Lesson: Designing an Effective Query

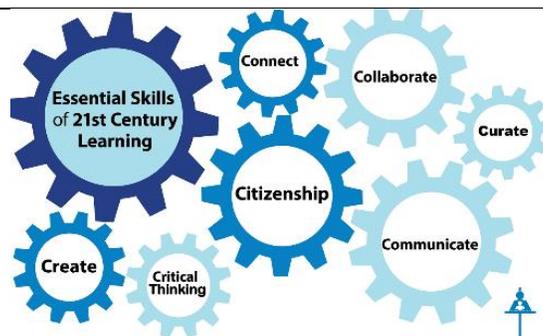Curriculum Areas: ELA – Reading, Writing, (other subjects)

Curricular Outcome(s):

CC1.1   CC5.1
CC2.1   CC6.9
CC3.1   CC7.2
CC4.1   CC8.2

Resources /Materials:
- Books, images, or tasks to generate questions
- Thick and Thin questions worksheet

Websites and Digital Resources & Sources:

http://ssla.ca/inquiry   (http://bit.ly/1OfWjwc)

Questioning and Inquiry information is from Inquiring Minds: Learn to Read and Write (2009)

21st Century Essential Skills:
- Create
- Curate
- Communicate

Digital Citizenship Concepts and Skills: RESPECT, EDUCATE, PROTECT
- RESPECT
- EDUCATE

Digital Citizenship Essential Questions:
- Should technology be used to access information to learn new concepts?
- How can students use digital technologies to best take advantage of the educational opportunities available to them?

Essential Knowledge - See Digital Fluency Continuum
- Knowledge: What will students understand?
    o Learning in a digital society includes searching and accessing information as well as processing skills (information literacy).
    o There are various ways of organizing information and we need to learn skills to find the information we are looking for.
    o I cannot believe everything I find online.
    o Sometimes there is content online that may make me feel uncomfortable and that I should close it and tell and adult.
    o Information may vary between websites because search engines have different features and ways of searching.
    o Both finding and evaluating information is necessary.
- Skills: What will students be able to do?
    o Use a variety of strategies to find information and determine the accuracy and reliability of the information.
    o Students successfully use keywords to search as well as a variety of search strategies.

Essential Question:

What is the difference between a thick and thin question?

How do I ask questions to seek for answers?   How do I inquire about a topic?

Before:

Introduce your students to the difference between thick and thin questions for research (http://bit.ly/XoPapU). Follow this by having students come up with examples of each type of question (thick and thin questions). You can also read a book, text, article (fiction or non-fiction) and create a list of thick and thin questions within the book. Students can recorder their questions in the worksheet below.

During:

As a class, generate essential questions on a topic you are studying by exploring books, videos, or images. Students can generate their questions on sticky notes and then post them on the board. After they have generated their questions, go through them and sort them between thick and thin questions.

Tips for Generating Questions

1. **Put standards into question forms.**
   Wiggins and McTighe (1998) critique most standards as being too vague, focusing on the rote learning of information, and as not identifying what constitutes adequate evidence of learning. So the first tip is to put standards into question forms that specifically get at what is deep and important and applicable from the standard.

   Examples:
   - The standard "Students will be able to identify the three branches of government and the notion of balance of powers" can be phrased as *What is a good government?*
   - The standard "Students will understand chemical properties and their effects" can be phrased as *What makes a powerful chemical?*

2. **Consider inquiry and design.**
   What questions drive the disciplines? What problems inform current research in the field of economics?

   Examples:
   - How can poverty be best addressed?
   - How is wealth best created?
   - What does it take to be an outstanding entrepreneur?

3. **Consider the heart of the matter.**
   What is the true importance of this curricular topic? Why do I love teaching it? What must students remember and carry away regarding it or we will all have missed the point?

   Examples:
   - What responsibilities do human beings have to one another?
   - How far can we, or should we, go in tampering with nature?
   - What are the costs and benefits of technology?
   - Is our medical or technological history a history of progress?

4. **Look around the community for issues that intersect with the topic.**

   Examples:
   - What should our community do about global warming? Waste disposal? Public transportation?

5. **Ask questions about "quality," requiring students to make judgements.**

   Examples:
   - Who was the greatest prime minister?
   - What makes a great leader or teammate?
   - What was the worst natural disaster?
   - The greatest hoax? The greatest military invention? The greatest sports upset?

6. **Ask questions of application. These work especially well in math and science.**

   Examples:
   - What should we do with what we know about nuclear fission?
   - How can we use what we have learned about geometry to design a new school?

7. **Ask ethical questions.**
   What should we pursue? What should we do with the knowledge we have?

   Examples:
   - Should we use cloned meat for our food supply?
   - Should we allow wiretapping to protect us against terrorism?

(See Wilhelm, 2007 for more tips and a fuller discussion)

Sample Guiding Questions

Another activity that works well is to brainstorm a list of questions around a generative topic. Then work with colleagues to identify those questions that meet the criteria. You must also find the one question that is the biggest; the others are sub-questions of the big question.

Ecosystems
- How do humans affect their environment?
- What are the ethical concerns arising from the way we use the environment?
- How do organisms interact within ecosystems?
- How can humans preserve unique ecosystems?

Social Justice
- How do we make a fair and just society?
- How do competing values affect ethical decision-making?
- How does a culture determine social justice?

Dance Rituals
- How do rituals reflect diversity?
- How can dance reflect, challenge, and shape the values and understandings of a society?
- Why are ritual dances performed?
- What are the characteristics of ritual dance?
- How can we use design elements to create our own ritual dance?

Artistic Choices
- What kinds of aesthetic choices do artists make and what are the effects?
- How do artists construct and present their works for particular audiences?
- How do ideas of beauty change over time?
- How have artists used the codes and conventions of their art form to describe a sense of place?

On a lesson level, an activity or shorter reading can be framed by a sub-question of the essential question or a problem-orientation related to it. If students understand what question or problem they are pursuing, and how they will be accountable for reporting out and sharing what they have learned, then their engagement will be greater and more focused.

For instance, during the freedom vs. security unit, our teachers created a Directed Reading and Thinking Activity (DRTA) around an article on school dress codes and uniforms. They framed the reading with the question: "To what degree should schools have the right to determine what students wear?" This is a nice sub-question to the essential question, particularly given dress related to gang coding and the like.

When designing essential questions, think about ...

» Have I related the topic to students' past and present experiences?

» Does the topic relate to human issues and human well-being?

» How might I teach so that my students and I work together to build a community of practice?

» Have I made good use of disciplinary concepts used by practitioners?

» How might I explore the emotional, ethical, and human dimensions that relate to the topic?

(Beck and Kosnick 2004)

After:
If you would like, you can continue the steps in the inquiry process and explore the question further, see below for an inquiry unit template.

Assessment:
Students will be able generate thick questions that promote inquiry.

THIN Questions (Right There)	THICK Questions (Think and Search)
Who? What? Where? When? How many?	What if…? How did…? Why did…? What would happen if…? What might…? What do you think…?
Record your THIN questions below.	Record your THICK questions below.

Inquiry Unit Template

ESSENTIAL QUESTION:

CONCEPTUAL KNOWLEDGE: (What you want the students to know)	**PROCEDURAL KNOWLEDGE:** (What you want the students to do)

FRONTLOADING ACTIVITY:

SCAFFOLD OF ACTIVITIES: For exploring and practising concepts and leading to capacity to complete culminating project — demonstration of developed understandings

Activities	Connection to Conceptual and Procedural Knowledge	Formative Assessments

CULMINATING PROJECT:

Project Description	Sequence for Achieving and Creating the Project	Summative Assessments

(This template, designed by Peggy Jo Wilhelm, 2006, is followed by a description of each section on page 39.)

ESSENTIAL QUESTION

» Articulate an Essential Question that frames the unit as a puzzle or problem to be solved

NAMING CONCEPTUAL AND PROCEDURAL KNOWLEDGE

» Name specifically what you want the students to be able to "KNOW" and "DO" by the end of the unit

WHERE DO I WANT THE STUDENTS TO BE AT THE END OF THE UNIT?

» Identify a culminating project (activity/performance) that requires students to visibly demonstrate their understanding of the developed conceptual and procedural knowledge

SEQUENCE — SCAFFOLD OF ACTIVITIES

Moving students from where they are to where they need to be; moving from their current zone of actual development to a new zone of actual development; from essential question to culminating project. This planning process allows the teacher to work backward from the culminating project as well as forward from the essential question to the culminating project.

» Each activity allows the students to practise as many skills/concepts as possible: concentrated samples, multiple iterations, lots of practice in meaningful situations.

» The activities should work together to Model, Mentor, and Monitor student learning through the use of Multiple Modalities and Measures: Teacher Models, Teacher Does/Students Help, Students Do Together/ Teacher Helps, Students Do Independently/Teacher Assesses. This provides practice, gradual release of responsibility, and multiple ways for students to develop and demonstrate learning.

PLANNING ASSESSMENT WITHIN THE UNIT

» Implement continual formative assessment throughout the unit.
» Implement summative assessment of student mastery of the major concepts and strategies.
» Ask how the culminating project demonstrates mastery of the major concepts and strategies the unit was designed to teach.

(Peggy Jo Wilhelm, 2006)