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| Connecting to the Next Generation Science Standards (NGSS Lead States 2013):  3-5 Engineering Design  <https://www.nextgenscience.org/topic-arrangement/3-5engineering-design>  The chart below makes one set of connections between the instruction outlined in this article and the NGSS. Other valid connections are likely; however, space restrictions prevent us from listing all possibilities. The materials, lessons, and activities outlined in the article are just one step toward reaching the performance expectation listed below.  Performance Expectation  3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. | |
| Dimension | Connections to Classroom Activity |
| Science and Engineering Practice |  |
| Constructing Explanations and Designing Solutions  Obtaining, Evaluating, and Communicating Information | Students observed groups’ traps in action and determined if the traps met the criteria for success. Students used feedback from other groups to improve their traps.  Students created diagrams to convey how their proposed design would trap the Zhu Zhu. Each groups shared their diagram and gave a brief description of their design and how they expected it to work prior to testing. |
| Disciplinary Core Idea |  |
| PS1.A: Structure and Properties of Matter.   * Different properties are suited to different purposes.   ETS1.B: Developing Possible Solutions | When students understood the allotted materials wouldn’t all them to replicate the bear claw trap or mousetrap, they had to consider the properties of the materials available to inform their design choices.  Students observed groups’ traps in action and determined if the traps met the criteria for success. Students used feedback from other groups to improve their traps. |
| Crosscutting Concept |  |
| Structure and Function | Students designed the parts of their trap system to function is specific ways such as closing quickly when the ZhuZhu entered the trap. |

Connections to the Common Core State Standards (NGAC and CCSSO 2010):

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| ELA |  |
| Mathematics  CCSS.MATH.CONTENT.5.NBT.B.7 “Add, subtract, multiply and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning.” | Students used decimals in calculating their spending on materials. |