Main Criteria: Pennsylvania Core and Academic Standards
Secondary Criteria: JoVE
Subject: Science
Grade: 9-12
Correlation Options: Show Correlated
Adopted: 2014

<table>
<thead>
<tr>
<th>SUBJECT / STANDARD AREA</th>
<th>PA.CC.3.5.9-10.</th>
<th>Reading Informational Text: Students read, understand, and respond to informational text – with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.</th>
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<tr>
<td>STANDARD AREA / STATEMENT</td>
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<td>Craft and Structure</td>
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<tr>
<td>STANDARD</td>
<td>CC.3.5.9-10.D.</td>
<td>Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics.</td>
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- Abdominal Exam I: Inspection and Auscultation
- Abdominal Exam II: Percussion
- Abdominal Exam III: Palpation
- Abdominal Exam IV: Acute Abdominal Pain Assessment
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• Dichotic Listening
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• Drosophila Larval IHC
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• Enzyme Assays and Kinetics
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• Executive Function in Autism Spectrum Disorder
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• Explant Culture of Neural Tissue
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| Extraction of Biomarkers from Sediments - Accelerated Solvent Extraction |
| Eye Exam |
| Eye Tracking in Cognitive Experiments |
| FM Dyes in Vesicle Recycling |
| Fate Mapping |
| Fear Conditioning |
| Filamentous Fungi |
| Finding Your Blind Spot and Perceptual Filling-in |
| Foot Exam |
| Fractional Distillation |
| Freezing-Point Depression to Determine an Unknown Compound |
| From Theory to Design: The Role of Creativity in Designing Experiments |
| Fundamentals of Breeding and Weaning |
| Förster Resonance Energy Transfer (FRET) |
| Gas Chromatography (GC) with Flame-Ionization Detection |
| Gel Purification |
| Gene Silencing with Morpholinos |
| General Approach to the Physical Exam |
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| Genetic Engineering of Model Organisms |
| Genetic Screens |
| Genome Editing |
| Gram Staining of Bacteria from Environmental Sources |
| Growing Crystals for X-ray Diffraction Analysis |
| Habituation: Studying Infants Before They Can Talk |
| Hand and Wrist Exam |
| High-Performance Liquid Chromatography (HPLC) |
| Hip Exam |
| Histological Sample Preparation for Light Microscopy |
| Histological Staining of Neural Tissue |
| How Children Solve Problems Using Causal Reasoning |
| Ideal Gas Law |
| Igneous Intrusive Rock |
| Igneous Volcanic Rock |
| In ovo Electroporation of Chicken Embryos |
| Inattentional Blindness |
| Incidental Encoding |
| Induced Pluripotency |
| Internal Standards |
| Intra-articular Shoulder Injection for Reduction Following Anterior Shoulder Dislocation |
| Intraosseous Needle Placement |
| Introducing Experimental Agents into the Mouse |
| Introduction to Catalysis |
| Introduction to Fluorescence Microscopy |
| Introduction to Light Microscopy |
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• Introduction to the Bunsen Burner
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• Invertebrate Lifespan Quantification
• Ion-Exchange Chromatography
• Isolating Nucleic Acids from Yeast
• Isolation of Fecal Bacteria from Water Samples by Filtration
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• Knee Exam
• Language: The N400 in Semantic Incongruity
• Le Châtelier's Principle
• Lead Analysis of Soil Using Atomic Absorption Spectroscopy
• Learning and Memory: The Remember-Know Task
• Live Cell Imaging of Mitosis
• Lower Back Exam
• Lymph Node Exam
• MALDI-TOF Mass Spectrometry
• Making Solutions in the Laboratory
• Making a Geologic Cross Section
• Male Rectal Exam
• Manipulating an Independent Variable through Embodiment
• Measuring Children's Trust in Testimony
• Measuring Grey Matter Differences with Voxel-based Morphometry: The Musical Brain
• Measuring Mass in the Laboratory
• Measuring Reaction Time and Donders' Method of Subtraction
• Measuring Tropospheric Ozone
• Measuring Verbal Working Memory Span
• Measuring Vital Signs
• Memory Development: Demonstrating How Repeated Questioning Leads to False Memories
• Mental Rotation
• Metabolic Labeling
• Metacognitive Development: How Children Estimate Their Memory
• Method of Standard Addition
• Modeling Social Stress
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• Motor Maps
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• Mutual Exclusivity: How Children Learn the Meanings of Words
• Neck Exam
• Needle Thoracostomy (needle Decompression) for Temporizing Tension Pneumothorax Treatment
• Neuronal Transfection Methods
• Nose, Sinuses, Oral Cavity and Pharynx Exam
• Nuclear Magnetic Resonance (NMR) Spectroscopy
• Numerical Cognition: More or Less
• Nutrients in Aquatic Ecosystems
• Object Substitution Masking
• Observation and Inspection
• Observational Research
• Ophthalmoscopic Examination
• PCR: The Polymerase Chain Reaction
• Palpation
• Passaging Cells
• Patch Clamp Electrophysiology
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• Pelvic Exam II: Speculum Exam
• Pelvic Exam III: Bimanual and Rectovaginal Exam
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• Percutaneous Cricothyrotomy (Seldinger Technique)
• Performing 1D Thin Layer Chromatography
• Pericardiocentesis
• Peripheral Vascular Exam
• Peripheral Vascular Exam Using a Continuous Wave Doppler
• Peripheral Venous Cannulation
• Perspectives on Sensation and Perception
• Photometric Protein Determination
• Physical Properties Of Minerals I: Crystals and Cleavage
• Physical Properties Of Minerals II: Polymineralic Analysis
• Physiological Correlates of Emotion Recognition
• Piaget’s Conservation Task and the Influence of Task Demands
• Pilot Testing
• Placebos in Research
• Plasmid Purification
• Positive Reinforcement Studies
• Preparing Anhydrous Reagents and Equipment
• Primary Neuronal Cultures
• Proper Adjustment of Patient Attire during the Physical Exam
• Prospect Theory
• Protein Crystallization
• Proton Exchange Membrane Fuel Cells
• Purification of a Total Lipid Extract with Column Chromatography
• Purifying Compounds by Recrystallization
- Quantifying Environmental Microorganisms and Viruses Using qPCR
- RNA Analysis of Environmental Samples Using RT-PCR
- RNA-Seq
- RNAi in C. elegans
- Raman Spectroscopy for Chemical Analysis
- Realism in Experimentation
- Recombineering and Gene Targeting
- Reconstitution of Membrane Proteins
- Regulating Temperature in the Lab: Applying Heat
- Regulating Temperature in the Lab: Preserving Samples Using Cold
- Reliability in Psychology Experiments
- Removal of Branched and Cyclic Compounds by Urea Adduction for Uk’37 Paleothermometry
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- Respiratory Exam II: Percussion and Auscultation
- Restriction Enzyme Digests
- Rodent Handling and Restraint Techniques
- Rodent Identification I
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- Rodent Stereotaxic Surgery
- Rotary Evaporation to Remove Solvent
- SNP Genotyping
- Sample Preparation for Analytical Preparation
- Scanning Electron Microscopy (SEM)
- Schlenk Lines Transfer of Solvents
- Self-administration Studies
- Self-report vs. Behavioral Measures of Recycling
- Sensory Exam
- Separating Protein with SDS-PAGE
- Separation of Mixtures via Precipitation
- Shoulder Exam I
- Shoulder Exam II
- Soil Nutrient Analysis: Nitrogen, Phosphorus, and Potassium
- Solid-Liquid Extraction
- Solutions and Concentrations
- Sonication Extraction of Lipid Biomarkers from Sediment
- Soxhlet Extraction of Lipid Biomarkers from Sediment
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- Spatial Memory Testing Using Mazes
- Spectrophotometric Determination of an Equilibrium Constant
- Sterile Tissue Harvest
- Surface Plasmon Resonance (SPR)
- Surgical Cricothyrotomy
- Tandem Mass Spectrometry
- Testing For Genetically Modified Foods
- The ATP Bioluminescence Assay
- The Ames Room
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<td><strong>Visualizing Soil Microorganisms via the Contact Slide Assay and Microscopy</strong></td>
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<td>Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</td>
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Event-related Potentials and the Oddball Task
Executive Function and the Dimensional Change Card Sort Task
Executive Function in Autism Spectrum Disorder
Experimentation using a Confederate
Explant Culture for Developmental Studies
Explant Culture of Neural Tissue
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Extraction of Biomarkers from Sediments - Accelerated Solvent Extraction
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Eye Tracking in Cognitive Experiments
FM Dyes in Vesicle Recycling
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Filamentous Fungi
Finding Your Blind Spot and Perceptual Filling-in
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• Gel Purification
• Gene Silencing with Morpholinos
• General Approach to the Physical Exam
• Genetic Crosses
• Genetic Engineering of Model Organisms
• Genetic Screens
• Genome Editing
• Gram Staining of Bacteria from Environmental Sources
• Growing Crystals for X-ray Diffraction Analysis
• Habituation: Studying Infants Before They Can Talk
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• High-Performance Liquid Chromatography (HPLC)
• Hip Exam
• Histological Sample Preparation for Light Microscopy
• Histological Staining of Neural Tissue
• How Children Solve Problems Using Causal Reasoning
• Ideal Gas Law
• Igneous Intrusive Rock
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• In ovo Electroporation of Chicken Embryos
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• Incidental Encoding
• Induced Pluripotency
• Internal Standards
• Intra-articular Shoulder Injection for Reduction Following Anterior Shoulder Dislocation
• Intraosseous Needle Placement
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• Introduction to Fluorescence Microscopy
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• Introduction to Serological Pipettes and Pipettors
• Introduction to Titration
• Introduction to the Bunsen Burner
• Introduction to the Microplate Reader
• Introduction to the Spectrophotometer
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• Isolation of Fecal Bacteria from Water Samples by Filtration
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• Le Châtelier's Principle
• Lead Analysis of Soil Using Atomic Absorption Spectroscopy
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• Lower Back Exam
• Lymph Node Exam
• MALDI-TOF Mass Spectrometry
• Making Solutions in the Laboratory
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• Neck Exam
• Needle Thoracostomy (needle Decompression) for Temporizing Tension Pneumothorax Treatment
• Neuronal Transfection Methods
• Nose, Sinuses, Oral Cavity and Pharynx Exam
• Nuclear Magnetic Resonance (NMR) Spectroscopy
• Numerical Cognition: More or Less
• Nutrients in Aquatic Ecosystems
• Object Substitution Masking
• Observation and Inspection
• Observational Research
• Ophthalmoscopic Examination
• PCR: The Polymerase Chain Reaction
• Palpation
• Passaging Cells
• Patch Clamp Electrophysiology
• Pelvic Exam I: Assessment of the External Genitalia
• Pelvic Exam II: Speculum Exam
• Pelvic Exam III: Bimanual and Rectovaginal Exam
• Percussion
• Percutaneous Cricothyrotomy (Seldinger Technique)
• Performing 1D Thin Layer Chromatography
• Pericardiocentesis
• Peripheral Vascular Exam
• Peripheral Vascular Exam Using a Continuous Wave Doppler
• Peripheral Venous Cannulation
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• Reconstitution of Membrane Proteins
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Regulating Temperature in the Lab: Preserving Samples Using Cold
Reliability in Psychology Experiments
Removal of Branched and Cyclic Compounds by Urea Adduction for Uk’37 Paleothermometry
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Respiratory Exam II: Percussion and Auscultation
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<td>• Water Quality Analysis via Indicator Organisms</td>
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<td>Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.</td>
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JoVE

- Algae Enumeration via Culturable Methodology
- An Introduction to Aging and Regeneration
- An Introduction to Behavioral Neuroscience
- An Introduction to Caenorhabditis elegans
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- An Introduction to Cell Metabolism
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| PA.CC.3.6.9-10. | Writing: Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content. |

### STANDARD AREA / STATEMENT
| Text Types and Purposes |

### STANDARD
| CC.3.6.9-10.B. | Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. |

### DESCRIPTOR / STANDARD
| CC.3.6.9-10.B.1. | Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. |

### DESCRIPTOR / STANDARD
| CC.3.6.9-10.B.4. | Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers. |
Stress
• An Introduction to Molecular Developmental Biology
• An Introduction to Motor Control
• An Introduction to Neuroanatomy
• An Introduction to Neurophysiology
• An Introduction to Organogenesis
• An Introduction to Reward and Addiction
• An Introduction to Saccharomyces cerevisiae
• An Introduction to Stem Cell Biology
• An Introduction to Transfection
• An Introduction to Working in the Hood
• An Introduction to the Centrifuge
• An Introduction to the Chick: Gallus gallus domesticus
• An Introduction to the Laboratory Mouse: Mus musculus
• An Introduction to the Micropipettor
• An Introduction to the Zebrafish: Danio rerio
• An Overview of Alkenone Biomarker Analysis for Paleothermometry
• An Overview of Epigenetics
• An Overview of Gene Expression
• An Overview of Genetic Analysis
• An Overview of Genetic Engineering
• An Overview of Genetics and Disease
• An Overview of bGDGT Biomarker Analysis for Paleoclimate
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• Anesthesia Induction and Maintenance
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• Assessing Dexterity with Reaching Tasks
• Auscultation
• Bacterial Growth Curve Analysis and its Environmental Applications
• Bacterial Transformation: Electroporation
• Bacterial Transformation: The Heat Shock Method
• Balance and Coordination Testing
• Basic Care Procedures
• Basic Chick Care and Maintenance
• Basic Life Support Part II: Airway/Breathing and Continued Cardiopulmonary Resuscitation
• Basic Life Support: Cardiopulmonary Resuscitation and
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- Basic Mouse Care and Maintenance
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