Carrizo Springs CISD
Summer SAYSS Program
(Systems Academy for Young Scientists)
PREP-USA
Prefreshman Engineering Program

Elementary
Systems Academy For Young Scientists

Grade
4 S 5 S 6 S

Middle School
PREP
I
II
III
7 S 8 S

High School
• PREP IV
• University PREP (summer)
9 S 10 S 11 S 12 Univ.

PHD PREP
High School through Doctoral

FIRST Tech Challenge

(S=Summer)
2009 SAY'S Watershed Operations Overview

- Purpose of the program
- Student Eligibility
- Curriculum
- Timeline - Dates & Hours of Operation
- Staff/Student Numbers
- Budget/Funding Sources
2009 SAYS Watershed Results

- What does the data show us?
  - Increase student STEM content knowledge
  - Increase student interest in STEM careers
  - Increase student knowledge of the community
  - Increase parental and community awareness of and support for SAYS
What Did Students Cover?

• Systems thinking

• STELLA Modeling

• Nueces River as a watershed system
The Nueces River Watershed System

• **Inflow** - Water flowing into Nueces River

• **Outflow** - Water flowing out of Nueces River to the Gulf of Mexico

• **Stock** - Amount of water in the system at any one place
Student Summary

• In SAYS, we looked at a few simple examples of systems dynamics and have seen how they can be modeled using the STELLA program.

• By working through examples like the Friends Game, the Mammoth Game, and the Bathtub Model, we have acquired a beginning proficiency with the program, which we used extensively in the Nueces River watershed model.

• The primary reason for modeling these systems using a computer was that many of them are so complex and their dynamics cannot generally be understood without computer experimentation.

• The STELLA program provided a powerful, versatile, and user-friendly means for modeling these systems dynamics on a computer.
2010 Operations Overview

• Purpose of the program
• Student Eligibility
• Curriculum
• Timeline - Dates & Hours of Operation
• Staff/Student Numbers
• Budget/Funding Source
2010 SAYS

- How are we improving?
  - Increase student and parental awareness of the program.
  - Increase attendance requirements of enrolled students.
  - Decrease staff
  - Modify coursework to provide a more thematically aligned curriculum
  - Staff development and training.
Focus of 2010 SAYS Systems Program

- Systems Thinking and Behavior
- Robotics and Robot Control
- The System Basics of Flight (Helicopters)
- Remotely Piloted Unmanned Helicopter Systems
- Classroom Helicopter Flight Control
- STELLA Modeling of Helicopter Flight
- The Helicopter as a Part of a Larger System