



# Botany Explorer School Program

## K-5 Grades Curriculum

The *Botany Explorer School Program* concentrates on plants and how they function. Students will discover the parts of a plant and explore various plant adaptations at hands-on, guided learning stations. Students will experience a guided plant part tour through the indoor tropical conservatory or outdoor gardens. Students will also have an opportunity to search for plants with unique plant part adaptations during a self-guided scavenger hunt.

The primary goals of the *Botany Explorer School Program* are:

- To introduce students to the basic structure of plants and the role and function of seeds, stems, leaves, roots, and flowers.
- To provide students with an authentic learning experience involving inquiry-based and hands-on learning methodologies.
- To enrich classroom learning by supporting the Wisconsin Model Academic Standards, the Metropolitan Madison School District (MMSD) K-8 Science Scope and Sequence, and the Next Generation Science Standards.

### Next Generation Science Standards

- **Life Sciences**
  - 5-LS1-1, 5-LS2-1, 4-LS1-2, 3-LS1-1, 3-LS2-1, 3-LS3-1/3-LS3-2, 3-LS4-1, 3-LS4-2, 3-LS4-3, 3-LS4-4, 1-LS1-1, 1-LS2-2, 1-LS3-1, K-LS1-1
- **Physical Sciences**
  - 5-PS3-1, K-PS3-1
- **Earth Sciences**
  - 5-ESS2-1, 5-ESS3-1, K-ESS2-2, K-ESS3-1, K-ESS3-2, K-ESS2-1, K-2-ESS3-1

### INTRODUCTION

Students are introduced to the topics of the day and to Olbrich Botanical Gardens. Through visual examples, physical demonstrations, and models, students develop an understanding of the importance of plants in their daily lives. They name major parts of plant anatomy related to nutrient uptake, photosynthesis, and pollination.

The following standards correlate to topics discussed during the introduction:

### Wisconsin Model Academic Standards

- **Wisconsin Standards for Agriculture, Food, and Natural Resources:**
  - NR 2.a.1.e, PS1.a.1.e, PS1.c.2.e, PS2.a.1.e, PS2.c.1.e
- **Wisconsin Model Early Learning Standards:**
  - A.EL.2
- **Wisconsin's Model Academic Standards for Environmental Education:**
  - A.4.4
- **Wisconsin Standards for Health Education:**
  - (PK-2) 1:1:A1, 1:1B2
- **Wisconsin State Standards for Literacy:**
  - Speaking and Listening 1 (K-2), 2 (K-1), 3 (3-5)
- **Wisconsin Model Academic Standards for Science:**
  - A.4.1, A.4.2, C.4.1, C.4.2, F.4.1, F.4.2, F.4.4, SCI.CC1.3-5, SCI.SEP1.A.3-5, SCI.LS1.A.4, SCI.LS1.B.3, SCI.LS1.C.5, SCI.LS2.A.5

### Metropolitan Madison School District K-8 Science Scope and Sequence

- **MMSD K-8 Science Standards:**
  - Grade K Physical Science *Wood/Paper, Trees*
  - Grade 1 Life Science *New Plants*



- Grade 2 Life Science *Insects*
- Grade 3 Life Science *Structures of Life*

## **LEARNING STATIONS**

### **DISCOVERING SEEDS**

This learning station engages students in hands-on learning about seeds. Students dissect a seed, explore the diversity of seed types, and discover seed dispersal methods through hands-on demonstrations and observations.

- **Wisconsin Standards for Agriculture, Food, and Natural Resources:**
  - PS2.a.1.e
- **Wisconsin State Standards for Literacy:**
  - Speaking and Listening 1 (K-2), 2 (K-1), 3 (3-5)
- **Wisconsin's Model Academic Standards for Environmental Education:**
  - A.4.1, A.4.2, A.4.3, A.4.4, B.4.6
- **Wisconsin Model Academic Standards for Science:**
  - C.4.1, C.4.2, C.4.4, C.4.5, C.4.7, F.4.1, F.4.2, F.4.3, F.4.4

### **MMSD K-8 Science Standards:**

- Grade K Life Science *Trees*
- Grade 1 Life Science *New Plants*
- Grade 3 Life Science *Structure of Life*

### **DISCOVERING FLOWERS AND POLLINATORS**

This learning station provides students with tactile activities that illustrate the important role stems play in the life of a plant. Students will examine celery stalks, discover the many ways we use stems in our daily lives, and examine some stem adaptations.

- **Wisconsin Standards for Agriculture, Food, and Natural Resources:**
  - PS2.a.1.e
- **Wisconsin's Model Academic Standards for Environmental Education:**
  - A.4.1, A.4.2, A.4.3, B.4.6, B.4.10
- **Wisconsin State Standards for Literacy:**
  - Speaking and Listening 1 (K-2), 2 (K-1), 3 (3-5)
- **Wisconsin Model Academic Standards for Science:**
  - A.4.1, A.4.2, A.4.3, A.4.4, C.4.1, C.4.2, C.4.4, C.4.5, C.4.7, F.4.1, F.4.2, F.4.4

### **MMSD K-8 Science Standards:**

- Grade 1 Life Science *Characteristics of Life Cycles of Plants*
- Grade 3 Life Science *Structure and Responses of Organisms*

### **DISCOVERING LEAVES**

This learning station offers students a unique opportunity to explore a wide variety of common and non-native plants and their leaves. Students compare and contrast leaves while learning the important role leaves play in making food for the plant.

- **Wisconsin Standards for Agriculture, Food, and Natural Resources:**
  - PS2.a.1.e
- **Wisconsin's Model Academic Standards for Environmental Education:**
  - A.4.1, A.4.2, A.4.3, A.4.4, B.4.1, B.4.6
- **Wisconsin State Standards for Literacy:**
  - Speaking and Listening 1 (K-2), 2 (K-1), 3 (3-5)
- **Wisconsin Model Academic Standards for Science:**
  - A.4.1, A.4.2, C.4.1, C.4.2, C.4.5, C.4.7, F.4.1, F.4.2, F.4.4

### **MMSD K-8 Science Standards:**

- Grade 1 Life Science *New Plants*
- Grade 2 Life Science *Insects*
- Grade 3 Life Science *Structures of Life, Earth Materials*



### **GUIDED OUTDOOR GARDEN NATURE WALK**

Students participate in a guided tour and scavenger hunt through the Bolz Conservatory as part of the *Botany Explorer School Program*. During the tour students explore the diversity of leaves, stems, roots, and flowers while engaging in an authentic learning experience in the botanically rich environment of Olbrich's unique tropical rainforest habitat.

- **Wisconsin Standards for Agriculture, Food, and Natural Resources:**
  - AS6.a.1.e
- **Wisconsin Model Early Learning Standards:**
  - C.EL.1F.4.4, C.4.2
- **Wisconsin State Standards for Literacy:**
  - Speaking and Listening 1 (K-2), 2 (K-1), 3 (3-5)
- **Wisconsin's Standards for Physical Education:**
  - Understanding Physical Activity and Well Being D.4.1; Respectful Behavior F.4.1, F.4.2
- **MMSD K-8 Science Standards:**
  - Grade K Life Science *Analyzing Animals, Trees*
  - Grade 1 Life Science *New Plants*
  - Grade 1 Earth Science *Air & Weather*
  - Grade 2 Life Science *Insects*
  - Grade 3 Life Science *Structures of Life, Earth Materials*