Why I’m doing this . . .
How many boxes does this check?

- STUDENT VOICE!!
- Visible demonstration of learning
- Two-way dialogue between students-students and student-teacher
- Collaboration
- Peer review
- WRITING!
- READING!
- Opportunity to revise as new learning is gained
This is not the entire program of Ambitious Science Teaching, but represents the parts I’ve chose to focus on this year.
Poll your students! Ask them about things that interests them or that they have experience with. This gives students from non-dominant cultures a chance to actively participate in the direction of the class. Also, you’ll get questions about things students already know a little bit about, leading to a more level playing field. EQUITY!!!
Byno Student Survey 2019
Next Step - Look at Your Standards

1. Think about how you can take student ideas and roll them into your curriculum
2. Don’t be limited by ‘units’ or ‘topics’
3. List every TEK or AP standard that applies to a phenomena (AP standards are easier, because they deal with Big Ideas)
Example Whiteboard

Best to do this with a partner!
Design your model

Models can be revised

Drawing framework

What are ways that the phenomenon could be explained?

♢ Is it a sequence?
♢ Does it have parts that make up a whole?
Examples

11 x 17 paper

What happened to the cups?

How do trees get so big? (in progress)
**Student Discourse**

1. Must have a safe classroom culture where students feel comfortable putting their ideas out there
2. Encourage students to talk about their models
3. Circulate while they are making the models and prep some groups on specific things to say
**Teaching/Thinking Partner**

- Having a thinking partner is HUGE!
  - How do you know when students have learned what they should
  - What should be on the models
  - What standards show up in the phenomena
  - What does the final rubric look like
- Also - observations! Ask someone to observe discourse to give you feedback on which students need more scaffolding for talk
Supposed the phenomena in question is from a student on the fishing team who wants to know how to find the best lakes for fish . . .

- There are a variety of biology, environmental, and earth science concepts that could be used to answer this question
- Let’s look at some environmental concepts!
Guiding question: Why is the sport fishing population of Lake Grace decreasing in size?
BACKGROUND READING - FIRST PAGE OF PACKET

Annotate:

1. **Underline** concepts you think might be important
2. **Circle** unfamiliar terms or phrases
3. **Box** information that you might need to design your investigation
4. Write notes and questions in the margins
**Design an Investigation**

1. Read the materials with information about Lake Grace
2. Decide which factor might be the most important
3. If you were actually going to go out in the field and test all this, how would you do it?
4. Sample ADI investigation forms
Make a Claim

1. Analyze the data provided
2. Decide which factor was the most important
3. Make a claim
**Gallery Walk**

1. Write your conclusions in the format to the right →
2. Stay and stray - send someone to look at other group’s whiteboards
3. Use the gallery walk log to note other group’s ideas
4. The person who stays home answers questions from visiting groups
Class Discussion

If students propose the question or big idea for the unit, they are much more invested in this discussion.

Get at misconceptions, press students to expand their thinking, remind students of rules for safe discourse (or whatever kid word you use to describe it)
THE REST OF ADI

1. Rough draft
2. Peer grade
3. Final draft
What’s next?
That depends ...
Teacher Reflection!!

ADI is only a piece of the overall AST program

1. What assessments should you use so students can demonstrate their learning?
2. What else do students need to know to understand the big idea?
3. What misconceptions did you uncover?
4. What sense-making activities should you do next? Example: interactive word walls