2019 7th Grade Science Unit 1

Content Area: **Science**
Course(s): **Science**
Time Period: **September**
Length: **43**
Status: **Published**

Alternative Assessments

- Case-based scenarios
- Concept maps
- Performance Tasks
- Portfolios
- Presentations
- Problem-based assignments
- Project-based assignments
- Reflective pieces

Benchmark Assessments

- Lab Practical
- Reading response
- Skills-based assessment
- Writing Prompt

Enduring Understandings:

- Define physical science
- Identify and demonstrate knowledge and properties of science tools.
- Identify and demonstrate laboratory safety knowledge.
- Use the engineering design process to create models.
- Use the metric system to make accurate scientific measurements.
- Use the scientific method to conduct experiments.

Essential Questions:

- What are common science tools and how do we properly use them?
- What are laboratory safety procedures?
- What is physical science?
- What is the engineering design process?
- What is the metric system?

- What is the scientific method?

Lesson Titles:

- Calculating area and volume
- Engineering design process
- Intro to physical science
- Lab safety
- Metric system and measurement
- Science tools
- Scientific Method

Career Readiness, Life Literacies & Key Skills

WRK.K-12.P.1	Act as a responsible and contributing community members and employee.
WRK.K-12.P.4	Demonstrate creativity and innovation.
WRK.K-12.P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
WRK.K-12.P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
WRK.K-12.P.9	Work productively in teams while using cultural/global competence.

Inter-Disciplinary Connections:

LA.RH.6-8.1	Cite specific textual evidence to support analysis of primary and secondary sources.
LA.RH.6-8.2	Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.
LA.RH.6-8.3	Identify key steps in a text's description of a process related to history/social studies (e.g., how a bill becomes law, how interest rates are raised or lowered).
LA.RH.6-8.4	Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.
LA.RH.6-8.5	Describe how a text presents information (e.g., sequentially, comparatively, causally).
LA.RH.6-8.7	Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.
LA.RH.6-8.8	Distinguish among fact, opinion, and reasoned judgment in a text.
LA.RH.6-8.9	Analyze the relationship between a primary and secondary source on the same topic.
LA.RST.6-8.1	Cite specific textual evidence to support analysis of science and technical texts.
LA.RST.6-8.2	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.
LA.RST.6-8.3	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
LA.RST.6-8.4	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 6-8

	texts and topics.
LA.RST.6-8.6	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.
LA.RST.6-8.7	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
LA.RST.6-8.8	Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.
LA.RST.6-8.9	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
LA.WHST.6-8.1.B	Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.
LA.WHST.6-8.1.C	Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
LA.WHST.6-8.1.D	Establish and maintain a formal/academic style, approach, and form.
LA.WHST.6-8.1.E	Provide a concluding statement or section that follows from and supports the argument presented.
LA.WHST.6-8.2.A	Introduce a topic and organize ideas, concepts, and information using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia) when useful to aiding comprehension.
LA.WHST.6-8.2.B	Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
LA.WHST.6-8.2.C	Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
LA.WHST.6-8.2.D	Use precise language and domain-specific vocabulary to inform about or explain the topic.
LA.WHST.6-8.2.F	Provide a concluding statement or section that follows from and supports the information or explanation presented.
LA.WHST.6-8.7	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
LA.WHST.6-8.8	Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
LA.WHST.6-8.9	Draw evidence from informational texts to support analysis, reflection, and research.
LA.WHST.6-8.10	Write routinely over extended time frames (time for research, reflection, metacognition/self correction, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Instructional Strategies, Learning Activities, and Levels of Blooms/DOK:

- Analyze data collected from lab experiments and informational texts.
- Apply knowledge of physical science, the scientific method and the engineering design process to conduct lab experiments.
- Bridge presentations
- Chip lab activity

- Create Quizlet of unit vocabulary terms.
- Current Event Essays
- Determine whether results apply to all similar scenarios.
- Educational Game: Legends of Learning
- Graphing stations
- Guided Notes
- Introduce vocabulary used to describe physical science
- Lab safety stations
- Liquid volume stations
- Making observations: index card description activity
- Measurements around the room lab
- Penny lab (water on a penny)
- Popsicle bridge building lab
- Post lab questions
- Predict misconceptions regarding related and advanced concepts
- Tutoring during Academic Enrichment
- Use learned knowledge to predict the outcome of similar scenarios.
- Using science tools lab.
- Video Clips
- Worksheets

Modifications

- Tutoring during Academic Enrichment

Formative Assessment:

- Anticipatory Set
- Closure
- Graded HW assignments
- Graded worksheets: Metric measurements
- Independent / dependent worksheet
- Lab safety quiz
- Legends of Learning
- Metric conversion EdPuzzle
- MPA review game (Jeopardy / GimKit)
- Qualitative / Quantitative EdPuzzle
- Qualitative / Quantitative worksheet
- Quizlet Live

- Science Tools EdPuzzle
- Scientific Method worksheet
- Surveys
- Types of observations index card activity
- Warm-Up

Summative Assessment:

- Alternate Assessment
- Benchmark
- Bridge lab
- Graphing stations lab
- Marking Period Assessment
- Measurement stations using science tools.
- Measurements around the room lab
- Monthly Current event
- Penny lab: water on a penny.
- Unit test: Physical science, lab safety, scientific method, science tools, engineering design process.

Resources & Materials:

- Bridge building kit
- Engineering informational text
- Glassware for liquid volume lab
- Graphing stations passages, diagrams and videos
- Lab safety gear
- Laboratory tools
- Measurement around the room kit
- Metric ruler / meterstick
- Middle school Chemistry, Chapter 1: Intro to Physical Science
- Penny lab kit
- Potato chips
- Qualitative / Quantitative index cards