Energy Transformation Model Challenge – putting together what we know so far.

Objective: TO DESIGN THE PERFECT MODEL. To design the most effective model utilizing the terms we have covered to date that accurately models the energy transfer that happens in and around carnivorous AND non-carnivorous plants.

Introduction: Now that you have been "exposed to the light", we will spend a class putting together all the pieces. First, what is a scientific model? A model is a diagrammatic representation of how something works, flows, or proceeds. You use models to understand how systems work and in this case, we will be coming to a consensus on how energy transformation can be modeled in a plant system.

Materials at your disposal: the work we have done to date for this unit on energy transfer that you have all been given back. You will have large format paper, colored pencils, markers, and rulers on which to make your model.

Elements you will need to include:

Radiant energy (sunlight)	Poor/low nutrient soil
Plant cells	Stoma
Water	Stomata
Chloroplasts	Nutrients (nitrogen and phosphorous)
Chlorophyll	High nutrient soil
Sugar	Different light wavelengths (R.O.Y.G.B.I.V)
Cell walls	Reflected light
Cytoplasm	Absorbed light
Carnivorous plant	Chemical energy
Energy transformation	Mitochondria
Oxygen	*Arrows showing the movement or steps**
Carbon dioxide	*Information boxes telling what each structure is**
Guard cells	

How should you start? PLAN, PLAN, PLAN! Sketch out your flow on a piece of scrap paper before committing to your final model. Spend 10 minutes grouping the terms above, developing what the model system you choose will be. Will it be a pitcher plant or Venus fly trap? Lastly, 30 minutes sketching your model. Hint: a sketch artist, information box specialist, and two researchers are the roles you will assume for this challenge.

Grading: 11 points for correct usage of all of the terms above. 3 points for correctly showing the flow of energy from the sun to the plant cells and from the plant's cell structures to chemical energy. 3 points for showing how and why a carnivorous plant makes its energy in a different way than one that is non-carnivorous. 3 points for detail, focus, and meeting the expectations of this challenge. 20 points in total.

Prize to the group that best meets the challenge: It will certainly be sweet!!

Roles:

Our sketch artist is: _____

Our info box specialist is: _____

Our researcher(s) are: _____ & _____

Our model will look like this (sketch area below can be messy, but it needs to organize your approach)