

# YES! ENERGY ACTION PROJECT REPORT

## New London – Spicer

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## WE ARE THE NEW LONDON – SPICER YES! TEAM

- Our team advisors are Teresa Copley and Kay Slama (photo next slide L to R) Kay and Teresa
- 9 students were members of our YES! Team throughout the year
- Potential members for the 2011-12 team were invited last spring, to assist in harvesting the YES garden, (photo next slide) Students who chose to join (circled L to R): Zach Nordmeyer, Kaitlyn Anfinson, Taylor Bengtson, Brea Westberg, James Magnuson, Espi Austvold, (not pictured): Kaitlyn Bergh, Evan Groff, Dylen Hunter





***Spring of 2011, future YES team member, Taylor Bengtson, pictured in the orange t-shirt, assists in harvesting lettuce.***

***Observing that the May harvest was about one fifth of the June harvest, this year's team set out to test ways in which an earlier peak harvest could be achieved to coincide with school in session.***



## INQUIRY QUESTION: CAN LETTUCE BE HARVESTED EARLIER IF STARTED INDOORS AND TRANSPLANTED VS. DIRECT SOW?



*Kaitlyn, James and Taylor thin the lettuce starts and reseed failed pots. Grow lights shown in the background were set on a timer as a light source at 15hrs/day. February 2012*



MARCH 1, 2012. DYLEN, ESPI, KAITLYN, ZACH, TRANSPLANTING LETTUCE STARTS AND PLANTING SEEDS (DIRECT SOW). BUTTERHEAD LETTUCE, RECOMMENDED FOR USE AS STARTS OR AS DIRECT SOW IS BEING USED FOR COMPARISON.



## INQUIRY QUESTION: WILL LETTUCE STARTS AND/OR SEEDS, GROW BETTER WITH OR WITHOUT THE AGRIBON COVER?

**Agribon comparison was first tested outside the hoop during unusually warm March days**

**One week later, the Agribon comparison was continued inside the covered hoop**



## RESULTS: AFTER 1 WEEK OUT OF THE HOOP PLUS 3 WEEKS IN THE HOOP

- Started Indoors and Transplanted:
  - With Agribon – More hearty looking, taller, fuller
  - Without Agribon – Not as hearty or tall and full
- Direct Sow – Seeds Planted:
  - With Agribon – Higher germination rate, larger plants
  - Without Agribon – Lower germination rate, smaller plants



Note the larger transplants and higher Germination rate inside the Agribon  
In the following slides: March 29, 2012







# NL-S YES

MARCH 2012

## NEWSCASTER ARTICLE (FIRST PAGE)

- The Youth Energy Summit (YES) was held in Mankato in November and a Winter Workshop at St. John's University in February. Both events were attended by the 8<sup>th</sup> grade NL-S YES team, who are working on a variety of projects, including the hoop garden, hydration stations and energy awareness. At the summit and workshop, sponsored by the Southwest Initiative Foundation (SWIF), students participated in activities conducted by local food growers, alternative energy vendors, and educators working for energy conservation.
- The hoop garden, built by last year's team, has proven to be easily taken down in the fall and quickly reassembled in early March. The current YES team experimented with a late season lettuce crop that grew but froze out. In February they started seeds indoors using grow lights to test transplanting versus direct sowing. They also set up an experiment to compare the two raised beds in the hoop, one with Agribon cover and one without. Their objective is to push the peak harvest season to May so the greens could be used in the school salad bar. Last spring the hoop produced a small harvest of greens in May and about a hundred pounds of greens in June, donated to the food shelf.



IN ADDITION TO HARVESTING THE SPRING CROP OF LETTUCE LAST MAY, THE INCOMING YES TEAM PLANTED ACORN AND BUTTERNUT SQUASH WHICH THEY HARVESTED IN SEPTEMBER. THE SQUASH WAS USED WITH NL-S APPLES FOR A SQUASH/APPLE BAKE.



NL-S APPLES ,PICKED BY MRS. MEIER'S SECOND GRADERS: YES  
STUDENTS WILL HELP THEM PLANT A NEW CHESTNUT CRABBABLE IN  
THE ELEMENTARY SCHOOL ORCHARD FOR ARBOR DAY



- Three apple varieties from the orchard were used for baking, a few were eaten fresh
- The favorite second grade eating apple were these small, flavorful, assumed to be Chestnut Crabapples, ripening in late August and early September. A hard and good storing crabapple with a very sweet pleasant nut-like flavor for fresh eating.
- Pictured on the next slide is Mrs. Meier's class. All second grade classes were given apples for a week's worth of healthy snack break.



# PW APPLE ORCHARD

MARCH 2012

## NEWSCASTER ARTICLE

- Mrs. Meier's second grade class harvested apples during the first week of school last September from the PW orchard (several trees planted years ago by PW students). The small, sweet and crunchy Chestnut Crabapples were shared with all second grade classrooms for morning snack break. A few of the larger apples were shared with the YES team and combined with hoop garden squash to test a "Squash-Apple Bake" recipe (yum), many of which can be found on the internet.
- Fresh eating apples are an excellent, healthy snack and an easy-to-grow local food, saving transportation costs and dependency on oil. To celebrate Arbor Day in April and encourage local food production, the YES team will be planting an apple tree in the PW orchard.



## YES STUDENTS WILL CONDUCT ENVIRONMENTAL LESSONS DURING OUTDOOR SCIENCE DAYS IN MAY

- Grade 1: Stations on habitat, food chain and stream flow will acquaint students with wetlands and the importance of a healthy environment – what is known and loved will be protected.  
(photos of past outdoor science days)





# OUTDOOR SCIENCE

## SECOND GRADE ENERGY LESSONS

- Station 1: How does composting kitchen scraps save transportation energy and landfill space? How can worms help food scraps break down faster and make soil more rich?
- Station 2: How does growing your own food save transportation energy? Can your own food be grown with less chemicals than huge commercial farms?
- Station 3: How can wind be used as an energy source? What causes wind and weather?



# COMPOSTING WITH RED WIGGLERS

Worms were added to a damp base in the worm box



Apple cores and vegetable scraps added for decomposition



TIME, DRY LEAVES, A LITTLE WATER, LOTS OF BANANA PEELS,  
APPLE CORES AND VEGETABLE SCRAPS = HEALTHY WORMS AND  
A GREAT WAY TO KEEP FOOD SCRAPS OUT OF LANDFILLS



# PLANTING SWEET PEAS AND BUSH BEANS

Seeds are planted in untreated compostable containers made from recycled paper

Students choose from a variety of sugar pea pod and bush beans to plant in their take home container



# MEASURING WIND SPEED AND DIRECTION: A FORCE CAPABLE OF TURNING A TURBINE TO RUN AN ELECTRIC GENERATOR



# OUTDOOR SCIENCE

## THIRD GRADE SUSTAINABILITY LESSONS

- Station 1: How does an animal population remain sustainable on the land and food available? What happens if an area becomes over populated?
- Station 2: How are animals adapted for survival?
- Station 3: What are the functions of insect parts? When are insects considered pests? How can insect pests be controlled without using chemicals? How are insects helpful? Why is a balanced insect population important?





### NEWSCASTER ARTICLE (LAST PAGE)

- Hydration stations are **reusable water bottle**-filling units attached to refrigerated water fountains, recently cropping up in schools everywhere. The YES team acquired a SWIF grant for two such units to be installed in the cafeteria and the hallway by the high school gym between the boys and girls locker room. YES students hope to reduce the number of single use plastic water bottles that, even though are recycled, become “down cycled” into a lower grade product, still requiring significant energy to reform. Noting that oil is burned in the production and transporting of bottled water, students would like to emphasize that the safety of our local water plus a **high grade filter** used in the bottle filling unit will deliver quality water for fractions of a penny and reduce the waste generated by piles of single use bottles.





# THE END

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