

## Principles of Agricultural Science – Animal Principles and Standards for School Mathematics Alignment Matrix

<b>Key:</b> o = Denotes a correlation in ideas and concepts in both standard and lessons but validation is required to infer direct instruction of standard	Unit 1: Worlds of Opportunity	Unit 2: History and Use of Animals	Unit 3: Animal Handling and Safety	Unit 4: Cells and Tissues	Unit 5: Animal Nutrition	Unit 6: Animal Reproduction	Unit 7: Genetics	Unit 8: Animal Health	Unit 9: Animal Products, Marketing, and Selection
<b>PSSM Number Operations Standard:</b> Instructional programs from prekindergarten through grade 12 should enable all students to—									
<ul style="list-style-type: none"> <li>understand numbers, ways of representing numbers, relationships among numbers, and number systems;</li> </ul>			o	o	o			o	o
<ul style="list-style-type: none"> <li>understand meanings of operations and how they relate to one another;</li> </ul>									
<ul style="list-style-type: none"> <li>compute fluently and make reasonable estimates</li> </ul>			o	o	o	o	o	o	
<b>PSSM Algebra Standard:</b> Instructional programs from prekindergarten through grade 12 should enable all students to—									
<ul style="list-style-type: none"> <li>understand patterns, relations, and functions;</li> </ul>									
<ul style="list-style-type: none"> <li>represent and analyze mathematical situations and structures using algebraic symbols;</li> </ul>				o					
<ul style="list-style-type: none"> <li>use mathematical models to represent and understand quantitative relationships;</li> </ul>				o					
<ul style="list-style-type: none"> <li>analyze change in various contexts.</li> </ul>									
<b>PSSM Geometry Standard:</b> Instructional programs from prekindergarten through grade 12 should enable all students to—									

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<ul style="list-style-type: none"> <li>analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships;</li> </ul>									
<ul style="list-style-type: none"> <li>specify locations and describe spatial relationships using coordinate geometry and other representational systems;</li> </ul>									
<ul style="list-style-type: none"> <li>apply transformations and use symmetry to analyze mathematical situations;</li> </ul>									
<ul style="list-style-type: none"> <li>use visualization, spatial reasoning, and geometric modeling to solve problems.</li> </ul>			o	o					
<b>PSSM Measurement Standard:</b> Instructional programs from prekindergarten through grade 12 should enable all students to—									
<ul style="list-style-type: none"> <li>understand measurable attributes of objects and the units, systems, and processes of measurement;</li> </ul>			o	o	o	o	o	o	o
<ul style="list-style-type: none"> <li>apply appropriate techniques, tools, and formulas to determine measurements.</li> </ul>			o	o	o	o			
<b>PSSM Data Analysis and Probability Standard:</b> Instructional programs from prekindergarten through grade 12 should enable all students to—									
<ul style="list-style-type: none"> <li>formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them;</li> </ul>			o	o	o	o		o	o
<ul style="list-style-type: none"> <li>select and use appropriate statistical methods to analyze data;</li> </ul>				o	o				
<ul style="list-style-type: none"> <li>develop and evaluate inferences and predictions that are based on data;</li> </ul>				o	o		o	o	o
<ul style="list-style-type: none"> <li>understand and apply basic concepts of probability.</li> </ul>							o		
<b>PSSM Problem Solving Standard:</b> Instructional programs from prekindergarten through grade 12 should enable all students to—									
<ul style="list-style-type: none"> <li>build new mathematical knowledge through problem solving;</li> </ul>									
<ul style="list-style-type: none"> <li>solve problems that arise in mathematics and in other contexts;</li> </ul>			o		o			o	o
<ul style="list-style-type: none"> <li>apply and adapt a variety of appropriate strategies to solve problems;</li> </ul>			o		o				o
<ul style="list-style-type: none"> <li>monitor and reflect on the process of mathematical problem solving.</li> </ul>									
<b>PSSM Reasoning and Proof Standard:</b> Instructional programs from									

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prekindergarten through grade 12 should enable all students to—									
<ul style="list-style-type: none"> <li>recognize reasoning and proof as fundamental aspects of mathematics;</li> </ul>									
<ul style="list-style-type: none"> <li>make and investigate mathematical conjectures;</li> </ul>								o	
<ul style="list-style-type: none"> <li>develop and evaluate mathematical arguments and proofs;</li> </ul>									
<ul style="list-style-type: none"> <li>select and use various types of reasoning and methods of proof.</li> </ul>									
<b>PSSM Communication Standard:</b> Instructional programs from prekindergarten through grade 12 should enable all students to—									
<ul style="list-style-type: none"> <li>organize and consolidate their mathematical thinking through communication;</li> </ul>				o					
<ul style="list-style-type: none"> <li>communicate their mathematical thinking coherently and clearly to peers, teachers, and others;</li> </ul>									
<ul style="list-style-type: none"> <li>analyze and evaluate the mathematical thinking and strategies of others;</li> </ul>									
<ul style="list-style-type: none"> <li>use the language of mathematics to express mathematical ideas precisely</li> </ul>									
<b>PSSM Connections Standard:</b> Instructional programs from prekindergarten through grade 12 should enable all students to—									
<ul style="list-style-type: none"> <li>recognize and use connections among mathematical ideas;</li> </ul>									
<ul style="list-style-type: none"> <li>understand how mathematical ideas interconnect and build on one another to produce a coherent whole;</li> </ul>									
<ul style="list-style-type: none"> <li>recognize and apply mathematics in contexts outside of mathematics.</li> </ul>			o	o	o	o	o	o	o
<b>PSSM Representation Standard:</b> Instructional programs from prekindergarten through grade 12 should enable all students to—									
<ul style="list-style-type: none"> <li>create and use representations to organize, record, and communicate mathematical ideas;</li> </ul>					o	o	o		
<ul style="list-style-type: none"> <li>select, apply, and translate among mathematical representations to solve problems;</li> </ul>							o		
<ul style="list-style-type: none"> <li>use representations to model and interpret physical, social, and mathematical phenomena.</li> </ul>				o					

**Table 1.** Comparison of *Principles and Standards for School Mathematics (PSSM)* and Principles of Agricultural Science - Animal™

Source: National Council of Teachers of Mathematics (NCTM) *Principles and Standards for School Mathematics*.

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