Differentiation is possible in science!

bit.do/GCLISCI  #GCL119
Hello!

I am Christina Hayes

5th grade teacher @ Glenhope Elementary

I am here because I'm passionate about making every learner in my classroom feel challenged, no matter the circumstances.

You can find me at:

@miss_5thASPIRE 🌐
christina.hayes@gcisd.net 📧
bit.do/hayeswebsite 🌐
What is your role in GCISD?

- Elementary school teacher?
- Middle school teacher?
- High school teacher?
- Campus admin?
- District admin?
- Support staff?
“We don’t grow when things are easy, we grow when we face challenges.” - unknown
GCISD Portrait of a Graduate

Look for these symbols in this presentation to find connections to science differentiation!

- Skilled problem solver
- Effective communicator
- Self-regulated learner
- Global Citizen
- Collaborative worker
My Unit Design Process (Steps 1-3)

1. **Student Unit Design**
   - Students are given the opportunity to analyze TEKS for the unit and organize them in the order they’d like to learn them.

2. **Pre Assess First Topic**
   - Students take a pre assessment on the first topic they’d like to learn.

3. **Mini Lessons & Differentiated Work**
   - Mini lessons and differentiated work are designed for students based on pre assessment data.
My Unit Design Process (Steps 4-7)

4. Repeat steps 2 & 3 until all topics covered

5. Expert

- At least once per unit, provide an expert to discuss related topics with students or to give a problem to solve.

6. CER Essays

- At the end of each unit, students use the CER writing method to write an essay related to the unit.

7. Digital Breakout

- Students participate in a digital breakout to review concepts learned in a challenging and engaging way.
My Unit Design Process (Steps 8-11)

8. **Unit Review**
   - Review all concepts in the unit with a fun game, especially the concepts that were most difficult.

9. **TEKS Check**
   - Students take the district unit assessment.

10. **TEKS Check Wrap Up**
    - Students analyze their performance on the TEKS check and work to secure concepts missed.

11. **Unit Feedback**
    - Have students complete a short survey to give you feedback on your teaching and the curriculum.
Student Unit Design

• Students work in pairs to complete the unit design
• Several teacher check ins to ensure TEKS are understood and thoughtful planning has been put into place
• Take the general consensus from student design to pick the first topic covered
• unit design example
Pre Assessment

• I use the 5 question pre assessment located on STEMscopes
• STEMScopes also has progress monitoring and post assessments
• You could create your own pre assessments if you feel the STEMscopes ones don’t meet your needs
• I take assessment data and put into a spreadsheet
MINI LESSONS & DIFFERENTIATED WORK

• Based on assessment data and classroom observations, pinpoint areas of struggle to develop mini lessons
• Use the groups you created to develop differentiated work

**tip: change up the group numbers**
• Using Depth & Complexity icons and Content Imperatives allow for increased rigor
• Work with teachers in other subjects to integrate content areas
  • Lab + differentiated work
  • Differentiated work w/no lab (1)
  • Differentiated work w/no lab (2)
  • Adding rigor to a class-wide activity (1)
  • Integrating other content areas
  • Adding differentiation to a design challenge
  • Differentiating with Science Menus
CER Essays

- Allow students to create their own claims for any topic in the unit
  - **Padlet to brainstorm possible claims**
- Provide a **rubric for expectations**
- Always have students **plan first**
- Spend the year modeling & encouraging strong writing strategies per grade level expectations (indentations, diagrams, strong intro/concl, in-depth reasoning)
- Showcase the essays!
Digital Breakouts

• Digital breakouts can be purchased on sites such as Teachers Pay Teachers

• You can also create your own digital breakout

  • Benefits: tailored to your own instruction and vocab; You can add the challenge level your own students need

• Digital Breakout Resources

  • Making Your Own Digital Breakout
    (guide by Jack Leonard)
  • Life Science Digital Breakout
  • Force, Motion, Energy Digital Breakout
**Unit Review**

- I use Jeopardy! each unit to review concepts the day before the TEKS check - students love it!
- We go over the most difficult concepts as well as concepts that go beyond the unit to provide extra challenge.
- Jeopardy Examples
  - Matter & Energy
  - Life Science
  - Earth Science
  - Space Science
  - Force, Motion, Energy
**TEKS Check Wrap Up**

• Spend at least a day after the TEKS check or unit test in order for students to analyze their performance and reinforce skills they may not have mastered

• **Wrap Up Example**
At the end of each unit, as students for their feedback on your teaching and the way you delivered instruction.

I chose goals that I wanted to improve in for the year.

Feedback Survey Example:

- **Life Science Unit Feedback**
What questions do you have?
THANKS!

Exit Ticket:
Please tweet something you learned during this session or something you are excited to try. Please use @miss_5thaspires & #GCLI19

Feedback Appreciated!
Please rate/give feedback on this course in Sched.