**Josh**

Need a preliminary document ONE-pager to “make the case” for computational modeling in physics.

1. Adding a Representational Tool
2. Differential Approach to Concepts
3. Pyret Considerations for Instruction
   1. Immediate feedback
   2. Error messages & failure

Fluidly incorporate the Design Recipe

**Unit 1 Discussion**

**(Note from Ben: +suggestion from Melissa)** suggested that in Unit 2, when they come back to linear motion, that we give them animate() and animate a draw-car-at-x(x) function -- note not time t, but position x, so that (a) it connects back to unit 1's flipbook, and (b) unit 2's differential motion

Colleen: Start with a falling object. Create a hands-on flip book with bar chart. Recognize that this can be written as a function (Total Energy = KE + PE) in plain English. In the following unit, students will recognize that the syntax of the Pyret statement channels the structure of the function statement that they wrote in the previous flip book activity. (Wouldn’t it be nice to automate this? How could you smooth this out? Animate between images?) Students should be able to write a function for a moving car that is “similar in form.”

Josh: It doesn’t sit right to not actually use that function. We’re building to a climax and moving on before we give them pay-off.

Colleen: Create the need -- introduce the need before we introduce the representation.

Colleen will take the lead on creating activities to introduce functions through flip books in Unit 1 by end of month.

**Unit 2** - Done by the end of the month

Melissa: Get rid of the mystery tube activity (too confusing, not a great analogy). Better to start with a Paradigm Lab for the new model.

Melissa: Shifting around -- start with buggy lab, shifting colliding buggies to after Two Bicycles, making change in Worksheet 7 with the table, adding reference to the storyboard at least in the teacher notes after the Buggy Lab, add more explicit reference to transition between forms of representations, add bank of questions/suggestions for how to get students started with Design Recipe (it’s more of a behavior management issue than a curricular issue).

Josh: Go into all student codes and make sure there is a place for examples. Go over contracts and *why we are doing examples*.

Josh: Timeline -- Dependency graph

Melissa will incorporate feedback on Unit 2 from Ben and Joe.

Josh: Reading and motion maps with piecewise functions -- concern that it takes too much time. It’s not part of the model at this time...is it worth keeping here?

Colleen: The piecewise functions create a need for acceleration. (Lab 2 - matching the graphing).

Jess: I’m ok with piecewise functions that they don’t have to code in Unit 2, but they do need to do it in Unit 4. I think it’s good to have a conversation about this, because if it’s JUST constant velocity, then distance and displacement are the same all the time.

Ben: The concern Joe and I had is about the “no magic” comment. If we want to lean into the piecewise functions computationally…

Josh: Let’s give it to them at the end of the unit, when we are transitioning to a new model. Piecewise functions has always been a time-sink. I think they are non-essential until we are talking about motion that changes over time.

...lots of discussion -- final action items?

Ben: How much of a pause is there between Pyret implementations?

Ben: How do we frame the design recipe so that it actually gets used?

**Unit 3**  - done mid-May

1. Storyline is set - additional work needed with the Teacher Notes.
2. “Which v” activity - simulation cannot have data table and graph currently. Reading needs to be more interactive: (1) students draw in rectangles and shade, (2) students compare areas. Need to ensure that these ideas “hit home” given the pivotal nature of these concepts.
3. **Josh:** Write simulation for Unit 3 Worksheet 3 (graphing problems) to compare algebraic and computational representations to get solutions.

**Unit 4**

**Unit 5**

**Notes for 4/17/2018**