

**STEMPilot Curriculum Alignment: Texas Essential Knowledge and Skills**

Standard	Description	STEMPilot Lesson	STEMPilot Worksheet
<b>English</b>			
110.18.b.23.A 110.16.b.24.A	Follow the research plan to collect data from a range of print and electronic resources (e.g., reference texts, periodicals, web pages, online sources) and data from experts.	Informational Writing Activity: Heritage Research Pg 49	11: Informational Writing 2.0 Pg 160
110.18.b.23.C	Record data, utilizing available technology (e.g., word processors) in order to see the relationships between ideas, and convert graphic/visual data (e.g., charts, diagrams, timelines) into written notes.	Informational Writing Activity: Heritage Research Pg 49	11: Informational Writing 2.0 Pg 160
110.18.b.23.D	Identify the source of notes (e.g., author, title, page number) and record bibliographic information concerning those sources according to a standard format.	Informational Writing Activity: Heritage Research Pg 49	11: Informational Writing 2.0 Pg 160
110.18.b.25.A 110.16.b.26.A	Compiles important information from multiple sources.	Informational Writing Activity: Heritage Research Pg 49	11: Informational Writing 2.0 Pg 160
110.18.b.25.B 110.16.b.26.B	Develops a topic sentence, summarizes findings, and uses evidence to support conclusions.	Informational Writing Activity: Heritage Research Pg 49	11: Informational Writing 2.0 Pg 160
110.18.b.25.C 110.16.b.26.C	Presents findings in a consistent format.	Informational Writing Activity: Heritage Research Pg 49	11: Informational Writing 2.0 Pg 160 5.1 Altitude vs Speed Pgs 146-147
110.18.b.25.D 110.16.b.26.D	Uses quotations to support ideas and an appropriate form of documentation to acknowledge sources (e.g., bibliography, works cited).	Informational Writing Activity: Heritage Research Pg 49	11: Informational Writing 2.0 Pg 160
110.19.b.17.D	Produce a multimedia presentation involving text and graphics using available technology.	Informational Writing Activity: Heritage Research Pg 49	11: Informational Writing 2.0 Pg 160
110.15.b.24.A	Follow the research plan to collect information from multiple sources of information both oral and written, including: (i) Student-initiated surveys, on-site inspections, and interviews. (ii) Data from experts, reference texts, and online searches. (iii) Visual sources of information (e.g., maps, timelines, graphs) where appropriate.	Informational Writing Activity: Heritage Research Pg 49	11: Informational Writing 2.0 Pg 160

Standard	Description	STEMPilot Lesson	STEMPilot Worksheet
<b>Math</b>			
111.26.b.1.D 111.39.c.1.D 111.40.c.1.D 111.41.c.1.D 111.42.c.1.D 111.43.c.1.D 111.44.c.1.D 111.46.c.1.D 111.47.c.1.D 111.48.c.1.D	Communicate mathematical ideals, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.	Aircraft Landing Pgs 37-39	5.1: Altitude vs Speed Pgs 146-147
111.26.b.1.E 111.39.c.1.E 111.40.c.1.E 111.41.c.1.E 111.42.c.1.E 111.43.c.1.E 111.44.c.1.E 111.46.c.1.E 111.47.c.1.E 111.48.c.1.E	Create and use representations to organize, record, and communicate mathematical ideas.		4.2: Ratios Pgs 137-138 4.3: Ratios: Fractions Pgs 139-140 5.1: Altitude vs Speed Pgs 146-147
111.26.b.1.G 111.39.c.1.G 111.40.c.1.G 111.41.c.1.G 111.42.c.1.G 111.43.c.1.G 111.44.c.1.G 111.46.c.1.G 111.47.c.1.G 111.48.c.1.G	Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.		5.1: Altitude vs Speed Pgs 146-147
111.26.b.5.A	Represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions.		4.2: Ratios Pgs 137-138 4.3: Ratios: Fractions Pgs 139-140
111.26.b.5.C	Use equivalent fractions, decimals, and percents to show equal parts of the same whole.	Ratios: Fractions Pg 43	4.3: Ratios: Fractions Pgs 139-140
111.27.b.3.A	Add, subtract, multiply, and divide rational numbers fluently.	Adding & Subtracting Fractions Pg 87	9.1: Adding & Subtracting Fractions Pg 158
111.27.b.4.C	Determine the constant of proportionality ( $k = y/x$ ) within mathematical and real-world problems.	Ratios: Fractions Pg 43	4.3: Ratios: Fractions Pgs 139-140
111.27.b.4.D	Solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems.		4.2: Ratios Pgs 137-138
111.27.b.4.E	Convert between measurement systems, including the use of proportions and the use of unit rates.	MPH to Knots Pg 27	4.1: MPH to Knots Pg 136
111.27.b.9.B	Determine the circumference and area of circles.	Area & Circumference Pgs 43-44	4.4: Area & Circumference Pg 141

<b>Math (Continued)</b>			
111.28.b.5.A	Represent linear proportional situations with tables, graphs, and equations in the form of $y = kx$ .		4.2: Ratios Pgs 137-138 4.3: Ratios: Fractions Pgs 139-140
111.28.b.5.F	Distinguish between proportional and non-proportional situations using tables, graphs, and equations in the form $y=kx$ or $y=mx+b$ , where $b \neq 0$ .	Ratios: Fractions Pg 43	4.3: Ratios: Fractions Pgs 139-140
111.39.c.3.D	Graph the solution set of linear inequalities in two variables on the coordinate plane.		4.3: Ratios: Fractions Pgs 139-140
Standard	Description	STEMPilot Lesson	STEMPilot Worksheet
<b>Science</b>			
112.11.b.4.A 112.13.b.4.A	Collect information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, and notebooks; timing devices, including clocks and timers; non-standard measuring items such as paper clips and clothespins; weather instruments such as demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as terrariums and aquariums.		5.1: Altitude vs Speed Pgs 146-147
112.11.b.5.A	Observe and record properties of objects, including relative size and mass, such as bigger or smaller and heavier or lighter, shape, color, and texture.	Weight & Gravity Pgs 18, 21	9: Weight & Balance Pgs 146-147
112.11.b.5.B	Observe, record, and discuss how materials can be changed by heating or cooling.	Making Thrust Pg 20	
112.11.b.8.A	Observe and describe weather changes from day to day and over seasons.	Weather Pgs 68-82	
112.15.b.5.B	Predict the changes caused by heating and cooling such as ice becoming liquid water and condensation forming on the outside of a glass of ice water.	Weather Pgs 68-82	
112.15.b.6.A	Differentiate among forms of energy, including mechanical, sound, electrical, light, and heat/thermal.	Four Forces of Flight Pgs 18-23	3: The Four Forces of Flight Pg 134
112.15.b.8.B	Describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process.	Weather Pg 68	
112.16.b.8.A	Differentiate between weather and climate.	Weather Pg 79	
112.16.b.8.B	Explain how the Sun and the ocean interact in the water cycle.	Weather Pg 68	
112.19.b.2.D 112.20.b.2.D	Construct tables and graphs, using repeated trials and means, to organize data and identify patterns.		5.1: Altitude vs Speed Pgs 146-147
112.19.b.2.E 112.20.b.2.E	Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.		5.1: Altitude vs Speed Pgs 146-147
112.35.c.4.C	Compare solids, liquids, and gases in terms of compressibility, structure, shape, and volume.	Weather Pgs 68-82	8.0: Weather Pgs 152-154
112.71.c.2.J	Organize and evaluate data and make inferences from data, including the use of tables, charts, and graphs.		4.2: Ratios Pgs 137-138 4.3: Ratios: Fractions Pgs 139-140