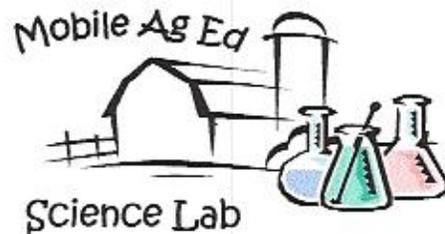


Mobile Ag Ed Science Lab

2020-2021 Curriculum Choices & Descriptions Limited



www.pfb.com/aglab

Thank you for considering the Mobile Ag Ed Science Lab program to provide a unique hands-on science experience for your students.

Our goal is to be a valuable resource to assist school districts in meeting the Pennsylvania Department of Education Science Standards. To accomplish this goal, our curriculum is developed to address as many Environment & Ecology Standards and Science & Technology Standards as possible. For a complete listing of the exact standards touched upon by each individual lesson, please visit our website: www.pfb.com/aglab

To assist you in selecting a lesson from our curriculum that will best benefit your students, we have created a lesson key that provides you with additional information about the lesson:

E environment/resource conservation and care

FS food safety

G “green” (renewable/nonrenewable)

N nutrition

NR natural resources

P process and production

****** indicates food item consumption



Not recommended for classes >26

As agriculture IS our food source, we have many lessons that utilize different food products. We do NOT have any peanut products on our labs, however, some products we use may have been produced in a factory where peanuts were present. IF you have students with food allergies and have any questions regarding lesson materials, please contact our Executive Director at cmespenshade@pfb.com.



In order to adequately accommodate the abilities and learning needs of all students at the schools we visit, we've added a lesson specifically designed for **Self-Contained Special Needs Classes:**

Old MacDonald's Farm **E** **NR**

An engaging and interactive retelling of “Old MacDonald Had a Farm” helps students discover what farms have and provide to us. The components of a farm are reinforced as students make a “fan farm” by identifying and placing stickers of each farm item on a fan.

ELEMENTARY CURRICULUM

(grades 3-5 unless otherwise noted)



NEW

No Soil? Now What? **E G NR P**

With only 1/32 of our earth's surface available upon which to grow food, how will we feed a world population of 9.2 billion by 2050?

Hydroponics, growing without soil, is one possibility. Students will discover the need for alternative growing methods, then create their own hydroponic growing system to test if plants can be grown without soil.

The Colorful Bean (grades 2-5) **E G NR P**

Students are introduced to the scientific method as they experiment to decide if petroleum or soybean based crayons produce the brightest color with the least flakiness and best covering power. Students end the session with a crayon making discussion where each student receives a soy-based crayon.

The Mighty Smooth/Magical Bean **G NR P**

The Mighty Bean - The power of a soybean is revealed to students as they "plant" a soybean in plaster of Paris. Observations amaze students as the soybean shows its strength.

The Magical Bean **E G NR P**

Soybeans are often referred to as "the magical bean" due to their many uses. Students will learn how soybeans grow and discover the various ways they are used in products they use every day. Students end the session with a take home sample of lip balm made from soybean products.

Tree Story **E NR**

Students are introduced to tree dendrology where they date two tree samples and identify patterns of tree growth. Various parts of the tree and their purposes are identified. Students examine the properties of two similar trees and learn how those properties affect the ways in which the trees can be used.

Environmentally Friendly Farmer **E G NR**

This STEM based lesson allows students to discover several of the ways farmers have been, and continue to protect the environment and natural resources upon which they grow our food and fiber. Student teams design their own environmentally friendly farm to put the conservation practices about which they learned into action.

MIDDLE SCHOOL CURRICULUM (grades 6-8)

Corn to Plastic **E** **G** **NR** **P**

Through a simulation of a landfill, students examine the differences between Styrofoam and Eco foam and discover that the types of resources we use to make products matter to our environment and future! By exploring some of the amazing discoveries scientists have made with corn as a renewable resource, students are engaged and excited about scientific discovery. Students will receive a procedure sheet to make plastic from corn using materials found in their homes.

Genetics

Students will learn about dominant and recessive genes and how genetics can determine the type of plant that is grown by creating models of corn DNA using different colored paper clips to signify genes. Applications of food biotechnology will be used.

Bug Out! **E**

A discussion of insects leads to the knowledge of beneficial and harmful insects. Integrated Pest Management is explained and students apply its methods to an imaginary field sample in order to determine the course of action that should be taken by the farmer.

PRIMARY CURRICULUM

In response to requests from 1st and 2nd grade teachers, this curriculum offers a full 50-minute, hands-on science experiment designed for students in grades 1-2.

Thirsty Stems

In order to answer the problem of how water travels to all parts of a plant, students create a model of a plant, then observe the effects of capillary action. The parts of a plant and their purposes, as well as capillary action, are reinforced with a make & take book.

BEE-utiful Relationship **E**

Students are introduced to the importance of pollination and pollinators in the development of the fruits they enjoy. As the parts of a flower are identified, students create a model of a flower.

WALK THROUGH CURRICULUM

These curricular options are available for Kindergarten to 2nd Grade classes. Instead of a science experiment, they offer a 35 minute hands-on activity introducing basic agricultural concepts and scientific information.

Farm Charm **E** **G** **NR**

An engaging conversation leads students to decide what makes up a real farm. Samples of these components of a farm are placed in a mini zip lock baggie and worn around the students' necks as a reminder.

Crawly Critters **E**

Students learn how to identify insects, as well as recognize that not all insects are pests. Students create their own insect and learn how farmers can sometimes use this knowledge to control insects in their fields without harmful chemicals.

Little Red Hen's Pizza **NR** **P**

A popular food, pizza, is traced back to the farm through the telling of a modern version of *The Little Red Hen*. Students interact with the story through the use of props, then create a pizza charm that traces all the parts of a pizza back to the natural resources from the farm needed to produce them.

The Forest & Me **E** **NR**

Through a sorting activity, the students learn the many uses and benefits of trees in their daily lives...from the clean air they breathe to the food they eat to the homes they live in. Students then create a charm bracelet that reminds them of what trees need, what they provide, and the important role people play in managing this valuable resource.