting the assessment criteria for the task?
- Are there clear and direct connections between the key learning goals and the assessment criteria?
- Where are the places you will check for student understanding throughout the task?


Assessment in Inquiry

Guiding Questions for Assessment:

- How will the design of the study intervene to increase student understanding?
- What will you collect and/or observe as evidence of student understanding?
- Does this count as evidence of deep understanding of the key learning outcomes?
- How might you involve parents in the assessment practices?

Thinking about Technology and Assessment:

- How might technologies be used to make the learning goals clear and visible to students?
- What technologies might be used to increase formative assessment?
- What tools would allow for increased peer-feedback?
- What tools would allow student work to be shared with experts or parents to increase feedback loops?
- How might technology allow students to demonstrate their understanding in a variety of ways, including multi-media forms of expression?



At the end of an inquiry unit there is a need to evaluate both the product (effectiveness of the inquiry) and the process (efficiency of the inquiry). This evaluation provides the vital "What Next" step to guide further learning.

<http://www.inquiringmind.co.nz/evaluation.htm>

<http://galileo.org/teachers/designing-learning/resources/inquiry-and-assessment/>

Poll Everywhere



When poll is active, respond at **Pollev.com/daniellejami896**



Text **DANIELLEJAMI896** to +1-747-444-3548 once to join



The background features a blurred image of a document with Spanish text, including phrases like "Se establece", "seguridad", "responsabilidad", and "producto". Several large, semi-transparent question marks are overlaid on the document. A thick orange horizontal bar is positioned above the main text.

**Have our
wonders
been
answered?**

Resource Books for Inquiry:

- Inquiry Circles in Action - Harvey and Daniels
- Inquiry-Based Learning Using Everyday Objects - Alvarado and Herr
- Engaging Readers and Writers with Inquiry - Wilhelm
- A Place for Wonder - Reading and Writing Nonfiction in the Primary Grades - Heard and McDonough
- Why Are School Buses Always Yellow? Teaching for Inquiry PreK-5 - Barell
- Natural Curiosity Handbook - available at <http://naturalcuriosity.ca/aboutus.php?m=b>

Resources to incorporate into your planning

- Planning Cycle for Teachers - handout (pages 5-9) - 10 Step Process
- Structuring inquiry-based learning activities - handout (pages 9-12) - for different age levels of students
- Overall Plan for Inquiry-based Learning Activity - handout (page 30)
- The Four-Column Planner - handout (BLM 9)
- Appendix B: Planning Model (The Third Column) - handout
- Inquiry Model from Alberta Learning - handout
- Inquiry Circles

New!!! - A Project in the Making :)

Wonder of Inquiry Wikispaces

Welcome to the Wonder of Inquiry Wiki!

This is a place where you can discover tools and resources that support the use of inquiry to engage students in the learning process.



<http://wonderofinquiry.wikispaces.com/>

Soon to be linked on the Sun West website
under "Quick Links"



Sun West 21st Century Competencies Artifacts 2014-2015

Search this site

- link on the Inquiry/21CC wiki - <http://21stcenturycompetencies.wikispaces.com/>

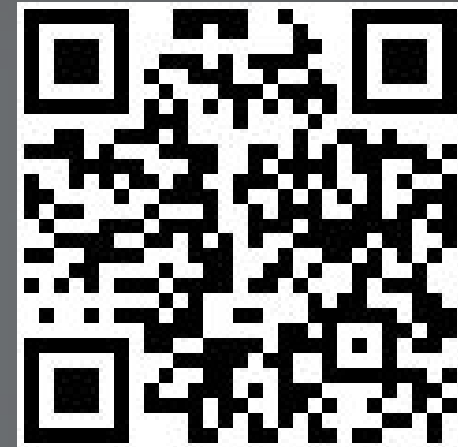


I Used to Think ... But Now I Think



Inside-Outside Circle

Feedback Form



<https://goo.gl/3dDvFV>

Thank You!

Have a **GREAT** rest
of the school year!

inquiry
“We learn more by looking
for the answer to a question
and not finding it than we do
from learning the answer itself.”

~Lloyd Alexander

venspired.com