

## Question Formulation Technique

### Step 1: Review the Rules for Producing Questions

1. Ask as many questions as you can
2. Do not stop to answer, judge, or discuss
3. Write down every question exactly as stated
4. Change any statements into questions

### Step 2: Produce Questions

1. Use the Question Focus (QFocus) to ask as many questions as you can
2. Follow the rules:
  - Ask as many questions as you can
  - Do not stop to answer, judge, or discuss
  - Write down every question exactly as it was stated
  - Change any statements into questions
3. Number the questions as you produce them

### Question Focus:

*“Young people are making an impact on society and the environment.”*

### Step 3: Improve the Questions

Once you have a list of questions, the next step is to learn about two different types of questions you might have on your list: closed-ended questions—questions that can be answered with a “yes” or “no” or with one word - and open-ended questions –questions that require an explanation.

1. **Review** your list and identify the closed-ended questions with a “C” and the open-ended with an “O.”
2. **Think** about and name the advantages and disadvantages of asking each **type** of question. You will see that there is value in asking both types of questions.
3. **Practice** changing questions from one type to another. Changing the questions will help you learn how to edit your questions to meet your purpose.

### Step 4: Prioritize Questions

Review your list of questions:

- Choose your three most important questions.
- While prioritizing, keep in mind the Question Focus: Young people are making an impact on society and the environment.

After prioritizing consider:

- Why did you choose those three questions?
- Where are your priority questions in the sequence of your entire list of

questions?

### **Step 5: Next Steps**

Your questions can now be put into action. For example, you may use the questions to do research, develop a project, use the questions as a guide, etc.

*You are now going to identify your own topic idea or issue. As directed by your capstone teacher, you will go through the Question Formulation Technique with a partner or small group in order to generate questions for your topic.*

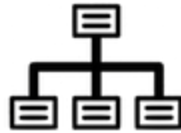
### **Question Inventory**

Ask tons of questions: What kinds of questions do you have about your topic and related issues?

Idea, system or problem:

Questions:

\*As you begin to do your formal research on your topic during the “U” phase, you will add more questions. Also you can ask for more tables for different ideas/systems/issue as you explore. It is normal to switch ideas in this phase as you learn more about each idea.



**Deliverable: Question Tree Map**

While conducting initial exploratory research you will create a Question Tree Map which identifies the main topics supporting your idea. Within each of these topics, you will have open ended questions that you previously generated or modified. The questions need to address a wide range of knowledge that relates to the project. This question map needs to clearly organize your hierarchy of thinking.

## ASSESSMENT RUBRIC: Asking Tons of Questions

Learning Targets	Meets/Doesn't Meet	Student Feedback with corresponding evidence noted	Teacher Feedback with corresponding evidence noted
I can generate a wide variety of questions that relate to my main idea.			
I can generate questions that demonstrate a depth of curiosity on my idea, system, or issue.			
I can group questions into appropriate categories with a hierarchy that is reflected in the tree map.			



*"The goal is for you to gather as much information as possible, so you can understand the problem and ultimately generate ideas for a solution in our next phase."<sup>1</sup>*

So, what types of research are there? Review the following table to identify some sources of information. Are there any types of information missing?

Types of Research	Explanation
Research through reading	Text-based documents are read to learn about your topic. The text can be found in books, the internet, journals, newspaper articles, etc.
Multimedia Research	Video, pictures and audio resources make concepts come alive so much clearer than reading. Don't be shy to find information through videos, songs, photographs, etc.
Exploring Data	There are so many ways in which you can explore data. These include, but are not limited to, published data from public records or journals, statistics connected to an issue, market research connected to corporations or sales, conduct surveys, and reviewing data you had already recorded.
Interviews	Conduct interviews with experts so that you can ask questions, get direct answers, and ask follow-up questions. Who might you interview? This could be a professor or educator, parents, kūpuna, neighbors, celebrities, professionals or anyone who is an expert on the topic you are studying.
Hands-On	This type of research involves hands-on, trial and error research.

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<sup>1</sup> [Launch](#) reference

Research	Some examples provided in the <u>Launch</u> book include testing magnets to see if magnetic trains actually work or playing video games to get a sense of the addictive properties of video games. Another example is is conducting scientific research on a topic such as coral health or sediment levels.
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You will be expected to record evidence of your research and cite the sources of the information. Working with your capstone instructor you will develop a method of recording your notes and the citation expectations. Two samples are included in this section.

Remember research is an ongoing process that never ends. You will likely be conducting additional research throughout all the phases of the LAUNCH cycle. You may have to research a skill, appropriate materials to use, or dig deeper into your topic as new questions arise.

**Deliverables:**

- Research notes**
- Oral Presentation**
- Assessment Rubric**
- Post Assessment Reflection**



Before beginning your research, you need to identify an essential question that will drive your research. Remember you are gaining an understanding of a system and key information connected to a problem, so what is the essential question that will guide you? Here are the qualities of a good essential question:

- A strong essential question is open-ended
- A strong essential question must provide depth of study demanded by your course focus
- A strong essential question must be meaningful to you
  - Provoke deep thought
  - Result in an original answer
  - Help you conduct your problem-related research
  - Make you produce original ideas rather than predetermined answers
  - Encourage critical thinking, not just memorization of facts

### **Getting started on an Essential Question**

Start with the following types of questions:

- *Which one?* Weigh two options and provide evidence supporting one over the other
  - Example: Which government system is more supportive of worker's rights socialist or capitalist?
- *How?* Evaluate, infer, and maybe propose an alternative
  - Example: How can humans inhabit Mars?
- *What if?* These are hypothetical, use the knowledge you have to pose a hypothesis and consider options
  - Example: What if self-driving cars were available to everybody?
- *Should?* Request a moral or practical decision based on evidence
  - Example: Should refugees of war be granted automatic citizenship in the United States?

- *Why?* Understand cause and effect and help understand relationships
  - Example: Why does carbon emissions impact climate change?



Use the following list of questions stems to help you draft your essential question:

- How would you ... ?
- What would result if ... ?
- How could you change ... ?
- How would you improve ... ?
- Why do you believe ... ?
- What is your opinion of ... ?
- What would you do differently if ... ?
- Why do you feel ... ?
- How would you go about solving the problem ... ?
- If you were in this position, would you ... ?
- Why do you/don't you support ... ?
- What could you improve ... ?

For example, if your initial idea in the brainstorming from part one was “make an ‘ukulele songbook” you can use the list the following way:

“How would you make music more accessible to keiki in our community?”

“What would result if people with alzheimer's had access to music lessons?”

“How would you improve music classes at our school?”

“Why do you believe that more young people are getting into DJ music?”

From there I can change each into an essential question:

Question stem	Essential question
<b>How would you</b> make music more accessible to keiki in our community?	<b>How</b> are young people impacted by learning an instrument?
<b>What would result if</b> people with alzheimer's had access to music lessons?	<b>What if</b> all people with alzheimer's learned an instrument?
<b>How would you improve</b> music classes at our school?	<b>How</b> does music class make you more focused in school?
<b>Why do you believe that</b> more young people are getting into DJ music?	<b>Why</b> is electronic music becoming more popular?

Try it!

Question stem	Essential question

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## Research Notes

### Understand your process or problem

Essential Question:		
Question	Answer	Source

\*Make additional tables as needed



## Cornell Notes For Product Research

<b>Essential question:</b>	
<b>Bibliography:</b>	
<b>Major ideas:</b>  What are the key points that remind you what you learned from this resource	<b>Detailed points :</b>  Details about the information from this resource that was useful to you Questions that this resource made you think of or things that you now want answers to
<b>Summary:</b> Summary of the information; can be prose or bullet points	

# Formal Research Notes Assessment

*Upon completion of the written summary you will self-reflect using this assessment rubric. Complete the first column "self feedback" with corresponding evidence noted. You can number portions of your written summary as a reference. Following your self-reflection you will meet with your capstone teacher to review your work and collectively identify whether you did or did not meet the learning targets.*

<b>Learning Targets</b>	Self Feedback with corresponding evidence noted	Teacher Feedback with corresponding evidence noted	Meets/Doesn't Meet
I can formulate an essential question that is open-ended, provides depth of study, and is meaningful to me.			
I can generate thorough answers to my questions and summarize the information I gathered.			
I can access a variety of resources in order to gather information about my topic.			
I can document my information so it is organized, legible, and			

detailed.			
I can cite sources identifying the type of resource referenced.			