Inquiry Research Platform: Curriculum Guide

inquiryresearchplatform.weebly.com

Prepared for: ETEC 510: The Design of Technology-Supported Learning Environments.

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Submitted on: August 2nd, 2015

TABLE OF CONTENTS

INTRODUCTION

Classroom learning has evolved, is evolving, and will continue to evolve for as long as the student-teacher relationship exists. The one-room schoolhouse has transformed into a classroom without walls, and even without borders. Current educational scholarship is responding to changes in global needs. The student-teacher relationship has been disrupted, and how we communicate, collaborate and problem solve needs to be rethought. Students' focus is shifting from learning about isolated facts to understanding how to be a global citizen, where core competencies and big ideas are key, and technological literacy is vital to a student's future success (BC Ministry of Education, 2013).

Inquiry learning platforms are an important movement for the future of research projects. Students' must develop new skills so that they can filter through the abundance of information and misinformation found on the Internet. The goal of this on-line, inquiry research platform is to expose students to Web 2.0 technologies, provide options that engage their interest through digital media projects, and build a foundation for research that examines both how to research, as well as researching literacy.

Throughout this platform, both educators and students will have options of pursuing either traditional, paper-based research methodologies or more modernized, technology-based approaches. Regardless of one's approach, however, a critical piece to the inquiry research process is that of reflection (Maab & Artigue, 2013, Branch & Galloway Solowan, 2003). Whether it is performed online via a blogspace or traditionally using a journal, reflecting throughout the inquiry process helps "students understand the phases of the inquiry process, their feelings throughout the inquiry, and the skills and strategies that support their inquiry develops the real learning and understandings that are transferable to other learning situations" (Branch & Galloway, 2003, p. 6).

THE CURRICULUM GUIDE

WHAT IS THE CURRICULUM GUIDE?

The curriculum guide for the inquiry research platform was developed to:

- Provide a theoretical context for the needs of inquiry based learning, especially in the province of British Columbia
- Introduce inquiry learning into the secondary school classroom
- Supply practical implementations of the inquiry research platform into secondary school classrooms

WHO IS THE CURRICULUM GUIDE FOR?

The curriculum guide was developed by educators for educators who are looking to implement inquiry learning in their classrooms. Since the inquiry research platform focuses on several different disciplines, it can be used universally in a school or even at home. The inquiry research platform was developed to cater to grade 8 students, but can be adapted to students of all ages.

WHAT IS THE WEBSITE FOR?

inquiryresearchplatform.weebly.com is for students and educators. Students will find that the website is an excellent springboard into inquiry learning. Whether students are formulating research questions, or exploring the basics of research, they will find that the platform helps them to enhance this valuable life skill. Educators can use the website in their classrooms to teach research, or take parts to reinforce important concepts.

WHAT IS INQUIRY BASED LEARNING?

"Inquiry is an approach to learning whereby students find and use a variety of sources of information and ideas to increase their understanding of a problem, topic or issue of importance. It requires more than simply answering questions or getting a right answer. It espouses investigation, exploration, search, quest, research, pursuit and study. It is enhanced by involvement with a community of learners, each learning from the other in social interaction" (Kuhlthau, Maniotes & Caspari, 2007, p. 2).

Is the role of the teacher merely to pass on knowledge in the form of facts and dates? Or is it to build students' capacities to learn for themselves? Most teachers would argue for the latter. While society regards the teaching of certain facts as indispensable, we contend that teachers prefer developing learners who can think for themselves, and know how to find the facts that they need. Helping students develop an understanding of how and what they learn is the territory of inquiry based learning. According to Jang, Reeve and Deci (2010), students that primarily experience inquiry based learning will most likely develop into engaged learners that will direct their own learning. They engage with their learning because they find it interesting and fulfilling in and of itself. This type of learner is able to stay focused on a task, turn mistakes into learning opportunities and persevere through challenging tasks.

Inquiry learning can take on different forms according to different teacher's preferences. While these differences may, on the surface, make these approaches seem quite different, at the core of all inquiry learning are some basic similarities. Most inquiry broadly follows these steps:

- Focusing: the student develops questions to be answered by a focused topic of interest;
- Investigating: the student seeks to find answers to self-generated questions from a variety of sources;
- Concluding: the student analyzes, synthesizes and draws conclusions from the investigation;
- Sharing: the student communicates to others both the reasoned findings and the personal reflections on the process itself

PURPOSE AND GOALS

Research is a vital life skill that all students need to practice, regardless of their future vocational and personal plans. However, students transitioning from primary to secondary school may find that the level of research they must perform challenging, and generating appropriate inquiry questions difficult. In the new BC curriculum, the core competencies are communication, thinking, and personal and social learning. Our inquiry research platform allows students to learn how to communicate, think critically and creatively, as well as to explore their educational identities by pursuing their personal inquiry questions. Because the new BC curriculum discusses the need for education to connect to real life experiences, we feel that learning how to research any topic in a realistic context and how to produce viable solutions are skills consonant with the latest ideas about learning. Whether a student is researching her favourite characters from popular movies such as Zoolander, or how much the maintenance and insurance on a car cost on a limited budget, research is an important life skill. In the new BC curriculum, the communication competency "encompasses the set of abilities that students use to impart and exchange information, experiences and ideas, to explore the world around them, and to understand and effectively engage in the use of digital media" (BC Ministry of Education, 2013). We believe that our platform will fulfill the communication competency because it will allow students to feel more confident when trying to navigate the Internet while searching for answers to their own questions as autonomous learners.

Further, the platform is interconnected with the critical thinking competency of the new BC curriculum. Critical thinking, as defined by the BC Ministry of Education, includes "making judgments based on reasoning: students consider options; analyze these using specific criteria; and draw conclusions and make judgments" (BC Ministry of Education, 2013), and also states that students should develop "a set of abilities that [they can] use to examine their own thinking, and that of others, about information that they receive through observation, experience, and various forms of communication" (BC Ministry of Education, 2013).

All sections of our inquiry research platform promote and help to build students' critical thinking competencies. Highlighted in the chart below are sections of the BC Education critical thinking competency that directly correlate with our inquiry research platform:

BC Curriculum		Inquiry Research Platform	
Analyze and critique	- Students make judgments about a work, position, process, performance, or product. - Students consider purpose, focus on evidence, and use criteria to draw conclusions and make judgments or assessments - Consider a variety of perspectives	Is my source credible	- Finding citation information on a website - The good and bad about Wikipedia - Evaluating Websites using the CRAAP model - Activity: Fact or Fiction. Visit three websites and look for clues that might make the website real or fake.
Question and investigate	- Students engage in inquiry and investigation and identify and explore questions or challenges. - Students develop and refine questions, gather, interpret, and synthesize information and evidence, as well as draw conclusions	What is my topic? Narrowing my Question	- Differentiating between a subject and a topic - Tips for choosing a good topic. - Research topic generators - Mind maps idea generator Bubbl.us - How to create good research questions using Bloom's Taxonomy.
Develop and design	- Students apply critical thinking to create products, methods, performances, events, issues, and needs. - Students explore possibilities, develop and refine plans, monitor their process.	Big Ideas in BCED, Choice Board	- Tied with Grade 8 learning outcomes, the platform takes the language used by the ministry and turns it into language that is accessible to students. These outcomes can be used as guides for inquiry topics.

Students using our inquiry research platform will feel empowered in their ability to grasp the inquiry research process, a process which is sometimes considered complicated and even overwhelming. The platform breaks the research process into chunks so that each step is laid out using multimodal strategies. Because our website has been laid out in a logical sequence, students not only complete the research process, but they also understand the importance of each step in the research. Smith and Throne (2009) talk about the diversity that teachers will find among Grade 8 students if they measure students' "social, emotional and intellectual levels of development" (p. 33). This disparity in students' needs is why our inquiry research platform is a worthy differentiated tool for classroom teachers. Our tool also exists as a research resource for students of any age, and although our target is Grade 8 students, the tool can be modified or adapted for primary, secondary (Grades 10-12), and even post-secondary students and instructors. By having clearly distinct sections in the inquiry research platform, students and teachers can start at the beginning (What is My Topic?) and work their way through the problem, or they can pick and choose which modules they find most beneficial. Based on the research and experience of the designers, the sections of the inquiry research platform are as follows:

- What is My Topic?
- Narrowing My Question
- Searching For Information
- Is My Source Credible?
- Organizing and Connecting My Information
- Big Ideas in BCED (Grade 8)
- Need Ideas? Visit the Choice Board
- Feedback
- Sharing Forum
- Reflection Space

Students learn best if they feel they can succeed and be a part of the learning process. Using technology to research their inquiries is engaging and motivating to students who have few

connections to traditional poster board research projects, projects which often result in the mere cutting and pasting of information rather than deep comprehension of the information. Smith and Throne (2009) describe the educational potential of information technology thus: as "a differentiator, technology helps us to personalize learning for our extremely varied students through collaborative learning and problem solving, which are excellent activities for the growing brain and for our students' future professions in the world of work" (p. 39). Our inquiry research platform is targeted to a secondary classroom of diverse learners who have different interests, and towards teachers who are using inquiry learning in their classrooms.

The goal of the inquiry research platform is simple: we want to fight the mindset of "I'm bored; this sucks." A 1990 survey of 25 000 Eighth Graders revealed that about half of students were bored in school at least half of the time (Hootstein, 1994). Hootstein maintains that, by enhancing student motivation, educators can win the battle with boredom or adolescent ennui simply by being mindful of four pivotal sources of motivation: student curiosity, the inherent challenge of the assignment, the real-world relevance of the content, and students' sense of control. The inquiry research platform creates a differentiated, authentic inquiry experience which will capitalize on all four anti-boredom sources of motivation.

The focus of the inquiry research platform is to develop students' knowledge and skills in the area of inquiry. The interactive website (inquiryresearchplatform.weebly.com) is a scaffolded tool for students to use as they plan, produce, and consider a possible inquiry project. Guided by project-based learning theories and the new guidelines to personalized learning from the redeveloped British Columbia Education Plan, the design activities are situated in Vygotsky's social development theory and Piaget's constructivism. With these theoretical foundations, the inquiry research platform facilitates students' asking and formulating research questions, eliciting their prior knowledge, helping them conduct in-depth inquiry to construct new knowledge, and finally helping them to share their finished products and reflections throughout the stages of inquiry.

The inquiry research platform is student-centered in that it offers students opportunities to develop and conduct their own authentic, relevant investigations (Singer et al., 2000). Because learning is a social venture, Vygotsky's theory of the zone of proximal development guided our design of the website, which scaffolds students' inquiry process through defined steps. This scaffolding brings about a shift in the teacher-student dynamic, since the teacher shifts from being a distributor of knowledge to being an inquiry facilitator (O'Day, 2006).

Anderson et al. (2001) highlight how a teacher's presence in a constructivist, online setting may be characterized as "the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes" (p. 5). For this design to be successful, we must consider the audience: students aged 13-14. According to Piaget's stages of cognitive development, these are people who are entering the formal operational stage, and are learners who can think about the future, the hypothetical, and the abstract. Further, they are able to deduce, analyze, and consider multiple perspectives (Singer & Revenson, 1997). These ways of thinking are highly conducive to inquiry and project-based learning, and these thinking processes will be facilitated and elicited through the various stages of this inquiry project.

Finally, the inquiry research platform addresses prevailing trends in education, specifically in the province of British Columbia. The goal of the new BC Education Plan is to impel British Columbia's educational system towards more personalized learning, creating a "[t]ransformation in curriculum and assessment [that] will help teachers create learning environments that are both engaging and personalized for students" (BC Ministry of Education, 2013). These two overarching ideas, engaging and personalized learning environments, are at the very heart of the inquiry process itself, and are embedded in the purpose and goals of the inquiry research platform.

CRITICAL THINKING COMPETENCY IN BRITISH COLUMBIA EDUCATION

The British Columbia Ministry of Education will implement three main core competencies in the new provincial curriculum. Separated into the three categories of communication, thinking, as well as personal and social development, the core competencies are integrated into all subject areas. We feel that the inquiry research platform touches on all three areas, but is particularly well integrated with the critical thinking competency. As outlined in previous sections of the curriculum guide, the inquiry research platform is seen as a basis for lifelong research, which is aligned with all BCED competencies.

Profile		Description
	1	I can explore. I can explore materials and actions. I can show if I like something or not.
	2	I can use evidence to make simple judgments. I can ask questions, make predictions, and use my senses to gather information. I can explore with a purpose in mind and use what I learn. I can tell or show something about my thinking. I can contribute to and use simple criteria. I can find some evidence and make judgments.
	3	I can ask questions and consider options. I can use my observations, experience, and imagination to draw conclusions and make judgments. I can ask open-ended questions, explore, gather information, and experiment purposefully to develop options. I can contribute to and use criteria. I can use observation, experience, and imagination to draw conclusions, make judgments, and ask new questions. I can describe my thinking and how it is changing.
	4	I can gather and combine new evidence with what I already know to develop reasoned conclusions, judgments, or plans. I can use what I know and observe to identify problems and ask questions. I can explore and engage with materials and sources. I can consider more than one way to proceed and make choices based on my reasoning and what I am trying to do. I can develop or adapt criteria, check information, assess my thinking, and develop reasoned conclusions, judgments, or plans.

	5	I can evaluate and use well-chosen evidence to develop interpretations; identify alternatives, perspectives, and implications; and make judgments. I can examine and adjust my thinking. I can ask questions and offer judgments, conclusions, and interpretations supported by evidence I or others have gathered. I am flexible and open-minded; I can explain more than one perspective and consider implications. I can gather, select, evaluate, and synthesize information. I can consider alternative approaches and make strategic choices. I can take risks and recognize that I may not be immediately successful. I can examine my thinking, seek feedback, reassess my work, and adjust.
	6	I can examine evidence from various perspectives to analyze and make well-supported judgments and interpretations about complex issues. I can determine my own framework and criteria for tasks that involve critical thinking. I can compile evidence and draw reasoned conclusions. I can consider views that do not fit with my beliefs. I am open-minded and patient, taking the time to explore, discover, and understand. I can make choices that will help me create my intended impact on an audience or situation. I can place my work and that of others in a broader context. I can connect the results of my inquiries and analyses to action.

Accessed from: https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/CriticalThinkingCompetencyProfiles.pdf

TECHNOLOGY SCAFFOLDING

The inquiry research platform can be adapted to many different educational environments. Although one-to-one devices and educational spaces are ideal, they are not always practical. Technical issues can arise, or device logistics can affect the user's experience with the platform. In this section, we hope to address some problems that could arise, and how to overcome them.

If the platform is shown to a group of students in a classroom without internet, the web pages can still be used if they are downloaded for offline use. Pages can be saved usually by using the file menu on most internet browsers. Unfortunately, videos cannot be legally downloaded for offline use.

One adaptation for the website is for schools that do not have headphones or speakers available for all students. Even though the inquiry research platform uses videos, there is a mix of videos that require sound, and those videos that do not. In some Windows labs, the computers may not have speakers, or there are not enough headphones for every student. There are a few resolutions for such problems. First, the video could be shown to the whole class on a projector with sound, a procedure which ensures that all students have viewed the complete video. If no projector is available, all YouTube videos with sound are able to be closed captioned. Closed captioning can be enabled by clicking on the CC button on the bottom right of the video.

INTRODUCTION TO WEEBLY

Should educators not already have their own preference for providing an on-line blogspace for their students, the Weebly platform is an excellent choice for people of any experience level to use. Features include the following:

- a simple “drag & drop” process to add text, images, slideshows, embed videos, spacers, and other formatting features; there is virtually no learning curve to Weebly; therefore, individuals can have a site running within minutes.
- affordability: using the “Weebly for Educators,” teachers can create sites with unlimited pages for free; additional features run between $4 - $25 per month.
- up to 40 free, password protected, student accounts; each student account allows students to create their own website with blogspace; sites can be made public or kept confidential; additional site licenses can be purchased.
- automatically generated, mobile device version of sites are produced allowing students to access each others sites seamlessly in a BYOD learning environment.
- contact forms: Weebly allows users to generate their own surveys on their sites using a simple “drag & drop” process.
- well-designed page templates and a wide selection of “free” images are easily accessible.
- ability to embed personalized html code to include widgets and other tools.
- the ready availability of customer support via online chatting and email.

Weebly has created a series of video tutorials to help users publish their initial sites and to take their sites to the next level of website design. Watching the first two videos will make the inaugural Weebly leap as stress-free as possible. For further instruction, a link to all of their tutorials is also provided.

- Welcome to Weebly
- Beginner’s Guide to Weebly
- Weebly’s Entire Tutorial Library

BIG IDEAS IN BRITISH COLUMBIA EDUCATION

A big idea is a statement that is important to one's understanding in an area of learning. A big idea is broad and abstract. It contains two or more key concepts. It is generally timeless and is transferable to other situations. (British Columbia Ministry of Education, 2013, para. 1)

In its Draft Curriculum of 2013, B.C.'s Ministry of Education has proposed to reduce the number of learning outcomes within each subject area so that participants have more time to teach and learn at a more in-depth level, in light of the affordance of more time. This new flexibility has been incorporated to allow students not only to pursue individualized learning projects, but also to look for horizontal or cross-curricular connections between their content points.

The Inquiry Learning Platform provides students with the the details of the Big Ideas that have been proposed at the Grade 8 level, although for some subjects these Big Ideas permeate through multiple grades, as well. The rationale for including the specific Big Ideas was to give students a potential launch point on picking a topic and question that would relate to the learning outcomes of Grade 8.

Educators will ideally take advantage of the Big Ideas page by promoting differentiated learning strategies for their emerging researchers. Some students will want to "play it safe" and choose a topic that is readily researchable, whereas other students will want to spend time reading the Big Ideas for all of the subject areas, thereby generating a cross-curricular research strategy.

Alternatively, educators may wish to require that their students focus on a specific subject area, such as Science, for example. By guiding them to the Science Big Ideas, teachers can then

walk students through the Big Ideas together, to help launch their brainstorming strategies for Science specific inquiry questions.

Table 1: Links to the Big Ideas (drafts) for all subjects in K - Grade 9. Click to access document. Internet connection required.

Language Arts	Mathematics	Science
Arts Education	Social Studies	Physical & Health Education

DIFFERENTIATED INSTRUCTION: THE CHOICE BOARD

What exactly is "Differentiated Instruction" or "DI"? Smith and Throne (2009) define DI as comprised of fundamental components such as these:

- the modification of instruction to meet the learning needs of individuals where the focus in the classroom is on choices, rather than "one size fits all."
- focusing on the quality of the activities as opposed to the quantity of work assigned.
- tasks are group-driven yet dependent on whole-class and individualized instruction.
- requiring a variety of assessments: pre-, formative, and summative -- utilizing traditional and nontraditional methodologies (teacher observation, self-assessment, project work, surveys, etc.).
- being guided by the constructivist approach to active learning whereby educators facilitate and guide, as opposed to the teacher's being the traditional "Fountain of Knowledge."

The Inquiry Research Platform recognizes that educators who may be utilizing the site will have varying levels of experience working within a DI context. The Choice Board, based on multiple intelligences, was developed to provide a launch point for both educators and students to generate personalized inquiry projects that offers a variety of technology-based ideas. The intelligences that are represented are these:

Bodily/Kinesthetic	Musical	Technological
Logical/Mathematical	Visual/Spatial	Naturalist
Verbal/Linguistic	Interpersonal	"The Extra Mile"

"The Extra Mile" is a special category that we have included to encourage students, particularly those who are gifted, to extend their learning beyond the minimal requirements of the project. Students can opt to utilize multiple intelligences and/or find topic ideas that are cross-curricular -- the sky's the limit!

INQUIRY ASSESSMENT MODEL

REFLECTIONS

Evaluating students during the inquiry process is essential. However, how do you decide what is more important in the inquiry process: the product or the process? Kruse (2012) states in his book *Assessment Strategies For The Inquiry Classroom* that:

> Reflection, or the active processing of experience, is embedded in – and is an ongoing aspect of – the inquiry process. It is also an important element of formative assessment processes, particularly assessment as learning. It is not something that should be kept until the end of an investigation but is part of day-to-day processing and meaning making (pg.88).

As Kruse describes it, any type of inquiry is a process and should be reflected on not after the final product has been completed, but throughout the whole process. Therefore we recommend that students use reflections to show what they have learned at each step of the inquiry process. We have used many of Kruse's ideas to spark meaningful reflection, instead of having students simply tell us what they did. We want students to be able to connect deeply to the experience and reflect in a way that is not only interesting to the audience, but also interesting to the student reflecting. Kruse (2012) talks about many different strategies that encourage deep inquiry reflection and one of his ideas is having students use analogies, which compare a known object or situation to one of the inquiry steps. For example on our reflection page we have used the following question: In what way is choosing a topic like choosing an elective? These types of analogies help a students frame a reflection that is thoughtful, detailed and organized and that connects content and process.

ASSESSMENT SCHEDULE

Reflections are a valuable assessment tool; however, they need to be completed in a logical sequence. Having students reflect only once or twice during the inquiry process will not give the instructor enough data to assess whether or not each student understands how inquiry works or how to attempt another inquiry project independently in the future. Best practice in this regard means collecting a minimum of five reflections and requiring that the final reflection be deeper and based on process and content. Also, best practice includes having clear guidelines about the length of each reflection and setting specific due dates, especially for students who struggle with executive functioning. Using a variety of tools to help students keep track of due dates is essential. There are several text-based systems, such as a paper copy of due dates, having students write in an agenda, or simply posting the dates in a central location in your classroom. However, Kim and Xie (2013) suggest using Google calendar because "teachers can share a calendar with short- and long-term due dates to remind students to focus on their work" (p. 177). Google calendar is easy to use, and would really help your students who struggle with thinking about a whole project and its final due date. Instead, this strategy would give students the opportunity to have mini due dates for each section and for each reflection. If using some kind of electronic calendar is not possible, still think about setting mini-due dates that accompany the reflections. Below are two links; one is a tutorial on how to use Google calendar, and the other link is to Google calendar.

Google Calendar Tutorial 2015- Quick Start	By Anson Alexander
Google Calendar	

BLOGS AND PODCASTS

Tindall (2013) states that "[S]ocial media tools form a conduit for reflective activity" (p. 49). We suggest that educators have students create their own blogs or that educators create a class blog where students can post their thoughts, ideas, struggles and their reflections. A blog is a perfect "container" (Tindall, 2013, p. 51) for all types of posts such as hyperlinks, videos, voicethreads (they are also known as "podcasts"), and text. Blogs have the ability to be interactive in nature, which lets students connect with their peers and share in the inquiry experience. Blogs are also good tools for students who need differentiated instruction. If you have students who struggle to get words on paper, they could easily record a video of their reflection, as well as record a voice thread, and then they could upload both of these to their blog. Tindall (2013) reminds us that

> "[R]eflection is above all a thoughtful personal reaction to a stimulus, and through voice nuance an instructor might be able to discern aspects of a student's thought processes and associated emotional communication that can be easily lost because of lacking written rhetorical skills" (pg. 50).

It would be very beneficial for students to explore all formats when submitting their reflections so they could find what works best for them as learners. Since blogs offer a variety of benefits and advantages in the classroom, we feel that they are ideal for supporting students in the assessment of inquiry.

INDIVIDUAL REFLECTION RUBRIC

Expert 90-100%	- reflection is well organized - makes connections to life experiences and to other subject areas - talks about what you use to think and how that has changed - asks questions - reflects deep thinking and learning - goes beyond the guiding questions and is creative
Accomplished 70-90%	- reflection is organized - makes connections to life experiences - some discussion about the journey or the process of learning - asks some questions - sometimes reflects deep thinking and learning - answers the guiding questions
Capable 60-70%	- is sometimes organized but parts of it do not make sense - makes an effort to connect learning to life experiences - answers the guiding questions on a basic level - makes one or two powerful comments about the inquiry experience
Almost, but it needs more 50-60%	- poorly organized and is hard to understand - describes what you did and not what you learned - answers one guiding question but with very little detail
Little Effort Less than 50%	- is not organized and is hard to understand - very little description of what you did - seems rushed and not connected to the guiding questions

Rubric for the content of the Inquiry Project

Inquiry Skill	Beginning	Emerging	Proficient	Exceeding
Questioning *Student is able to develop open ended, inquiry questions that drive further exploration*	Student is not yet able to create open ended questions. Questions may be simple and easily answered with only a small amount of information.	Student is able to formulate some open ended questions, but these often do not inspire further exploration.	Student consistently formulates open-ended inquiry style questions that can be used to drive further exploration.	Student consistently formulates questions that are beyond expectations for the grade level. Questions are a reflection of deep, critical thought.
Research *Student is able to use effective research methods including keyword searches and source evaluation*	Student is not yet able to use effective research methods to answer their inquiry questions.	Student is able to apply effective research methods some of the time but has difficulty with either generating keywords or evaluating sources.	Student is consistently able to apply effective research methods including generating keywords, and evaluating sources.	Student is consistently able to research without assistance, interpret information, evaluate sources and organize the information they've gathered.
Information organization *Student is able to use effective methods to collect and organize information*	Student is not yet able to effectively organize the information collected.	Student is able to use some information organizing methods effectively some of the time.	Student is consistently able to to collect and organize information effectively.	Student uses novel &/or exceptional methods to collect and clearly organize information.
Presentation of Findings *Student is able to present their findings in a critical and creative way that informs their audience.*	Student is not yet able to use critical and creative thinking to present their findings. Presentations may be simple and/or incomplete.	Student is able to use some critical and creative methods when presenting their findings but may have difficulty going beyond traditional methods.	Student is able to use some critical and creative thinking when presenting their findings and usually thinks beyond traditional methods for presenting.	Student consistently uses critical and creative thinking to select presentation methods that are innovative, interesting and educational.

USER GUIDE

WHAT IS MY TOPIC

ACTIVITY: HOW TO NARROW A TOPIC

Directions for teacher in green. Directions/discussion for class in black. 30 minutes for lesson.

Materials needed:

- Words on post-it notes (see handout below)
- Blank post-it notes
- Pens or markers
- Tape
- Large blank sheets of paper
- Handout – Choosing an Inquiry Topic (see handout below)

Teacher intro to class:

We'll start today by learning about research topics. We want to learn ways to focus or narrow a topic so that it is a reasonable size that will be manageable for research.
To let students practice narrowing a topic, we will try out some methods for narrowing down the topic of home energy conservation.
We'll begin with a group activity.

Divide students into groups of 3-5 people.
Have the groups move to one of the large sheets of paper taped on the wall.
Hand out word post-its, blank post-its, and pens/markers to each group.

Teacher's instructions to class:

You've been given a number of words on post-its that relate to the topic of **home energy conservation**. You are to now arrange the words in a way that helps you better organize or

think about the topic. Use most of the words in your pile, but you don't necessarily have to use them all.

Stick the post-its with the words on the large sheet of paper and use pens/markers to show connections between the words (using lines or arrows). You can also write additional words on the blank post-its. This way you can visually show connections, make your organization more more apparent, fill in gaps, or go in another direction altogether!
You have five minutes to finish this task and then I'll ask one (or more) of the groups to talk about their diagram and what thought processes they went through while creating it. Just remember: there are no right or wrong answers!

Give students at least five minutes, then get their attention, and ask a group to report out. Depending on how long this takes, ask other groups to report on issues that they encountered that weren't mentioned by the first group.

Teacher instructions to class:
Looking at the arrangement of your words and connections, choose a portion of the larger topic that you would consider to be a reasonable sized topic for research.
In order to help you choose, come up with at least one question that you could ask and answer around that subtopic. Write down the research question or questions on your paper.

Have the students return to their seats and hand out the *Choosing Inquiry Topic* handout. Go over the different techniques for coming up with subtopics: Hierarchical, Relationships, and Outline. Compare these methods with what each group did during the activity. Did some naturally gravitate towards one or the other? Discuss the similarities and differences between what they produced and what is on the handout.

Teacher's concludes with these remarks:

This method of narrowing down a topic could be helpful in choosing a research topic. Representing a topic visually like this can give you an idea of the larger, surrounding context of your topic.

This method may also reveal which topics that might not work. Reasons a topic might not work include that they are too far apart from other topics that you want to include, a problem which could result in a fragmented inquiry project. While your inquiry may touch on areas outside your narrow sub-topic, most of it should focus on the sub-topic.

Words to put on post-it notes:

Newspaper	Transportation	Solar Panels
Plastics	Cycling	Weather stripping
Trees	Hybrid vehicle	Thermostat
Water	Conservation	Utility bills
Dripping taps	Recycling	Tire pressure
Filtering process	Cans	Gasoline
Coal	Batteries	Public transportation
Sun	Low-flush toilets	Energy
Compact fluorescent bulbs	Dishwasher	
Appliances	Oil	
Insulation	Gas	
Air conditioning	Pipelines	
Appliances	Electricity	

Handout: Choosing an inquiry topic

Here are some different ways to organize concepts:

Hierarchical

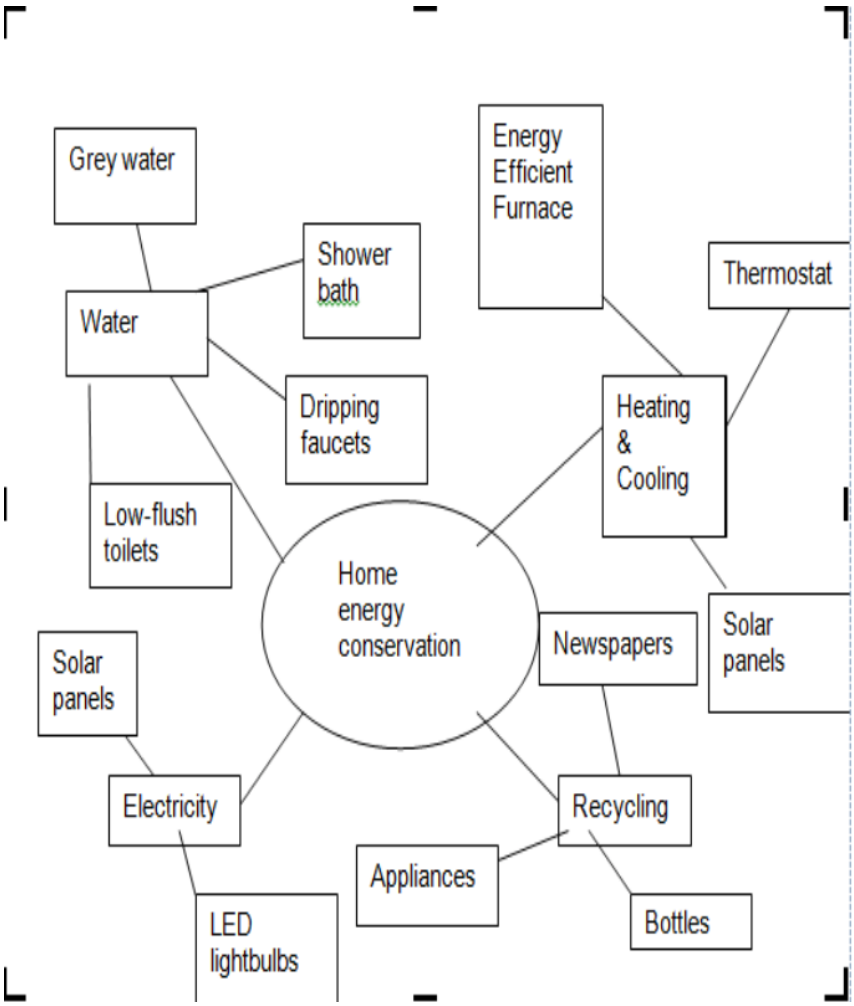
Home energy conservation

Electricity

Lighting

LED lightbulbs

Showing Relationships



Outline

Home Energy Conservation

I. Heating & Cooling
   a. Air Conditioning
   b. Thermostat
   c. Energy Efficient Furnace

II. Electricity
   a. Light bulbs
   b. Solar panels

III. Water
   a. Low-flush toilets
   b. Dripping faucets
   c. Dishwasher

NARROWING MY QUESTION

ACTIVITY #1 – BLOOMS TAXONOMY AND GOOD QUESTIONING AN INTRODUCTION

Objectives:

- To have students connect with and challenge the content of the two videos Blooms Taxonomy and Good Questions, linked to the "narrowing my questions" page
- To have students identify the key concepts in the videos and be able to reflect on their importance
- To have students analyze what the videos messages are

Materials:

1. Each student will need a partner.
2. Students working in pairs will need an ipad, laptop, or a phone (each with internet access) in order to watch the videos on the site.
3. Students will find headphones useful if they are available.
4. Students need to visit inquiryresearchplatform.weebly.com
5. Students need The 4 C's worksheet (available on Google docs for students who prefer to use a device

Introduction (10 minutes)

- Talk to students about how not all questions are created equal, and that there is an art to creating questions that fit perfectly with an inquiry project. The videos the students are about to watch and share with their partners are there to introduce the basics of questioning. It is really important that everyone puts as much detail into his or her worksheets as possible, considering that each of you is relying on his or her partner to describe the other video that you will not get a chance to see until later!
- Students will be partnering up and choosing one video to watch and completing the 4 C's thinking routine from the text Making Thinking Visible. The 4 C's are connecting, challenging, identifying key concepts. Identify how the videos are trying to change your thinking.

- Handout the 4 C's worksheet based on whichever video they have chosen to watch; briefly explain which each C means and what the expectations are (to be responsible for your section, to communicate your ideas fully to your partner, ask for clarification if you need to…).
- The blank line on the worksheet is for what topic they are discussing (Bloom's or Questioning)

During the Video (15 minutes)

- Students will be watching videos taking notes/answering the 4C's worksheet
- Students may watch the videos twice
- Students will finish filling in worksheet

Partner Work + Share Out (15 minutes)

- Students will join again with their partners and share their points of information one at a time without being interrupted for 3 minutes (have the partner time the other).
- Students discuss the 4 C's of the videos.
- Have students choose one statement from either worksheet to share with the class.

Conclusion (10 minutes)

- Have students reflect on the usefulness of these resources. What is going to be helpful for narrowing down their questions? What was missing from the information?
- Students can either share their ideas as a class discussion or as a reflection on a post it or as a tweet.

The 4 C's: Connections, Challenge, Concepts and Changes

Connections:	What connections do you draw between the video and your own life?
Challenge:	What ideas, positions, or assumptions do you want to argue with in the video?
Concepts:	What key ideas do you think are important and worth remembering from the video?
Changes:	What changes in thinking are suggested by the video, either for you or others?

ACTIVITY #2 - QUESTION FORMULATION TECHNIQUE

Found on the 'narrowing my topic' tab on inquiryresearchplatform.weebly.com

There are 3 steps, and each of which will take a different amount of time. All activities could be attempted separately or as a full lesson.

Step 1: "Pictured below" should take the longest amount of time. Students should be encouraged to practice using the pictures on the site or search for images that interest them. Once they have found the right image they should complete the task.

1. Finding the right image or practicing on the images on the site (5-10 minutes)
2. Generating as many questions as they can in 5 minutes can be done individually or in pairs (10 minutes)
3. Reviewing questions or statements (2 minutes)

How to create your own questions:

Step 1: Use the **pictures below to practice** this awesome questioning formulation technique. If you already have a topic, click on any picture to **google a picture** of the topic you have been given **by a teacher** or to **google a picture** of a topic you have **chosen for yourself**.



Use any text document (word, notes, pages....) to record your ideas or a regular piece of paper:

- Ask as many questions as you can in **5 minutes**.
- Do not stop to think about the questions, there are **no stupid questions**.
- Write down every question ***exactly*** as you think of it.
- Change anything that is just a fact into a question.

Step 2: “Pictured below” is for organizing questions into two categories. Students can simply put a ‘C’ or an ‘O’ next to their question, or they can organize them using a t-chart. The exercise is very flexible. They could do this individually or in groups. (10 minutes +/-).

Make Your Questions Better

Step 2: Use the notes below to **organize** your questions from Step 1 into two groups.

- **Closed-ended questions**: They **can** be answered with **yes or no or with one word**. Put a **'C'** beside these types of questions. Does the sun heat the earth? (C)
- **Open-ended questions:** They require an explanation and **cannot** be answered with **yes or no or with one word**. Put an **'O'** beside these types of questions. How does the sun heat the earth? (O)

Step 3: “Pictured below” is the final stage where students actually choose their top three questions and reflect on their selections. This activity could also be done with a partner, in a group, or individually. Students could have a mini debate with other students to defend their choices. The focus should be on choosing a question they like, a question that is not too broad or too narrow...these elements should be included in their debate/reflection. (15 minutes +/-).

Step 3: Organize Your Questions

Choose your 3 best questions:

1.

2.

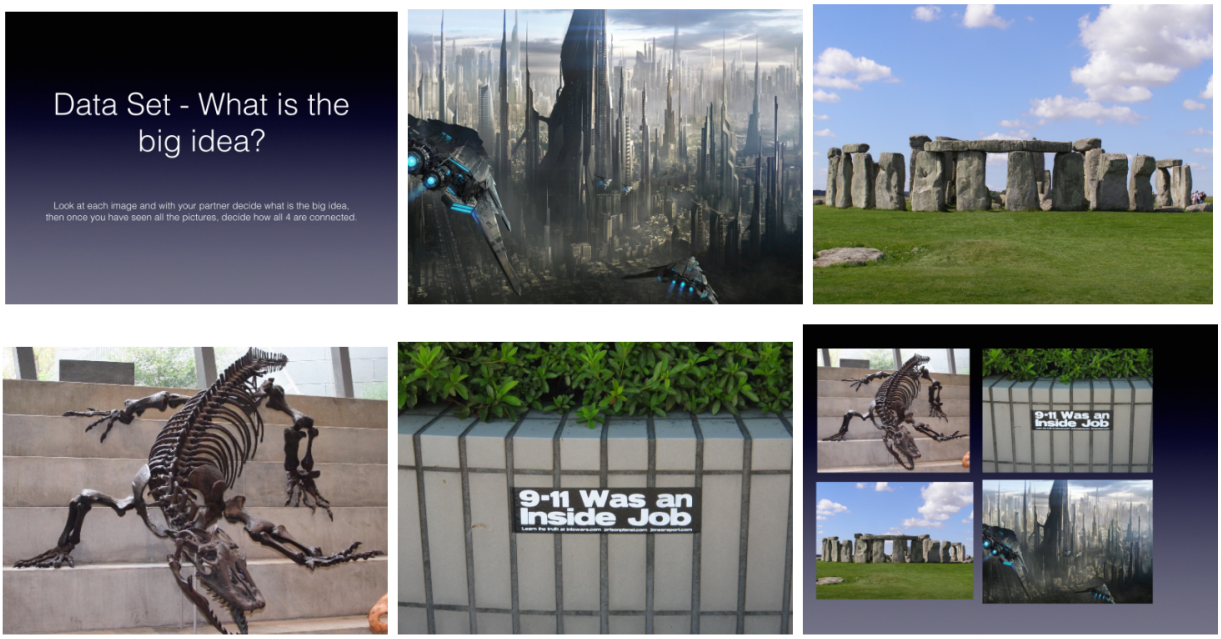
3.

Write a short **reflection** on why you chose these 3 questions.
Will it be the **right amount of work** for the assignment you have been given?
Are you really **interested** in the topic? Have you always wondered about these questions?

ACTIVITY #3 - DATA SET FOR QUESTIONING AND/OR TOPIC GENERATING

A data set in this activity is a set of 4 photos that students look at digitally (interactive whiteboard or on a white screen or surface) with a projector and a laptop/ipad. Each picture is on the screen one at a time, and students always work in pairs. The goal is to establish what the big idea connection is between all of the questions. However, the teacher should resist the temptation to **tell** students the big idea. What you really want is to spark the interconnectedness of ideas and have the students think deeply and critically.

1. *Students organize into partners.* There are many formats involved in organizing this activity. The teacher can have one student be the describer and the other be the active listener with their backs to the image (very good listening assessment), and with each photo the students change places. You could also have the partners both look at the picture and have a piece of paper to take notes, doodle, or write words that come to mind.
2. Each picture should be projected for a set amount of time and if you have the other student as the active listener you will need to time that part as well.
3. After all the images have been shown, students are shown the last slide with all 4 pictures; this is their opportunity to come up with the connected big idea. I have attached the data set for discussing mysteries and topics that may have multiple theories attached to them. If students choose these types of topics, they will have to work hard at creating appropriate questions that are not biased or misleading.
4. Students can discuss the connections with their partners and then slowly pick up other partner groups until the whole class can discuss what connections they have come up with. Students can also use Web 2.0 tools to collect and organize their ideas, like 3M Post-it Plus App or bubbl.us. The whole activity will take 45-55 min +/-


Data Set - What is the big idea?
Look at each image and with your partner decide what is the big idea, then once you have seen all the pictures, decide how all 4 are connected.
9-11 Was an Inside Job
9-11 Was an Inside Job

SEARCHING FOR INFORMATION

ACTIVITY #1: WHAT IS THE WEB?

Objectives:

- To reinforce the internet-based terminology: Internet, Web, Browser, Search Engine, Webpage, Website, Web Address (URL)

Materials:

- projector with internet access for instructor
- worksheet: How well do you know the Internet?
- large sheets of paper or poster board
- coloured markers
- optional: individual access to internet

Instructions:

1. Access the following lesson plan located here.

OR use the following modified version

1. Use the "What Is The Web?" Google Presentation provided with this lesson to introduce students to Search. Slides that go with each section of this lesson are indicated by number.
2. Start the class by sharing with students that many people are confused by terminology used to describe the internet, the web, and web searching. This is normal! As an introduction, show the video on Slide # 3.
3. Break students into partners and have each group fill in the worksheet, "How well do you know the Internet?" Remind them that less than 8% of adults knew what a browser was in the previous video, so if they aren't sure about a term, encourage their best guess.

Depending on time availability, groups can share their answers with each other or a class discussion can ensue.

4. Show slides #4 - #11. Possible responses to the internet terminology include these:
   - ✦ The Internet: a global system of interconnected computer networks; computers around the world that are connected to one another
   - ✦ The (World Wide) Web: the set of documents residing on the internet that are formatted in hypertext
   - ✦ Browser: a program used to view HTML documents, or the World Wide Web (e.g., Firefox, Safari, Chrome)
   - ✦ Search Engine: a computer program that retrieves documents or files or data from a database or from a computer network (especially from the internet)
   - ✦ Website / Webpage: a collection of web pages, a collection of links between pages, programs that do services (such as look up things)
   - ✦ Web Address: the address of a web page on the world wide web; also called a URL
   - ✦ Deep Web vs. Visible Web: deep web consists of every single document available on the internet; visible web refers only to documents indexed by search engines (a mere fraction of the whole web)
5. Break students up into groups, and assign each group a term described in the last slide, #12. Each group is responsible for making a poster to explain the concept to someone unfamiliar with the internet and web search. If individual internet access is available, encourage students to use Google Search to expand the given definitions for these terms. For their posters, encourage students to draw diagrams or pictures, or connect concepts to real-life examples (e. g., students can explain the relationship between webpages and websites by comparing webpages to pages in a book, and websites to the whole book).

6. Reflection:
   A. Option 1: Examine one of the terms presented in this activity that you thought you understood but were mistaken. Describe what your misconception was and what the

actual meaning of the term is. Why do you think you had the misconception or where do you think your misconception originated?

B. Option 2: Ask your parent, guardian or other adult in our life who is at least a generation older, to define some of today's terms. What did they say? What words did they define correctly (more or less) and what words did they struggle with? Why do you think they had their successes and/or misconceptions?

ACTIVITY #2: HOW TO SEARCH EFFECTIVELY ON THE WEB

Objectives:

- to introduce to the Boolean Operators: AND, OR, and NOT
- to learn the basic searching techniques to help them narrow down or broaden out their questions

Materials:

- projector with internet access for instructor
- blank paper
- guided notes: Searching for Information
- Google Doc version of guided notes-- copy and make your own, editable version
- earbuds or headphones
- individual access to internet

Preparation:

- Go to the Google Doc version of the guided notes and copy and create your own, editable version. Students will be adding their own responses to this document.

Instructions:

1. Ask the class what the expression "It's like trying to find a needle in a haystack" means to them. Have a discussion about the vastness of the Internet: Why is this vastness a good thing? What challenges might we face when dealing with so much information?
2. Instruct each student to divide his or her blank piece of paper into four, equal-sized quadrants. Label the quadrants according to the following headings: "What I know about online searching," "What is confusing about online searching," "Past experiences with online searching," and "How I feel about online searching." Give about 5 - 7 minutes for individuals to fill in their own reflections. Encourage both written and drawn (pictures)

responses. In pairs, have students share their responses with each other. Time permitting, have a class discussion. Collect responses to gage students' previous knowledge and experience.

3. Have students work individually or in pairs to complete the guided notes titled, Searching for Information (this link will go to The Inquiry Research Platform page where the Word Document can be downloaded). The information on the videos is provided in chronological order and headphones are recommended. Encourage students to pause and reverse, as required.
4. Divide class into seven groups and assign the groups as follows: Groups 1, 2a, 2b, 3a, 3b, 4a, and 4b. Each group is then responsible for adding in its responses to its assigned section. Encourage students to add comments and revisions to their sections. Optional: have each group edit the next section (e.g., Group 2a would edit section 2b; Group 4b would edit section 1.) Rotate the edits as many times as necessary, until the document is complete and correct. Provide time for all students to strengthen areas of their guided notes that may be weak.
5. Reflection:
   A. Option 1: Visit the Reflection Page: My Search on The Inquiry Research Platform.
   B. Option 2: If you were to pick your top 3 searching tips or techniques to share with someone, what would they be and why are they your top 3?
   C. Option 3: What Internet searching tips and techniques were you already using? Describe the context that you have used these skills. What aspects of Internet searching still remain confusing or foggy to you? Specifically state the questions you still have.

ACTIVITY #3: SCAVENGER HUNT

Outcomes:

- to utilize both detective skills and web searching skills in a friendly competition

Materials:

- projector with internet access for instructor
- individual access to internet

Instructions:

1. It's a race! Show each image on the projector, one at a time. The goal is for the students to find out what they are looking at an where it is located.
2. The first student to identify the image can then share with their classmates what their search process was. Encourage others to share their process, as well.
3. Images:
   a. World's Largest Coffee Pot, Davidson, SK (note the Saskatchewan flag in the background!)
   b. Tipis located at Head-Smashed-In Buffalo Jump, near Fort Macleod, Alberta
   c. Tiananmen or The Gate of Heavenly Peace, Beijing, China

a. World's Largest Coffee Pot

b. Tipis locate at Head-Smashed-In Buffalo Jump

c. Tiananmen or The Gate of Heavenly Peace

IS MY SOURCE CREDIBLE?

ACTIVITY #1: HOW TO TELL IF YOUR SOURCE IS CREDIBLE: USING YOUR CRITICAL EYE

Outcomes:

- to learn where to find citation information on a webpage
- to understand why Wikipedia is a launch point for research as opposed to the endpoint
- to be introduced to the method of website evaluation, C.R.A.A.P.

Materials:

- projector with internet access for instructor
- blank paper
- Word document version of guided notes: Is My Source Credible?
- Google Doc version of guided notes-- copy and make your own, editable version
- earbuds or headphones
- individual access to internet

Preparation:

- Go to the Google Doc version of the guided notes and copy and create your own, editable version.

Instructions:

1. In partners, ask students to brainstorm all of the ways that they know something is true or false. Create a master list of the class' detective skills.
    a. *Potential discussion questions*: Does everyone trust the same sources? Who can we trust to provide us with factual information? Is a source's credibility ever subjective or contextualized?
2. Have students work individually or in pairs to complete the guided notes titled, Is My Source Credible (this link will go to The Inquiry Research Platform page where the Word Document can be downloaded). The information on the videos is provided in chronological

order and headphones are recommended. Encourage students to pause and reverse, as required.

3. Divide class into four groups and assign the groups as follows: Groups 1, 2, 3, and 4. Each group is then responsible for adding in their responses to their assigned section. Encourage students to add comments and revisions to their sections. Optional: have each group edit the next section (e.g. Group 2 would edit section 3; Group 4 would edit section 1.) Rotate the edits as many times as necessary, until the document is complete and correct. Provide time for all students to strengthen areas of their guided notes that may be weak.
4. Reflection:
    a. Option 1: Visit the Reflection Page: My Critical Eye on The Inquiry Research Platform.
    b. Option 2: In what ways are determining if information is true offline the same as online? Describe the differences between determining online and offline credibility.
    c. Option 3: Pick two of the initials in the acronym C.R.A.A.P. that you feel are most important when conducting research. Describe each initial and explain why you chose these two.
    d. Option 4: Script out a conversation you might have with a friend who thinks that Wikipedia is a great source for doing research. Describe the pitfalls of using Wikipedia and how we could use it in a productive way.

ACTIVITY #2: FACT, FICTION, OR OPINION

Objectives:

- to apply the skills learned from Activity #1 (Is my source credible?) to determine if a webpage is credible

Materials:

- projector with internet access for instructor
- printed versions of the handout: Website Evaluation Form OR students can use the interactive version found here
- Google Doc version of guided notes
  - Tree Octopus Google Doc
  - Elephant Butte Google Doc
  - Spaghetti Harvesting Google Doc
- earbuds or headphones
- individual access to internet

Preparation:

- Go to the Google Doc versions of the guided notes and copy and create your own, editable version

Instructions:

1. Having completed Activity #1: Is My Source Credible?, it is now time to put the students' skills to the test. Hand out the website evaluation sheets to the students (or send them to the interactive link). Working in pairs, students should visit each site and fill out as much of the evaluation sheet as they can. Each website or video will have components of them that are believable and components that are not.
2. Divide class into three groups and assign each group one of the websites. (Short on time? Divide into groups before the activity begins, having each pair of students analyze only one

of the websites/video.) Each partnership will then go to the appropriate Google Doc to add in their responses.

   a. Google Doc version of guided notes
      - Tree Octopus Google Doc
      - Elephant Butte Google Doc
      - Spaghetti Harvesting Google Doc

3. Leave at least 15 minutes, at the end of the class, to go over the three Google Docs that the class collaboratively created. If students analysed only one website each, you will need to allow for time to introduce the other websites.
4. Reflection:
   a. Option 1: Visit the Reflection Page: My Critical Eye on The Inquiry Research Platform.
   b. Option 2: What made the website or video that you analysed seem believable? What components of the website or video made you think that the information may not be factual?

ORGANIZING AND COLLECTING MY INFORMATION

By the end of these modules, students will be able to do the following:

- Examine and explore different types of graphic organizers, and choose a graphic organizer that suits their learning best. This task can be adapted depending on the abilities of the student.
- Visit the website bubbl.us and enter one word into the search criteria.
- View “Basic Note Taking” and be able to state what the three basics of note taking are.
- View “How to Paraphrase” and define the three explanations of what paraphrasing is.
- View “What is Plagiarism” and state what are three kinds of plagiarism.

Materials:

- Computer or tablet with internet access.
- inquiryresearchplatform.weebly.com -> Organizing and Collecting My Information
- Printer Access
- Pen and paper
- Instructor computer with projector and sound if in commons lab. If in classroom, headphones or speakers or connection to sound system.

ACTIVITY #1: INTRODUCTION TO ORGANIZING RESEARCH INFORMATION

The Purpose of this module is to introduce students to organizing the information that they find when researching (20-30 Minutes).

Setup:

- Students will work in pairs for this lesson. Begin once each pair is seated at a computer (if in a lab), or once laptops or tablets have been distributed. If there are not enough computers or devices, the activity can be adapted for any number of students per device.

Introduction:

- Present the following scenario to students:
  - ✳ Say: Imagine that you are moving homes. However, the new home that you are moving to only has one room. How will you move everything that is in every room in your current home into one room in your new home? Think about it. You have the entrance, garage, living room, kitchen, dining room, bedrooms (maybe a few!), bathrooms. These rooms all contain different things.
    - ◉ The scenario can be verbally explained to students, or can be put onto a presentation slide or overhead.
  - Ask: How could you bring what is important from every room to put into one single room?

Activity:

- Say: Thinking of the seven sections of the home we listed, in your pairs decide what are the two most important items in each room. Write your responses on a piece of paper. Write large because they will be going on the wall.
  - Do: Students will have 5 minutes to complete their responses. If applicable, they can share in different ways (ie tableau, drawing).
- Do: Once students have finished writing down items of importance, have them tape their responses to the wall. Once everyone has posted, have students walk around to view the responses. They will have 5 minutes to accomplish this task.

- Do: As students view responses, the instructor will also view responses and star the most common ones.

Debrief:

- Ask: What were some of the common items found on the responses?
- Ask: Why is it important to think about what is most important in a room? Did you have trouble figuring out what would be important?
- Ask: Do we think we would have the same trouble deciding what is important when it comes to researching? How do we decide what is important and what is less significant in our sources?

ACTIVITY #2 FINDING THE PERFECT GRAPHIC ORGANIZER

Building on module #1, this module explores the different graphic organizers students can use when gathering research information (10-15 minutes).

- Say: Graphic organizers are a great way to organize and collect what you find.
- Say: Taking notes can seem really hard, especially if you have a large project.
- Ask: What would be some things you could take notes for, even if you're not doing research? Responses could be when talking to someone, watching a movie, reading a book, etc.
- Do: Bring up an overview of graphic organizers as found on the inquiry research platform. They can be explained or presented on the projector. Instructors can also have the option to print out the graphic organizers, or email them to students prior to the lessons. Students can also download the graphic organizers they prefer.
- Organizers to review:
  - Note taker: great for history research, includes events, people, key terms, facts, as well as important quotes.
  - Key Points, Details, Summary: awesome for as you read. The left side gives you room for main keywords, with more detail on the right, and a space to write a summary in your own words at the bottom **This stage is recommended for adaptation.
  - Connection Web: Great for having one main idea, with subtopics off to the side. You could use several of these during a research project.

* If completing all modules at once, continue onto the next step.

- Say: The Inquiry Research Platform provides several examples of great graphic organizers that can help bring your research information together. We'll be using a graphic organizer as part of today's lesson. Take a few minutes to have a look at the different graphic organizers available. When you have explored the different organizers, please print out the "Key Points, Details, and Summary" organizer. We will be using the same one today.
  - If students cannot print, print out the items before hand for them.

ACTIVITY #3 CONCEPT MAPS

Introduction to Concept Maps (10 minutes).

- Ask: Who has ever had an idea? Field responses.
- Ask: When you thought of your idea or followed through with your idea, was your idea different than when you started? Did you find other things as you thought through or looked into your idea?
- Say: Sometimes when we research it, it can be difficult to find ideas that are connected. A mind map can help find more ideas. We'll explore a website, bubbl.us to see how we can find more ideas.
- Do: If projector available, demo: Bring up the website and ask the students for an appropriate word to enter onto the site.
- Do: View the video on the website "Tutorial: How to Use Bubble.us" (3:09). Depending on classroom setup, the class can view on the projector, or individually.
- Do: After viewing the video, review the key points from the video. Students if they have an e-mail, can sign up for an account.
- Do: Have students use their graphic organizer from module #2 (if used. If not used, it can be reintroduced).
- Say: Write "bubbl.us" on the left column, and then have them write "mind-mapping site that allows you to connect and learn about ideas"

ACTIVITY #4 NOTE TAKING FOR RESEARCH PAPERS

Explores making connections, as well as discusses how students can take guided notes when researching (10 minutes).

- Say: We've already started to take notes using our graphic organizer, but let's take it to the next level. We are going to watch a short video on the basics of note taking. Pay attention to the three keys to making good notes.
- Do: Before we begin, let's write "Note Taking" on the left side of our graphic organizer.
- Do: Watch video "Basic Note Taking" (5:09).
- Ask: After video, review the three keys to Note Taking :
  - Don't write facts, write conclusions
  - Make Connections, use different colours
  - Review your notes for understanding.
- Say: With your partner, compare the notes that you made from the video.
- Ask: What are some note taking tips you use?

ACTIVITY #5: PARAPHRASING

Examines how students can paraphrase information that they find while researching (10 minutes).

- Say: once we have our notes, we need to be able to put what we find in our own words, that's where paraphrasing comes in.
- Do: Watch video "Paraphrasing" (2:26).
- Say: (if using graphic organizer) Next, we'll write "paraphrasing" on the left side of the graphic organizer, and the three key points of what paraphrasing on the right side of the graphic organizer.
- Do: Allow students time to go back and review video in pairs.
- Say: Discuss with the person beside you the six effective ways to paraphrase. Decide on which one you and your partner think is most important.
- Ask: What did your groups decide was most important when paraphrasing?

ACTIVITY #6 PLAGIARISM

Students investigate what it means to take someone else's work and pass it off as your own (15 minutes).

- Ask: How would you feel if someone took something that you made and tried to say that he or she did it? Wait for responses. Ask students if something like this has ever happened to them. If the students are in the younger grades, ask students how they feel about "copy cats."
- Ask: Why is it important that we give credit to someone who did or wrote something? We need to give credit where it is due. It is wrong to take others ideas and pass them off as our own.
- Ask: Does anyone know what the word "plagiarism" means? "Plagiarism" may be defined as taking someone else's work and saying that it is your own.
- Ask: Can we just copy and paste things off of Wikipedia for our research? No! But students often do so.
- Do: Click on the first "watch this" tab for a quick video on plagiarism.
- Say: Before we start, we'll write "plagiarism " on the left column of our graphic organizer.
- Do: Watch Video "Watch This: Plagiarism Introduction" (2:17).
- Say: Write down the three points of "what plagiarism is" from the video.
- Ask: As a class, discuss when you give credit and when not to give credit. Why don't we give credit for some things?
  - When do we give credit: if the words are from another work, if the information is given to us from someone else, when you copy something word for word, anything you didn't think of.
  - We don't give credit for: your own observations, experiences, or thoughts, findings in a science experiment, common sense or major historical events, accepted facts.

Conclusion

Summary of modules and bringing information together (10 minutes).

- Hold onto your graphic organizer as an example of note taking. Take a few minutes to write a small summary of what we covered today in the bottom space.
- What were the five areas that we explored today?
  - Graphic Organizers
  - Concept Maps
  - Note Taking
  - Paraphrasing
  - Plagiarism.
- What was something we already knew?
- What was something we learnt?

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