

Questions that Blend CCCs and SEPs

	Asking Questions and Defining Problems	Developing and Using Models	Planning and Carrying out Investigations	Analyzing and Interpreting Data	Using Mathematics and Computational Thinking	Construct Explanations and Design Solutions	Engage in Argument from Evidence	Obtaining, Evaluation, and Communicating Information
Patterns	What questions can I ask about this pattern? How can I change this pattern? How can I use this pattern?	How can I model this pattern? Can I make a model to explain this pattern?	How can we design and carry out an investigation to confirm that this pattern is real?	Is there a pattern to this data? How can I organize and display my data to show this pattern?	How can we use math to represent this pattern? How can we use a computer to find or visualize patterns in the data?	How can I explain this pattern? How can this pattern support my explanation? Does this pattern tell me if the solution works?	What is the evidence for this pattern? Can I use this pattern as evidence to support my argument?	What is already known about this pattern? How can I best communicate about this pattern?
Cause and Effect	What is the cause of this effect? What is the desired effect?	What model will explain this cause and effect relationship?	How can we design an investigation to see if this is the cause of this effect?	Does our data support this cause and effect relationship?	How can we measure the relationship between the cause and effect? How can we model it with math? How can we make a computer model of this cause and effect relationship?	What explains how the cause leads to the effect? What does this cause and effect relationship help to explain? Will this cause the desired effect?	What is the evidence that the cause leads to the effect?	What is already known about this cause and effect relationship? How can I best communicate about this cause and effect relationship?
Scale	How does this change at different scales? Can I make this bigger or smaller?	How can I make a model that helps me understand nature at this scale?	How can we investigate nature at this scale? What tools will we need?	What does the data tell us about how nature works at this scale? What does the data tell us about how the system changes at different scales?	How can we use math to describe and measure this scale? How does math help us understand what happens if this gets bigger or smaller? How can we use computers to see how this changes as it gets bigger or smaller?	How can I explain how nature works at this scale? Can I explain how what happens at this scale affects nature at other scales? Does a change in size work? How can we make it work?	What is the evidence that we have for our description of nature at this scale?	What is already known about nature at this scale? How can I best communicate about this scale?
Systems	How does this system work? How can I design a system to solve a problem?	How can I model this system? Can we model how this system functions?	How can we change variables to test this system?	What kind of data can help us understand this system? What does the data tell us about the system?	How can we use math to model how this system works? How can we use computer models to understand this system?	How can I explain the function of this system? Will this system solve the problem? Has the system been improved?	What evidence do we have to support our model of this system?	What is already known about this system? How can I best communicate what I know about this system?
Energy and Matter	How does energy work in this system? How does matter function? How can I make this more energy efficient? How can I use energy to improve the system? How can the materials be improved?	How can we model the flow of energy? How can we model the cycling of matter?	Can we design and carry out an investigation to determine how energy or matter affects this system?	What does the data tell us about the effect of energy on this system? What does the data tell us about the matter in this system?	How can we use math to quantify the energy and matter in this system? How can computers be used to track matter or energy in this system?	How can I explain how energy affects this system? How can I explain how matter changes in this system? Does the change in materials improve the system? Is energy being used to improve the system?	What is the evidence for how energy and matter affect this system?	What is already known about energy and matter in this system? How can I best communicate about energy and matter in this system?
Structure and Function	How does the function depend on the structure? How can we design a structure to perform this function? How can we improve the structure?	How can we model how this structure works?	What variables about this structure can we change to find out how the function is affected?	What does the data tell us about how changes to this structure affect its function?	How can we use math to measure and describe the function? How can computers be used to study how the structure affects the function?	How can I explain how the structure is related to the function? Does the structure serve the function? Did the change in structure improve the function?	What is the evidence for the structure supports the function?	What is already known about the relationship between structure and function in this system? How can I best communicate about this relationship between structure and function?
Stability and Change	What causes change in this system? What causes stability in this system? How can we make this system more stable? How can we make it change?	How can we model how this system changes?	Can we design an investigation to study what leads to stability and change in this system?	What does the data tell us about what affects the stability of this system?	How can we use math to measure the rate of change in this system? Can math describe the balance that keeps it stable? How can computers be used to analyze stability and change in this system?	How can I explain why this system changes or remains stable? Have we made the system more stable? Does the system respond to change the way we want it to?	What is the evidence for the stability and change in this system?	What is already known about stability and change in this system? How can I best communicate what I've learned about stability and change in this system?

All questions on this sheet came from <http://crosscutsymbols.weebly.com/>