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435 IONIA AVENUE SW

GRAND RAPIDS MI 49503

Spring 2017

Hello Second Grade Teacher:

We are excited to introduce you to the Downtown Market Education Foundation's (DMEF) Greenhouse Growing and Nutrition Field Trips.

The enclosed documents offer information about our field trips, including the curriculum focus areas and trip outline. We look forward to welcoming your group to the Market for the 2017-2018 school year. Please review the enclosed information and let us know if you have questions.

When you're ready to plan your visit, please complete the registration form and return it to us by email or physical mail.

Thanks and we look forward to seeing you at the Market!



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## GREENHOUSE GROWING NUTRITION FIELD TRIPS AT THE DOWNTOWN MARKET

September 2017 – May 2018

### PURPOSE OF THE PROGRAM

The DMEF Growing Science and Nutrition Field Trips program has been designed to fill specific experiential needs in Science, Health/Nutrition, Social Studies, and Language Arts curriculum. The field trip is designed to meet State of Michigan Second Grade Curriculum expectations, but can be adapted to most age levels. The focus of the field trip is in the following curriculum areas:

- **Economicology:** addressing the balance that benefits our economy and ecology when working in harmony.
- **Science/Engineering:** observing and experimenting with natural systems, energy conservation, generation, and solving problems.
- **Health/Nutrition:** learning tools to create healthy meals, how to prepare (even grow) them, and generate balanced, combined foods.
- **Food, Natural, and Economic Systems:** witness and discuss the interdependence of elements in a greater system and students' role within that system.

**TIMING:** 90-minute on-site, hands-on experience

### OUTLINE OF EXPERIENCE:

20 min – Introduction to the Downtown Market and “behind the scenes” tour

30 min – Hands-on experiential Science lessons in the Market Greenhouse

10 min – Malamiah Juice Smoothie Demonstration with fresh ingredients from the Market Greenhouse

10 min – Malamiah Juice Smoothie Tasting with the group

10 min – Q&A with Greenhouse Educator and Malamiah Juice

“Homework” assignment for return to class

**COST:** \$10\* per student/chaperone, 50% deposit due 10 days prior to scheduled field trip

\*All participant fees are waived for qualifying school systems with 70% or higher Free or Reduced Lunch (FRL) student population.

### TRIP OUTLINE:

#### *Preparation:*

Classrooms and educators will be sent an advance packet with materials to discuss and show the students regarding the unique construction and features of the Downtown Market's LEED Gold Certified Building. In this advance lesson, teachers will introduce a “scavenger hunt” of ecology features such as the rain gardens, rain barrels, recycled materials, live walls, greenhouse, and other energy conservation tools used in the Downtown Market. Students will seek these items when arriving on-site and have familiarity with location upon arrival.



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*On-site interaction:*

Upon arrival, students will begin to identify physical objects that were introduced in advance lessons. During their introductory tour of the Market, the docent will point out items that students will be able to identify from their preparation. During their tour, students will learn of the mission and product lines of each small business in Market Hall and their interdependence with community, environment and each other.

Following their Market Hall tour, students will return to the second floor Market Greenhouse for their first lessons regarding the purpose of a greenhouse, how plants are grown and why, and finally conduct a hands-on experiment regarding soil and the best properties of soil mix to grow a plant of their own. Educators & chaperones will be given a small container of the soil mix at the proper ratio to conduct an in-classroom experiment with two pineapple plants gleaned from Malamiah Juice Bar. This activity leads to the final phase of the on-site Growing Science and Nutrition Field Trip, the nutrition portion! Malamiah Juice Bar in the Downtown Market is highly successful and thriving on teaching and equipping our community how to eat and live healthfully. Students will see a live smoothie demonstration using healthy ingredients locally grown in the Greenhouse. Students will each receive their own six-ounce smoothie with an outline of nutrition elements and a recipe to try at home with their families.

As the last portion of Growing Science and Nutrition Field Trip on-site experience, students will be posed a problem to solve as a reflection back in their classroom. The problem to be solved will be one of three core areas: How do we grow more plants in the Greenhouse? How would you encourage your friends and family to save energy and resources? What other healthy foods could we make to help people in our community?

*Post-trip activities:*

Each classroom group will be sent home with two pineapple plants, growing from their own soil mixes, with growing instructions to put one in the light and one in the dark. In three weeks, their experiment should result in a demonstration of the Michigan state science curriculum requirements. Additionally, students will be asked to send writings and drawings of their problem solutions to the Market for display. Students can visit with their families and show off their participation in engineering economicology. Post-trip packets will include prompts for teachers to facilitate the problem solving feedback, a grade appropriate reading list for further exploration, and instructions on continuing their pineapple plant experiments.

**OUTCOMES:**

At the close of the Growing Science and Nutrition Field Trips experience the students will be able to identify tools used in capture and conservation of energy in the Downtown Market. Students will observe and reflect how Market Hall businesses work within systems of food, economy, and ecology to understand their relationship to the community. Students will have conducted experiments to determine different traits of materials, test materials to discover what should be used for intended purposes, and if plants need sunlight and water to grow. Students will explain the importance of eating a variety of foods from all food groups. They will have seen the creation of and tasted an example of combination foods.

Growing Science and Nutrition Field Trips  
Downtown Market Greenhouse

**OBJECTIVES:**

Second Grade State of Michigan Curriculum Expectations:

**Social Studies**

- 2-H2.0.4 Describe changes in the local community over time.
- 2-H2.0.5 Identify a problem in a community's past and how it was solved.
- 2-G2.0.2 Describe how the local community is part of a larger region.
- 2-G4.0.1 Describe land use in the community.
- 2-G4.0.2 Describe the means people create for moving people, goods, and ideas within the local community.
- 2-G4.0.3 Use components of culture to describe diversity in the local community.
- 2-G5.0.1 Suggest ways people can responsibly interact with the environment in the local community.
- 2-G5.0.2 Describe positive and negative consequences of changing the physical environment of the local community.
- 2-E1.0.2 Identify businesses in the local community.
- 2-E1.0.3 Describe how businesses in the local community meet economic wants of consumers.
- 2-E1.0.4 Describe the natural, human, and capital resources needed for production of a good or service in a community.

**Science**

- 2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- 2-PS1-2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.
- 2-PS1-4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
- 2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow
- 2-LS2-2 Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
- 2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.
- 2-ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
- 2-ESS2-1 Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.
- 2-ESS2-3 Obtain information to identify where water is found on Earth and that it can be solid or liquid.
- K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

K-2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

### **Health**

1.1 Explain the importance of eating a variety of foods from all the food groups.

1.3 Describe the characteristics of combination foods.

1.4 Describe the characteristics of food and beverages that should be limited.

1.5 Provide examples of combination foods.

1.6 Provide examples of foods and beverages that should be limited.

5.1 Demonstrate skills throughout the day to reduce the spread of germs.

### **Language Arts**

R.IT.02.04 Respond to individual and multiple texts by finding evidence, discussing illustrating and/or writing to reflect, make connections, take a position, and/or show understanding.

R.CM.02.01 Make text-to-self and text-to-text connections and comparisons by activating prior knowledge, connecting personal knowledge, experience and understanding of others to ideas in text through oral and written responses.

R.CM.02.04 Apply significant knowledge from grade-level science, social studies and mathematics texts.

W.GN.02.04 Use the writing process to produce and present a research project; develop two research questions related to a teacher-selected topic; gather electronic or print resources and organize the information using key ideas with teacher assistance.

W.PS.02.01 Develop personal style in oral, written, and visual messages in both narrative and informational writing.

S.CN.02.02 Explore and use language to communicate effectively with a variety of audiences and for different purposes including questions and answers, discussions, and social interactions.

L.CN.02.02 Ask appropriate questions for clarification and understanding during a presentation or report.

L.CN.02.03 Listen to or view knowledgeably while demonstrating appropriate social skills of audience behaviors in small and large group settings; listen to the comments of peers and response on topic adding a connecting idea.