

2018 Grants: RSFES

Fourth Grade Mealworm Breeding Kit

Concept Statement: I strive to make life science relevant & hands-on for my students by bringing real life experiences into my classroom.

Concept Description: I would like funding so that I can purchase meal worm breeder kits for my grade level (4th grade). It is my goal that students can watch observable changes during the life cycle of meal worms/darkling beetles including birth, growth, development, reproduction, and death. Students will have a hands-on experience with observing, measuring, and recording data regarding the development of organisms. Students will develop ownership of the meal worms/ darkling beetles by caring for them, providing food, and separating adults from larvae & pupae. Furthermore, we would like to integrate this into an economics unit by having student create a business plan to develop a meal worm farming business as means for us to raise money for our grade level.

Project Goals and Objectives: Students will watch observable changes during the life cycle of meal worms/darkling beetles including birth, growth, development, reproduction, and death. Students will have a hands-on experience with observing, measuring, and recording data regarding the development of organisms. Steps to obtain goal:

1. Students will research caring for meal worms/ darkling beetles
2. Set up meal worm breeder kits
3. Students will collect initial data- How many larvae arrived, initial observations, and measurements
4. Students will collect daily data & care for meal worms

5. As the organisms begin to transform, students will separate the adults so that it is easier for us to find the newborn larvae
6. Students will come up with a business plan outlining the fixed and variable expenses of running a meal worm farm & research how to make the operation profitable so that we can earn money as a grade level to purchase grade level needs.

Project Budget: I am asking for \$104.85 to purchase meal worm breeding kits to help us get started with this project. Thank you for your consideration.

2018 Funding: Requested amount: \$105. Fully funded

Entomological Foundation 2018 Micro Grant Report

Grant Awarded: Micro Grant for mealworm breeding kits, \$105 fully funded

Organization: R. Steve Folsom Elementary School, Prosper ISD, 800 Sommerville, Prosper, Texas 75078

Contact: Rachel Bainbridge, 4th Grade Math & Science Teacher

During the 2018-2019 school year, we provided all 160 of our fourth grade students with an opportunity to observe the changes and life cycle of mealworms/darkling beetles. Thanks to the generous funding of the Entomological Foundation, each of our science classrooms was able to house a mealworm breeding system in which students were able to actively care for and observe the insects on a daily basis in the larva, pupa, and adult stages. Partnering with the daily observations, students researched mealworms using an interactive hyperdoc.

In addition to daily observations & research, all fourth grade students created a business plan for a mealworm farming business, tying our life cycle unit into our financial literacy unit. Students researched potential customers, start-up costs, fixed & variable expenses, and profit potential of running a mealworm farming business.

Below I have included a few pictures of the mealworm breeding habitat that we purchased and modified for each of our four science classrooms. You will notice in one of the pictures that we cut out the bottoms of one of the drawers of each kit and replaced it with mesh. This was so that the eggs would drop through to the next level, keeping the darkling beetles from potentially eating the newly hatched larva. Additionally, I have attached a few pictures of our students in action and an [example](#) of a final project that a group of students created to showcase their business plan.

We would like to thank the Entomological Foundation for their generous support of our project and helping bring this idea to fruition for our students. We look forward to using the breeding kits for years to come in our science classrooms & providing this opportunity for our future students.



