OREGON HARVEST for SCHOOLS

CLASSROOM CONNECTIONS

Early Childhood and Lower Elementary: Sort It! Graph it!

Connections to Standards:
Science 2-PS1-1
Math K.MD.1, 2; 1.MD.4; 2.MD.9, 10

Lesson: Grapes come in a variety of shapes, colors, sizes, tastes and textures. There are green, red and almost black grapes that are small or large, round or oblong. This activity will introduce students to the variety seen in grapes while practicing their sorting, counting and graphing skills. The lesson outlined in the resource section can provide a starting point for further exploration. In addition to sorting and graphing simply by color, lesson expansion can occur by sorting by size, shape and taste. Discussion can ensue about the diversity in fruits and vegetables and what may cause those differences (different nutrients present, amount of sugars, cultivar of grape, how/where grapes were grown, etc.)

Resources:
Sort It - Graph It
http://www.tablegrape.com/docs/LP_Sort_Graph.pdf

Upper Elementary: Grape Vine Wreaths

Connections to Standards:
Art AR.03.HC.03, 02
Social Science 3.12; 4.9, 12; 5.10

Lesson: Art can be a reflection of the artist's personal experiences, environment, culture and values. Plants have been the most abundant material for artists to use through the centuries and can provide insight into the environment the artist is surrounded by. There are native grapes that grow wild in great abundance on the eastern half of the United States while grapes are also one of the more popular backyard fruits to plant. It should be no problem to find a grape vine to harvest material from for this project; ask students' parents, check in the school garden or scout the neighborhood, just be sure to ask before pruning!

Grape vine wreaths will be created in this lesson with step-by-step directions provided in the resource section. Before or after the project, have students brainstorm other plant materials that could be used to create art. Going on a "scavenger hunt" for art materials around the school can open students' eyes to the array of materials available and can be a good introduction to talk about how art is influenced by an artist's community and environment.

Resources:
Grape Vine Wreaths (about 1/3 of the way down the page)
http://blogs.cornell.edu/garden/lessons-alphabetically/

Middle School: Dyeing for Color

Connections to Standards:
Social Science 6.8
Art AR.08.HC.01, 03, 04, 05

Lesson: Throughout history, various plant materials have been used to dye clothing and material. Different plant, and thus colors, were available depending on the region. Working in groups, have students make hypotheses about what vegetables and commonly available plants might create each color of the rainbow. Have students write these hypotheses out and then as a whole class discuss how you might go about testing these hypotheses. Depending on the availability of time and resources, work either as a class or in small groups to gather the materials and test the hypotheses. If time is a limiting factor, voting on a material or two to test for each color may be the most efficient method. Different variations for creating dyes are listed in the resources. While clothing can be used, it's suggested to use strips from an old white sheet as an initial testing material. After the experiment, have students write up the experimental methods used, the results and whether their hypotheses were confirmed. For further exploration look at questions such as: Were certain colors easier or harder to create? Why would plant availability differed during different time periods and in different regions? What would have been the importance of having dyed material? Why would certain colors have been considered royal?

Resources:
Dye Your Clothes with Food
http://www.planet-science.com/categories/experiments/chemistry-chaos/2012/06/dye-your-clothes-with-food.aspx

Simple Vegetable Dyes
http://www.instructables.com/id/how-to-make-vegetable-dyes/

High School: Food Miles

Connections to Standards:
Social Science HS.16, 20, 60, 63

Lesson: Today, many of our foods travel from afar to reach the grocery shelves. An oft quoted study by the Leopold Center for Sustainable Agriculture found that on average, food travels 1,500 miles from the farm to your plate. These "food miles" have implications for physical health, our economy, the environment and climate change.

In groups, students will investigate the origin and food miles of different foods. Hand out multiple food packages/wrappers to each group. Have students identify where each product is made and have them mark those locations on the world map with a sticky or push pin. Students then use their string to measure from food origin to their home. Using the ruler and map scale, students can convert the measured distance of their string to miles. Once completed, have students share their findings with the class and brainstorm how the environment, economy and different societies may be affected by the transport and processing of the different foods. Further exploration can include graphing of data, discussion of why this method may not be the most accurate way to measure food miles, brainstorming about what other processes a food may undergo during its travels that can also impact the environment, economy, and society.

Materials:
Large World Map (with key denoting scale)
Food packages/wrappers (chocolate wrappers, produce stickers, plastic produce "clamshells", etc.)
String
Rulers
Stickers, push pins or sticky arrows

Resources:
Food Miles Impact on Health by the Natural Resources Defense Council
https://food-hub.org/files/resources/Food%20Miles.pdf

Checking the Food Odometer Report
http://www.leopold.iastate.edu/sites/default/files/pubs-and-papers/2003-07-checking-food-odometer-comparing-food-miles-local-versus-conventional-produce-sales-iowa-institution.pdf