THE STUDENT INQUIRY PROCESS

# Exploring

INITIATING INQUIRY, CHOOSING THE TOPIC, DEVELOPING QUESTIONS

## AS LEARNERS OF INQUIRY, STUDENTS…

* explore topics that are related to the selected curriculum concept(s) using a variety of resources
* use prior knowledge to connect to unit of inquiry
* wonder and ask questions to push their learning further
* sort, prioritize, and re-frame questions, to determine the focus (‘big’) question that they wish to pursue
* share their thinking and questions with peers and teachers
* make connections between current and previous questions/answers
* discuss possible ways to learn more
* make predictions about possible outcomes or answers

## AS PARTNERS IN INQUIRY, TEACHERS AND TEACHER-LIBRARIANS…

* introduce selected curriculum concepts to students to build on prior knowledge and engage in deeper thinking about the topic
* strategically model wondering and making predictions; encourage questions and acknowledge quality of questions being asked
* listen, observe, and talk with students to assess interests, knowledge, and needs
* provide additional information about the topic for students with limited knowledge or experience
* dialogue with students about ways of learning more about the topic
* value student thinking
* encourage/model accountable talk and provide time for student talk
* give descriptive feedback to students to develop rich inquiry questions

## AS LEADERS OF INQUIRY, TEACHER-LIBRARIANS…

* encourage students to be curious and excited about the topic of inquiry by providing a ‘spark’ for it, e.g. books, websites, primary source documents, movies, databases, artifacts, trips, experts
* [assist students with asking good questions](https://www.edutopia.org/blog/help-students-become-better-questioners-warren-berger) and inspire them to want to ask questions (through [questioning/thinking activities](http://www.visiblethinkingpz.org/VisibleThinking_html_files/03_ThinkingRoutines/03c_CoreRoutines.html) and [picture books](http://blogs.sd38.bc.ca/sd38mathandscience/wp-content/uploads/sites/14/2015/03/Inquiry-book-list-2015.pdf))
* assist students with brainstorming, sorting, and evaluating questions, ultimately choosing one to be the focus question
* generate vocabulary lists related to the focus question and discuss meanings/connections
* [model/teach students how to make their thinking visible](http://www.visiblethinkingpz.org/VisibleThinking_html_files/VisibleThinking1.html)
* [document the questioning and learning process](https://www.teachervision.com/writing/letters-and-journals/48544.html)
* support teachers when using inquiry methods to develop effective [assessment strategies, curriculum goals, and cross-curricular links](https://tc2.ca/uploads/PDFs/TIpsForTeachers/cc_early_primary.pdf)
* create a collaborative virtual space to share questioning and build the inquiry 24/7
* network with other educators to share experiences with this curriculum area/topic, and/or technology tool(s)

# Investigating

DESIGNING THE PLAN, SELECTING INFORMATION, FORMULATING THE FOCUS

## AS LEARNERS OF INQUIRY, STUDENTS…

* use a variety of strategies to select sources, access information, check reliability, record relevant information
* gather information from a variety of resources (3+) across multiple formats, e.g. encyclopedias, books, databases, maps, atlases, ESRI Storymaps, video, archives, field studies, interviews, media
* [assess reliability of sources and cite accurately](http://www.slideshare.net/buffyjhamilton/evaluating-information-sources-graphic-organizer-checklist-fall-2014-rust)
* [use appropriate inquiry and subject specific vocabulary](http://canadiangeographic.com/atlas/glossary.aspx?lang=En)
* [demonstrate successful disciplinary thinking](http://canadiangeographic.com/atlas/glossary.aspx?lang=En)
* connect current thinking to previous knowledge
* clarify and extend questions
* talk about observations and thinking to generate more questions
* record information and keep work samples
* determine whether data, evidence, and/or information is complete for this inquiry

## AS PARTNERS IN INQUIRY, TEACHERS AND TEACHER-LIBRARIANS…

* select the inquiry strategy focus depending on needs, i.e. teachers provide questions and sources then assess student analysis of information
* [co-create “power” question criteria](http://www.scholastic.ca/education/teaching_tip/march2013.html)
* extend student thinking with open-ended questions
* [introduce tasks using prior knowledge to generate new ideas and explore questions and possibilities](http://www.edugains.ca/resourcesLIT/AdolescentLiteracy/AL_Resources/BackgroundKnowledgeALERT_8X11.pdf)
* [model how to read, view or listen to record with a question focus](http://blog.iat.com/2015/08/26/the-best-note-taking-strategies-for-students-teachers-and-experts-weigh-in/)
* [model how to create, conduct and record interviews](http://files.eric.ed.gov/fulltext/ED399583.pdf)
* challenge students’ prior knowledge and beliefs
* model how to plan [(thoughtbook-forward reflection)](http://www.gov.pe.ca/photos/original/eecd_GEO631AS.pdf), observe, and reflect
* provide opportunities for peer and self-assessment to refine or adjust initial plans (co-create checklists)
* encourage student sharing of ideas
* assess student success using [disciplinary thinking](http://oessta-teachers.ca/success-criteria-oessta/)
* monitor and assess learning using inquiry journals, exit tickets, conferencing, anecdotal notes and provide descriptive feedback to support and improve learning

## AS LEADERS OF INQUIRY, TEACHER-LIBRARIANS…

* model [digital citizenship](http://www.talcoontario.ca/digital-citizenship/) and ethical use of intellectual property
* provide a variety of resources to support research and model use of primary and secondary sources
* curate resources
* [model use of keywords and search terms for searching books and online sources](http://www.collectionscanada.gc.ca/education/008-3010-e.html)
* model triangulation of sources to compare information and determine consistency
* explicitly teach bias, point of view and perspective in sources
* [model information gathering from a variety of resources](https://tc2.ca/sources.php)
* model different ways to organize research, e.g. mindmapping, sketchnoting, thoughtbook, KQL, RAN charts
* [model how to determine information needed using thinking concepts](http://oessta-teachers.ca/gr1-concepts-of-social-studies-thinking/)

# Processing

ANALYZING THE INFORMATION, EVALUATING IDEAS, ORGANIZING AND SYNTHESIZING FINDINGS

## AS LEARNERS OF INQUIRY, STUDENTS…

* identify important information or ideas in each source of information to support conclusions of the inquiry using disciplinary thinking concepts and criteria
* use thinking concept criteria to identify how evidence gathered supports conclusion of the inquiry
* [record information from sources in graphic organizers to analyze, compare, sort, classify, and recognize patterns in their inquiry](https://docs.google.com/document/d/1Hzvmo9ZH2Vt19gKOIxuDs5Ey_fkykfyz8YHfea3KeLs/edit)
* use [mind mapping tools](https://www.mindomo.com/) to create timelines, compare/contrast and sort information
* analyse sources of information to determine the importance of an event, development or issue for individuals and/or groups using disciplinary thinking
* think and use a variety of strategies to revise inquiry based on new information, ideas and criteria
* [use evidence and data to evaluate and draw conclusions connecting to big ideas and disciplinary thinking concepts](http://oessta-teachers.ca/an-approach-to-inquiry/inquiry-in-action/)
* [co-create criteria to form judgements and evaluations using disciplinary thinking, i.e. What makes something significant?](http://facingthepastshapingthefuture.com/teacher-guidance/teaching-learning-strategies/history/historical-significance/)
* use criteria to analyse inferences, information and judgements made to determine if more information or thinking is needed
* [evaluate sources of information for accuracy, credibility, bias and usefulness](http://vlc.ucdsb.ca/howdoi9-12/evaluate)
* identify biases in sources of information and ensure a balanced perspective
* use co-constructed inquiry success criteria to determine improvements to notes, thinking, judgement or evaluation

## AS PARTNERS IN INQUIRY, TEACHERS AND TEACHER-LIBRARIANS…

* model the [disciplinary thinking concepts](http://www.edugains.ca/resourcesCurrImpl/Elementary/ConceptsofDisciplinaryThinking.pdf)
* [introduce the new concepts, processes, and skills that relate to the inquiry using disciplinary thinking concepts](http://oessta-teachers.ca/an-approach-to-inquiry/inquiry-in-action/)
* [assist students to review and analyze notes for importance and relevancy](https://www.teachingchannel.org/videos/help-students-analyze-text)
* encourage use of graphic organizers to organize, analyze and think about their inquiry using [SSHG thinking concepts](http://historicalthinking.ca/historical-thinking-concept-templates)
* [assist students with prompts to think about their analysis and evaluation](http://www.edugains.ca/resourcesLIT/AdolescentLiteracy/AL_Resources/ALERT_Inquiry_Fall2015-Letter.pdf)
* observe and strategically question students to clarify and extend their thinking
* provide opportunities for students to demonstrate their understanding, skills and new learning in a variety of ways
* revisit initial questions and thinking with students, providing opportunities to extend their inquiry
* [co-construct success criteria with students to support them as they complete inquiry tasks](http://oessta-teachers.ca/success-criteria-oessta/)
* [provide opportunities for self and peer assessment that revisit the initial engagement questions and reflect back on co-created success criteria](http://www.edugains.ca/resourcesLIT/AdolescentLiteracy/AL_Resources/ALERT_Metacognition_Winter2016-Letter.pdf)
* [assess and evaluate student achievement based on conversations, observations and products](http://oessta-teachers.ca/assessment/)

## AS LEADERS OF INQUIRY, TEACHER-LIBRARIANS…

* model ways to determine if enough evidence has been collected from reliable sources to answer the inquiry question
* [show students how to interpret and analyze primary and secondary sources](http://oessta-teachers.ca/an-approach-to-inquiry/inquiry-in-action/)
* [strategically model ways to describe patterns, analyze, draw conclusions to synthesize information](https://www.youtube.com/watch?v=p3ZNAZk8w68)
* [co-create with students criteria needed to enable critical thinking and to evaluate information](https://tc2.ca/videos.php)
* [model ways to include a balance of perspectives](http://www.edugains.ca/resourcesLIT/AdolescentLiteracy/AL_Resources/PerspectivesBiasesALERT_Fall2013.pdf)
* [assist students in recognizing bias](https://tc2.ca/videos.php)
* [assist students to evaluate sources or information for bias, credibility, accuracy and usefulness](http://library.acadiau.ca/sites/default/files/library/tutorials/webevaluation/)
* [provide a variety of tools to evaluate sources](https://www.youtube.com/watch?v=_M1-aMCJHFg)
* [incorporate the professional learning community to verify and strengthen information](https://www.digitalhumanlibrary.org/)
* [support students to cite sources properly](https://www.youtube.com/watch?v=IMhMuVvXCVw)

# Creating

MAKING AND PRESENTING, ASSESSING PRODUCT AND PROCESS, COMMUNICATING LEARNING

## AS LEARNERS OF INQUIRY, STUDENTS…

* plan ways to express their learning
* consider a variety of representations
* articulate connections between prior knowledge and new discoveries
* answer and refine questions
* [pose new, deeper questions for independent investigation](http://www.naturalcuriosity.ca/pdf/NaturalCuriosityManual.pdf)
* identify avenues for action and celebrate the learning journey
* reflect on what, how and why learning happened by connecting to learning goals and success criteria
* self assess work using success criteria and disciplinary thinking to determine next steps of learning in an inquiry

## AS PARTNERS IN INQUIRY, TEACHERS AND TEACHER-LIBRARIANS…

* facilitate discussions in which students make connections between prior knowledge and new discoveries
* [co-develop learning goals and success criteria](http://www.edugains.ca/resourcesDI/ProfLearningModules2011/DiffInst_AssessmentandEvaluation/LearningGoalsSuccessCriteriaViewingGuide2011.pdf)
* emphasize choice, differentiation and high level thinking about the topic
* [challenge and extend students’ understandings and skills](https://www.youtube.com/watch?v=HQf9Kv1Wtx0&feature=youtu.be)
* provide opportunities for students to demonstrate the progress of their inquiry
* [encourage students to assess their learning and ways of learning by providing timely descriptive feedback](http://www.edugains.ca/resourcesAER/VideoLibrary/Feedback/ViewingGuideFeedbackAfLVideoSeries.pdf)
* [evaluate student learning related to curriculum expectations](https://docs.google.com/document/d/1n_ynS1QFmt4J5ivwMWo9Jtu0S_wfrh9YM19Sm7FN27Y/edit)
* plan, with students, alternative experiences or avenues of inquiry to gain new or deeper insights
* [create opportunities with students to celebrate the learning journey](http://www.scholastic.com/teachers/top-teaching/2013/03/beyond-publishing-party-ten-ways-celebrate-learning)

## AS LEADERS OF INQUIRY, TEACHER-LIBRARIANS…

* [students to brainstorm multiple ways of sharing learning that would optimize their inquiry](http://www.accessola.org/web/OLA/Together_for_Learning/T4L_Vision_Document/Multiple_Literacies/OLA/OSLA/Together_for_Learning/Multiple_Literacies.aspx)
* [encourage students to consider their audience and purpose when sharing their inquiry](http://www.accessola2.com/osla/docs/Library%20Final%20PDF%20REV.pdf)
* [facilitate the integration of technology by reflecting on proven models](http://www.educatorstechnology.com/2013/06/samr-model-explained-for-teachers.html)
* [foster metacognition, allow students to justify their sharing strategy](http://www.scilearn.com/blog/teaching-metacognition-thinking-about-thinking)
* [collaborate with teachers to create appropriate assessment of learning](http://www.edugains.ca/newsite/aer/implementing_assessment.html)
* [match Web applications with student learning needs to facilitate equitable 24 hour access](http://edjudo.com/web-2-0-teaching-tools-links)
* [create opportunities for teachers and students to self reflect on the inquiry process](https://docs.google.com/document/d/1ugdN79ythmYmPEoG3_Rk5D_Ot1OL3rh4ohicAaCKizg/edit)
* allow for various and appropriate forums for students to [showcase their learning](http://www.edu.gov.on.ca/eng/general/elemsec/speced/LearningforAll2013.pdf)
* [provide ongoing coaching for students to apply their understanding of digital citizenship](http://www.talcoontario.ca/digital-citizenship/)
* [explore avenues to share student inquiry globally](https://www.digitalhumanlibrary.org/)