

**Montezuma School to Farm Project 2016-2017 SBCG Collaboration with
Montezuma Orchard Restoration Project
Final Report
9/29/17**

The Montezuma School to Farm Project (MSTFP) planted school orchards with students through MSTFP developed lesson plans at Mesa Elementary, Kemper Elementary, Pleasantview Elementary, Lewis-Arriola Elementary, Southwest Outdoor School, Manauh Elementary and Battlerock Elementary schools. K – 12th grade students were involved in preparations for the installations, the actual planting of the heritage fruit trees, and after care/maintenance of each of the sites. Apple pressing lessons were also implemented using apples from already developed heritage orchards in the county. The lessons developed through this process were piloted and refined repeatedly. These lessons will be used to do further orchard installations and educational projects with students in Montezuma County and across the region.

The Montezuma School to Farm Project developed the following curriculum of standards aligned heritage orchard lessons for K-8th grade student populations:

1. K-2 Elementary Grade Levels: Identifying Parts of the Apple (See attached lesson)
 - a. Colorado Common Core Standards Addressed:
 - i. Kindergarten:
 1. RF.K.3. Know and apply grade-level phonics and word analysis skills in decoding words.
 2. RF.K.2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes).
 - ii. First Grade:
 1. RF.1.2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes).
 2. RF.1.3. Know and apply grade-level phonics and word analysis skills in decoding words.
 - iii. Second Grade:
 1. RF.3.3. Know and apply grade-level phonics and word analysis skills in decoding words.
2. 3 – 5th Elementary Grade Levels: Apple Pressing and Volume Predictions (See attached lesson)
 - a. Colorado Common Core Standards Addressed:
 - i. Third Grade:

1. RI.3.3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
 - ii. Fourth Grade:
 1. 4.MD.2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
 - iii. Fifth Grade:
 1. 5.MD.3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
3. 3 – 5th Elementary Grade Levels: Orchard Installation Part 1 & 2 (See Attached Lessons)
- a. Colorado Academic Standards Addressed:
 - i. Third Grade:
 1. 3.LS.2 Analyze how various organisms grow, develop, and differentiate during their lifetimes based on an interplay between genetics and their environment
 2. 3.ESS.2 Evaluate evidence that Earth's geosphere, atmosphere, hydrosphere, and biosphere interact as a complex system
 - ii. Fourth Grade:
 1. 4.LS.2 Analyze how various organisms grow, develop, and differentiate during their lifetimes based on an interplay between genetics and their environment
 2. 4.LS.2 Explain and illustrate with examples how living systems interact with the biotic and abiotic environment
 - iii. Fifth Grade:
 1. 5.LS.2 Analyze how various organisms grow, develop, and differentiate during their lifetimes based on an interplay between genetics and their environment
 2. 5.ES.3 Describe how humans are dependent on the diversity of resources provided by Earth and Sun
4. 6 – 8th Middle School Grade Levels: Orchard Care: Pruning (See attached lesson)
- a. Colorado Academic Standards Addressed:

- i. Sixth Grade:
 - 1. 6.ESS.3 Describe how humans are dependent on the diversity of resources provided by Earth and Sun
 - ii. Seventh Grade:
 - 1. 7.LS.2 Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems' dependence on natural selection
 - iii. Eighth Grade:
 - 1. CAS 8th 2.1 Humans can deliberately alter ecosystems and their resiliency
5. 6– 8th Middle School Grade Levels: Pollinating Orchards (See attached lesson)
- a. Colorado Academic Standards Addressed:
 - i. Sixth Grade:
 - 1. 6.ESS.3 Describe how humans are dependent on the diversity of resources provided by Earth and Sun
 - ii. Seventh Grade:
 - 1. 7.LS.2 Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems' dependence on natural selection
 - iii. Eighth Grade:
 - 1. CAS 8th 2.1 Humans can deliberately alter ecosystems and their resiliency