Food Systems

ESTABLISHED GOALS New Mexico Science Standards **5-8 Benchmark I**: 1. Use a variety of print and web resources to collect information, inform investigations, and answer a scientific question or hypothesis. 2. Use models to explain the relationships between variables being investigated. **5-8 Benchmark I:** Explain the diverse structures and functions of living things and the complex relationships between living things and their environments **Standard I:** Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies	***Transfer***	
	Students will be able to independently use their learning to… 1. Reflect on their own relationship with food; 2. Compare their relationship with food with others, including non-human living organisms. 3. Illustrate the food supply chain from field to plate;	

	Meaning	
	UNDERSTANDINGS *Students will understand that…* U1: Food is a source of nourishment, essential for life. U2: Food is integral to human lives but our relationship with food extends far beyond the act of eating and has economic and social/cultural implications. U3: The food system explains the components of a food's journey from its origins to consumers' plates, including harvest, processing and transportation. U4: Food has an origin, both historically and literally based on modern day agriculture and global trade.	ESSENTIAL QUESTIONS E1: What is food? E2: What is a food system and what are its components?
	Acquisition	
	Students will know… K1: All living organisms need food. K2: There are issues related to food beyond nourishment, including environment, culture and economics. K3: The steps in the food system include: Production, Processing, Distribution, Retails, Consumption and Disposal.	*Students will be skilled at…* S1: Describing and give examples of food from different perspectives (not just the human perspective). S2: List and describe the steps of the food system. S3: Name countries of origin for specific foods using http://map.seedmap.org/category/food-diversity/centres-of-diversity/crops/
Evaluative Criteria	**Assessment Evidence**	

1. Demonstrates ability to follow directions, maintain hygiene procedures, and clean up, as well as work as a group. 2. Student will use equipment properly to measure out correct amount of ingredients. 3. Chart will contain details on each of the foods used. 4. Creates a comprehensive and diverse paragraph or visual aid that demonstrates multiple perspectives. 5. Students will properly turn on and off the Chrome books and care for the equipment as well as navigate the webpage based on instruction. 6. Analysis of the video will be apparent in the review/chart of the steps of the food system and making flour/sugar.	TRANSFER TASK(S): 1. Through cooking a meal using produce from the school garden, students will identify and demonstrate steps of the food system. 2. Students will review the metric system and use metric tools to cook a dish. 3. Students will complete a chart that determines the origin of the ingredients and how they changed through the process of cooking 4. Student will write a paragraph or create a visual aid that demonstrates their understanding of food, from different perspectives. 5. Students will be able to access, use and explore the website http://map.seedmap.org/ with regard to the origin of specific crops on Chrome Books. 6. Students will watch and write a review of a video that demonstrates the steps needed in making flour or sugar. 7. Students will create a diagram that shows the series of steps food takes from farm to plate.	
1. Accuracy of bellringer/pop quiz questions	OTHER EVIDENCE:	

	1. Observations of individuals and groups during class time 2. 2. (pop) quiz and bellringers.	
Summary of Key Learning Events and Instruction **Lesson 1: Apple Pie** Students will harvest apples from the school garden and use them to make an apple pie. Students will use metric balances to measure out the ingredients instead of cups and follow proper hygiene procedures. Students will also begin to create a compost pile/worm bin with the leftover apple waste. **Lesson 2: What is Food?** Students will discuss their own perspective of food. Students will then work in groups to discuss and examine food from other perspectives: economic, ecological, health related and other living organisms other than humans. Students will use the following resources to enable discussion: ● Book: What the World Eats ● Photos: Ecosystems around the world, including wild and agricultural/domesticated ● Internet: http://foodmatters.tv/articles-1/what-the-world-eats-shocking-photos		

Students will create a visual aid that helps describe “What is Food?” from different perspectives **Lesson 3: The Food System**: Students will first discuss and review how they made the apple pie to initiate thinking in all the ingredients needed and what happened to those ingredients. Students will then watch a video that shows how flour/sugar is grown and processed in order to understand all the steps and resources needed. Students will create their own flow charts of the steps taken in order to manufacture sugar or flour. **Lesson 4: From Farm to plate in your family**: Students will create a dish at home that represents their family’s heritage for a community potluck. Students will also bring in a recipe to create a grade level cookbook that includes a description of their family heritage. Using a world map we will plot the country or region of origin of the recipe. This will be done as part of collaboration with the history department classes and annual 7th grade harvest festival in our school garden. Students will use http://map.seedmap.org/ to learn about the origin of some ingredients. NOTE: The other units to be build on this foundation with global and scientific links are: ● History of Food ● Agriculture and Ecosystems ● Food Animal Production ● Food Processing		

● Food Distribution and Transport ● Food Safety ● Diet and Influences on Food Choice ● Food Environments ● Food Marketing and Labeling ● Hunger and Food Security		