



What's Growing On In Virginia?
Virginia Foundation for Agriculture in the Classroom
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AITC Program Highlights (continued)

Web expands for AITC

Information abounds at the expanded Web site for the Virginia Foundation for Agriculture in the Classroom—www.agintheclass.org. New information includes program highlights and details on awards programs, as well as an updated schedule of teacher workshop opportunities. You can even receive lessons for use in your classroom by registering for a curriculum CD.

About the Newsletter

What's Growing On In Virginia? is a semiannual publication for Virginia elementary and middle school teachers, published by the Virginia Foundation for Agriculture in the Classroom

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The Virginia Foundation for **AGRICULTURE IN THE CLASSROOM**

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Scots-Irish and German settlers left their mark on the Shenandoah Valley's landscape

It's no blarney that, even today, bank barns are nestled into the sides of the Shenandoah Valley's hills, and the landscape is dotted with log cabins, thanks to Scots-Irish (also called Scotch-Irish) and German immigrants who moved there in the mid-1700s.

The current structures resemble those created by immigrants who settled in the area and adapted their customs to the new environment. Both groups changed the landscape by building barns, homes and places of worship that resembled those in their native countries.

When people settle in a new area, they generally change the landscape so it reflects their culture.

The Germans constructed homes made of local timber and limestone, daubing clay, lime, sand and straw into the spaces between logs or stones. They also built bank barns, which were two-story barns with a full loft, partly set into the sides of hills. The lowest level was used primarily to house animals, because it was partly below ground and therefore warm in the winter and cool in the summer. One unique feature of the barns is small, decorative openings cut high on the gable wall. The openings provided homes for swallows, even though they were called owl holes.

The Scots-Irish immigrants were used to living in stone homes, but since stone was not as plentiful in the Shenandoah Valley, they kept the style and used local timber. They have been credited with spreading the "log cabin" style across the American frontier.

These innovative immigrants had arrived in the area via the "Great Wagon Road," which had been carved out by American Indians and buffalo that once roamed the land in search of food. The Germans and Scots-Irish started out in the northern American colonies in the 1730s and 1740s, but when those colonies became too congested, they decided to move farther inland, where land was more plentiful and affordable.

The path they took meandered from the Great Lakes in New York through Pennsylvania to western Maryland and then

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Erik Dalke, Virginia Farm Bureau

Vocabulary

Cotton – a soft, white fiber grown from the cotton plant and often spun into yarn

Wool – the soft undercoat of sheep; often spun into yarn

Flax – the fiber of a flax plant used for spinning

Twisting – winding cotton, wool or flax fibers onto a card

Carding – combing wool fibers

Spinning – turning fibers into strands of yarn

Shearing – cutting fleece from a sheep

Loom – machine on which weaving is done

Treadle wheel – a type of spinning wheel operated with the user's foot

Iron frying pan – a cooking implement with an extra-long handle, used over an open fire

Dutch oven – a cast iron pot with a tight-fitting lid, used for baking over an open fire

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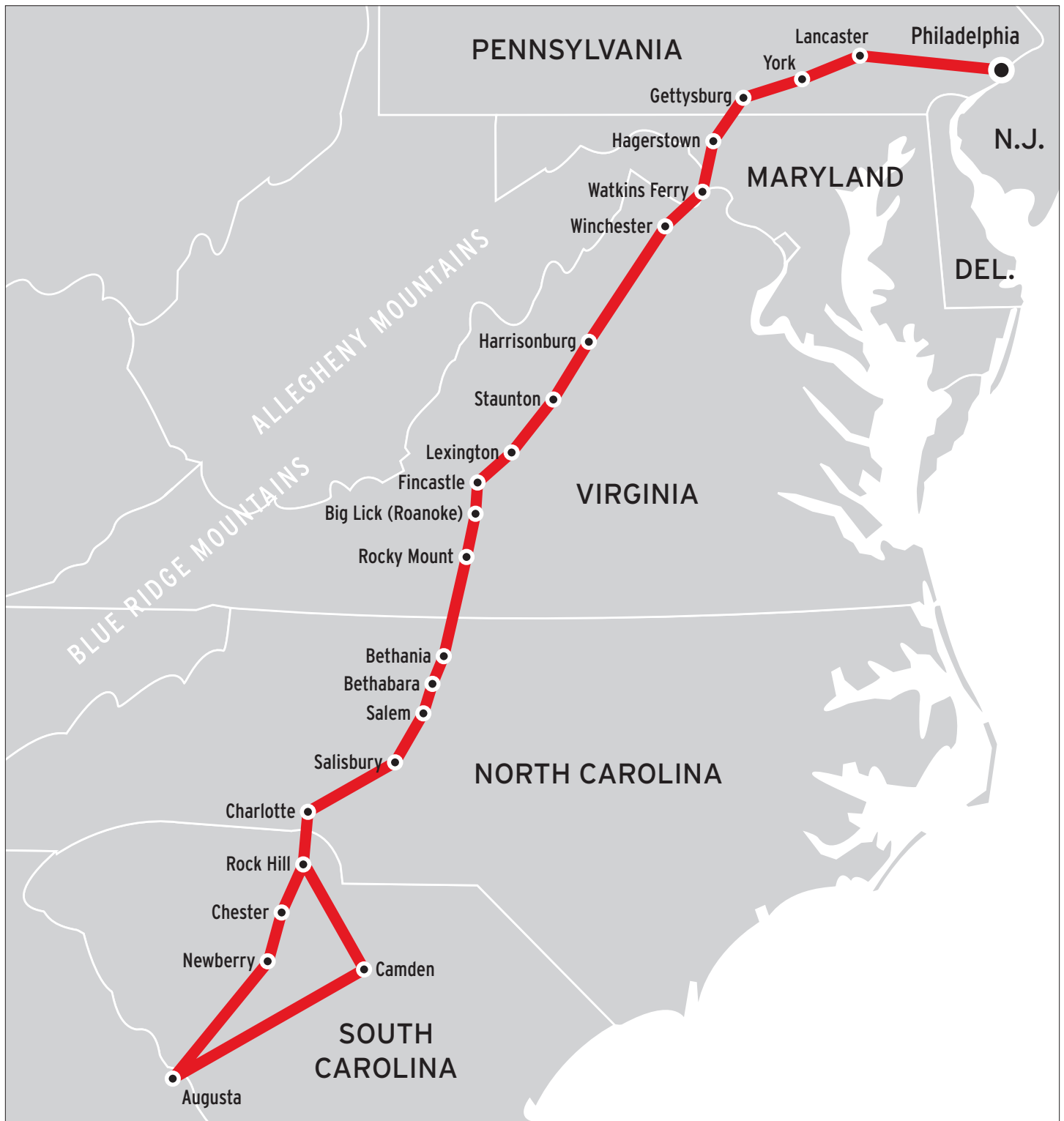
through Winchester to the Shenandoah Valley, with many settling in what are now Harrisonburg, Staunton, Lexington, Roanoke and Salem.

Once they settled in the valley, they established livestock and grain farms.

The Scots-Irish traditionally had grown as much wheat and potatoes as possible on small plots of land, but in America

they focused on multi-use crops. They grew corn for human consumption as well as for their hogs and other animals. The Germans—drawing from their culture—preferred to use oxen instead of horses to pull their plows as they worked the land.

Both groups of people became integrated into their new environment, and their influence in the Shenandoah Valley continues to this day.



LESSON PLAN >> ELEMENTARY SCHOOL

Settling the Shenandoah

SOL:

Virginia Studies: VS.4b

Objective:

To be able to identify the cultural influences of the German and Scots-Irish settlers on the landscape of the Shenandoah Valley. Students will create a home or barn in the architectural style used by the German or Scots-Irish.

Materials:

- U.S. map (on overhead projector)
- markers/crayons
- construction paper
- glue
- wooden craft sticks
- modeling clay

**Background knowledge**

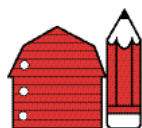
During the 1700s German and Scots-Irish (also called Scotch-Irish) immigrants began to settle in the Shenandoah Valley. Most traveled along the migration route called the "Great Wagon Road" from Pennsylvania in search of affordable land on which to farm and build their communities. They formed communities of farmsteads and raised livestock and grain. Their heritage can be seen reflected in their architecture. The Germans brought with them their knowledge of log construction and bank barns. German homes were made using the plentiful timber, as well as limestone. The space between the logs and/or stones was then "daubed" using clay, lime, sand and straw. Additionally, German immigrants built bank barns, which were two-story barns built into the slope of a hill.

While the Scots-Irish typically lived in stone homes in their homeland, they adapted this style to the materials available (timber); living in log homes similar to those of the Germans. The Scots-Irish are credited with spreading the "log cabin" style across the American frontier.

Procedure

1. Ask students to imagine that they have been chosen to settle a deserted island. What would their buildings look like?
2. Ask students what factors would influence the building of their houses. Would they want to build something to remind them of home? What resources would they have

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available? Discuss with students the fact that they would have to rely on materials of the island.

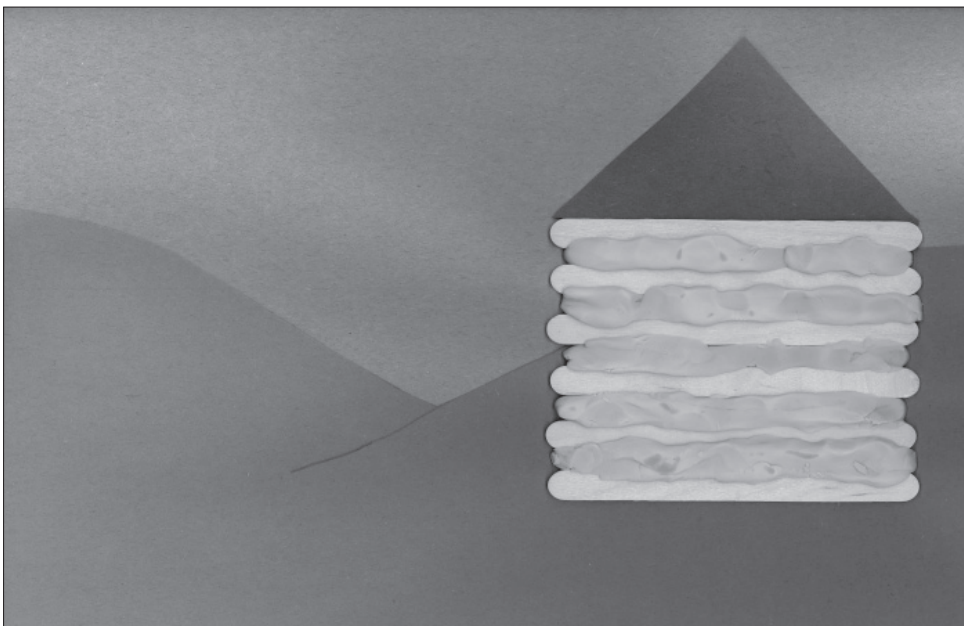
3. Tell students that the early settlers of Virginia took the same factors into account as they built their homes, barns and other buildings. They brought with them knowledge and customs from their home countries and combined this with the resources that were available.
4. Put a map of the United States on the overhead. Have a student trace the migration route that many Scots-Irish and German settlers took from Pennsylvania to the Shenandoah Valley. Discuss reasons for migration, namely the desire for affordable land.
5. Show pictures and discuss what the homes and barns of the Germans and Scots-Irish looked like (See Background knowledge).
6. Distribute the following supplies to each student: one piece of construction paper, glue, markers, clay and wooden craft sticks.
7. Students will be creating a barn in the style of the German or Scots-Irish. Have students draw a square in the middle of the paper. In the square they are to glue popsicle sticks horizontally, leaving a little space in between each.
8. Next, have students take glue and a little bit of clay to "daub" the spaces between the popsicle sticks.
9. Draw a triangle on top of the square; this is the roof.
10. Next, draw mountains and crop fields around the barn. German barns in particular often were built into the sides of hills (thus, called bank barns) so students may draw this as well.

Extension

- Create a 3-D barn by gluing the sticks and clay to the sides of a tissue box.
- Take a field trip to the Frontier Culture Museum in Staunton. Visit their Web site to learn more: www.frontier.virginia.gov.

References

- Frontier Culture Museum: www.frontier.virginia.gov
- Virginia Vignettes: www.virginiavignettes.org
- Virginia Tourism Corp.: www.virginia.org



LESSON PLAN >> MIDDLE SCHOOL

Plant-based dyes colored colonists' clothes

SOL:

- Science 6.1, LS.1, PS.1, PS.5
- Social Studies USI.4, USI.5

Objective:

Students will conduct a scientific investigation to validate a hypothesis using controls and independent and dependent variables. This lesson also focuses on conducting an experiment identifying chemical and physical changes of the dependent variable, and identifying practices of Colonial life in the Mid-Atlantic region. Students will explore the dyeing qualities of different plant materials mixed with hot water.

Materials:

- vegetation samples for dyes (red cabbage, carrot tops, beets, berries, birch leaves, parsley, mint, tea leaves)
- water
- vinegar
- heat source such as a stove, hotplate or microwave
- hot water
- heat-resistant containers
- spoons or stir sticks
- white fabrics: cotton fabric or roping, cotton balls, wool yarn, wool athletic socks
- trays lined with paper towels
- knife, scissors or other safe cutting instrument
- hammer or mortar and pestle for grinding the vegetation samples into tiny bits
- tweezers
- rubber gloves

Introduction

Throughout history mankind has used natural dyes to adorn clothing. In Colonial times the color of clothing signified class and noted occasions. Roots, nuts and flowers are just a few common natural sources of textile colorants. Early American colonists used (among other things) salt, vinegar, urine and oak galls, which are the lumpy growths found on oak branches where insect larvae distort the normal growth. American Indians used the ashes of burned juniper branches, as well as other wood ash, rusty water and clay.

A number of methods can be used to dye fabric from plants. Plants generally are ground up and added to water, then boiled. Cloth, yarn or wool is then added to the boiling pot. Muslin, silk, cotton and wool work best for natural dyes, and the lighter the fabric in color, the better. White or pastel colors work the best. Time and temperature plays a factor in the intensity of color absorbed by the fabric. Metal pots themselves release metals into the dye baths, so copper, iron and other pots sometimes yield different colors in the dyed product. Some colors permanently affix to the fabric, while others needed a mordant—used to “fix” the color into a fabric. Vinegar and alum often were used for this purpose, with fabrics being treated before and after dyeing.

Using a variety of fabrics and plants, students can develop hypotheses regarding which fabrics take on color the best. In addition, students will have the opportunity to analyze which plant materials yield the most intense dyes. It's best to use an old large pot as your dye vessel. Wear rubber gloves to handle the fabric that has been dyed; the dye can stain your hands. It's also important to note that some plant dyes can be toxic. Practice lab safety throughout this or any experiment.

PLANTS TO GROW AND COLLECT FOR DYEING

COLOR	PLANT	COLOR	PLANT
Blue	Leaves: red cabbage	Tan/Brown	Leaves: birch
	Fruit: elderberries		Nuts: acorns
	Leaves & stems: tomato plants		Other: coffee grounds, tea bags
Yellow	Leaves: mint, parsley, birch, onion skin	Magenta	Roots: dandelion
	Flowers: chamomile, dandelion, marigolds, zinnias	Pink	Leaves: red cabbage, strawberries, cherries, roses
	Other: paprika	Purple	Fruit: wild grapes, mulberries, beets, blackberries
Green	Leaves: carrots, red onion	Red	Roots: madder
	Flowers: black-eyed Susan	Black	Black walnut hulls
Leaves & stems: spinach	Gold/Brass		Flowers: sunflower
Flowers: dyer's coreopsis			Leaves & stems: cocklebur, dock, goldenrod
Orange	Other: turmeric	Seeds: sunflower	

Procedure

1. Each student will create a hypothesis regarding dyeing medium and dye. "If (independent variable) then (dependent variable)."
2. Students will choose a plant material and grind or cut the material into small pieces.
3. Add plant material and ½ cup of hot water to a container.
4. Add fabric material to container with plant material and hot water.
5. Soak material for 5 minutes.
6. Remove material with tweezers and spread on paper towel to dry.
7. Repeat, adding 1 tablespoon of vinegar as a mordant.
8. Once dry, test each fabric sample for colorfastness by adding water drops to fabric and observing changes in dyed fabric.
9. Additional trials may be conducted using various plant materials.
10. Record data, including chart noting which plants were tested as dye to which fabrics, and whether a mordant was used.
11. Write a conclusion paragraph including whether the hypothesis was confirmed.

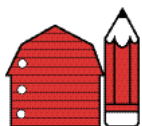
Extension

- Increase the amount of time fabric is soaked in dye; water temperature; and amount of mordant.
- Use a copper pot for dyeing fabric. The copper produces a chemical reaction that affects dye color.
- Attempt to remove stain from fabric. Discuss what seems to make some stains harder to remove, and how people may have learned which plants make good dyes.

References

- <http://www.nationalgardenmonth.org/index.php?page=dye>
- <http://www.pioneerthinking.com/naturaldyes.html>
- <http://www.kidsgardening.com/growingideas/PROJECTS/may03/pg2.html>

Trial	Material used	Independent variable (dye result)	Dependent variable (dye result)	Colorfast test results	Mordant
#1	Ex: Cotton	Beet	Light Red	Color bleeds	Without
#2	Cotton	Beet	Light Red	Holds Color	With



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LITERARY CORNER

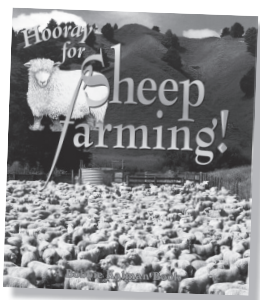
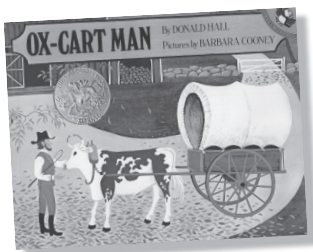
Books based on Scots-Irish and German farming

Ox-Cart Man, Donald Hall, Puffin, ISBN-10: 0140504419

Hooray for Sheep Farming!, Bobbie Kalman, Crabtree Publishing Company, ISBN-10: 0865056692

Hands on History: Colonial America, Michael Gravols, Scholastic, ISBN-10: 0439587167

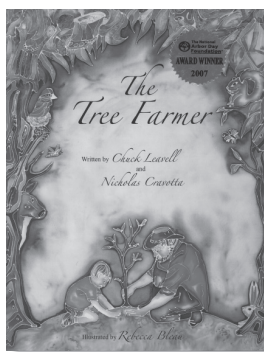
The Quilting Bee (Hardcover), Gail Gibbons, HarperCollins, ISBN-10: 0688163971; ISBN-13: 978-0688163976



SPECIAL SELECTION

American Farm Bureau Foundation for Agriculture's inaugural Book of the Year winner:

The Tree Farmer, Chuck Leavell & Nicholas Cravotta, VSP Books, ISBN-10: 1893622169



AITC Program Highlights

AITC offers grants to improve agricultural literacy

Two grants offered by the Virginia Foundation for Agriculture in the Classroom help educators make the most of their AITC training.

Community organizations interested in supporting literacy will want to apply for a Book Partnership grant. The grants provide volunteer organizations with funds to purchase and provide agriculture-themed books for school libraries.

Students and teachers who have an opportunity to read agriculturally accurate books will develop a better understanding and appreciation of the industry. And books about corn, wheat, cotton, dairy cows, bees and other agricultural topics are a fun and easy way to teach about the industry and support Virginia's educational standards.

Teams of teachers interested in growing school gardens can apply for Instructional Garden Grants. Recipients can receive up to \$500 to purchase non-consumable supplies for their gardens.

School gardens come in all shapes and sizes; they can be as small as a few pots of herbs on a windowsill or as large as a half-acre plot of vegetables in a schoolyard.

For applications and details, including a list of the partnership grant books, visit www.agintheclass.org today.

Get free information on putting ag in your classroom

Free workshops for elementary and middle school educators who want to incorporate agriculture into their classroom activities are offered by the Virginia Foundation for Agriculture in the Classroom.

Middle school workshops feature selected hands-on activities and resources that support Virginia standards for science and civics, and participants will receive complimentary resource kits. Elementary workshop participants will receive the new AITC curriculum CD, along with personalized resource kits.

Contact us at aitc@vafb.com or call 804-290-1141 to plan a workshop for your school today.

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