

The Bucket Brigade

Kaitlin Goforth, Katie Gilson, Phil Fravel & Catherine A. DiBenedetto



Introduction

- High school agriscience programs offer career exploration for students.
- Students are introduced to a variety of topics and skills associated with animal science, plant science, environmental and natural resources, agribusiness and mechanical systems.
- Experiential learning through hands-on instruction enhances student learning.
- Due to COVID -19 pandemic, students at Pendleton High School in South Carolina chose a virtual option for the Introductory Agriscience and Technology course in 2020-2021.
- Zoom was the remote instructional platform used for students to meet for class.
- The Bucket Brigade was created to increase student participation/engagement.



- ✓ Student teacher organized materials and sorted into the buckets for distribution.
- ✓ Planned the lesson, facilitated instruction and guided the demonstration virtually.
- ✓ Students maintained video connection with their cameras on during class/laboratory.

Resources Needed

Table 1
List of Materials included in Bucket for Bluebird House Laboratory Activity

Item	Quantity	Cost	Per Bucket
5ft 1 x 6 Lumber	8	\$1.30/ ft	\$6.50
1 1/2 in paddle bit	1	\$7.18 each	.48
1/16 bit	2	\$2.18 each	.29
Nail set	3	\$6.98 each	\$1.40
4d finishing nails	1 pound	\$5.28	.35
Sandpaper (Medium, 100 grit)	1 pack- 25sheets per pack	\$11.98	.16
Tape measure	15	\$5.48 each	\$5.48
Claw hammer	15	Donation	n/a
5-gallon plastic bucket	15	Donation	n/a
		Total	\$14.66

Perkins Funding provided support to purchase the materials for this innovative idea.

How It Works

- Student (N = 12) each had two pre-assigned five-gallon plastic buckets.
- One bucket remained at the school and the other was sent home with two weeks of laboratory instructional materials and supplies that aligned science, technology, engineering and math (STEM) concepts to enhance the curricular content being taught in the unit of instruction.
- Buckets were rotated with materials and supplies for each unit of instruction.
- Numbered and lettered (A and B)
- Parent or guardians of the students were emailed instructions for pickup and return procedures.
- Agricultural mechanics unit of instruction focused on:
 - Basic measurement skills
 - How to construct a bluebird house
- Supplies placed in the bucket included a measuring tape, claw hammer, nail set and a bag of 1.5-inch finishing nails, six precut boards, one third of a sheet of medium grit (100) sandpaper and a procedure and material list.



Implications

- BEFORE the Bucket Brigade students were:**
 - Reluctant to actively participate in discussion
 - Most did not maintain video connection
 - Idle and lacked engagement
- Method of instruction heavily relied on lecture
- AFTER the Bucket Brigade students were:**
 - Fully engaged tangibly in their agriscience course
 - Motivated to actually assemble a bluebird house
- With adequate and creative planning techniques using a minimal budget, we discovered inquiry/project-based, hands-on instruction can be delivered effectively to students who attended class/laboratory in a completely virtual learning environment.

