Science in Action

The Science in Action Video Series is a collection of videos that focus on middle school science in Georgia. This series is meant to showcase exemplary science teaching and features Georgia teachers explaining various aspects of science instruction related to the Science Georgia Standards of Excellence. We have also included footage of four middle school classrooms in Georgia so that you get a glimpse of 3D science instruction.

As you watch each video, use the discussion guide within your PLC or for self-reflection of science teaching occurring in your classroom or school. Each resource collection is designed to support the topic being showcased in that video. The videos, also, share examples of various strategies that can be used in any science classroom to address the Science Georgia Standard of Excellence.

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Video 1: Science in Action Introduction

Resources for Additional Information
A Framework for K-12 Science Education. National Research Council Guide for Effective Science Instruction for All Students SuitCASE - Science Georgia Standards for Excellence
Discussion Guide:
• When students leave your classroom, what do you want them to know and be able to do? • How does science support students' learning in other content areas?

Video 2 What is 3D Science?

Resources for Additional Information	
Color Coded Standards • 6th Grade • 7th Grade • 8th Grade FAQs- Science GSE	**Teacher Notes:** • 6th Grade • 7th Grade • 8th Grade GSE Planning Cards Core Idea Progressions
Discussion Guide:	
• What is 3D Science? • How is the 3D science approach to instruction similar or different from what you may have experienced before? • How does centering science instruction around phenomena provide opportunities for all students? • How has 3D science made you rethink children's ability for understanding and engaging in science?	

Video 3 Phenomena in Focus

Resources for Additional Information

• Using Phenomena with GSE
• Grab and Go Phenomena Cards
  • 6th grade
  • 7th Grade
  • 8th grade
• Georgia Science Teacher Association's Phenomenon Bank
Phenomenon Tasks (there are more lessons in GaDOE Inspire)
• 6th Grade
• 7th Grade
• 8th Grade

Discussion Guide:
• What is a phenomenon? • How is a phenomenon different from a hook? • How does a phenomenon allow all students to engage in science learning more effectively? • How can you plan ways to keep the focus on the phenomenon during learning? • What makes an effective phenomenon?

Video 4: Science and Engineering Practices in the Classroom

Resources for Additional Information
• Science and Engineering Practices Matrix • The Myth of the Scientific Method • Supports for Science and Engineering in 6-12 • Graphic Organizers for SEPs and CCCs • GSE Planning Cards
Discussion Guide:
• What are the science and engineering practices? • What is the purpose of these practices in supporting student sensemaking in science? • How does sensemaking build on your students' strengths?

Video 5: Crosscutting Concepts in the Classroom

Resources for Additional Information
• Crosscutting Concepts Matrix • Supports for Crosscutting Concepts in 6-12 • Graphic Organizers for SEPs and CCCs • GSE Planning Cards
Discussion Guide
• What are the crosscutting concepts (CCCs)? • What is the purpose of the crosscutting concepts in supporting student sensemaking in science? • What are some strategies that you use in your class to engage students in using crosscutting concepts during science instruction?

Video 6 Literacy in Science

Resources for Additional Information
• Reading, Writing, and Science: The Perfect Combination- Middle/High • Words for Science Learning: Which Words and When? • Word Analysis: Grade Level Resources • Visualizing the Language for Science
Discussion Guide
• How do science and engineering practices promote science literacy? • What are some strategies from the video that you could use in your classroom to engage students in utilizing literacy skills? • How does literacy promote a stronger science learning experience for students? • How do phenomena assist students in using literacy skills?

Video 7 Shifting to Student-Centered Instruction

Resources for Additional Information
• GSE Science flowchart • Science Standards-Based Instructional Framework • Science Instructional Strategies Playlist
Discussion Guide
• Describe strategies you use in your science class to support classroom discourse and scientific argumentation. • What strategies do you use to ensure that all students share their ideas? • Describe strategies you use to facilitate classroom discourse and scientific argumentation.

Video 8 Putting Science in Action Part 1

Resources for Additional Information

• Science Standards -Based Instructional Framework
• Lesson Plans from the classrooms:
  • 6th Grade Solar Eclipse
  • 6th Grade Mushroom Rock
  • 8th Grade Grilled Cheese

Discussion Guide
• Describe strategies you use that support all students in obtaining, evaluating, and communicating information. • How did the teachers facilitate the learning in each of the classrooms? • How is science the engine for reading, writing, listening, and speaking? • Describe how your students use mathematics and computational thinking in science.

Video 9 Putting Science in Action Part 2

Resources for Additional Information

• Teacher Created Assessment Items are located in GaDOE Community's 6th, 7th, and 8th Grades Science Groups.
• Example Assessment Tasks and Choice Boards
  • 8th Grade Formative Assessment Task
  • 8th Grade Formative Choice Board
  ○ More formative tasks and choice boards are in the 8th grade science course in GaDOE Inspire.

Discussion Guide
• Do all assessments need to be written in science? Why or why not? • How do phenomena help assess students? • What dimensions of science learning should we assess? • Describe strategies you use in your classroom to assess students' knowledge of science.

Additional Resources

- GaDOE has a platform to provide the opportunity for science teachers, leaders, and GaDOE staff to share thoughts and resources. To get started, visit the GaDOE community website, select Create an Account, and follow the prompts. Next, navigate to the groups section and join the groups you are most interested in. We look forward to connecting!
- Where do I find learning resources for science? GaConnects provides access to GaDOE learning resources, standards, data, and professional learning. To find instructional resources for your grade or course, select GaDOE Inspire. For Science Georgia Standards of Excellence, select SuitCASE. For additional professional learning opportunities, select Georgia Learns.
- There are three ways to stay in touch with the GaDOE Science Program:
  1. Join the GaDOE Science Listserv to receive the latest updates. To receive, send a blank email to any of these:
     - **Science K-5**: join-science-k-5@list.doe.k12.ga.us
     - **Science 6-8:** join-science-6-8@list.doe.k12.ga.us
     - **Science 9-12:** join-science-9-12@list.doe.k12.ga.us

  2. Follow us on X (formerly known as Twitter) @GaDOE Science.

  3. We are also on Facebook. Please like our page: Georgia Department of Education Science Program