

DIGS

c. Botanography 2024

K-12 instructional units that integrate: ecology 🌿 botany 🌿 ethnobotany & economic botany 🌿 health & wellness 🌿 literacy 🌿 art

Botanography's DIGS are units of project-based lessons and activities that are aligned with Pennsylvania State Curriculum Standards and the newly adopted STEELS standards. Each unit lists standards addressed in lesson or activity content. They encourage active, hands-on engagement with plants and a plant's ecology. The curriculum integrates STEM, art, social studies, and literacy subject matter and activate classroom garden spaces and fieldtrips to arboretums, parks, or botanical gardens. * Some lessons are directly aligned with HIVE teaching tools.

Grades	PreK – K	1 – 2	3 – 5	6 – 8	9 – 12
	<p>Pre K-K DIGS emphasize alphabet knowledge & phonological awareness using plants as a context. They encourage community & socialization in a garden and are designed to develop motivation and imaginative connection to ecology and plants through art projects and stories about plants that teach fine motor skills and the fundamentals of environmental literacy.</p>	<p>1-2 DIGS emphasize phonological awareness, word recognition and vocabulary development using plants as a context. They encourage community & socialization in a garden and are designed to develop motivation and imaginative connection to ecology and plants through art projects that teach skills and reading stories about plants with a focus on the fundamentals of environmental literacy.</p>	<p>3-5 DIGS emphasize word recognition and vocabulary development of botany and ecology concepts using plants as a context. They encourage community & socialization in a garden and are designed to develop motivation and imaginative connection to ecology and plants through art that teach observation skills, reading and writing stories about plants with a focus on the fundamentals of environmental literacy.</p>	<p>6-8 DIGS emphasize vocabulary development of botany and ecology concepts from imaginative and scientific points of view using plants as a context as well as community & socialization in a garden. Lessons are designed to develop scientific observation skills and imaginative connection to ecology and plants through making art that teach skills in reading and writing to advance students' environmental literacy. STEM career exploration is introduced.</p>	<p>9-12 DIGS emphasize vocabulary mastery of botany and ecology concepts from imaginative and scientific points of view using plants as a context as well as community & socialization in a garden. Lessons are designed to encourage deep scientific and imaginative connection to ecology and plants through making art through scientific observation, stories about plants to advance students' environmental literacy from multiple points of view. STEM career exploration is introduced.</p>
	<p>Three Sisters: Native American Gardening 1. Exploration of the language of empathy and 'interplanting' as an exercise in observation.</p>	<p>Three Sisters: Native American Gardening 1. Exploration of the language of empathy and 'interplanting' as an exercise in observation.</p>	<p>Three Sisters: Native American Gardening 1. Exploration of the language of empathy and 'interplanting' as an exercise in observation. * <i>Native American Plants HIVE</i></p>	<p>Variation and Particularity in Names of Philadelphia Trees. 1. Creation of annotated leaf cards that identify plants by their common and binomial names and their meaning. 2. Writing shape poems with and about plants.</p>	<p>Variation and Particularity in Names of Philadelphia Trees. 1. Creation of annotated leaf cards that identify plants by their common and binomial names and their meaning. 2. Writing shape poems with and about plants. * <i>Philadelphia Trees HIVE: Leaf and Tree Matching</i></p>
	<p>Garden Creatures 1. Exploration of shapes and forms of parts of plants and an imaginative writing composition of these forms. 2. Creation of and writing about an imagined garden creature from different parts of various plants.</p>	<p>Garden Creatures 1. Exploration of shapes and forms of parts of plants and an imaginative writing composition of these forms. 2. Creation of and writing about an imagined garden creature from different parts of various plants.</p>	<p>Garden Creatures 1. Exploration of shapes and forms of parts of plants and an imaginative writing composition of these forms. 2. Creation of and writing about an imagined garden creature from different parts of various plants.</p>	<p>Lexicon of Leaf Shapes and Forms. 1. Creation of a lexicon of a variety of leaf shapes using botanical nomenclature.</p>	<p>Lexicon of Leaf Shapes and Forms. 1. Creation of a lexicon of a variety of leaf shapes using botanical nomenclature. * <i>Philadelphia Trees HIVE: Leaf and Tree Matching</i></p>
	<p>Garden Salads 1. Creation of and writing about an imagined healthy meal from different parts of various plants.</p>	<p>Garden Salads 1. Creation of and writing about an imagined healthy meal from different parts of various plants. * <i>Healthy Plants HIVE</i></p>	<p>Garden Salads 1. Creation of and writing about an imagined healthy meal from different parts of various plants. * <i>Healthy Plants HIVE</i></p>	<p>Simplicity vrs. Complexity. 1. Creation of annotated leaf cards that describe and annotate the basic botany of leaf structure: Simple vrs. Variations of Complexity.</p>	<p>Simplicity vrs. Complexity. 1. Creation of annotated leaf cards that describe and annotate the basic botany of leaf structure: Simple vrs. Variations of Complexity.</p>
	<p>Garden Lives 1. Plants are born, live, and reproduce. 2. Ecology: plants live in communities with insects and animals.</p>	<p>Garden Lives 1. Plants are born, live, and reproduce. 2. Ecology: plants live in communities with insects and animals.</p>	<p>Garden Lives 1. Plants are born, live, and reproduce. 2. Ecology: plants live in communities with insects and animals.</p>	<p>Finding a Four-Leaf Clover 1. Observations of species Variety and use while looking for and learning about four-leaf clover.</p>	<p>Finding a Four-Leaf Clover 1. Observations of species Variety and use while looking for and learning about four-leaf clover.</p>
	<p>The Alphabet Tree 1. Exploration of shapes and forms of leaves that make trees and as letters that make words. * <i>Garden HIVE of Letters</i></p>	<p>The Alphabet Tree 1. Exploration of shapes and forms of leaves that make trees and as letters that make words. * <i>Garden HIVE of Words</i></p>	<p>Variation and Particularity in Names of Philadelphia Trees. 1. Creation of annotated leaf cards that identify plants by their common names. 2. Writing shape poems with and about plants.</p>	<p>African American Plant Folklore 1. Introduction to folktales and folk songs about plants in African American culture. 2. Introduction to Zora Neale Hurston and a palate of African American foodways. * <i>African American Plants HIVE</i></p>	<p>African American Plant Folklore 1. Introduction to folktales and folk songs about plants in African American culture. 2. Introduction to Zora Neale Hurston and a palate of African American foodways. * <i>African American Plants HIVE</i></p>

A Face / A Leaf

1. Exploration of leaf structure and empathy with plant world.

A Tree, A Pencil

1. A story about how pencils are made from trees.

A Plant Self Portrait

1. A self-reflective, creative exploration of flowers, fruit and leaves to imagine one's face (eyes, ears, nose, mouth, hair).

Plant Sounds & Blends

1. Phonetics of vowels, consonants, and blends found in the plant world.
* Garden HIVE of Letters

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1. Exploration of leaf structure and empathy with plant world.

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A Plant Self Portrait

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Plant Sounds & Blends

1. Phonetics of vowels, consonants, and blends found in the plant world.
* Garden HIVE of Letters

Lexicon of Leaf Shapes and Forms.

1. Creation of a lexicon of a variety of leaf shapes using botanical nomenclature.

Finding a Four-Leaf Clover

1. Observations of species Variety and use while looking for and learning about four-leaf clover.

African American Plant Folklore

1. Examples of the significance of the folktales and folk songs about plants in African American culture.
2. Introduction to Zora Neale Hurston and a palette of African American foodways.

A Plant Self Portrait

1. A self-reflective, creative exploration of shapes and forms of flowers, fruit and leaves to imagine expression in one's face.
* Garden HIVE of Words

Wonder Tree

1. A self-reflective, creative exploration of a tree's ecology.
2. Observation of interspecies ecology of a tree from its roots underground to the leaves of its canopy.
* Ecology HIVE of Words

Stories of African American Healing

1. Introduction to Gullah Geechee peoples and plants like garlic in African American culture.
2. Study of garlic's botany.
* African American Plants HIVE

Wonder Tree

1. A self-reflective exploration of a tree's ecology.
2. Observation and documentation of interspecies ecology of specific tree species— underground to canopy.
* Interspecies Ecology Puzzle HIVES

Plants Matter

1. Descriptive writing exercise about the biological matter of plants.
2. Reflective drawing and writing exercise about why plants matter to humans and animals.
* Garden & Ecology HIVES of concepts & definitions

Seasonal Colors of Trees

1. Seasonal observations with writing and drawing of color of trees—color theory.
2. Observations of and concepts about color and leaves of deciduous trees.

Pollination

1. Seasonal observations with writing and drawing of plant pollination—biology of plant reproduction.
2. Botanical Illustrations of plant pollination—botany and metamorphism.
* Pollinator Plants HIVE

Native American Ecology

1. Seasonal ecologies of living.
2. Spirits of non-human world.
* Native American Ecology HIVE

Stories of African American Healing

1. Introduction to Gullah Geechee peoples and plants like garlic in African American culture.
2. Study of garlic's botany.
* African American Plants HIVE

Wonder Tree

1. A self-reflective exploration of a tree's ecology.
2. Observation and documentation of interspecies ecology of specific tree species— underground to canopy.
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1. Descriptive writing exercise about the biological matter of plants.
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Seasonal Colors of Trees

1. Seasonal observations with writing and drawing of color of trees—color theory.
2. Observations of and concepts about color and leaves of deciduous trees.

Pollination

1. Seasonal observations with writing and drawing of plant pollination—the timing of interspecies dependencies.
2. Botanical Illustrations of plant pollination—botany and metamorphism.
* Pollinator Plants HIVE

Native American Ecology

1. Seasonal ecologies of living.
2. Spirits of non-human world.
* Native American Ecology HIVE