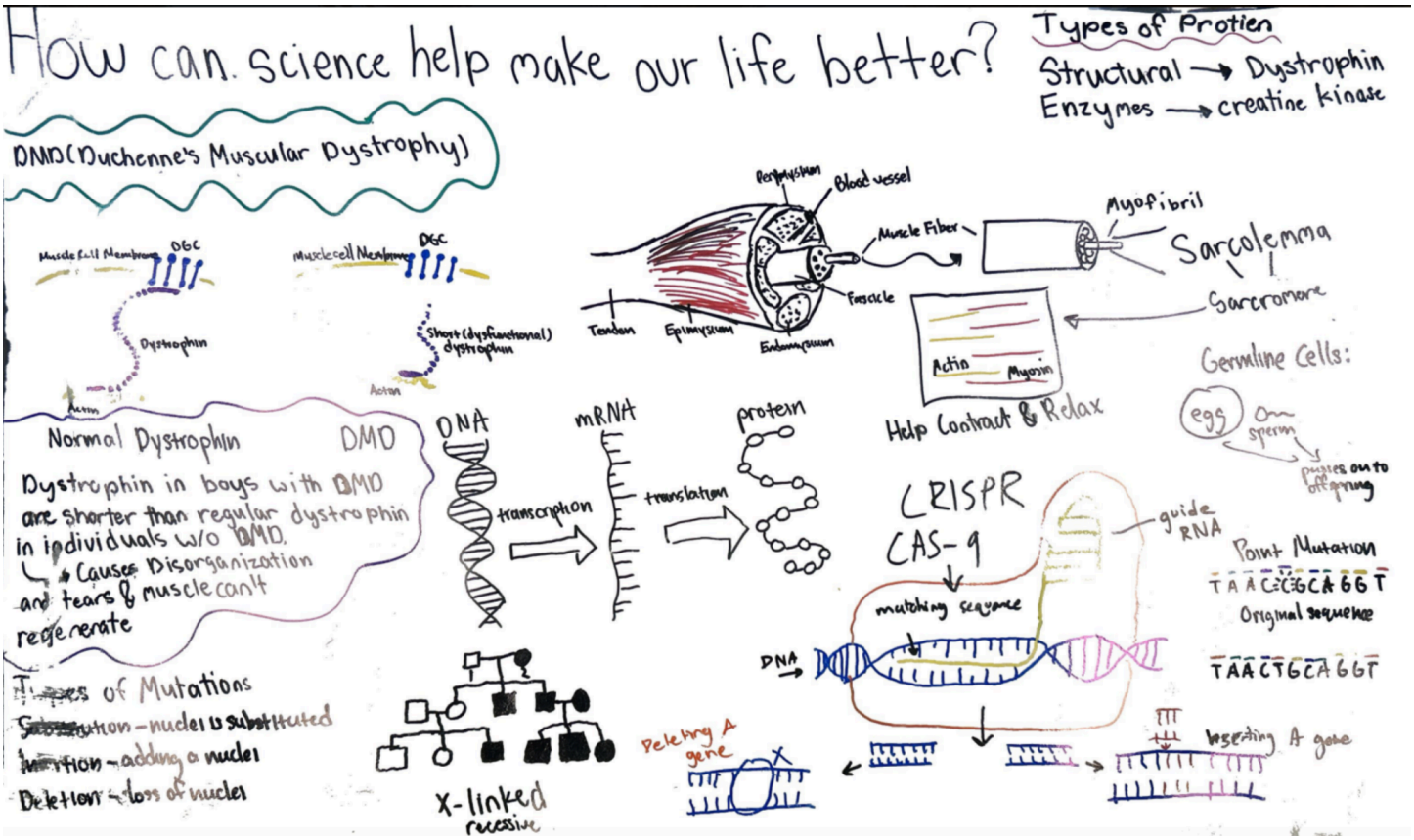
Modeling 101

Scientists can model:

- We're going to popcorn-read the modeling rubric. We will look at a few examples to grade those models individually and then together as a class to come up with a consensus as a class.

GENERAL MODELING RUBRIC				
Category	Advanced (4)	Proficient (3)	Needs Improvement (2)	Score
Components of the Model	• *clearly* and *properly* labels and illustrates ALL of the essential components of the model	• labels and illustrates MOST of the essential components.	• components are *missing* and/or *improperly* labeled and/or illustrated.	
Relationships among components (and Scientific Reasoning)	• *accurately* defines the relationship among the components of the model. • Relationship ties to the phenomena This will likely be a cause and effect relationship.	• *reasonably* defines the relationship among the components	• *inaccurately* defines the relationship among the components, or *shows no or very little relationships among components*.	
Scientific Connections (**major concepts**)	• *Model clearly* connects the model to the phenomena and scientific theories **OR** • *Overall model has the capacity* to predict outcomes of similar phenomena (the model has Predictive Power!)	• *reasonably* connects the model to the phenomena and/or scientific theories	• *incoherently* connects the model to the phenomena and/or scientific theories	
Notes:			Total	/12

SAMPLE MODEL #1

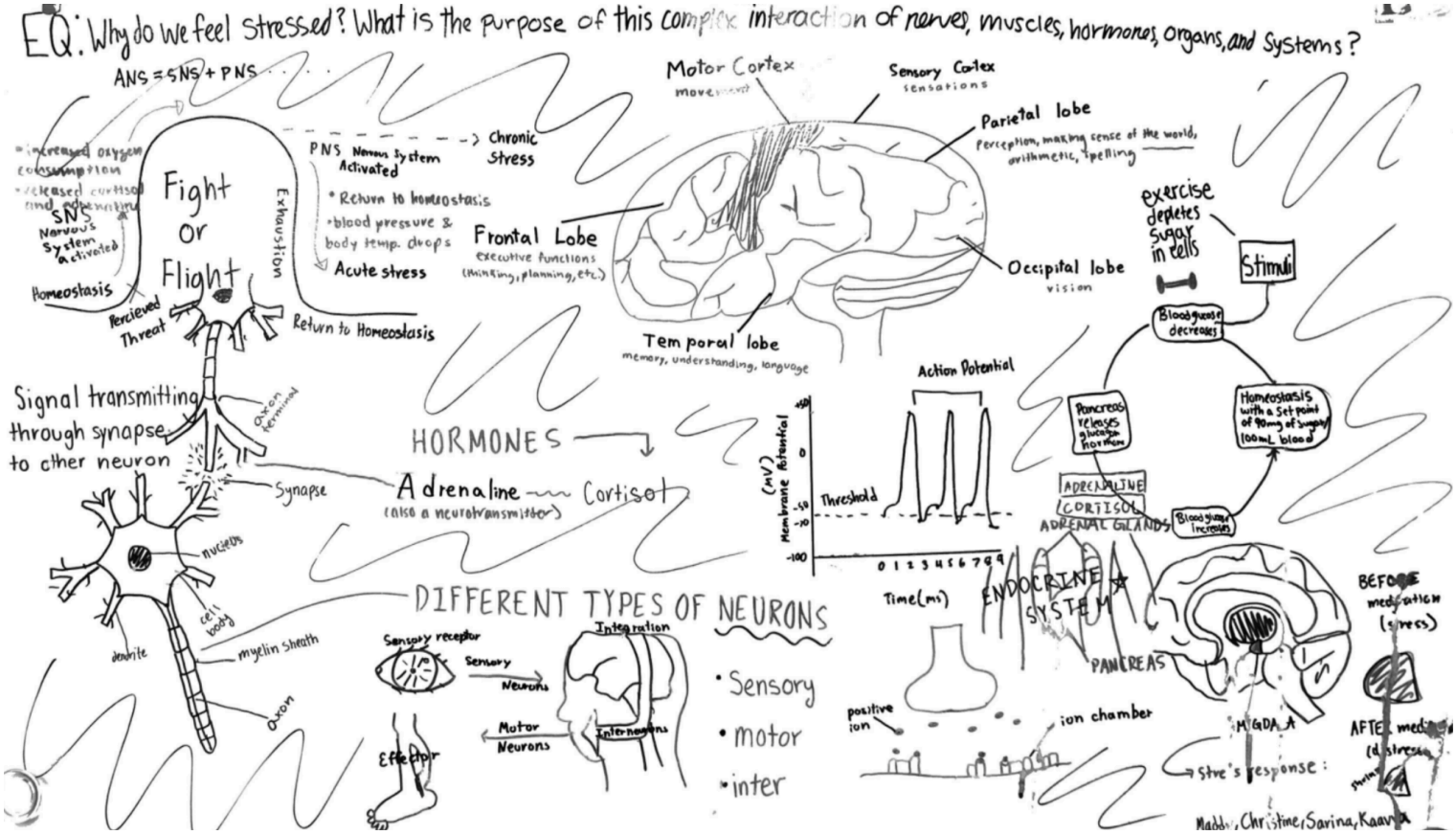


- highlight what you'd give this model for each category using the rubric below::
- We will build consensus as a class shortly.

GENERAL MODELING RUBRIC				
Category	Advanced (4)	Proficient (3)	Needs Improvement (2)	Score
Components of the Model	• *clearly* and *properly* labels and illustrates ALL of the essential components of the model	• labels and illustrates MOST of the essential components.	• components are *missing* and/or *improperly* labeled and/or illustrated.	
Relationships among components (and Scientific Reasoning)	• *accurately* defines the relationship among the components of the model. • Relationship ties to the phenomena This will likely be a cause and effect relationship.	• *reasonably* defines the relationship among the components	• *inaccurately* defines the relationship among the components, or *shows no or very little relationships among components*.	
Scientific Connections (**major concepts**)	• *Model clearly* connects the model to the phenomena and scientific theories **OR** • *Overall model has the capacity* to predict outcomes of similar phenomena (the model has Predictive Power!)	• *reasonably* connects the model to the phenomena and/or scientific theories	• *incoherently* connects the model to the phenomena and/or scientific theories	

Notes:	Total	/12

MODEL #2:



- highlight what you'd give this model for each category using the rubric below
- We will build consensus as a class shortly.

GENERAL MODELING RUBRIC				
Category	Advanced (4)	Proficient (3)	Needs Improvement (2)	Score
Components of the Model	• *clearly* and *properly* labels and illustrates ALL of the essential components of the model	• labels and illustrates MOST of the essential components.	• components are *missing* and/or *improperly* labeled and/or illustrated.	
Relationships among components (and Scientific Reasoning)	• *accurately* defines the relationship among the components of the model. • Relationship ties to the phenomena This will likely be a cause and effect relationship.	• *reasonably* defines the relationship among the components	• *inaccurately* defines the relationship among the components, or *shows no or very little relationships among components.*	

Scientific Connections (**major concepts**)	• *Model clearly* connects the model to the phenomena and scientific theories **OR** • *Overall model has the capacity* to predict outcomes of similar phenomena (the model has Predictive Power!)	• *reasonably* connects the model to the phenomena and/or scientific theories	• *incoherently* connects the model to the phenomena and/or scientific theories	
Summary Explanation (back of the model)	• *clearly and specifically* explains the phenomena using all key vocabulary words. (please, **no** definitions, **no** paragraphs)	• *lacks* SOME *detail or steps* represented to explain the phenomena.	• *Missing or incomplete* model summary explanation	
Notes:			Total	/16

Now that you know the modeling expectations, we can create an initial model using our solar cell lab