

## Common Terms in Modeling Instruction

**Whiteboard:** Professor assigns students a task and often the activity is then written up on a small portable whiteboard which will later be used for a Board Meeting, these should be presentable.

**Board Meeting:** Students form a circle and discuss the whiteboards which precede the Board Meeting.

**Instructor Led Discussion:** Professor engages in discussion with students while they're in their respective groups. This approach is similar to Socratic dialog teaching.

**Specific Model:** This is a model of a specific situation, for example "A can of soup falls 3.6 m from the top of a cabinet." A model of this very specific situation might include equations of motion, kinematic graphs of the motion of the soup, motion maps of the can as it falls, force diagrams during the fall, energy pie charts during the fall but all would be describing the specific situation.

**Basic Model:** Basic models differ from specific models in that they are models of a class of situations, so for example in the situation "A can of soup falls 3.6 m from the top of a cabinet." The basic model that applies during free fall is a constant acceleration model. In this case the constant acceleration model is the base model that can be adapted to fit the situation, but still has a set of characteristics which are valid across all constant a models (constant difference between motion maps, constantly changing energy pie charts, force diagrams showing a constant force, standard kinematic equations are valid, etc...)

**Representation:** One of the constituent components of a model and are used to represent aspects of a physical phenomena. Motion maps represent both the position and velocity of the center of mass of an object, Energy Pie charts represent the energy storage and transfer within a system, Force Diagrams represent the number, magnitudes and directions of forces on a particle. A representation by itself is not a model, but instead stands for a model in that a model includes a number of coordinated representations. Often we refer to these representations as representational tools.

**Seed:** This is an approach to introducing an idea to the class where the instructor makes a suggestion to a group or several groups while they are working on something and then asks that group to present the idea to the larger class during a Board Meeting. These seeds can be small (try a different frame of reference) to large (introducing a new representation).