

## Massachusetts Agriculture in the Classroom

Social Studies  
Economics  
Nutrition  
Science



### Workshops & Conferences

#### Annual Winter Conference

Saturday, March 7, 8:30 - 3:30  
Pathfinder Regional Voc-Tech HS,  
Palmer, MA \$50

#### Help MAC Review our new Lessons with Curriculum Connections

##### Grade 1 & 2 Lesson Review

Wednesday, April 22 9:00 - 3:00  
Marlborough

##### Grade 3 through 6 Lesson Review

July 2015  
Marlborough

#### Summer Graduate Course

8 Workshops on Massachusetts Farms  
Starting: Thursday, July 9, 2015  
Ending: Thursday, August 6, 2015  
Farms across the State  
Details on page 7.

### Feature Topic:

#### Horses



*The Mission of Massachusetts Agriculture in the Classroom is to promote agricultural literacy among educators and to provide them with the skills and support to integrate agriculture into their classrooms.*

### New Agricultural Lessons & a Chance to Help Us Review

Massachusetts Agriculture in the Classroom has been working for more than thirty years to provide resources and trainings for teachers to support classroom learning using agricultural examples. MAC regularly receives request from teachers, especially those who are new to teaching or who have moved to a new grade level, asking for agriculture, natural resource and gardening lessons that they can readily use to support their classroom learning while meeting the curriculum requirements.

In 2012, MAC developed twenty garden-based lessons, five for each grade from one through four, covering soils, garden planning, seeds, pollination and nature journaling-botany. The following year, MAC created an additional 20 garden-based lessons for the elementary grades with enhanced agricultural background and additional activities to connect classrooms to local farms. Four elementary level dairy-based lessons were also developed that year. Each lesson was connected to the curriculum standards and reviewed by teachers from the targeted grade. They are available on the MAC website in html and well as easy to print pdf format.

During the year 2015, MAC will add **twenty-four additional web-based lessons** representing the diversity of agriculture across the state – three new lessons for each grade from first through fourth and nine lessons for grade five and six. Each lessons will provide agricultural background content, classroom activ-



*Elementary teachers needed to review MAC Lessons during February and April Vacations.*

ities to support the agricultural theme and a strong connecting link to the Common Core Standards.

In addition, MAC plans to bring teachers together for four educational days, where they can share agricultural lessons from their own classrooms and try out lessons targeted to their own grade level from the forty garden-based and four dairy-based lessons developed in past years, as well as the twenty-four new agricultural lessons. These teachers will then offer feedback to review and improve each lesson, making them more useful to classroom teachers across the state. These teacher review conferences will be scheduled throughout 2015 with the first one on April 22.

Eighteen of these new lessons and three teacher review days are supported by a grant from the **Mass. Society for Promoting Agriculture**. Six lessons for grades five and six and one teacher review day are funded by a grant from the **Mass. Department of Agricultural Resources**. We gratefully thank the Society and Department for their support.

## 2014 Mini Grants

The MAC Mini-Grant program awarded **\$6,952 in 2014** to support the **fifteen worthy agricultural education projects** listed below. Each year MAC awards mini-grants, usually in the amount of \$300 to \$500, to teachers and schools. The deadlines for proposal submissions are the first of April, September and November. We encourage any Massachusetts educators to submit a proposal to enhance their education program. Information and guidelines are available on the MAC website.

### April 2014 Mini-Grants

“The Planting More Project” Tucker Elementary School, Milton	\$300
“Ottoson Garden Upgrade Project” Ottoson Middle School, Arlington	\$500
“Bringing Embryology into Community” Sprout Home School Proj., Greenfield	\$277
“Leverett Elem. Comm. Greenhouse” Leverett Elementary School	\$500
<b>April Funding Total</b>	<b>\$1,577</b>

### September 2014 Mini-Grants

“Eco-Machine Biosphere” Worcester Technical High School	\$1,500
<b>September Funding Total</b>	<b>\$1,500</b>

### November 2014 Mini-Grants

“Fisher Farm” Fisher Elementary School, Walpole	\$500
“Growing Green in Classroom All Year” Tahanto Reg. Middle Sch., Boylston	\$300
“Garden Tool Supply Improvement Plan” Dr. Elmer Bagnall Elem., Groveland	\$300
“Burbank Organic Curriculum Garden” Mary Lee Burbank Elem., Belmont	\$600
“The Yolk Project” Muddy Brook Elem., Gr. Barrington	\$825
“Kind. & First Grade Pumpkin Patch” Brooks Elementary School, Medford	\$350
<b>Four \$250 Dairy Grants Awarded:</b> Auburn High School, Auburn John Parker Elem. School, New Bedford Paulo Freire Social Justice School, Holyoke Williston Northampton Sch., Easthampton	\$1,000
<b>November Funding Total</b>	<b>\$3,875</b>

**Total 2014  
Mini-Grant Awards \$6,952**



## President’s Message

Agriculture in the Classroom was a new term in the early eighties. I was new to Farm Bureau at the time, and members with longer experience thought it was a good idea. The pursuit interested me, so I joined formative meetings hosted by Agriculture Commissioner Fred Winthrop and attended national and regional gatherings. Educators from public schools and colleges, industry and agency representatives and farmers who ran programs on the farm were attracted. From this group a board of directors was formed and we established non-profit status.

Originally most curriculum developed nationally focused on large farms that feed the world. Locally, we modified these resources for the Northeast and developed others that assisted teachers in interpreting food and farming to their students. Our greatest value, was our ability to teach about farming and to listen to the teacher’s questions and feedback. Then we were able to adapt what we recognized as an honest picture of farming and growing to lessons that could explain the importance of food, fiber and forestry in society.

The ultimate audience is children. When Debi Hogan and I were honored on Agriculture Day at the State House a few years ago, I spent my 30 seconds with the microphone stating that it is important to teach a child to plant and nourish a seed. Knowing how to grow food is a strength that will assist during many life situations. Hopefully it will also encourage appreciation of farmers.

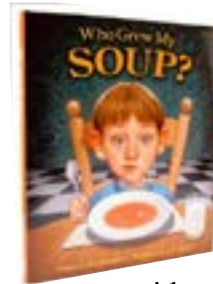
I’ve met many wonderful people, toured many beautiful farms and learned a great deal about growing food and providing food for the public. MAC attracts a fabulous crop of teachers and I have enjoyed them immensely. Teachers want to attend a conference, take home a lesson that can be used in the classroom on Monday morning and be sure that the lesson satisfies what must be taught this year. That is the constant challenge that MAC faces.

I am retiring as president of MAC, Inc. at our Annual Meeting later this month, but I expect to remain active as a past president for a few years. Thanks to all of you who have contributed in various ways to the success of Massachusetts Agriculture in the Classroom.

*Marjorie Cooper, President*

## “Who Grew My Soup?”

MAC is selling copies of “Who Grew My Soup?” by Tom Darbyshire as a fund-raiser to support our educational programs. It tells the story of young Phineas Quinn and his questions about the vegetable soup his mom serves for lunch. Phin declares he won’t slurp a single spoonful until he knows the answer to such questions as “Who grew these carrots? Who grew these tomatoes?” This previously unavailable book is being offered in a soft-cover edition, and can be purchased from MAC for \$15



with an additional \$3 for shipping and handling.

## Win a Trip to the Big E

MAC and the Massachusetts Trustees of Eastern States Exposition are partnering to promote the 5<sup>th</sup> Annual Massachusetts AgriScience Excellence Award. The winning teacher will receive recognition in the MAC newsletter, a plaque and award ceremony at the Big E, a classroom grant of \$200, and a trip to the Big E with busing and tickets for his/her students for September of 2015. The application and guidelines can be found on the MAC website under grants and awards and are due February 14.

Three additional bus trips and tickets to the Big E will be awarded - one to any teacher in Western Mass. and two to urban teachers in Eastern Mass., courtesy of the MA Trustees of the Big E. To apply, send an e-mail to MAC with your name, school, grade and a brief description of how the trip to the fair will benefit your students. Send by February 14. Awards will be notified in March.

We thank the Massachusetts Trustees of Eastern States Exposition for their support of classroom teachers. We also **thank them for a grant in the amount of \$2,692** for educational resources and interactive activities for children in the Mass. Building at the Big E in September of 2015. The grant will also find prizes for children who participate in these activities

## Horses Resources

### Mass. Dept. of Agriculture

251 Causeway Street Suite 500  
Boston, MA 02114  
[www.mass.gov/agr/](http://www.mass.gov/agr/)

### Massachusetts Horse Magazine

[www.horse.com/Massachusetts\\_Horse/home.html](http://www.horse.com/Massachusetts_Horse/home.html)

### Massachusetts Horsemen's Council

[www.mahorsecouncil.com](http://www.mahorsecouncil.com)

### American Horse Council

Horse Statistics  
[www.horsecouncil.org/national-economic-impact-us-horse-industry](http://www.horsecouncil.org/national-economic-impact-us-horse-industry)

### American Morgan Horse Association

[www.morganhorse.com](http://www.morganhorse.com)

### American Quarter Horse Association

[www.aqha.com/Education.aspx](http://www.aqha.com/Education.aspx)

### International Museum of the Horse

[www.imh.org/education](http://www.imh.org/education)

## Other Horses Resources

### Websites

#### Canadian Geographic Article: Wild Horses

[www.canadiangeographic.ca/magazine/ma05/indepth/](http://www.canadiangeographic.ca/magazine/ma05/indepth/)

#### FAOSTAT Livestock Statistics

<http://faostat.fao.org/site/573/DesktopDefault.aspx?PageID=573>

#### Horse Genome Project

[www.uky.edu/Ag/Horsemap](http://www.uky.edu/Ag/Horsemap)

#### Illinois Ag in the Classroom

[www.agintheclassroom.org/teacherresources/Lesson%20Booklets/Horse%20Lessons.pdf](http://www.agintheclassroom.org/teacherresources/Lesson%20Booklets/Horse%20Lessons.pdf)

#### Oklahoma State University: Breeds of Livestock

[www.ansi.okstate.edu/breeds/horses](http://www.ansi.okstate.edu/breeds/horses)

#### Rutgers Equine Science Center: The Basics of Equine Behavior

[www.esrutgers.com/publications/general/fs525.htm](http://www.esrutgers.com/publications/general/fs525.htm)

### Books

*"The Complete Morgan Horse"*  
by Jeanne Mellin

*"Justin Morgan Had A Horse"*  
by Marguerite Henry

*"The Morgan Horse"*  
by Sally Spencer

*"The Morgan Horse of the West"*  
by W. Robert Morgan

*Information for this newsletter  
was taken from the resources listed above.*

## Horses

### A Multi-Disciplinary Topic for the Classroom

Horses have been part an important part of agriculture for thousands of years. The topic of horses can also be a simple way to bring agriculture into your classroom. There are applicable lessons for all age groups and disciplines that can tie directly to Common Core and Next Generation Science Standards. This newsletter will be broken up by subject showing how horses can be used to bring agriculture into social studies, math, science, and English and then lesson suggestions for different grade levels will be presented. We will also take a look at horses and horse breeding in Massachusetts today.



There are more than 150 breeds and types of horse and ponies. These various breeds are divided into three main groups: light horses, heavy horses and ponies. **Light horses** have thin legs, small bones and weigh less than 1,300 pounds. **Heavy horses** have large bones, thick, sturdy legs, and weigh more than 2,000 pounds. **Ponies** are small horses that stand less than 58 inches high when full grown and weigh less than 800 pounds.

Horses are measured in units called "**hands.**" One hand represents 4 inches. The origin of measuring a horse this way is very old, but easy to understand. To measure a horse, they used what they had available. At various times in history and in different locales, a "hand" was defined as the width of a person's hand using the fingers only, the width of a person's hand using the fingers and the thumb, the height of a clenched fist, and possibly many others. Somewhere along the way, the measuring unit of a hand was standardized to mean four inches. Though the origins are ancient, a hand is still the unit of measurement for horses that modern horse owners use today.

**Foals** are newborn horses. The foal is either a **colt**, which is a male less than four years old, or a **filly**, which is a female less than four years old. Foals are able to stand shortly after they are born and within a few hours they can run. A **mare** is a female horse that is more than four years old. A pregnant mare will carry her foal for about 11 months. A **stallion** is a male horse that can be used for breeding and a **gelding** is a male horse that is not able to be used for breeding.

Domestic horses require much more care than other livestock. Wild horses, or mustangs, are able to survive without human care. However, as man has tamed the horse, he has also made it necessary to care for it. Horses eat grass, hay, grain and grain pellets. Horses that are kept inside all the time eat mostly hay and grain. Horses kept outside eat grass during the spring, summer and fall, and are fed hay in the winter. Horses also require a lot of water. On the average day of 70 degrees, an adult horse will drink 11 gallons of water.



Horses are not able to digest food very well, so they must have high quality feed. Horses have a cecum which is attached to the small intestine through which the food must travel to be processed. Although they are able to eat roughage like cattle and sheep, they do not have four stomachs to efficiently digest it. They must eat only small amounts at a time and eat throughout the day in order to get the nutritional value from their feed. One horse needs about 825 air dry pounds of hay or forage per month, or about 5 tons of hay per year. A horse needs supplemental feeding on grazing land to correct deficiencies in protein or other essential nutrients in native forage.

## A Brief History of Horses

The modern horse, known by the scientific name *Equus caballus*, is a descendant of the **Eohippus**, a small hooved animal of similar size to the fox, that lived 54-55 million years ago. This animal was spread all over the world, including North America. The eohippus had three toes on its hind feet, and four on its front feet. It was an herbivore, grazing on soft plants. As a prey species, it quickly adapted to running distances at a rapid speed. There is evidence to suggest that even at this early stage, the eohippus had a complex brain leading scientists to surmise that it was an intelligent creature, a trait that has been passed down to its descendants.

As the early horses continued to evolve, they developed stronger molars, increasing their ability to chew grasses. Another change was the reduction in the number of toes. Twenty-five million years ago, a new family of horses, *Equinae*, evolved that had a densely packed foot that allowed for faster running in grasslands. By fifteen million years ago, the family had developed several branches. Only one survived. This branch had only one toe which greatly increased speed and thus the ability to outrun predators. Three million years ago the genus equus emerged in North America. These early equines crossed the land-bridge to Eurasia and spread throughout the continent. In the north, they continued to evolve into what we know as modern horses and in the south they became modern zebras and donkeys.

Human contact with horses began as early as three million years ago. These early humans hunted horses, with horse meat becoming a staple of their diet. Ten thousand years ago, in **North America**, over-hunting of horses combined with climate changes and mysterious diseases **drove the horse to extinction**. Other large animals like the Woolly Mammoth disappeared at the same time.



The Eohippus

Horse species continued to thrive in **Eurasia** however, culminating in the domestication of horses. There are many theories as to when horses were first domesticated by humans. Recent evidence suggests that the practice originated in roughly 4,000 B.C. with the Botai people of ancient **Kazakhstan**. Archeologists believe that the Botai people initially bred horses for both their meat and milk. By 3,500 BC, they discovered that if they used rope or leather as early bitwear that the horses could be controlled and ridden to hunt wild horses. The practice of using horses for agricultural and transportation purposes spread quickly throughout Europe and Asia, as evidence in writings and art.

**Spanish conquistadors** bear much of the responsibility for the reintroduction of horses into North America. The first horses arrived in the New World in the early 16<sup>th</sup> century. In **1519, Hernan Cortes** brought fifteen horses with him as part of his expedition into the Aztec empire. Within the next 150 years, the population expanded into the millions due to continued importation combined with breeding. This included groups of wild horses. New breeds of horses replaced the original Spanish horses and spread out all over the continent. Horses were brought to New England by colonists, primarily British, to be used for agricultural purposes.



## Horse Anatomy: Hooves and Eyes

The anatomy of horses include two unique features: their single toed hooves and their large eyes. Each of these features gives the horse special abilities that have made it so useful in agriculture.

The horse hoof begins with the distal phalange. This is similar to the human toe. It is surrounded by cartilage. The exterior of the hoof is made up of keratin. This is the same material that makes up human fingernails, though it is much thicker and stronger in horses. As horses have only one toe, it is as if they are constantly tiptoeing. Just like a fingernail, the hoof continually grows and needs to be trimmed every five-to-eight weeks. For added protection, many horses are fitted with horseshoes. The strong hooves allow for horses to manage most natural terrain and still maintain their speed. Even more importantly, without hooves horses would not be able to stand, as their weight is evenly distributed among the four hooves.



As an animal of prey, a horse's eye is of crucial importance. They have the largest eye of any land mammal.

Their eyes are situated on the side of the head meaning that they have roughly 350 degrees of vision. The eyeball of the horse is flattened, rather than being perfectly spherical. Although usually dark brown, the iris may be a variety of colors, including blue, hazel, amber and green. The sense of sight is connected directly to hearing. The inner ear of a horse can rotate 180 degrees. Typically the direction in which a horse is looking is also the direction in which their hearing is focused. However, due to the lateral placement of the eyes, the horse has two blind spots, directly in front of the face and behind the head. This vision is an asset for hunting as they are able to see obstacles in their way early and find ways around them, including their ability to jump.



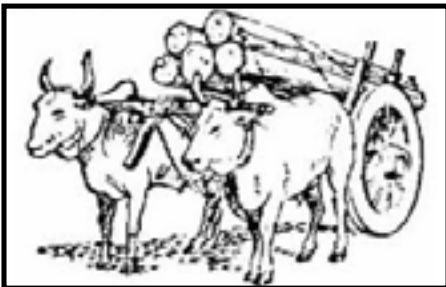
## Farm Math

How the introduction of the horse into New England agriculture in the mid 19<sup>th</sup> century revolutionized farming as a business.

Early Euro-American agriculture in New England was a millennial old tradition based on ox-power. The 17<sup>th</sup> through early 19<sup>th</sup> century farming of Massachusetts and neighboring states was one that had been virtually unchanged since the British Isles' in the Middle Ages. Slight improvements to agricultural technology had been adopted and manipulated over the course of the previous thousand years, but for all practical purposes Yankee farmers prior to the 1840s were locked in an antiquated agricultural style based on oxen as the main source of farm power.

The exponential expansion of both urban areas and immigration to the U.S., in the middle of the 19<sup>th</sup> century called for the increased production of agricultural products to feed the growing nation. Most important were wheat and other cereal grains.

A family farm using ox-power could put between twenty and thirty acres of land under cultivation annually. It wasn't the physical size of the farm that dictated how many acres could be planted, but rather the type of power used. A team of oxen and two men (a teamster to drive the oxen, and plowboy to work the plow) could plow approximately an acre of land per day. This is under ideal conditions, no rain, no snow and no sweltering heat. Given the growing season in New England, and the Puritan mores against working on Sundays, the typical Massachusetts family farm only had little over a month to prepare and plant. This added up to roughly thirty acres of land under cultivation using ox-power.



The revolutionizing agricultural technology of the mid 19<sup>th</sup> century wasn't developed for the slow and lumbering



draft cattle, however. Threshing machines, reapers and sulky-plows were all developed for the faster, leaner and more sure-footed horse. With this new technology, the acreage a family could put under cultivation was greatly increased. Two horses and one man (a single person can drive a team of horses and manage a plow at the same time) could triple the amount of acreage plowed in a day. With two teams a farm could increase their area of cultivation by nearly six times.

But not all was golden on a Yankee farm converted to horse-power. Not only was the new agricultural technology expensive, a team of horses could cost as much as eight times that of a team of oxen. Most farmers had the wood-working skills to create yoke and other simple equipment for oxen, but few had the leather-working skills to craft the intricate tack needed for working a horse team. And, while cattle can live off grass and hay alone, horses also need their diet supplemented with oats. In addition, the time required for caring for the horses was costly.

It was the agricultural revolution of new technology that brought the greatest change to farms, however. Few, if any, farmers had the thousands of dollars on hand to invest in the new equipment. Investment in horse-power meant mortgaging the farm and taking a loan from a bank. Unlike the thirty-year mortgages of today, mortgages of the 19<sup>th</sup> century were typically loaned for eighteen to twenty-four months. At a time when the average farm income was less than \$300 annually, the shift to horse-power was an insurmountable gamble for many farmers.

Not all farmers embraced the transition from ox-culture to horse-culture. Some chose not to take the gamble of the high-risk investment. Others simply

thought the way things had always been done worked well for them, and there was no need to abandon their trusty oxen.

Have your students talk about the pros and cons of oxen, horses and the transition of ox-power to horse-power in the middle of the 19<sup>th</sup> century. Create word-problems for students to break down the amount of acreage farmers could cultivate with horses versus oxen. Allow students time to creatively argue why or why not they would transition from oxen to horses as Massachusetts farmers in the middle of the 19<sup>th</sup> century. Ask them what would happen if they were successful in the transition. What happened to farmers and their families if they failed?

## Horses in Art

Images of horses have appeared in art since humans have been writing and painting on cave walls. The first images we have are from 16,000 years ago. They were found in the Lascaux Caves in southwestern France. Below are other examples of famous works of art containing horses.



Leonardo Davinci,  
Study of a Horse (1490)



El Greco - Saint Martin  
and the Beggar (1600)



Statue of a Horse, 1<sup>st</sup> Century B.C.

## The Morgan Horse

The Morgan horse was one of the first breeds developed in the United States. All Morgans can trace their ancestry back to a single horse named **Figure** who was born in **West Springfield, Massachusetts** in **1789**. Figure was given to a teacher in Vermont named James Morgan as a payment for the debts of his original owner. Though he passed through many hands later, and eventually became a racehorse, he was frequently referred to as James Morgan's horse, which gave the name to the new breed. Figure was used extensively for breeding as his unique coloring and compact body structure gave him a refined look sought out by farmers and racers.

The height of a Morgan horse generally ranges from 14.1-to-15.2 hands, with some individuals under or over. Morgans are usually bay, black or chestnut in color. Used by both sides of the conflict during the Civil War, Morgans were used in the 19<sup>th</sup> century primarily for riding. Their compact size and strong legs allow for great speed, making them ideal for combat, as well as driving carriages. They have a mild temperament, which makes for easy care.

This breed was named the **state horse of Massachusetts in 1970** in recognition of Figure and his importance to the foundation of the breed. Today, Morgan horses are typically used more for pleasure riding or dressage competitions.



This Teacher Resource was researched and written by Christopher Szkutak, MAC's Technical Associate & MA Certified Teacher

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## Horses in Literature

Horses have also played a major role in literature. From Greek mythology to children's books today, horses are frequently used because they are universally relatable. The horse is a commonly known animal throughout the world. Here is a list of a few pieces of literature that you could read with your class where the main theme involves horses.

**Black Beauty: The Autobiography of a Horse** by **Anna Sewell** is the suspenseful and deeply moving account of a horse's experiences at the hands of many owners—some, sensitive riders who treated him gently; others, cruel drivers who thoughtlessly inflicted lasting damage. Written as an autobiography, and as an appeal for the humane treatment of horses, Anna Sewell's beloved classic reveals as much about human conduct and the social ills of the time as it does about the treatment of animals. Scenes from the lives of both the landed gentry and the impoverished working



class offer a subtle but well-rounded perspective of social conditions in England during the late 19<sup>th</sup> century.

**The Black Stallion** by **Walter Farley**. First published in 1941, Walter Farley's best-selling novel for young readers is the triumphant tale of a boy and a wild horse. From Alec Ramsay and the Black's first meeting on an ill-fated ship, to their adventures on a desert island and their eventual rescue, this beloved story will hold the rapt attention of readers new and old.

**Seabiscuit: An American Legend** by **Laura Hillenbrand** was one of the most electrifying and popular attractions in sports history and the single biggest newsmaker in the world in 1938, receiving more coverage than FDR, Hitler, or Mussolini. But his success was a surprise to the racing establishment, which had written off the crooked-legged racehorse with the sad tail. Three men changed Seabiscuit's fortunes.

## The Pony Express

The Pony Express mail system was developed by **William Russell**, **Alexander Majors** and **William Waddell**. They were promised a million dollar grant from the U.S. government to start a mail system that would help the government communicate faster. The mail traveled both day and night, thus reaching the East Coast from California in just eight days as compared to the months it had taken before. The Express was set up as a horse relay, where each rider and horse galloped at high rates of speed (as fast as 10 mph.) for distances of ten-to-fifteen miles. At each stop the rider received a fresh horse and continued on. There were about 165 relay stations and each rider stopped at six-to-eight stations before they turned the mail over to a new rider. The men and horses worked as a team to ensure that the mail was delivered quickly and safely. The fastest delivery was said to contain President Lincoln's inaugural speech in 7 days and 17 hours.

(From *Illinois Ag in the Classroom*)

## Lesson Ideas

Ask students to research early cave paintings of horses. How are they depicted? Why is that? Encourage students to recreate these works of art.



Have students research what horses eat. Then encourage them to create a menu for a restaurant that serves food to horses. Include meals and treats that are part of a healthy diet. How is a horse's diet different than a human diet or that of other animals?

Horses and zebras are in the same family but evolved differently because of their surroundings. Ask students to research other animal families and make a presentation about how these animal relatives have adapted differently.

Horses have been employed for many different purposes over the centuries. Have students research different jobs horses have used for and write a job description for with these duties.

## Annual Winter Conference

MAC is sponsoring our 14<sup>th</sup> Annual Winter Conference for Educators at **Pathfinder Regional Voc-Tech HS** in **Palmer** on **Saturday, March 7<sup>th</sup>** from **8:30 a.m. to 3:30 p.m.** The conference provides teachers with activity ideas, resources and curriculum connections to link the farm and the classroom.

Four sessions will be held during the day, with a choice of **six-seven concurrent workshops per session.** Each will be taught by a teacher, or teacher working with a farmer, and will offer specific background and activities for elementary, middle or high school. The **\$50 fee** includes all workshops; a breakfast snack and lunch from nearby Randall's Farm, materials, and ten PDPs with a related classroom activity.

**Scholarships** for new and urban teachers and farm educators are available thanks to 2015 grant from **Farm Credit East Ag Enhancement.** Visit MAC's website for information on workshops, registration and scholarships.



## Looking for 1<sup>st</sup> & 2<sup>nd</sup> Grade Teachers to Review Lessons!

Massachusetts Agriculture in the Classroom is in the process of developing new standards-based agricultural lessons for Massachusetts teachers, and we have a number of garden-based and dairy lessons already on-line.

We need your help! We are looking for a few **Grade 1 & Grade 2 teachers** to review the lessons targeted to these early grades. We will host a review day on **April 22<sup>nd</sup>** at the Massachusetts Farm Bureau Federation in Marlborough. Lunch will be provided. 3<sup>rd</sup> through 6<sup>th</sup> Grade Lessons will be reviewed during the July 2015. To register, send an e-mail to MAC.

## Summer Graduate Course

Check out our 3-credit Summer Graduate Course co-presented with **Fitchburg State University.** The course meets **Thursday, July 9 & Thursday August 6** in North Grafton from 9 a.m. to 3 p.m. Each participant will attend both sessions and participate in six additional workshops on the farm. The fee for the three graduate credits, eight workshop days, materials and meals is \$500.

## Exceptional Teacher Award

Do you know a teacher who does an exceptional job of bringing agriculture to life for their students? Consider nominating him or her for the **MAC Teacher of the Year Award for 2015.** Send us a description of his/her agricultural classroom and the reasons for your recommendation for the award. Applications are due **March 15, 2015** and will be announced in the autumn 2015 edition of our newsletter.



## National Conference!

Mark Your Calendar! The **2015 National Agriculture in the Classroom Conference** will be held **June 16-20** at **Galt House Hotel** in **Louisville, KY.** The theme is: **"Unbridled Possibilities."** The conference offers hands-on workshops and mini-workshops; make-and-take sessions and tours, as well as the opportunity to meet and share ideas with other educators. For more information visit [www.agclassroom.org](http://www.agclassroom.org).

## REGISTRATION ... DONATION... MATERIAL ORDER FORM

Please fill out this form and return it to: **MAC, Inc. P. O. Box 345 Seekonk, MA 02771**

Name \_\_\_\_\_

School or Organization \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone Number (day) \_\_\_\_\_ (evening) \_\_\_\_\_ e-mail \_\_\_\_\_



I am registering for the Winter Conference on March 7 in Palmer  \$50 enclosed  please send directions

I am registering for the April 22 in Lesson Review in Marlborough  please send directions

Please send information on:

- The 2015 Summer Graduate Course;
- MAC 2014 Annual Report;
- Mini-Grant Guidelines

I would like to order:  "Who Grew My Soup" \$ 15 plus \$3 for Shipping for a total of \$18

- "Eight Lessons About Ag. & the Environment" \$ 12;
- "Farm Field Trip Manual" \$12;
- "Schoolyard Gardens & Their Community Partnerships Manual" \$10

I'd like to make a tax-deductible donation in the amount of:  \$100;  \$50;  \$25 Other donation \_\_\_\_\_

## Calendar of Events

- **Feb. 19 - MHS School Gardening Conference**, at Elm Bank, Wellesley, visit [www.masshort.org](http://www.masshort.org).
- **Feb. 25 & 26 - Ecological Landscaping Conference**, in Springfield, visit [www.ecolandscaping.org](http://www.ecolandscaping.org).
- **Feb. 25 & 26 - Harvest NE Agric. Marketing Conf.**, in Sturbridge, visit [www.harvestnewengland.org](http://www.harvestnewengland.org).
- **March 7, 8, 14 & 15 Pancakes at the Farm 9-1** at Heifer Farm in Rutland, visit [www.heifer.org](http://www.heifer.org).
- **March 11 - MEES Conference** at Holy Cross, Worcester. Theme: Our Commonwealth Envir. Education Is for Everyone at [www.massmees.org](http://www.massmees.org).
- **March 21 - MA Land Conservation Conference 8-4** in Worcester, visit <http://massland.org>.
- **March 28 - 3 - Urban Farming Conf.**, Worcester at <http://tinyurl.com/mh822v4>.
- **March 31 - Mass. Agriculture Day** at the State House. For info. e-mail to [agpromoboard@mfbf.net](mailto:agpromoboard@mfbf.net).
- **May 14 - Mass. Envirothon**, envir. educ. competition for HS at Quabbin Reservoir, at [www.maenvirothon.org](http://www.maenvirothon.org).

## Resources

- **2015 Secretary's Award** for Excellence in Energy & Envir. Education at <http://commpres.env.state.ma.us/exedu/> apply by 3/27.
- **MA. Agricultural License Plate** supports Farmers' Markets & new farmers at [www.mafoodplate.org](http://www.mafoodplate.org).
- **Sugar From Trees: Teacher Guide** from Minnesota at <http://tinyurl.com/kxc6h1>.
- **School Garden Lesson Plans** connected to standards at <http://growing-minds.org/school-gardens/>.
- **School Gardening Resources & Lessons** from National Gardening Assn. at [www.kidsgardening.org/school-gardening](http://www.kidsgardening.org/school-gardening).
- **Bird Feeding 101** from National Wildlife Federation at <http://tinyurl.com/m7u8jgg>.
- **Northern Woodlands** browse archived envir. education articles or register for free teacher magazine at [http://northernwoodlands.org/programs/nw\\_goes\\_to\\_school](http://northernwoodlands.org/programs/nw_goes_to_school).
- **K-12 Soils Science Teacher Resource** at [www.soils4teachers.org/lessons-and-activities/teachers-guide/](http://www.soils4teachers.org/lessons-and-activities/teachers-guide/).

• **2015 Massachusetts Agriculture Calendar Photo Contest.** Now is the time to start taking pictures for the 2015 Massachusetts Agriculture Calendar Photo Contest. Photos must be at least 4" by 6" and no larger than 8" by 10" and must have been taken in Massachusetts in the past three years. Send photos of local rural scenes, farm animals, and more by June 1 to Photo Contest, Mass. DAR, 251 Causeway Street, Suite 500, Boston, MA 02114. For more information, e-mail to [Richard.LeBlanc@state.ma.us](mailto:Richard.LeBlanc@state.ma.us). The twelve winners will be featured in the 2016 MA Agriculture Calendar and posted on MAC's website. For details visit [www.mass.gov/agr/](http://www.mass.gov/agr/).

To receive more information, add a name to our mailing list or give us your comments:

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