Energy and Matter

- I noticed I can break ___ into smaller pieces, put together ___ into larger pieces, and change the shape of ___.
- The __ is made of ____ particles too small to see. I know they are there because___.
- Although ___ changed, the total weight ___.
- In the (physical/chemical process) the number of atoms ___.
- The (thermal energy, energy of motion, energy in the field) transferred from ___ to ___.
- In terms of energy and matter I observed___.

Structure and Function

- The ___ is (name of shape). The shape helps it to ___.
- The parts of ____ help it to ____.
- I think the parts of the object that are too small to see look like ___ because they ____.
- The best material for ____ is ____ because____.
- The molecular structure of ____ allows it to _____.
- The ___(designed system) functions the way it does because of the interrelated parts, ___, ____ and ____.

Scale, Proportion, and Quantity

- I noticed that _____ was (bigger, faster, longer, hotter) than ___.
- The object is ___ (inches, feet)
- Some ways I can measure the object are___.
- A mathematical expression that represents this situation is ___.
- The pattern that occurs in the model would ___ on a larger/smaller scale.
- Using the data, I can predict that as the independent variable increases/decreases the dependent variable will ____

Systems and System Models

- The ___ has this many parts. The parts are ___. They work together by ___.
- The ____ would not function without ____.
- ____ and ___ interact to make the system work.
- The input of ____ system is ___ and the output is ____.
- The (physical, mathematical, computer) model simulates the (flow of matter/energy and interactions). I can use it to predict ____.

Stability and Change

- ____ stayed the same, but ____ changed.
- ____ changed ____ (Slowly/quickly)
- Over a ____ period of time, the system____.
- At this scale the forces____, whereas at a (smaller/larger) scale the forces___.
- When ___ changes in the system ____ happens.
- In order to stabilize the system, we would need to _____.
- The positive feedback, ____, destabilized the system by_____.

CROSSCUTTING CONCEPT CARDS

Patterns

- The pattern I see is___.
- I noticed that ___ is similar to ____.
- I noticed that ___is different from___.
- If this pattern continues, I predict __.
- The pattern on the graph shows me___.
- When I see the pattern change this way, I think ___ s causing the change.
- At this scale/size, the pattern is ___ and on a larger/smaller scale the pattern is ___.
- I will redesign the solution by ___ based on the pattern of performance of ___.

Cause and Effect

- I think the reason ___ happened is because ___.
- ____ changed because of ___. I know this because___.
- Although ____ and ___ happen together, it does not mean that ___ caused ___ to happen.
- I predict ___ will happen when/if ___.
- ___caused ___. My evidence is___.
- ___and ___ are related, but ___did not cause ___ to change/occur.
- I propose that____caused ____ to occur based on the evidence of ___. As a result I predict___.