

Three-Dimensional (3D) Instruction Outline

Per the New 2021 Science TEKS



Content Knowledge WHAT THEY LEARN

- Matter and Properties/Matter and Energy
- Force, Motion and Energy
- Earth and Space
- Organisms and Environments

WHAT TO DO

- Identify the content TEKS to be taught.
- Make connections to the RTCs.
- Determine phenomenon relevant to the content TEKS and RTCs.

MINI LESSONS (ML) (see * in Resources below)



RESOURCES

- TREKS
- Themes & Concepts Pack
 - RTC & Content TEKS Connections Maps At-a-Glance or Detailed Maps
 - Flowchart for Selecting and Using Phenomena to Drive Instruction
 - Phenomenon Explanation Handout (see + in SEPs)



Scientific and Engineering Practices HOW THEY LEARN

WHAT TO DO • Master content through the exploration of **investigations anchored in phenomena**



RESOURCES

- TREKS
- Custom Investigation Handout (see ++)

ANCHOR LEARNING IN PHENOMENA (KS1) +

- Observe and/or read information about phenomena (SEP)
- Find patterns (RTC) (ML)
- Ask questions (SEP)
- Construct explanations about phenomena (SEP) using systems models (SEP) (RTC) and/or mathematical calculations (SEP) (ML)

PLAN AND CONDUCT INVESTIGATIONS (KS1) ++

- Determine how to test the model (SEP) (ML)
- Establish the cause (RTC) (ML)
- Identify variables (ML)
- Develop procedure and identify tools and materials
- Demonstrate safe practices and use safety equipment (SEP)
- Use tools to observe, measure, test and analyze information (SEP)
- Collect evidence (SEP)
- Construct organizers to collect data (SEP)

ANALYZE DATA & EVALUATE DESIGNS (KS2) ++

- Analyze data (SEP)
 - Identify significant features, patterns (RTC) or sources of error
 - Use mathematical calculations (SEP)
- Identify advantages and limitations of models (SEP) (ML)
- Evaluate experimental designs (SEP)

DEVELOP & COMMUNICATE EXPLANATIONS & FINDINGS (KS3)

- Claim-Evidence-Reasoning model (SEP) (ML)
- Communicate explanations in a variety of settings and formats (SEP)
- Listen to others' explanations (SEP)
- Engage in respectful scientific discussion (SEP)



Recurring Themes & Concepts HOW THEY THINK

- Patterns
- Cause and Effect
- Scale, Proportion and Quantity
- Systems and System Models
- Matter and Energy
- Structure and Function
- Stability and Change

WHAT TO DO

- Identify and connect RTCs with content TEKS to be taught and phenomena to be explored.



MINI LESSONS (ML) (see * in Resources below)



RESOURCES

- TREKS
- Themes & Concepts Pack*
 - RTCs Vertical Articulation, Gr K-8
 - RTC & Content TEKS Connections Maps At-a-Glance or Detailed Maps
 - RTC Modules
 - Getting Started
 - Introduction Activity
 - Practice Activity
 - Extra Practice