Lesson Title: The Very Hungry Caterpillar Visits Montana

Grade: K-2

Duration of Lesson: 2 – 50 minute classes

Brief: *Students will understand that many of the foods that we eat come from Montana farms, where those foods fit into the MyPlate Food Guidelines as developed by the USDA, and the role of Montana Indians in Montana farming.*

Materials:

This hands on, minds on lesson involves food. Use your school's guidelines for safe food handling and foods exposure to children who have allergies. If your students have wheat allergies, rice or lentils can be substituted in the packets for wheat.

The Very Hungry Caterpillar Visits Montana – Student Book One copy for each student:
http://agr.mt.gov/agr/Programs/AgClassroom/LessonPlans/K-3/

The Very Hungry Caterpillar by Eric Carle

Resources for the teacher:

Montana commodity learning resources for educators: http://1.usa.gov/12u0jCR

Sheep/Wool information: http://www.sheepusa.org/Online_Resources

Note: If you have difficulty finding wool or any of the other materials please contact lbrenneman@mt.gov *for assistance.*

Resealable sandwich bag with the following items inside - one for each student:

3 – 2 inch black chenille stems (pipe cleaners)
3 - 2 inch yellow chenille stems (pipe cleaners)
1 – 4 inch black chenille stem (pipe cleaner)
1 - 4 inch yellow chenille stem (pipe cleaner)
1 - butterfly die cut or butterfly sticker
1 – 2 inch piece of clean wool (for cocoon and egg)
1 – packet of sugar (Western Sugar is a Montana product)
2 – dried cherries (available in the dried fruit section of most grocery stores)
3 – sunflower seeds (black oil sunflower seeds or unsalted sunflower seeds)
4 – pumpkin seeds (usually in the section with snack nuts)

5 – kernels of wheat (also called wheat berries which can be found in the bulk foods section)
Glue – we suggest Aileen's tacky glue (apply sparingly), but white glue such as Elmers will work.
Mint Leaves – mint leaves can be taken from mint tea bags or many home gardeners have mint. The smell of mint persists into the winter, even in the dried stems!

Key Terms

- Farm
- Food
- Fiber
- Flower
- Icon
- Life Cycle

Education Standards
Common Core Standards: RL.1; RL.2; RL.3; Rl.6; RL.7; RL.9 Science Content Standard 3.1 IEFA: Essential Understanding 1

Understanding(s) /Big Ideas: Students will understand the origination of food and fiber. Students will understand a variety of foods grown in Montana are part of our daily diets. Students will understand Montana Indians add great value to Montana's agriculture. Students will understand the cycle of life for butterflies.	**Essential Question(s):** What foods that we eat grow in Montana? Do Montana Indians grow food for Montana and the world? What is the link between a caterpillar and a butterfly? What is the link between butterflies and food?
Students will know: Which foods grown in Montana are part of our daily diet, food is sometimes taken straight to the store or market, other times it must be processed first. Many fruits and vegetables must be pollinated to produce a crop.	**Students will be able to:** Identify foods grown in Montana. Identify the seven Indian reservations in Montana on the Montana Ag Map. Link larvae to butterflies. Recall the sequenced days of the week. Place foods grown in Montana into the correct MyPlate category.
Performance / Observations	
Performance Task(s): Following directions, fine motor skills, and verbal skills in relating ideas.	**Other Evidence:** Students will know many of the foods grown in Montana are part of the MyPlate Nutrition guidelines.
Learning / Inquiry Activities	

Prep/Introduction:

Read Eric Carle's, The Very Hungry Caterpillar

Before starting the *The Very Hungry Caterpillar Visits Montana*, discuss why the title might include Montana.

Emphasize the fact that the variety of foods the caterpillar eats in *The Very Hungry Caterpillar Visits Montana* are all foods that we grow right here in Montana! Inform students that they will be making their own copy of the book to take home and read with their families.

Farmers and gardeners harvest their crops for food; the crops are either shipped directly to the store, or processed first, like wheat into flour. We buy these foods in our local grocery stores or at farmer's markets. Farmers also grow fibers for clothing, carpets, paper, linens, blankets, etc., flowers for markets, fuel seed oil for energy, fungi, and forests.

There are many ways to harvest foods. Some foods like wheat and potatoes are harvested using machinery; other foods like berries must be harvested by hand.

Remind students that the activities they do when making the books will be taking them on a tour of many of the foods that are grown in Montana.

We can eat more local foods by shopping at Farmer's Markets and checking our grocery stores for locally grown foods. By doing this we also reduce our carbon footprint. Note: According to the Leopold Center the average food has traveled 1500 miles before we place it on our plate. http://www.leopold.iastate.edu/pubs/staff/ppp/produce_chart.html

Montana Farmers Markets: http://agr.mt.gov/agr/Producer/FarmersMarkets/

Learning Activities:

1. Ask students to please write their name on the first page of the book in the right hand corner, next to the cloud. All books should be kept in order and they will have to be careful that they do not lay glued pages on top of each other.
2. Ask students to please take the white soft-looking material out of their bag. Ask them to identify the item. (It is wool, from sheep) This wool has been washed and combed into a commodity called roving. Ask students to twist (wind) the wool up and hold each end tight so that it cannot unwind.  Now, ask students to pull the wool apart while it is twisted tight. They will not be able to accomplish this, you have taught them that twisted fibers are very strong. Fiber is what our clothes, rope, furniture, carpet, and many

other items are made from.

3. Ask students to unwind the fiber and then separate it into 5 lenthwise sections. Ask them to pull one of the sections apart, it will be very easy as the wool is not twisted and therefor has lost its strength. 

4. Ask students to roll one of the 5 parts into a little ball, and then put the rest of the wool back into their ziploc bag.

5. Ask students to take the other items out of their bag that are soft and made of fiber (chenille stems or pipe cleaners).

6. Replace the longest black and the longest yellow chenille stems into the ziploc bag.

7. Twist one yellow short stem and one black short stem together to make a caterpillar, repeat with the other two sets of stems until you have 3 short caterpillars.

8. Ask students to look at the front cover of their book, what foods do they see? Read the front page and lay that page aside.

9. Ask students to look at the second page of the book while you read. What foods do they see on this page? Are huckleberries farmed? (No, but farmers keep trying).

GLUE TIME! Ask students to glue the little ball of wool onto the huckleberry bush where the white circle appears. Ask them to glue one of their caterpillars on the huckleberry bush on the right hand side where the caterpillar icon appears. Books may vary with the placement of the caterpillar. Students will only need a dot, not a lot, of glue. It is recommended to use 4 dots of glue along the caterpillar design for good adhesion.

10. Lay the page that students just glued onto aside with the egg and caterpillar facing up so that the glue can dry.

11. Ask students what day of the week comes after Sunday, which was the day the little caterpillar came out of the egg. Began reading the next page, read only about Monday. Discuss Montana sugar production. Refer to the map to see where in Montana sugar beets grow. Point out that they grow along Yellowstone River by following the sugar beet icons. More activities for sugar beet farming can be found in the teacher resource packet.

GLUE TIME! Ask students to glue the packet of sugar into the book, placing it on top of the beet icon on Monday. They should **not** open the packet, just glue the whole

packet down, with a dot, not a lot, of glue.

12. Ask students what day of the week comes after Monday. Began reading about Tuesday. Discuss Montana sweet cherries. Refer to the map to see where in Montana sweet cherries grow. You can use this opportunity to discuss the Flathead Indian Reservation and the tribes that live there. You can also use the map to find all of the other reservations by finding the horse icons and relating the horses back to the stats on the map about horse ownership in Montana.

 GLUE TIME! Ask students to glue the two dried sweet cherries into the book, placing them on top of the cherry icons on Tuesday. A a dot, not a lot, of glue for each dried cherry.

13. Ask students what day of the week comes after Tuesday. Began reading about Wednesday, discuss sunflowers. Refer to the map to see where in Montana sunflowers are grown by farmers. You can use this opportunity to discuss the fact that sunflowers grow in many areas, including gardens. Discuss what else eats sunflowers besides people.

 GLUE TIME! Ask students to glue the three sunflower seeds into the book, placing them on top of the sunflower icons on Wednesday. A dot, not a lot of glue for each seed.

14. Ask students what day of the week comes after Wednesday. Began reading about Thursday, discuss pumpkins. You can use this opportunity to discuss the fact that pumpkins grow in many areas, including gardens and they are also grown by farmers who let the public come and pick their own pumpkins. Compare the pumpkin and sunflower seeds.

 GLUE TIME! Ask students to glue the four pumpkin seeds into the book, placing them on top of the pumpkin icons on Thursday. Use a dot, not a lot, of glue for each seed.

15. Ask students what day of the week comes after Thursday. Began reading about Friday, discuss wheat. Substitute rice or lentils for students who may have wheat allergies. Refer to the map to see where in Montana wheat is mainly produced. You can use this opportunity to discuss the fact that wheat from Montana is shipped to the countries who are eager to buy Montana wheat; those along the Pacific Rim like Japan, China, Russia, Taiwan, the Philippines, North and South Korea, etc.

 GLUE TIME! Ask students to glue the five wheat kernels or seeds into the book, placing them on top of the wheat icons on Friday. Use a dot, not a lot, of glue for each seed. Ask students to glue another little caterpillar onto the page just next to the wheat, there is a small caterpillar there for placement.

16. Lay the page that students just glued onto aside with the glued objects facing up so that the glue can dry.

17. Began reading the next page, emphasizing all of the food the little caterpillar ate on Saturday. Remind students that all of these foods are grown in Montana.


GLUE TIME! Ask students to glue another little caterpillar (final small caterpillar) onto the page just next to the moon, there is a small caterpillar there for placement. Seeds and other dried items can be added to this page at home for continued study of Montana agriculture.

18. Lay the page that students just glued onto aside with the glued objects facing up so that the glue can dry. Ask them to be careful not to lay it onto any other pages which may have wet glue.

19. Ask students what day of the week comes after Saturday. Ask them to take out the two long chenille stems, one black and one yellow, and to twist them together. Why would the caterpillar be getting bigger? Ask them to take the green leaf out of their book and smell it, what things that they eat or use at home might have this leaf's oil in them. (Toothpaste, gum, cookies, etc.) Read the Sunday page.


GLUE TIME! Ask students to make three small dots of glue, one on each of the dots of the mint leaf picture in the book. Ask them to crush their mint leaves and place a few pieces on each dot of glue. Ask them to make 6 small dots on the caterpillar shape on the page, and then to glue their large caterpillar onto the page.

20. Lay the page that students just glued onto aside with the glued objects facing up so that the glue can dry. Ask them to be careful not to lay it onto any other pages which may have wet glue.

21. Read the next page; ask if they know why the caterpillar is fat, and what he might do next. Review the stages of the life cycle covered so far in the book.

22. Read the next page, students may correct the usage of the word cocoon, suggesting chrysalis, remind them that we are using Eric Carle's book as a guide. Ask students to take the rest of the wool out of the packets, fold it in half, and roll it back and forth in their palms as fast as they can. This will produce a shape resembling a cocoon. Ask students what fruit is pictured on this page? Did they know apples grow on trees and are shipped to the store?


GLUE TIME! Ask students to glue the cocoon onto the page, right on top of the cocoon pictured with two dots of glue.

23. Lay the page that students just glued onto aside with the glued objects facing up so that the glue can dry. Ask them to be careful not to lay it onto any other pages which may have wet glue.

24. Read the final page of the book, ask students to take out their butterfly sticker and place it on the page, anywhere they choose. Discuss the completed lifecycle of the butterfly.

25. Bind the books by punching holes and tying ribbon, or clipping pages together.

Lesson Extensions: Graph the food which was discussed in the book by dividing it into the same groups as MyPlate; protein, dairy, vegetable, fruit, and grains.

Partial listing of foods for examples sourced from:
http://www.fruitsandveggiesmorematters.org/?page_id=1600

Montana Department of Agriculture, Agriculture in the Classroom
http://agr.mt.gov/agr/Programs/AgClassroom/