

Pneumatic Learning Grid

Objective Number	NGSS Grade 6-8  = Fully covered  = Partially covered	Activities				Designing and Making	
		Scissor Lift	Robot Hand	Stamping Press	Robot Arm	Dinosaur	Scarecrow
Disciplinary Core Ideas: Physical Science							
1	MS-PS2 Motion and Stability: Forces and Interactions						
2	MS-PS3 Energy						
Crosscutting Concepts							
1	Patterns						
2	Cause and effect: Mechanism and explanation						
3	Scale, proportion, and quantity						
4	Systems and system models						
5	Energy and matter: Flows, cycles, and conservation						
6	Structure and Function						
7	Stability and change						
Science and Engineering Practices							
1	Asking questions and Defining Problems						
2	Developing and using models						
3	Planning and carrying out investigations						
4	Analyzing and interpreting data						
5	Using mathematics, Informational and Computer Technology, and computational thinking						
6	Constructing explanations and designing solutions						
7	Engaging in argument from evidence						
8	Obtaining, evaluating, and communicating information						

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Mathematical Practice							
MP1	Make sense of problems and persevere in solving them						
MP2	Reason abstractly and quantitatively						
MP3	Construct viable arguments and critique the reasoning of others						
MP4	Model with mathematics						
MP5	Use appropriate tools strategically						
MP6	Attend to precision						
MP7	Look for and make use of structure						
MP8	Look for and express regularity in repeated reasoning						
Ratios & Proportional Relationships							
7.RPA	Analyze proportional relationships and use them to solve real-world and mathematical problems						
Speaking and Listening							
SL 6-8.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly						
SL 6-8.4	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation						
Reading Standards for Literacy in Science and Technical							
RST 6-8.3	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks						
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						
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)						
Writing Standards for Literacy in History/Social Studies, Science & Technical Subjects							
WHST. 6-8.1	Write arguments focused on discipline-specific content						
WHST. 6-8.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes						
WHST. 6-8.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience						
WHST. 6-8.5	With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed						
WHST. 6-8.6	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently						
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						