

# Bloom and Grow: Creating an Illustrated Book and Learning Games on Native Plants for Children

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## ABSTRACT

“Children’s Book and Learning Games on Indiana Native Plants & Habitats,” a 2023 ASLA student project winner, is an effort by five landscape architecture students to convey to a young audience two important things we learn in college: native plants, and the right plant in the right place. By integrating this knowledge into children’s early education, dramatic changes can be catalyzed in local ecosystems and networks and promote healthier habitats. The well-designed book and thought-out games not only allow children to grow and engage with landscape design, but also simplify landscape planning and decision-making. The process and the final product are innovative applications of knowledge-based systems to spread awareness and educate young people.

## KEYWORDS

Landscape Architecture  
Education;  
Children’s Environmental  
Awareness;  
Interaction;  
Nature Education;  
Native Plants

## HIGHLIGHTS

- Addressing landscape monotony and the overuse of non-native plants through children’s early education
- Telling the story of ecosystems and native plants in children’s way
- Illustrated book serves as a transforming agent on educating biodiversity and habitat creation
- Board games creatively reinforce the knowledge acquisition and application to real-life scenarios

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## 1 Where Things Began...

As one traverses residential neighborhoods in contemporary America, a striking array of vibrant hues adorns the gardens, meticulously crafted to imbue homes with an air of sophistication and refinement. While each residence boasts a uniquely tailored garden design, a homogeneous pattern of plant species emerges<sup>[1]</sup>. Homeowners across states and regions have acquainted themselves with these flora, despite their non-native origins. Local garden

stores feature non-native annual plants, captivating audiences with their visual allure. This trend extends to local nurseries, where non-native species tend to be favored as well. The vibrancy and distinctive characteristics of these non-native annuals have become commonplace in everyday gardens, fostering widespread familiarity. In the course of an investigation conducted by Professor Yiwei Huang and her students at Purdue University, USA, an intriguing phenomenon surfaced during interviews with individuals at local stores. A notable preference emerged for non-native species, with

some expressing resistance to incorporating native plants into their gardens. Despite long-standing recognition of this issue, efforts to address it have encountered limited success. Aesthetic preferences often prompt individuals to adhere to familiar choices, and adults may exhibit reluctance to embrace new concepts when existing practices suffice.

## 2 Ideation

In addressing this challenge, these emerging landscape architects confront the imperative of fostering a shift towards more native-friendly gardens through a compelling approach. Professor Huang and her five students discerned a strategic opportunity in targeting education towards children, given that the interviewed adults were notably resistant to embracing native species. Leveraging the influence of personal relationships can be an effective strategy.

Many children have grown up surrounded by the same non-native species as adults in their lives, yet their connection and familiarity with these plants remain less ingrained. Initiatives aimed at educating children about the importance of planting native species offer a conduit for change, as these young individuals are receptive to new ideas and eager to learn. By harnessing the inherent persuasiveness of children, who often share their school learnings and creative ideas with adults, a compelling opportunity arises to influence adults. Some adults even involve their children in the process of selecting flowers and plants for their gardens. Instilling knowledge about native plants and their ecological benefits in the younger generation and empowering children to advocate for native-friendly gardens could drive adults to change their perspectives, ushering in a paradigm shift towards sustainable and ecologically sound gardening practices (Figs. 1, 2).

## 3 Communicate in Children's Tone

Given that images in picture books aid in conveying messages, the project team conceived to develop a book for children about Indiana native plants (Figs. 3, 4). The target audiences are children aged 6 ~ 10, the critical years for development and learning, during which kids learn to make critical judgments and decisions based on the facts they know and the information around them. Equipping these children with native plant knowledge would generate a stronger foundation that can be thoroughly built upon in the future. The importance of planting native species will be established in these young minds, and hopefully persist throughout their lives.

While a straightforward approach involving factual exposition and aesthetically pleasing imagery would have sufficed, the overarching aspiration was to create a lasting impact. Drawing upon their own experiences, as well as that of the consumer extension specialist in the department, the project team discerned the necessity of introducing special characters like monsters. The creation of these characters elicits a more profound response from the children, affording them an emotional connection to what would otherwise have been a more conventional textbook on native plants.

## 4 Monsters, Habitats, and Rhymes

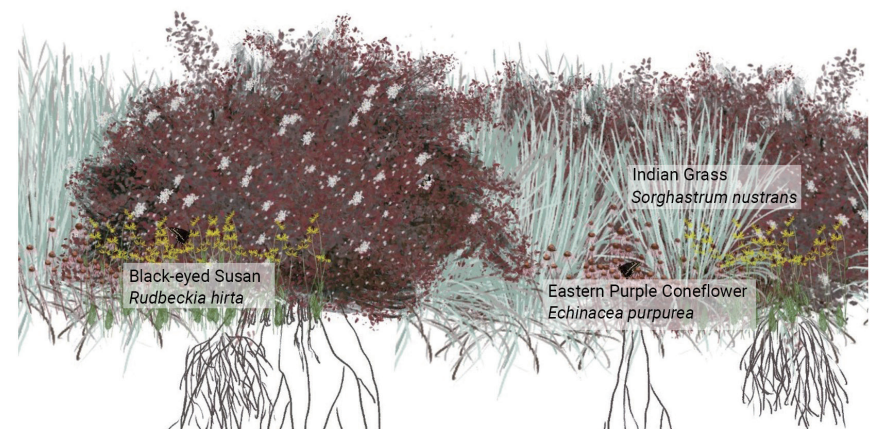
Finalizing the delivery methods of the materials allowed the project team to advance to the next phase: what should be included in this book? The task of simplifying the extensive subject matter proved to be a difficult undertaking, necessitating the exclusion of some valuable topics and information. Comprehending a multifaceted subject such as native plants demands a nuanced understanding of various aspects including habitats, climate, flora, and fauna. It is

1. Ecological companion assignments in Huang's class.



© Molly Wimborg  
1-1

Common Ninebark  
*Physocarpus opulifolius*



© Chloe Kennedy  
1-2





## PLANT LIST



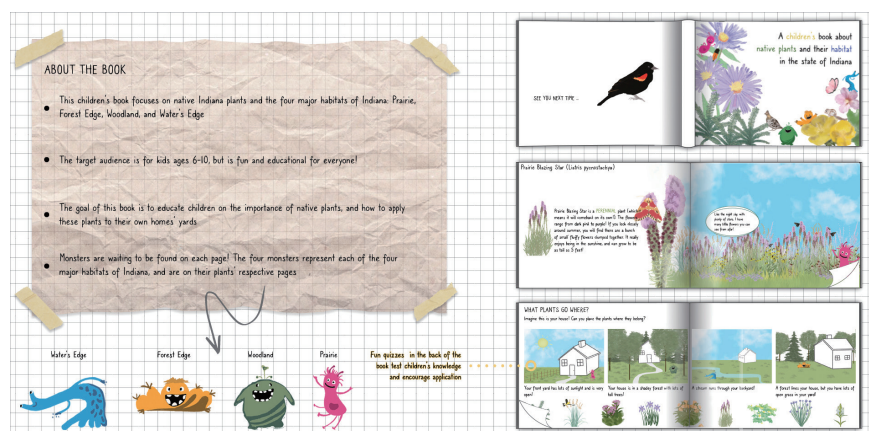
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2. Student work demonstration of garden design which utilizes a combination of native and non-native plants that support local pollinators and habitat.
3. The simple yet aesthetical images as the book style.
4. This book aims to educate children on native Indiana plants and their habitats and encourages readers to apply these native plants at home.

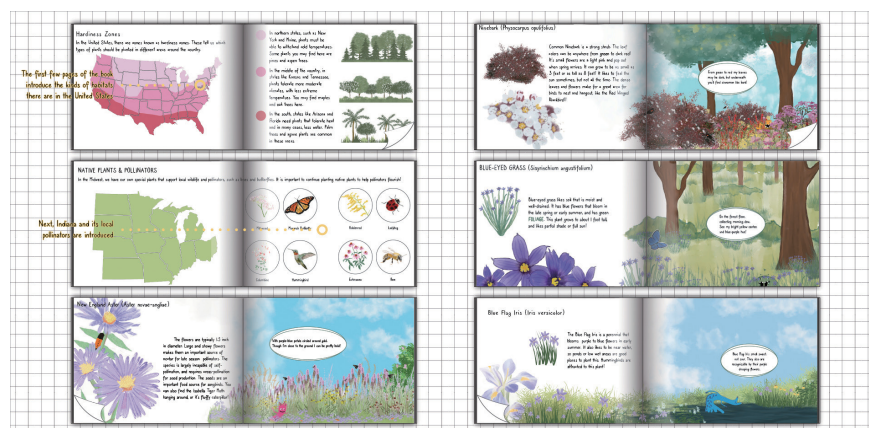
challenging to distill the extensive information into a concise and accessible form.

Recognizing the pivotal role of organization and pacing in educational materials, a comprehensive blueprint was crafted for the book. It should first establish base knowledge about climate and habitat, then introduce the selected native plants. The last section of the book will hold material with which children can test and apply their knowledge, enhancing impression of the subject. To render information about climate and habitat more accessible for young children, the team delineated four distinct habitat groups—prairie, prairie edge, woodland, and edge of the water. Within each habitat, 2 ~ 3 species were selected for instruction, forming a curated selection of 8 ~ 12 plants spanning diverse habitats. This strategic approach also facilitated the integration of characters, with each habitat being represented by a unique “monster,” fostering a heightened association between habitat and plant. These whimsical creatures were hidden across the pages, encouraging children to actively engage with and invest time in each plant spread.

The dissemination of information about the plants presented a noteworthy challenge for the project team. They only presented the principal facts about each plant to ensure conciseness and to facilitate a deeper understanding and memory. Recognizing that a mere paragraph of information would not suffice, the team sought to infuse the learning experience with engagement and enjoyment. Drawing inspiration from their collective educational experiences, they decided to introduce a mnemonic rhyme for each plant. This



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mnemonic device not only aids in recalling essential information, but also serves as an interactive element that may inspire young readers to devise their own creative strategies for retaining information (Fig. 5).

## 5 Learning Games and Interactive Education

As the final stages of the book development unfolded, it became increasingly apparent that the practical application of newly acquired knowledge is imperative. Knowledge retention is inherently linked to the ability to discuss, test, and apply information (Fig. 6). Thus, the project team explored avenues for the tangible application of the imparted knowledge.

Creating quizzes plays a pivotal role in this project, which not only assesses the recollection of plant-related facts among young readers but also facilitates the utilization of the newfound knowledge (Fig. 7). Providing children the ability to identify the appropriate placement of various plants in their gardens can both enhance the practicality of their botanical knowledge and promote their active engagement with gardening.

The conception of a board game emerged as an additional, enjoyable method for children to apply what they have learned in a readily accessible and engaging manner. The game itself provides each reader with a card depicting an empty garden representing one of the habitats explored in the book. Through the acquisition of plant cards, young readers can design their own gardens (Fig. 8). The board game affords an interactive and entertaining experience that stimulates discussions regarding plant preferences and strategies employed for plant identification. These engagements fortify the retention of information among young readers,



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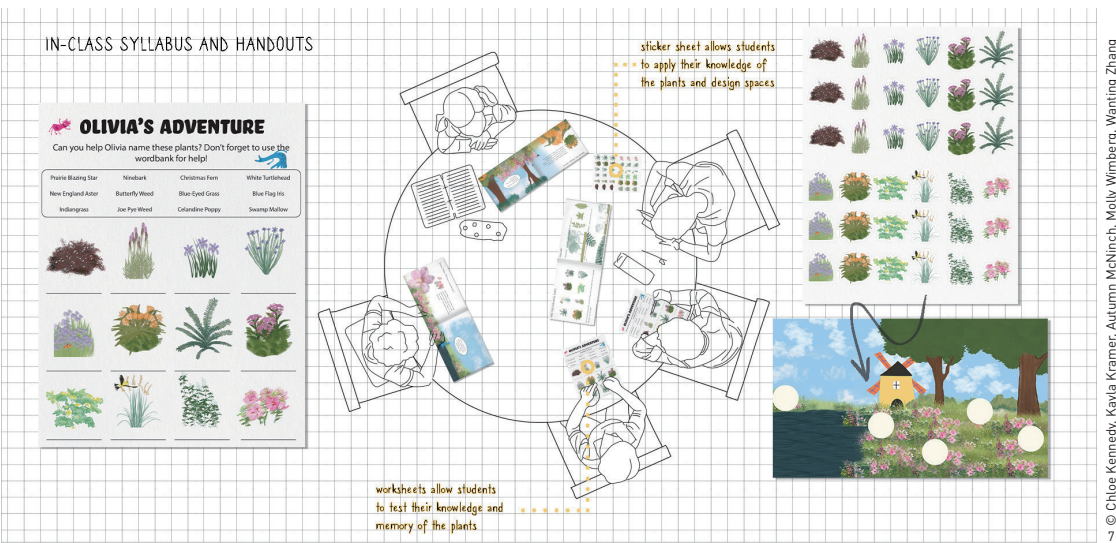
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leaving a lasting imprint far beyond the confines of mere textual comprehension (Fig. 9).

## 6 Conclusion Thoughts

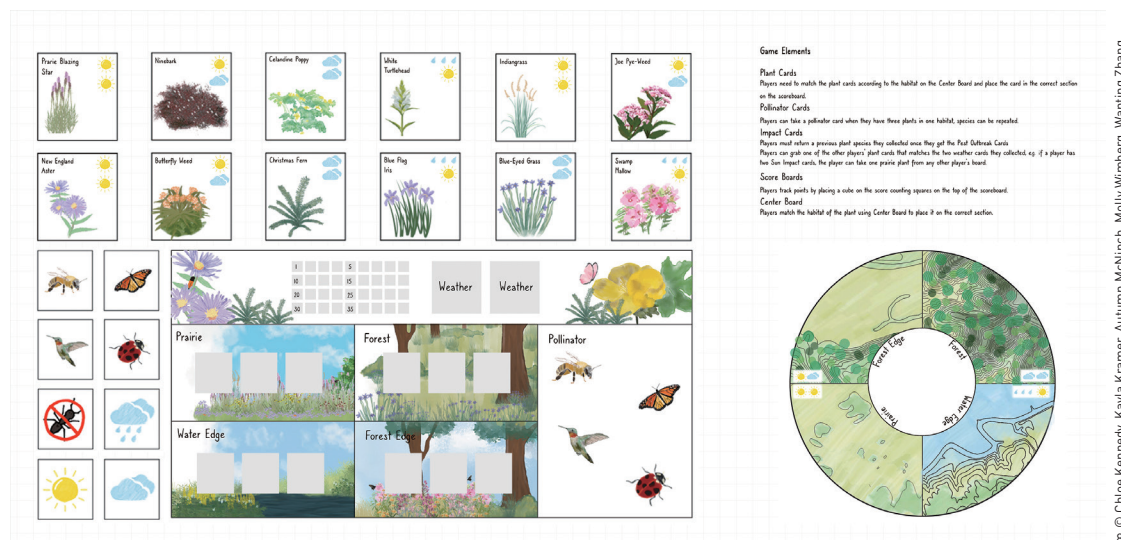
This book has been published electronically through the Purdue University's Education Store, and the creators hope that easy

5. Page layout including the basic information, hidden monsters, and rhymes.
6. The eventual goal of the illustrated book is for young minds to connect information to real-life practice.
7. Activity worksheets and stickers enable teachers to create curriculum over the book, and have students apply their knowledge in class exercises.



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8. A different variety of plant cards, animal species cards, and situational cards make this game a more advanced version.
9. This board game offers an educational yet fun approach to learn about native species and their habitats.

access to their content can encourage more teachers and parents to purchase the book. “Children’s Book and Learning Games on Indiana Native Plants & Habitats” is also a transformative agent, implanting concepts of biodiversity, habitat creation, and ecosystems in the minds of young readers. Educating younger generations about native plants offers increasing opportunities to make a difference as children grow up to become active, educated citizens.

Today's landscape industry and landscape practitioners are no longer just party B. Instead, they should step out of the framework of being a passive employer and positively influence society to consider a greater level of social impact<sup>[2]</sup>. As commented by the 2023 ASLA Student Awards Jury that "the book and games allow growth and exposure to Landscape Architecture, it's a well-crafted and thought-out game that could make landscape planning

and decision making more accessible. An innovative application of knowledge-based systems to spread awareness and educate others”<sup>[3]</sup>, this children’s illustrated book is also an attempt to go towards this realization.

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# 绽放与成长： 为儿童设计的本土植物绘本与学习游戏

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## 摘要

“本土植物的儿童读物和学习游戏”是2023年美国景观设计师协会学生项目的获奖作品，它在美国住宅景观同质化的背景下，探索了普及本土植物价值和种植方法的路径。儿童如果能在其早期教育中获得本土植物相关的知识，便可能影响家中的成年人，并在未来带动环境的改变。来自美国普渡大学景观设计专业的5名学生共同为印第安纳州的本土植物创作了儿童绘本，旨在向儿童读者传达景观设计专业高等教育中一直强调的两个要点——本土植物的重要性，以及适地适栽的种植原则。将这些知识以绘本和游戏的形式融入儿童的早期教育中，可以帮助他们更好地掌握本土植物知识，鼓励他们在家庭花园中更多选用本土植物并采用适当的可持续种植方式，进而促进更大的生态系统和栖息地环境发生转变。精心设计的绘本和游戏不仅可以让儿童切身参与景观设计过程，更能够向他们传播生物多样性、栖息地和生态系统概念。正如获奖评语所言，这个项目创造性地将知识系统与实际应用相结合，既能传播思想，又能潜移默化地育人。

## 关键词

景观设计教育；  
儿童环境意识；  
互动；  
自然教育；  
本土植物

## 文章亮点

- 通过对儿童的早期教育，尝试解决景观模式单一和过度使用非本土植物的问题
- 用亲近儿童的口吻讲述生态系统和本土植物的故事
- 使用绘本传播生物多样性和栖息地营建的相关知识
- 配套游戏创造性地丰富了知识的获取和在现实生活场景中应用的途径

编辑 王颖，高雨婷