Massachusetts Curriculum Framework Standards - Grades 3-5 Life Science

- 1. Classify plants and animals according to their shared physical characteristics. (ex. compare and contrast goats and sheep)
- Identify structures in plants that are responsible for food production, support, water transport, water conservation, reproduction, growth, and protection. (ex. maple trees, maple syrup production, Christmas tree exhibit, New England Center – preserves, and Farm-A-Rama – vegetable displays)
- 3. Recognize that plants and animals go through predictable life cycles that include birth, growth development, and reproduction. (ex. baby chicks hatching)
- 4. Give examples of how inherited characteristics may change over time, as adaptations to changes in the environment occur. (ex. study the shape of feet, placement of eyes, length, teeth, and their color)

Science/Technology: Materials and Tools

- 1. Identify and describe characteristics of natural and man-made materials. (ex. sheep's wool vs. plastics)
- 2. Identify and explain possible uses for natural and man-made materials. (ex. Mallary Complex and the New England Center)
- 3. Identify and describe the safe and proper use of materials and tools to construct simple structures. (ex. Storrowton Village Black Smith shop)
- 4. Identify and explain the differences between simple and complex machines. (ex. Antique Tractor exhibit)

Social Studies – Grade 3

- 1. Explain the meaning of time periods or dates in historical narratives and use them correctly in speaking and writing. (ex. decade, century, etc., Storrowton Village, Circus Museum, Hallamore exhibit)
- 2. Observe and describe local or regional historic artifacts and sites and generate questions about their function, construction, and significance. (ex. Storrowton Village, State Buildings, and the Circus Museum)
- 3. Define specialization in jobs and businesses and give examples of specialized businesses in the community.
- Explain how objects/artifacts of everyday life in the past tell how ordinary people lived and how everyday life has changed (ex. Storrowton Village Buildings, Farm-A-Rama carriage exhibit, Hallamore exhibit, and soap making)
- 5. Give examples of goods and services provided by local businesses and industries. (Better Living Center, barnyard (outside), Massachusetts Building, Christmas tree exhibit, and the Cheese Shoppe)

<u>Social Studies – Grade 4</u>

- Interpret a map using information from the title, compass rose, scale, and legend. (ex. use The Big E map
 – create grid and label the compass rose, and use for scavenger hunt or as a means of tracking your route
 through The Big E)
- 2. Using a North American map locate regions of the U.S. (ex. New England states, visit tourism areas in each State Building for state maps or visit the Department of Conservation and Recreation exhibit in the New

England Center)

3. Describe climate, major physical features, and major natural resources in each region. (ex. State Buildings, the New England Grange Building, the New England Center, and the Christmas tree exhibit)

<u>Social Studies – Grade 5</u>

- 1. Identify different ways of dating historical narratives. (ex. Colonial period, the church, Meetinghouse, and School House in Storrowton Village)
- Identify the first 13 colonies on a map of North America. Describe how regional differences in climate, types of farming, populations, and sources of labor shaped their economics and societies throughout the 18th century. (ex. Farm-A-Rama, 4-H exhibits, the State Buildings, and the Mallary Complex)

ELA Standards – Grades 3, 4, & 5

- 1. Identify formal and informal language use in advertisements. (ex. read, heard, or seen. Use the Big E brochures, newspaper ads, articles, circus posters, Facebook, Twitter, The Big E website)
- 2. Identify and use knowledge of common graphic features, charts, maps, diagrams, and illustrations to create a new Big E brochure. (ex. tourism exhibits in the state buildings)
- 3. Write an account based on personal experiences that have a clear focus and sufficient supporting detail. (ex. Write an essay about your day at The Big E)
- 4. Use appropriate language for different audiences.
- 5. Organize ideas for an account of personal experiences in a way that makes sense.

ELA Standards – Grade 5

- 1. Write a formal letter to correspondents, such as authors, newspapers, businesses, or government officials. (ex. A press release thank you to The Big E)
- 2. Select and use appropriate rhetorical techniques for a variety of purposes such as to convince or entertain the reader.

Math Standards – Grades 3, 4, & 5

- 1. Compare and analyze attributes and other features of various shapes located throughout The Big E's fairgrounds. (ex. the number of sides, faces of three dimensional geometric shapes)
- 2. Used ordered pairs of numbers/letters, graph, locate, and identify points and describe paths in one or all four quadrants. (ex. create a graph using The Big E map)

Physical Education

1. Using pedometers students will calculate how many steps they took during their trip

Topics for discussion/research

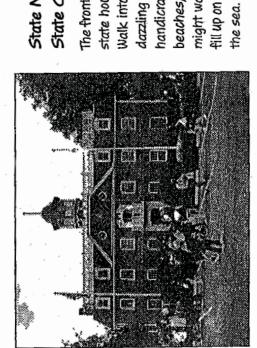
- 1. New England Center, Grange building, Mallary Complex, Farm-A-Rama
- 2. Fabric, fine arts, photography, recycling
- 3. Christmas tree growers
- 4. Butter sculpture, dairy products
- 5. Sheep shearing
- 6. The Big E Super Circus
- 7. Soap making, bees and honey

Resources – Books and Websites

- 1. BiggiE's Avenue Adventures
- 2. BiggiE's BrainGames
- 3. Alpaca Owners and Breeders Association
- 4. Llama Association of North America
- 5. Discovering New England
- 6. USDA
- 7. Dairy Farmers of America

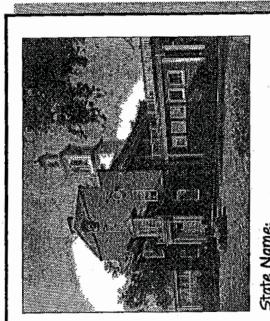
Where else in the world can you travel through all six New England states in less than one hour? Only at The Big E!! That's because each state

owns the land and the state building on it. Imagine... when you stand in these impressive replicas of the original state buildings, you are actually standing in that state! See if you can fill in these adventure... adventure...



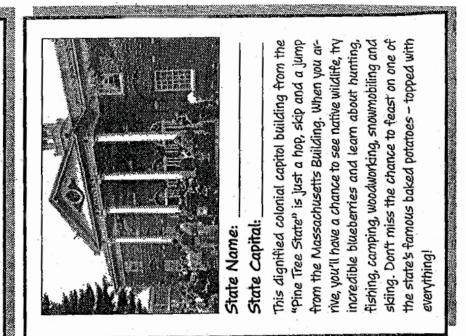
State Name: ______ State Capital: _____

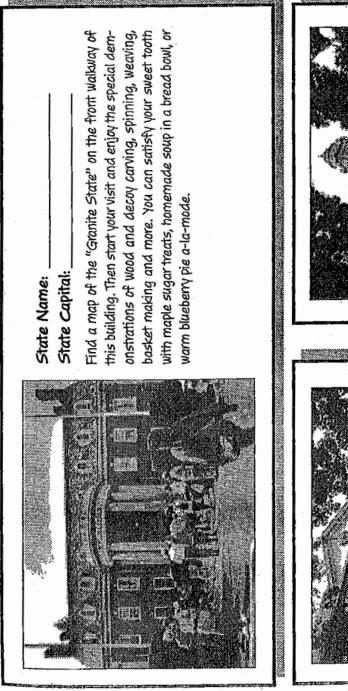
The front of this "Ocean State" building is a copy of the old state house, which became a tourist attraction in Newport. Walk into this building and feast your eyes on exhibits of dazzling gold and silver jewelv, works of art and original handicrafts. You'll also find out about the state's cool beaches, magnificent mansions and other attractions. You might want to unpack your bag and stay right here – if so, fill up on the outstanding "Jonny cakes" and other "fruits" of fill up on the outstanding "Jonny cakes" and other "fruits" of

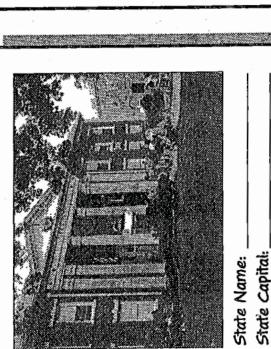


blanks before you begin your

This "Bay State" building has the honor of being the first to be built on the Avenue of States and dedicated by then Gov. Calvin Coolidge. Be prepared to say "Wow!" when you see the impressive display of forest and fishing products, cranberries, honey, fruits and handicrafts!





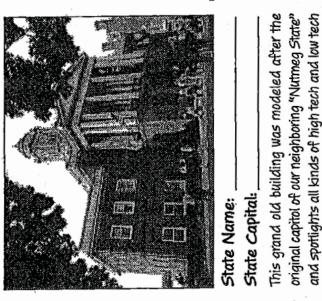


From ski vacations to maple sugar, this "Green Mourtain State" building has something for everyone. Check out the sharp clothes for each season, breathe in the fabulous aromas of candles and coffee, or tempt your taste buds with hot, homemade apple pie, cheddar cheese or some Cherry Garcia ice cream.

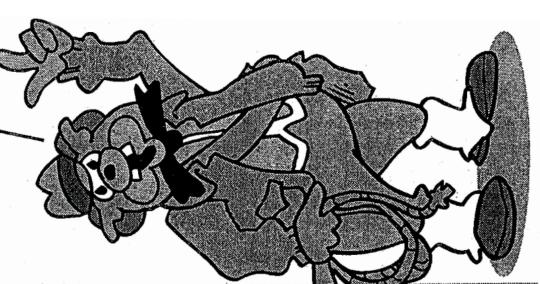
made in this state? Check out the neat places to

iisit and outstanding food such as apple pie.

products Did you know that astronaut suits are



Great Job!!! Now let's get rollin'... we've got a lot of fun things to do!!!





When Eastern States Exposition founder Joshua Brooks began to create the Avenue of States in 1918, he employed hundreds of tradespeople who used many different tools and materials to construct the beautiful buildings we visit today.

Using the number of letters in each word as clues to where it belongs, see how many of these tools you can fit into the boxes of the building puzzle.

Tools:

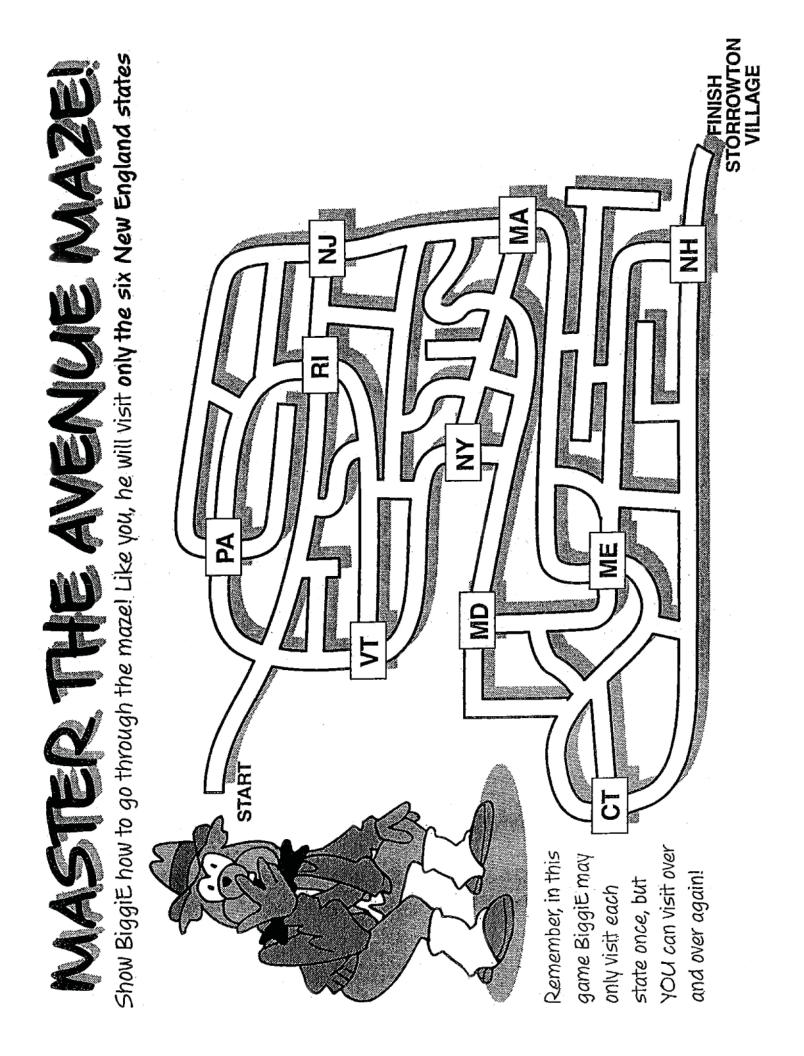
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4 Letter	bits	nule	saws	vise	s poon	5	6 Letter	clamps	hammer	ladder N	pliers	square	wrench
3 Letter	axe	awl	tap				5 Letter	auger	brick	chalk	drill	level	

*Example

<u>ע</u>

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20



MASSACHUSETTS *Frinnlo Luder each New England state, list the items beginning with the letter that you find A APPLE* MAINE | ≾ z ∢ z ш ∢ Ì ш S S S C S in its building. You don't have to fill in all the blanks. **NEW HAMPSHIRE** VERMONT z × × Ř щ ≽ н ∢ <u></u> S Τ 0 ш R z > ш F CONNECTICUT ا ں 0 z J z ш J \neg RHODE ISLAND o < z D αI Δ _ ш S

SCRAMBLE	BiggiE needs your help to unscramble all the names of the state buildings. See if you can help him fix the words for each state!	1. TENVORM	2. ENW SMIHRAHEP	3. NCITTCOECNU	4. ENIMA	5. DREHO NSALID	6. SSAMCUTEAHSTS	
Find the answer to each question, then fill in the spaces below with the numbered letter from each answer to crack the BiggiE code word for the Avenue of States	 What grows on a thorny bush and is a small seedy fruit? 	$\overline{}$ $\overline{}$ $\overline{}$ $\overline{}$ $\overline{}$ $\overline{}$ 3. What kind of herb topping is put on Maine baked potatoes?	4. What kind of berry does New Hampshire use in their pies?	5. What color describes the Vermont mountains?	6. What is the nickname of the mountains in New Hampshire?	 What is the nickname of Connecticut? <l< th=""><th>9. What do Ben and Jerry make in Vermont?</th><th>Code Word:</th></l<>	9. What do Ben and Jerry make in Vermont?	Code Word:

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There are six big brick buildings on the Avenue of States. Inside each you will find all kinds of products that the people of that state make. Did you know that when you stand in one of the state buildings or on the land that surrounds it you are actually standing in that state? It's true because each state owns its building and the land it sits on. So you can visit all the New England states without ever leaving West Springfield. See how quickly you can walk through New England, but you don't walk too fast or you'll miss all the wonderful things that make each state proud.

Count the states- Rhode Island, Massachusetts, Maine, Vermont, Connecticut, and New Hampshire.

Now you're ready for Game #I

BiggiE's BrainGame Number 1

Draw a line from each state listed below to the products that make it special. Connecticut Clam Cakes

Maine

Massachusetts

New Hampshire

Rhode Island

Vermont

Dairy Products

Carousels

Wild Blueberries

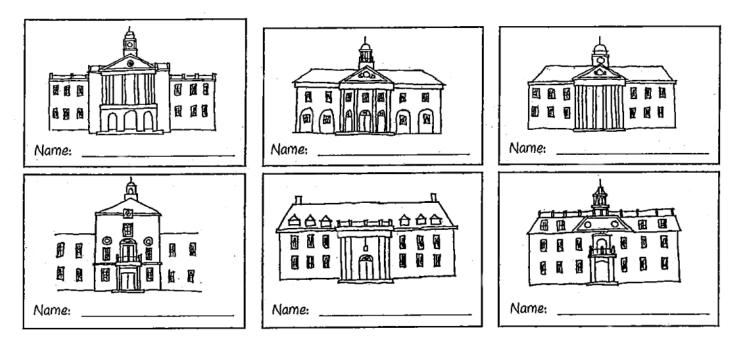
Raspberries

Chowder

Maple Syrup



Each of the brick buildings on the Avenue of States looks like the very first capitol of the New England state it represents. Take a look at the drawings below and see if you can identify each state building.



BiggiE's BrainGame Number 2

- A. Fill in the empty row on each of the state buildings in the picture above with the correct name of the state it represents.
- B. Name the capital city of each of the New England states. The answer is in each building. Connecticut

Connectico

Maine_____

Massachusetts

New Hampshire _____

Rhode Island _____

Vermont _____

BiggiE's BrainGame on

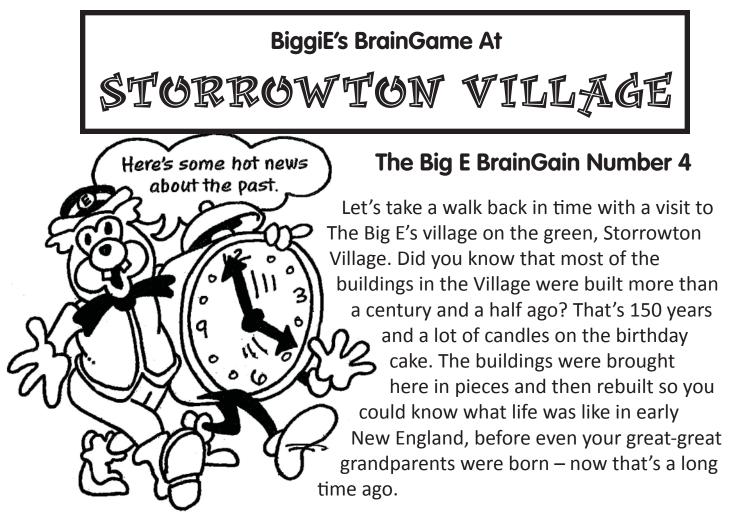
THE BIG E

Here are some words you can build on architect. One of the many tools used by an architect is mathematics. The part of mathematics that has to do with lines, points, and shapes is called geometry. Squares, triangles, and cylinders are just a few of the shapes that architects use as they work. If you look carefully at the beautiful brick buildings of The Big E, you will see several different geometric shapes. Remember where you see the shapes and get started on Game #3.

BiggiE's BrainGame Number 3

List where you found each of the following geometric shapes. Each shape can be seen in more than one place. Look sharp, the shapes are all around you.

<u>SHAPES</u>	BUILDING/LOCATION
Triangle	
Circle	
Square	
Rectangle	
Cylinder	
Oval	
Octagon	
Hexagon	
Rhombus	



A tour of Storrowton's buildings will help you play game #4

BiggiE's BrainGame Number 4

Look around the village. How many chimneys do you see?

Why did people in the 19th century have so many chimneys?

What did they burn in their chimneys for cooking and warmth? _____

Can you see a building in the Village that doesn't have a chimney? Why do you think there is no chimney?

- A. How did people stay warm in this building? (Clue: Look next to the pulpit a high place where the preacher stands.)
- B. Who owned the pews (seats) in this building in the 19th century? (Remember, the costumed guide knows the answer.)



The Village's large yellow house is the Potter Mansion. It was built in Brookfield, Massachusetts, in the late 1700s by Captain John Potter, who made what we today call "Grandfather Clocks." He even built his own house where he raised 15 children. Be a detective and see if you can find out what other things Captain Potter did (ask the costumed guides).

The Gilbert Farmstead is the brown house on the side of the Village Green. It belonged to the Gilbert family and was built by two brothers, Levi and Pelitiah, in the late 1790s. The Gilberts were farm families who raised crops like corn and rye that grew in the rocky soil of Central Massachusetts.

The brick schoolhouse is usually called a one-room schoolhouse. But is it? Look carefully and you might discover other rooms.

BiggiE's BrainGame Number 5

Choose any room in each of the buildings listed below and, after visiting the house, list what someone your age might have done in these rooms. (The people in the old-fashioned clothing can help. Just ask.)

POTTER MANSION

Room _	
--------	--

MEETING HOUSE

Room

Activity

GILBERT FARM HOUSE

Asking questions can be an adventure. You never know

what you'll find. So

don't be shy. You may need a

little help with

this one.

Room _____

Activity _____

Room _____

Activity _____



Find Game #6 on the Village sidewalks

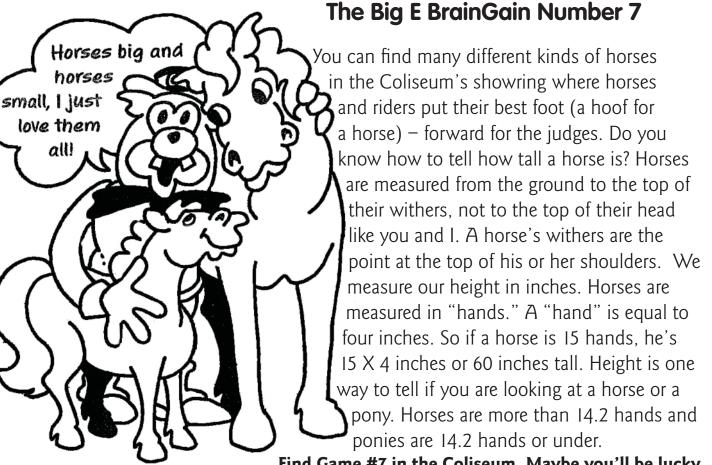
BiggiE's BrainGame Number 6

You'll need your walking shoes for this one.

Take a normal step. How many bricks did you cover in that step?

Now, take the same size step as you walk from the front door of the Gilbert House (the brown house) to the front door of the Potter Mansion (the yellow house). Count your steps as you walk. How many bricks have you walked over?





Find Game #7 in the Coliseum. Maybe you'll be lucky and even see a horse show.

BiggiE's BrainGame Number 7

- A. Find the picture of the horse in the Coliseum (Look for the big, yellow "7"). How many "hands" is this horse?
- B. Measure yourself in inches and "hands". How many hands (tall) are you? Use the top to the bottom of your hand and have your friends and classmates help.



The horse show isn't the only event that takes places in the Coliseum. The oxen and the horse pulling competitions and the sheep dog trials take place in the Coliseum too.

Oxen are a team of steers older than 4 that work together to pull a heavy load of stones (large cement blocks) on a stoneboat (a sled made out of wood and steel) continuously



for six feet. Draft horses are also used for pulling. In the

horse pulling competition, a team of draft horses works together to pull the heavy stoneboat continuously for 12 feet. There are many different pulling classes for the oxen and draft horses, which are based on the weight of the oxen or horses.

The open sheep dog trials also take place in the Coliseum. The trials are a timed event in which the sheep dog has to herd sheep through a course without biting the sheep or sending the sheep the wrong way through the course. The sheep dog works with their handler to herd the sheep as quickly and safely as possible.

BiggiE's BrainGame Number 8

What's the difference between a draft horse and a regular horse?

What do oxen wear around their necks when pulling?



Farm-A-Rama is the place to be to see all kinds of flowers, plants, fruits, and vegetables. Horticulture is a big word that means the art or science of growing these items. Many horticultural products come from New England - apples, cranberries, garden and landscape plants and even Christmas trees to name just a few. Can you think of any others?



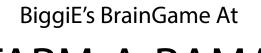
Stop in Farm-A-Rama and play game #9.

BiggiE's BrainGame Number 9

The giant pumpkin is one of the largest vegetables on display in Farm-A-Rama. See if you can find it.

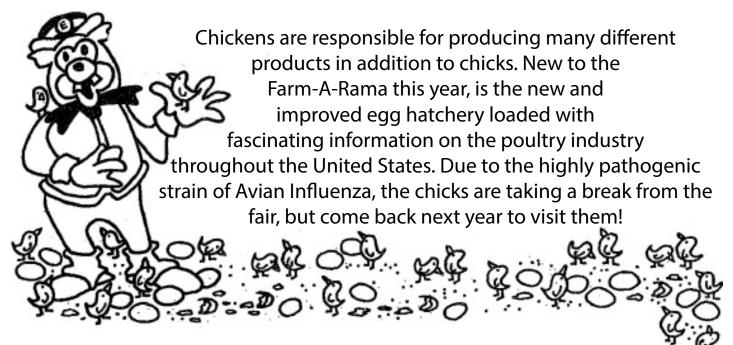
- A. How much does the giant pumpkin weigh?
- B. How much do you weigh?
- C. How many young people of your size would it take to equal the weight of the giant pumpkin?

If you had a giant pumpkin, how would you carve it to make your own jack-o-lantern? Draw a picture.



FARM-A-RAMA

The Big E BrainGain Number 10



Take a Minute and Analyze the New Exhibit!

- Avian Influenza is a disease carried by migratory birds that infects chickens and turkeys, without causing the wild birds to be affected.
 All eggs are originally white, but due to the different colored pigments of the chickens we get colored eggs.
- Chicken is the most common meat source consumed in the United States.
- Over 45 million turkeys are eaten for Thanksgiving each year.
- Poultry products are safe to consume!

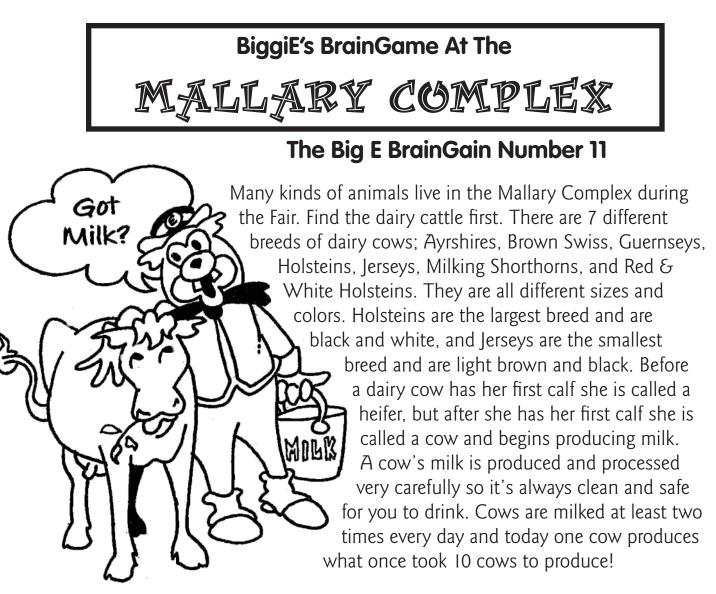
BiggiE's BrainGame Number 10

If four pounds of feed is required for a chicken to lay one dozen eggs, how many pounds of feed is needed to produce twelve dozen eggs?

pounds of feed

In lowa, there are 60 million laying hens producing 15 billion eggs per year, how many eggs are produced in four years?

eggs



While you are in the Mallary Complex, go to The Big E Milking Parlor to play game #11. You may even see a cow being milked.

BiggiE's BrainGame Number 11

Imagine you have just bought a Holstein cow. The dairy farmer told you that she produces the average amount of milk for her breed. Use the signs above the milking parlor and write down her yearly milk production.

_____ pounds of milk per year from a Holstein cow

A gallon of milk weighs 8.6 pounds. How many pounds and gallons of milk will your cow produce in:

One year____(pounds) ____(gallons)

One day _____(pounds) _____(gallons)



Llamas and alpacas also call the Mallary Complex home during the last week of the Fair. Llamas and alpacas are members of the camelid family and like goats, sheep, and cows, llamas and alpacas are ruminants. A ruminant is an animal with multiple stomachs that can regurgitate their food in the form of cud to re-chew it. When a female llama or alpaca gives birth, their babies are called crias.

Llamas are much bigger than alpacas and were originally bred to be meat animals and to carry heavy loads through the mountains of Peru. Today, llamas are used for their fleece or fiber, and they are used as guard animals to protect flocks of sheep. Alpacas on the other hand are much smaller than llamas and unlike llamas, alpacas were originally bred for their fiber and are still bred for that today. Alpaca fiber is much softer and finer than llama fiber, but it's still just as warm.

Go to the Fiber Nook to help you play Game #12.

BiggiE's BrainGame Number 12

In the Fiber Nook, feel the fiber from a llama and the fiber from an alpaca. Can you tell the difference?

Which is bigger, a llama or an alpaca? _____



Production livestock provide us with food,

clothing, and many other things we use every day. Dairy cows, beef cattle, sheep, swine (pigs), dairy goats, llamas, and alpacas are examples of production livestock.

Many of these animals are ruminants. They have more than one stomach. This is why they can eat grasses and other plants (forages) that we can't eat. Our single compartment stomachs can't change these forages into the food we need to stay healthy like ruminants. They swallow their food without really chewing it, then cough up the food (now called 'cud"), chew and re-swallow it.

If you would like to know more about these remarkable animals, check out The Big E's ALL ABOUT...

brochures. There's one for each of the animals named above. Look for them right here in the Mallary Complex.

BiggiE's BrainGame Number 13

Fill in the blanks below with one or more animals that provide the products listed.

Purpose/Products:

Fiber	Milk	Meat

cows coughing up cud.

Try saying that

fast.

three times



Draw a line from the mother to the correct name of her baby (one will be used more than once)

Mare	Piglet	
Mare	Kid	Alpaca
Doe	Chick	Праса
DUE	Lamb	Ewe
Llama	Calf	Lwe
LIdilla	Cria	Cow
Sow	Foal	Cow
JU W		

Did you know?

- A newborn calf weighs 80 100 pounds
- A goat kid weighs 3 9 pounds
- A piglet weighs 3 pounds
- A lamb weighs 8 12 pounds
- A llama cria weighs 20 30 pounds
- A foal weighs 35 80 pounds (heavy breeds 80 -175 pounds)
- An alpaca cria weighs 15 19 pounds

BiggiE's BrainGame At The Mallary Complex

FIBER NOOK

The Big E BrainGain Number 15

Did you know that many people in early America had to make their own clothes? No shopping malls for them. Many farmers raised sheep for wool.

Each Spring the farmers and their families would shear (cut off) the wool fleece (coat). The wool was washed and picked over by hand. The next step was "carding," combing the fibers so they would run in the

same direction. The wool was now ready to be spun into yarn.

Even though we can buy clothes already made, today many people still raise animals such as sheep, llamas, and alpacas for their fiber. Stop by the Fiber Nook and watch the person sitting at the spinning wheel. When the spinner turns the wheel by stepping on a pedal the spindle also turns, twisting the fiber into yarn. The finished yarn comes out through a hole in the side of the spindle, ready to be dyed and woven into cloth.



For more fun facts on sheep, llamas, and alpacas, pick up The Big E's ALL ABOUT SHEEP, ALL ABOUT LLAMAS, and ALL ABOUT ALPACAS brochures.

BiggiE's BrainGame Number 15

Do you remember how to make yarn from fleece? Test yourself by numbering in order the steps below. The answers are above, but try to finish the game without looking.

- _____ A person sits at the spinning wheel and puts fiber on the spindle.
- _____ The wheel turns the spindle.
- _____ The yarns are woven into cloth.
- _____ In the spring the fleece is sheared.
- _____ The fiber is picked over by hand.
- _____ The yarn comes through the spindle.
- _____ The spinner turns the wheel by stepping on a pedal.
- _____ The fiber is washed.
- _____ The yarn can then be dyed.



THE BIG E

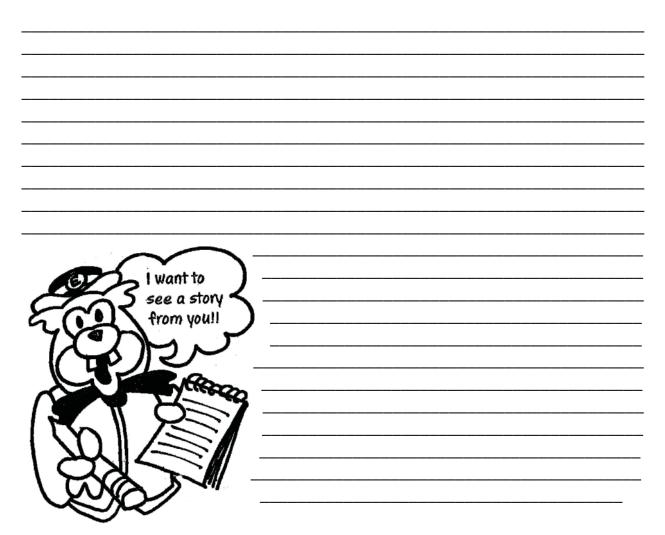
TELL US YOUR BIG E STORY!

BiggiE's BrainGame Number 16

Write a short story about your day at The Big E using at least five of the following words. You can choose any five words you want. Be descriptive!

band organ – Ferris wheel – circus tent – triangle – spinning wheel – horse show – fireplace – eggs – milk – pumpkin – baked potato – village – carousel – giant slide – ruminant – eat – ride – walk – look – learn – listen – measure – touch – smile

Title : MY DAY AT THE BIG E





THE BIG E WORD GAME

BiggiE's BrainGame Number 17

Have some fun and see if you can fill in all the spaces on The Big E crossword puzzle. You may want to review the BrainGains before you start.

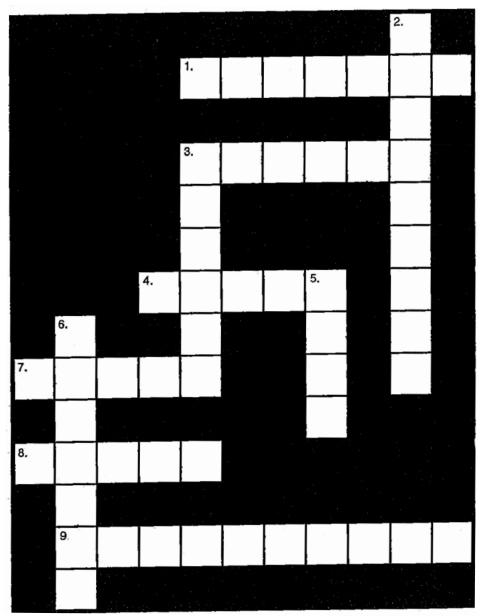
First across, then down. Fill in the spaces as you go around!!!

ACROSS

- 1. A giant one of these orange vegetables might win a ribbon.
- 3. A figure with four equal sides and four 90-degree angles
- 4. Famous singers perform here.
- 7. The height of a horse is measured using these units.
- 8. Yarn can be woven into this.
- 9. One turn of the Ferris wheel.

DOWN

- 2. Logs were burned in this to warm Early American homes.
- 3. Each of these in New England has an exhibit building at The Big E.
- 5. Chicks hatch from these.
- 6. The building where the cows and sheep are exhibited.





HUNT FOR THE MISFIT

BiggiE's BrainGame Number 18

Look at each group of words. With you bigger knowledge of The Big E, find the one word in each group that doesn't fit. Cross out the "misfit" and write a word that you think fits better.

Better Living Center – Storrowton Village – Connecticut River – The Coliseum
Pizza – Ice Cream – Hamburger – Sawdust
Pumpkins – Bricks – Apples – Beans
Fun House – Ferris Wheel – Sheep – Merry-Go-Round
Horses – Blueberries – Cows – Sheep
Spinach – Fun – The Big E – Excitement

How did you find out about The Big E?

Imagine you're the ace reporter for The Big E News. You have to tell the readers what you liked best about The Big E. File your report in the space below.