



## School Nominee Presentation Form

### ELIGIBILITY CERTIFICATIONS

#### School and District's Certifications

The signatures of the school principal and district superintendent (or equivalents) on the next page certify that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of their knowledge. *In no case is a private school required to make any certification with regard to the public school district in which it is located.*

1. The school has some configuration that includes grades early learning to 12.
2. The school has been evaluated and selected from among schools within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
3. Neither the nominated public school nor its public school district is refusing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district wide compliance review. The Department of Defense Education Activity (DoDEA) is not subject to the jurisdiction of OCR. The nominated DoDEA schools, however, are subject to and in compliance with statutory and regulatory requirements to comply with Federal civil rights laws.
4. OCR has not issued a violation letter of findings to the public school district concluding that the nominated public school or the public school district as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.
5. The U.S. Department of Justice does not have a pending suit alleging that the public school or the public school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
6. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the public school or public school district in question; or if there are such findings, the state or public school district has corrected, or agreed to correct, the findings.
7. The school meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

### U.S. Department of Education Green Ribbon Schools

Public  Charter  Title I  Magnet  Private  Independent  Rural

Name of Principal (Head of School) Brandi Cartwright

Official School Name: Raintree School

Official School Name Mailing Address: 2100 S. Mason Road, St. Louis, MO 63131

County: St. Louis State School Code Number: NA

Telephone: 314-415-6400 Fax: NA

Web site/URL: www.raintreeschool.org E-mail: brandi@raintreeschool.org

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

(Principal's / Head of School Signature)

Date: January 5, 2019

Name of Superintendent: NA

District Name: NA

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

NA  
\_\_\_\_\_  
(Superintendent's Signature)

Date: NA

**Nominating Authority's Certifications**

The signature by the Nominating Authority on this page certifies that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of the Authority's knowledge.

1. The school has some configuration that includes grades Pre-K-12.
2. The school is one of those overseen by the Nominating Authority which is highest achieving in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
3. The school meets all applicable federal civil rights and federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency: Missouri Department of Elementary and Secondary Education

Name of Nominating Authority: Mrs. Kristen McKinney  
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application and certify to the best of my knowledge that the school meets the provisions above.

*Kristen D McKinney*  
\_\_\_\_\_  
(Nominating Authority's Signature) Date: February 13, 2019

**SUBMISSION**

The nomination package, including the signed certifications, narrative summary, documentation of evaluation in the three Pillars, and photos should be submitted online according to the instructions in the Nominee Submission Procedure.

OMB Control Number: 1860-0509  
Expiration Date: March 31, 2021

**Public Burden Statement**

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email ICDocketMgr@ed.gov and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.

## Raintree School – St. Louis Missouri



### Missouri Green Ribbon Schools Nomination Form

#### School Contact Information

School Name: Raintree School	Street Address: 2100 S. Mason Road	
City: St. Louis	State: Missouri	Zip: 63131
Website: <a href="http://www.raintreeschool.org">www.raintreeschool.org</a>		
Head of School: Brandi Cartwright	District: NA	
HoS Email: <a href="mailto:brandi@raintreeschool.org">brandi@raintreeschool.org</a>	HoS Phone: 314-858-1033	
Lead Applicant and Position (if different):		
Lead Applicant Email:	Lead Applicant Phone:	

#### School Characteristics

Level <input checked="" type="checkbox"/> Early Learning Center <input checked="" type="checkbox"/> Elementary (PK - 5 or 6) <input type="checkbox"/> K - 8 <input type="checkbox"/> Middle (6 - 8 or 9) <input type="checkbox"/> High (9 or 10 - 12)	School Type <input type="checkbox"/> Public <input checked="" type="checkbox"/> Private/Independent <input type="checkbox"/> Charter <input type="checkbox"/> Magnet	How would you describe your school? <input type="checkbox"/> Urban <input checked="" type="checkbox"/> Suburban <input type="checkbox"/> Rural	Total Enrolled: 97 Graduation rate: NA Attendance rate: NA
Does your school serve 40% or more students from disadvantaged households? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
% receiving FRPL: NA	% limited English proficient: 6%	% total disadvantaged students*: NA	

\* **without double counting**, provide the total percentage of students that are receiving FRPL and/or have limited English proficiency, and/or have learning disabilities

## Summary Statement

Raintree School is a private Reggio-inspired Forest School serving children ages two to eight in St. Louis. It is founded on the belief that civically-minded outdoor experiential education is a vehicle for community change and personal transformation. The Reggio Approach asserts that children are driven by their interest to understand and know more, and are able to construct their place in the world through interactions with others within human and natural environments. Raintree aims to guide students to develop civic character, a sense of place, and depth of knowledge through inquiry-based thinking and student driven projects within the context of wild nature.

For Raintree School, the native landscapes that surround the school ground every child's experience, the curriculum, and the approach in every classroom. On our nearly 11 acre, wooded campus, creating and protecting the threatened habitats for insects, birds, mammals and other wildlife within the residential corridor of Town & Country has been a priority. Having eliminated the threat of the woodland being leveled for a housing development, Raintree now works to remove invasives from the woodland while adding pollinator gardens and tall grasses in all landscaped zones and student-use spaces to support our school grounds as a haven for wildlife. The diverse landscape, created in collaboration with DJM Ecological Services, has maximized our campus's ecological benefit and added immeasurable value to our educational program as well as the neighboring community.

While the main focus is the grounds, we have also made significant progress on sustainability in our buildings. We added 170 solar panels, which reduced GHG emissions by 34%. And one of the benefits of establishing native plant communities instead of lawn is a 55% reduction in water use.

Healthy minds need healthy bodies to grow. Instructing, practicing, and modeling body-healthy ways of being is of utmost importance in Raintree's approach to support learners and the community. To accomplish this goal, we look to Sustainable Food Culture, a healthy school building, and prevention and reduction efforts.

At the center of the campus, the kitchen and dining room at Raintree School serve to create a model school food program. Children, families, and local farmers are intimately connected to food in three ways. 1. *Seasonally Responsive Cuisine* – School produce is purchased from local farms at in-season growing times and frozen for use in winter and early spring to reduce/eliminate reliance on purchasing food out-of-season. 2. *Local Food* – The only school in Missouri to partner with Eat Here STL, food from local farms is delivered weekly and school menus (breakfast, lunch, and snack) are developed based on farm availability. Additionally, dairy and bread, tofu and honeys, pasta, eggs and poultry are purchased from local suppliers who use only local products. Ninety percent of all food on campus is locally sourced. 3. *100% on Site* - To ensure all food adheres to green kitchen standards, all students are required to eat from the school kitchen. Students are not permitted to "pack a lunch", thereby reducing disposable bags and packaging, and ensuring all food on campus is in line with the above standards.

The entire curriculum has been built upon Raintree's forest landscape. Every semester, every student on campus is engaged in action projects that focus on the woodland or the neighborhood surrounding the forest. From campaigns to protect waterways for toad populations to a public service announcement touting the effectiveness of a new, non-lethal technology to reduce-deer-car collisions in town, Raintree students' learning is situated the needs of nature and the community. 2019 will mark the adoption of a student researched and designed plan for reducing deer-vehicle collisions within Town & Country, MO, one that was presented to and approved by local aldermen.

When not engaged in community action projects, students spend one day each week in Forest School sessions within the wild ecosystem of the woodland. All inquiry, art, science, math and literacy instruction takes place outside in local habitats. Surrounded by homes, the woodland is the impetus for provocations of human environmental impact, which are documented and presented as part of formal project outcomes. To ensure a coherent and scaffolded environmental and sustainable experience, all summer camps are also focused on Forest School pillars.

The first Forest School established in Missouri, and consultant to new Forest Schools in the region, Raintree is a model school in child-initiated, long-term community project work. To share the lessons we've learned and keep the momentum going throughout the region, every member of Raintree School faculty connects with other efforts in the region in a variety of ways – providing a popup outdoor school in local parks called Wildkin, the Gateway Children's Nature Connection, Missouri Environmental Literacy Advisory Board, and the Development Committee of Experiential Education Exchange. Raintree also founded the Forest School Congress of the Midwest, Vaskebjorn, which will hold its 2<sup>nd</sup> conference this fall. Finally, Raintree produced a documentary, *Forest Hymn for Little Girls*, a film that challenges adults to make space for little girls to take risks, roll in the mud, hunt mysteries and nurture their inner scientist outdoors in wild landscapes.

## Engagement, Benchmarking and Recognition

List the members of the team that helped prepare documentation and their role in the school

- Ilya Eydelman – School President
- Brandi Cartwright – Head of School
- Meghan Halsey – Early Childhood Teacher
- Katie Brown – Chef, Dietitian and Nutritionist
- Andrea Hediger – Sous Chef
- Alex Bobenko – Facilities Manager
- DJM Ecological Services – Landscape Management
- Brian Feld – Registered Architect

List any programs you are currently using to benchmark your progress in sustainability

- We initially established baseline metrics and measured campus-wide progress through data collection in-house using utility bills for waste, energy and water consumption.
- In 2008, Raintree School's participation in EarthWays Centers' Leadership in Environmental Action Projects (LEAP) (and subsequent receipt of several LEAP grants) provided tools for students to work collaboratively with faculty to measure and set benchmarks for waste reuse, reduction, and recycling.
- December 2017 marked our first use of EPA ENERGY STAR Portfolio Manager.

List any recognition, awards or grants you have received in the last five years related to your efforts in any of the pillars

- In the years prior 2014, Raintree School enjoyed yearly garden-support and composting grants from EarthWays Center and Inspired by Bulbs.
- Beginning 2014, grants provided raised beds to the student food garden, adding six additional beds to the four beds created by the student body.
- **Leadership in Environmental Action Project (LEAP) Grant, 2014** – For four electric composters were provided to increase kitchen capacity to compost food scraps.
- **Gateway Greening, 2014 to 2017**– For delivery and installation of garden beds, an outdoor composting system, an arbor and tools
- **Subaru of America, 2017** – awarded native plants, tools, and seeds for the expansion of a native garden plot beside a classroom, called Creature Garden by students.
- **World Forum Foundation Connecting Children and Nature Working Group, 2011** - Nomination to be part of the four-person team representing MO. 77 countries were granted attendance. The MO team, including Brandi Cartwright of Raintree School, was the only team represented from the Midwest
- **World Forum Foundation 2016**: Chef Katie and Genevieve Ploch, early childhood educator, were invited to conduct a workshop for participants at the forum (representing more than 80 counties) on food cultures at schools that support sustainable communities.
- **Children & Nature Leadership Summit 2018**: Genevieve Ploch, early childhood educator, and Brandi Cartwright, Head of School, were invited to participate in the first summit to set goals and directions for the Children & Nature Network, in two pillars – supporting young leaders and research on children and nature.

List any future goals

- We plan to install an in-ground water tank for run-off collection to be used for irrigation.
- We expect to complete a children in nature documentary that highlights the important role of time in wild, outdoor spaces for young girls.

# Pillar I: Sustainability - Reduced Environmental Impact and Costs

## Energy and Greenhouse Gases

- In 2017, Raintree School installed a 51 kW solar array with 170 solar panels, covering 75% of rooftop and projected to provide 80% of the school's electricity. Motion-activated lighting is installed throughout the building. The 2017 campus addition has 100% LED lighting. The campus is served by ultra-efficient water-heaters with exhaust recovery features. GHG Emissions were estimated for the baseline and ending year at Raintree School. 7,318 lbs. of CO<sub>2</sub> emissions were saved by use of the solar array. This was an 18.8% kBtu reduction in energy use and a 34% MT CO<sub>2</sub>e in emissions per student.
- By adding native trees to all sides of the site, and by protecting the existing forest on campus from conversion into housing and turfed backyards, Raintree kept GHG's from being emitted.

## Water and Grounds

- Reductions of water use were documented through a review of utility bills. Raintree School has experienced a 55% gal/student/year reduction in total school water consumption despite a nearly 10% increase in our student body and 5800 sq. ft. building addition in 2017. Among many changes on campus this year regarding water use, native plantings and new trees have become established and now require less watering.
- Essential components of campus plantings include tall grass prairie in two locations, integration of native gardens throughout playscapes, turf reduction, and wildlife gardens around the school building. Additionally, mulching, a planted BMP, and strategic shade planting adds to ecological and sustainability features. Water Efficient Plants include Blue Star, Big Blue Stem, several varieties of Milkweed, Butterfly Weed, Prairie Sedge, Coreopsis, Tickseed, several varieties of Coneflower, several varieties of Blanket Flower, Clover, Spicebush, several varieties of Mint, Beebalm, several varieties of Fern, Oak trees, Sassafras, Goldenrod. Regionally Appropriate Plants include Cattails, Ground Cherry, Lamb's Ear, Glade Coneflower, Nettles, several varieties of Milkweed, Wild Strawberry, Tickseed Coreopsis, Wild Bergamot, Echinacea, Oak trees, Dogwood, Red Bud, Junipers, Butterfly Weed, several varieties of Coneflowers, Water Canna, Big Blue Stem, Sideoats, Indian Grass, Switch Grass, several varieties of Aster, Garlic Mustard, Knapweed, and Ragwort. In all 9.97 or 90% of Raintree's acreage is water efficient and/or regionally appropriate landscaping.
- A rain garden was the first step taken to utilize rain water efficiently. We are currently planning the installation of an in-ground water tank for run-off collection to be used for irrigation.
- One hundred percent of impervious surfaces, including paved surfaces and roof, drain to an engineered water retention basin (BMP) with a native raingarden. The BMP filters all storm-water runoff through the use of native plantings and engineered soil. Two other highly impactful features on campus are a 1+ acre prairie for overflow parking in lieu of impervious parking surface, and planting every slope. Reports from campus neighbors cite reduced flooding in low-lying backyards and visibly cleaner water within Grand Glaize West Creek.

## Waste

- By comparing trash bin pick up to recycle bin pick up we estimate that we divert about 65% of the solid waste we produce. Our greatest efforts come from composting 53% of our food waste for use in the gardens. All paper, plastic, and glass are recycled or reused on campus. Over 50% school supplies are repurposed material from recycled goods warehouses. Additionally, our kitchen follows practices including: no plastics, use of leftovers, and zero use of disposables.
- Raintree School has a dual-point purchase system. As a small school, our control of hazardous waste benefits from having only two purchasing members of the staff: #1 for food and #2 for all else. As the single staff member purchasing non-food items, Ilya Eydeman ensures hazardous materials remain off campus. The campus is a pesticide-free property. Only green certified cleaning products are used. Raintree School does not use laboratory chemicals, or solvents. A license variance allows us to use a non-toxic, biodegradable, green certified peroxide-based sanitizer in lieu of bleach/ammonia (normally required by licensing regulations for facilities of our type).
- We use Green Seal, UL ECOLOGO, EPA's Safer Choice for our cleaning products
- With electronic waste, repair takes priority and is completed by a staffer able to work with electronic components. Raintree has minimal classroom electronics, including computers, greatly reducing probability of waste. In case of need for electronics disposal (including cords, batteries), local electronics recycling is utilized if donation is not an option.

## **Transportation**

- We have two electric car chargers, including a level 3 DC fast charger and level 2 high-amperage charger. The chargers will be free to use and accessible to the public. Additionally, 5% of parking stalls are reserved for electric vehicles only.
- An online carpool database on our school website's Parent Portal includes parent drive schedules and addresses to aide parents/administrators in coordinating carpool relationships. However, Raintree School's location prevents certain alternative transportation options. Sidewalks and crosswalks are not a part of the neighborhood surrounding the school campus.

## **Purchasing/Sourcing**

- One third of paper on campus is once-used paper supplied from area businesses and schools. All purchased paper is 100% post-consumer recycled content. Raintree's recordkeeping and administrative operations are paperless. In February 2014, the campus ended use of paper towels in bathrooms, replaced by electric hand-dryers powered by solar panels.
- Established as a fully green kitchen, Raintree School partnered with EarthWays Center in Missouri upon the founding of the school. Raintree School operates a locally sourced meal program, serving breakfast, lunch, and snack to 100% of its students. The program follows a strict seasonally responsive menu that is 90% sourced from a 1-acre campus production food garden and local farms within 50 miles of the school. Approximately 60% of all food served is organic. Eggs are free range and milk is low-pasteurized. Meat is only served two days per week in an effort to increase sustainability and reduce carbon footprint.

## Pillar 2: Health - Improve the health and wellness of students and staff

### Environmental Health

- **Water Sources** - A municipal water treatment plant supplies all water on campus. Our team monitors any news or reports of the treatment plant to ensure swift action is taken should a problem occur within the plant. The water treatment plants follows the guidelines set forth by the state and is in good standing.
- **Drinking Water** - Raintree School hires an independent lab to annually test the water on campus. We selected a lab qualified to check for lead and other heavy metals and chromium-6. A plan has been formulated with a registered engineer to implement a reverse osmosis filtration system should any contaminant quantities rise above acceptable limits. Raintree does not have drinking fountains on campus. Students use personal water bottles. Parents are permitted to bring filtered/reverse osmosis treated water for their child's water bottle use.
- **Moisture Management** - Built under the advisement of LEED certified architects, Raintree's schoolhouse enjoys the benefits of many moisture controls: a perimeter insulation around foundation walls; all spaces below grade are waterproofed; cold air returns and cold water plumbing pipes are insulated; the HVAC system is designed to eliminate condensation from indoor air channels, in part, by 10 degree temperature differential between occupied and non-occupied building times; and dehumidifiers are built into HVAC system. Additionally, faculty work with students to establish/execute mold-prevention practices: gear dries outdoors on designated pegs, cubbies are cleaned weekly. Monthly visual inspections for mold, leaks, and moisture build-up are conducted by the facilities manager.
- **Ventilation** - Building features create and maintain optimal ventilation for occupants, while faculty practices support healthy indoor air quality. Raintree's schoolhouse meets ASHRAE outdoor air requirements. For maximum efficiency, air filters are changed monthly, and Raintree has contracted with a local HVAC service provider for annual system maintenance. Establishing healthy routines with students, faculty regularly open large windows in every classroom and dining room on days when HVAC is not in use.
- **Airborne Contaminants** - Air quality precautions on Raintree's campus are founded in four areas: 1) building materials and furnishings - The majority of floors are non-carpeted. The few throw rugs on campus are cleaned seasonally and made from natural fiber. Additionally, daily cleaning, dusting and vacuuming of campus reduces buildup of dust. 2) cleaning products - All cleaning products meet high green certified standards and pesticides are not used. 3) exclusion of toxic chemicals - All paint and wood finishes in building are zero or low VOC.4) protection from traffic/industry air pollution - Vehicles park 166 ft. away from building. Additionally, we have a policy of no idling, campus does not own a school bus, and all windows and doors are new (installed 2014 or 2017) with regular inspection by facilities manager. Air filters are changed frequently.
- **Integrated Pest Management** - In careful coordination with Raintree School's facilities manager, DJM, HKW architects, and the Missouri Department of Conservation (MDC), IPM efforts have been strategic and school-wide. Despite the newness of the campus, a system of prevention is in place including long-term prevention by ecosystem management, pest identification, regular monitoring, and assessment of effectiveness. Raintree School begins with cultural controls to regulate plant disease and weed growth. Students and faculty maintain strict hygienic practices to prevent food/food residue left exposed on campus. Biological controls include working with MDC to determine clues to animal well-being.
- **Chemical Management** - Purchasing choices are the primary source of prevention of hazardous chemicals on campus. Protection focuses on Prevention, Monitoring and Policy. Prevention: all furniture is wooden, there is no plastic equipment indoors or out, rugs are natural fiber. Pesticides and hazardous cleaning materials are not used. To prevent mold growth, teachers dry ALL of all wet student gear outdoors in open air. Monitoring: The facilities manager conducts regular inspections to identify and repair sources of mold. Carbon monoxide detectors are present throughout schoolhouse. Radon testing is performed bi-annually. Policy: Policies prohibit smoking and idling vehicles.



## Nutrition and Fitness

- **Healthy Foods** - Chef Katie consults with schools statewide on creating healthier food options and is invited annually to conduct workshops on greening school kitchens and maximizing nutritional output of delicious food at local and international conferences. We serve “adult” food, avoid cookies and treats, prohibit juice on campus, and reduce liquid milk with meals. Katie has taught educators and food service staff in St. Louis, Vancouver, and Costa Rica. Two full-time chefs are dedicated to the preparation of nutritionally balanced, locally sourced meals on campus. Both chefs hold degrees in dietetics and nutrition and oversee all aspects of Raintree School’s food culture. Regular cooking and wellness classes for parents are facilitated by the school chef. In a push to go greener in the kitchen, parents supported Chef Katie’s decision to reduce the fresh fruit assortment in off-season months. In-season, parents volunteer in the kitchen to freeze large quantities of organic, heirloom variety fruit from local farms. The bulk of winter and early spring fruits served on campus is thawed from these batches to uphold Raintree’s seasonally responsive cuisine.
- **Fitness** - Students have a minimum of 18 hours a week of supervised, sustained gross motor activity. However, traditional P.E. classes have been omitted from Raintree School curriculum due to results of recent research citing increased student gross motor activity in open-play outdoor time above and beyond that found in organized P.E. classes. Similarly, data on Forest Schools asserts the additional benefits in balance, coordination, and strength in children spending time in wild outdoor spaces. Wanting to maximize the physical activity of students during gross motor opportunities, as a Forest School, Raintree has made play in wild outdoor spaces a regular, consistent part of the school week, year-round, rain or shine. Student outdoor gear policies ensure all students readily participate despite weather conditions.
- **Outdoor Safety** - Sun Exposure – Students are required to have a wide-brimmed hat and sunblock on campus, year round. Application is supervised by faculty for all ages of students and application is required prior to spending more than 20 minutes outdoors. Sunglasses are encouraged. Outdoor Air quality is checked at [airquality.gov](http://airquality.gov) and time guidelines for outdoor play is adjusted accordingly.
- **Outdoor Activity** - Raintree School has replaced traditional PE with outdoor play time so students spend 1 full school day per week hiking and playing in the woodland on campus. During the four non-Forest School days each week, the school day begins with a one-hour recess and ends with a one-hour recess. A lunchtime recess of 45 minutes is part of each school day. With a playscape that is designed to increase gross motor activity, changes in elevation due to intentionally hilled grading, boulders and the exclusion of toys and seats/benches outdoors, action research conducted by faculty indicate full student participation in gross motor activity for the majority of each designated recess.

## Coordinated School Health Program

- **Health Education** At the heart of all interactions on campus is a language of health, well-being, and caretaking that all faculty are trained to use. From that platform, classroom encounters, lessons, and assessments grow. Students are taught risk-assessment for outdoor encounters. Gross motor challenges comprise a significant portion of Forest School encounters, including: tree climbing, bouldering, swimming, and hiking. Healthy eating habits are monitored and assessed for every student. Faculty spend mealtimes tracking data on the types of foods students eat. Semester progress reports include scores for: “student tries a variety of foods” and “student eats a well-balanced diet”. Chef Katie works with parents on healthy-food homes.
- **Health Services** - One hundred percent of faculty and administrators are certified in CPR and first aid, and complete Wilderness First Aid training every two years. Campus administrators have been trained to dispense medication on campus and manage chronic health conditions, such as asthma, in students. Campus policies delineated in the Parent Handbook and discussed during annual Parent Orientation each August detail wellness policies on campus including mandatory absences due to illness.
- **Mental Health** - The Peace Program, developed by Raintree School in 2007, uses research-based practices in a comprehensive campus-wide approach to support student social-emotional development including conflict resolution, identification of emotions, tools for building relationships of mutual respect, use of feelings words, peer mediation, personalized behavior support plans, and tools to cope with frustration, anger, disappointment, and death. Faculty assess student success within the program, report student progress on report cards, and provide detail on Character Report Cards. Founded on the principals of the Center on the Social and Emotional Foundations for Early Learning, our Peace Program helps students increase their interpersonal and intrapersonal skills in every stage of development.

- **Employee Wellness** - A free faculty and parent exercise group meets three times a week and the weekly Forest School sessions with students are a time of sustained gross motor/aerobic exercise. There are daily, scheduled student-free periods for faculty to regroup and refresh. The faculty meal program includes complimentary meals on campus; leftovers taken home support healthy dinners. Faculty mentors promote open communication and support for teachers.
- **Community Engagement** - Students have coordinated civic and ecological initiatives with the Town and Country board of aldermen. The Humane Society of Missouri hosts an annual student community service trip, and offers classroom resources for all animal welfare class projects. The Litzinger Road Ecology Center coordinates with faculty to support student Creature Garden plans. Eat Here St. Louis connects local farmers to Raintree, and delivers farm-fresh produce to campus. Move, Live, Learn offers free weekend clinics on physical health on campus for families that include biking and running. In the fall of 2017, Raintree faculty launched Wildkin – an initiative to bring St. Louis kids to the wild spaces of local parks once each season. Led by Forest School practitioners, infants to twelve-year-olds are welcome to the free day.
- **Family Engagement** - Faculty have developed an annual rhythm that supports a healthy home culture by modeling good practices, showcasing what works with students, teaching new skills to parents, and offering diverse events/learning encounters to attract parents of varied interests/needs. These include seasonal cooking workshops, documentary film screenings on food issues, social-emotional development and civic engagement, Forest School parent days, invitations to all outdoor events – Father's Day Hike, Mother's Day Hike, Grandparent's Planting Day-, family lunch dates with free lunches for family members, Wildkin – Forest School mornings in local parks-, and school participation in locally organized mud runs

## Pillar 3: Learning - Effective Environmental and Sustainability Education

### Curriculum and Assessment

- **Literacy Requirement** - Project design is a student-initiated activity, spurred by issues within the community and outdoor environment. Every academic benchmark is embedded in the locally-based work within each classroom. Assessments are conducted within this constructivist model. Additionally, weekly Forest School sessions place learning within the wild ecosystem of the woodland. It situates all inquiry, art, science, math and literacy in local habitats. Surrounded by homes, the woodland is the impetus for provocations of human environmental impact that are documented and presented as part of formal project outcomes. To ensure a coherent and scaffolded environmental and sustainable experience, all summer camps are also focused on Forest School pillars, ages two to eight.
- **Lessons**
  - **Nursery - How to Make a Garden Grow:** Students go from seed to plant, an exploration of what food needs to grow in a garden. There is a focus on counting seeds, making a 1-to-1 correspondence when adding seeds to holes, and counting total planted. Summative Assessment - Faculty meet at the end of each daily lesson with student to measure number knowledge and counting skill.
  - **Preschool - Who Lives Here?:** Students use tracks, scat, and feathers, using field guides and clues to determine the animal population in the woodland. The focus is on 'reading' the field guide and using shape, color, and size to identify biological markers. Physical science skills – students explore physical properties of objects and materials, investigate properties, and solve problems involving physical properties of objects. Life Science skills – students investigate characteristics of living things, solve problems related to living things, and represent observations about living things in a variety of ways. **Criterion Assessment in the field** – was the animal population located?
  - **Pre-K - The Story of the Turkey Vulture:** After setting up motion-activated video cameras, students write short non-fiction narratives on the activities of turkey vultures on campus. Creative Writing: Students integrate good writing techniques into personal pieces, including plot, setting, and descriptive words. **Diagnostic Assessment** – comparison of growth from prior knowledge in the previous story and the end result of turkey vulture story
  - **Kindergarten - Sizing Up Queeny Park:** Students use modern and art-based mapping techniques to create a usable map of a favorite section of Queeny Park. Focus is on scale, location of points of interest, symbolic representation, and geometry. **Interim Assessment** – tracking benchmarks throughout project. **Criterion Assessment** – judged on performance rubric as criteria for entry into a community book.
  - **Grades 1-3 - Government and Deer Car-Collisions:** Students research the problem of deer-vehicle collisions in town, working with city alderman to reduce deer-vehicle collisions through public PowerPoint presentations, creating a short film PSA, and participating in planning meetings within City Hall. Social Studies skill – understanding principals of republic in the United States, explaining how laws and rules are made and changed to promote the common good. **Criterion Assessment** – student-made rubric for presentation and research completed at each benchmark within project work.

### Professional Development

- **Certification**
  - Missouri Project WET - 2 early childhood teachers 2008
  - Project Learning Tree - 1 early childhood teacher 2008
  - Stream Team - 1 early childhood teacher 2007
  - Prescribed Burn certification - 1 early childhood teacher 2007
  - Project WILD - 2 early childhood teachers 2008
  - National Outdoor Leadership School Wilderness First Aid - 11/11 early childhood teachers 2017 (renewed every two years)
  - Forest Kindergarten Certification from Academy of Forest Kindergartens, 2 early childhood teachers 2015
  - Discover Nature Schools, MDC, 3 teachers, 2016, 2017
  - Missouri Master Naturalist, 1 early childhood teacher
  - Archimedes Earth Level 1 Practitioner, 1 early childhood teacher 2017
  - Voyagers of Learning Teachers Academy, 1 early childhood teacher
  - Litzsinger Road Ecology Center , 3 early childhood teachers 2015, 2017

- **Workshops Attended**
  - 3 Forest School Congress of the Midwest, 11/11 early childhood teachers (nursery – 3<sup>rd</sup>) 2016, 2017
  - 3 Natural Start Alliance International Conference, 2 early childhood teachers 2016
  - 1 Children & Nature Network webinar: Cities Connecting Children to Nature, 5 early childhood teachers 2017
  - 3 MOBOT weeklong training, 2016, 2017
  - 1, 3 World Forum Foundation: Children and Nature working group, 1 early childhood teacher, 1 chef 2016
  - 3 Natural Start Alliance International Conference, 2 early childhood teachers 2017
  - 3 Children & Nature Network International Conference, 2 early childhood teachers 2017
  - 1 Management of Invasive Species in Forests, 1 early childhood teacher 2017
  - 3 MEEA Conference, 2 early childhood teachers
  - 3 Great Lakes Place-Based Education Conference, 1 early childhood teacher 2016, 2017
  - 1 Making Gardens Accessible in Schools, 1 chef 2014
  - 1 Smarter Lunchrooms, 1 chef 2014
  - 1 Increasing School Garden Productivity, 1 chef 2014
  - 2 Conservation Seeds with Missouri Department of Conservation, 7 early childhood teachers in total – 2015, 2016, 2017
  - 1 Effective Outdoor Learning, Litzsinger Road Ecology Center, 3 early childhood teachers, 2012, 2017
  - 1 Gateway Greening Garden Summit, 6 early childhood teachers 2016
  - 3 Early Childhood Nature Summit, MOBOT, 5 early childhood teachers 2014, 2017
- **Workshops or Lessons Provided (Attendees)**
  - Sustainable Lunch Programs for Schools, OneSTL Sustainability Summit in St. Louis 2017 (50)
  - Critical Questions in Outdoor Education, Forest School Congress of the Midwest in St. Louis 2017 (20)
  - Outdoor Games, Forest School Congress of the Midwest in St. Louis 2017 (25)
  - Sticks and Rocks 101, Forest School Congress of the Midwest in St. Louis 2017 (30)
  - Tool Use in Forest School, Forest School Congress of the Midwest in St. Louis 2016 (120)
  - Role of the Outdoor Educator, Forest School Congress of the Midwest in St. Louis 2016 (120)
  - Developing Soft Skills in the Forest, Buzzwords Conference in St. Louis 2016 (20)
  - The Forest Classroom, Early Learners Workshop at St. Louis Science Center staff training 2016 (20)
  - A Case for the Forest, Nature Preschool Conference at Irvine Nature Center in Maryland 2016 (30)
  - Fire Building, Forest School Congress of the Midwest in St. Louis 2017 (50)
  - Connecting to Local Parks with Mapping, 2016 year-long training and consulting with Stix Early Childhood (8)
  - Deer Pod at Experiential Education Exchange conference 2017 (30)
  - Civic Engagement and Social Action for the Environment, Great Lakes Place-Based Education Conference in Detroit 2017 (50)
  - Forest School in the Early Years, Great Lakes Place-Based Education Conference in Grand Rapids 2016 (30)
  - Sustainable Food in Schools, World Forum Foundation 2016 (20)
  - Forest encounters for babies, Children & Nature Network International Conference in Vancouver BC 2016 (30)
  - Connecting Children to Wild Spaces, Crucial Early Years Conference in St. Charles, MO 2014 (40)
  - Child-Directed Learning to Enhance Engagement, Global Botanical Gardens Congress 2015 (50)

## Outdoor Learning Experiences

- **Nursery - The Care of Worms and Other Little Things** – locating and observing small creatures, including worms, and maintaining safe spaces for them. Life science skills included observes/Investigates characteristics of living things
- **Preschool - Bridge Building Over Waterways** – creating passage over water in winter to keep bodies dry by exploring a variety of natural bridge building techniques. Physical science skills included problems involving physical properties of objects and materials
- **PreK - Free Shooney!** – exploring Shaw Nature Reserve to identify areas that can benefit from student action and record data from observations. After determining to help rehabilitate a Cooper’s Hawk, conducting a variety of fundraisers to reach the projected money need. Numbers and operations skill - use number to show quantity
- **Kindergarten - Wildlife Field Guide** – semester-long survey of wildlife within the campus woodland, research one animal of choice, field guide creation and end-of-semester presentation on the forest features that support each researched animal. ELA Pre-Writing skill - appropriate to genre type, develop a draft from prewriting
- **Grades 1-3 - Wilderness Survival Skills** – with the goal of spending one full day in the woodland without adult support, students spent two months of summer researching and testing and mastering survival skills used historically and presently in MO (ex: rope-making, net-making, fire-starting without matches, survival shelters, wild edibles, navigation with maps and nature clues). Social Studies skill - 3a. A. Compare culture and people in our community across multiple time periods.

## Community Engagement

The foundation of Raintree’s approach includes: civic character, student-driven projects, place-based learning, depth of knowledge, and inquiry based thinking. To this end, every student, of every grade, is engaged in long-term, collaborative project work through the school year. All curricular components fit tightly to this model. Three community projects: 1) Stray Cat Roundup – students work to find homes for cats found in forest to help songbird population. 2) Creek Stomp – annual summer event. Student-made posters are distributed to invite community members to clean Grand Glaize West Creek. 3) Map the Park Initiative – multi-year project to map favorite wild spots of Queeny Park, for distribution to area kids

- Within the “Free Shooney! Project”, students initiated advocacy considered the habitat and wildlife of Shaw Nature Reserve, integrated every learning domain (from creating watercolor paintings of the prairie to graphing bird sightings), enhanced soft skills, and prompted presentations to students campus-wide and the partner organizations within the project.
- Studying the primitive vs. modern techniques for modern survival, students noticed how urban sprawl and pesticide use reduced the availability of wild edibles. In response, students took three actions toward measurable change on campus and at home: 1) created a campus wild edibles field guide for student use, 2) planted underrepresented varieties on campus, and 3) presented to parents on the role of wild edibles in culture and risk posed by pesticides.
- This year, two school districts received faculty training, lesson plan review, and program implementation advisement on outdoor, experiential learning that is place-based and child-directed. Both districts serve 1000+ prek-3<sup>rd</sup> grades. One district is composed of Title I schools.
- Engaging an entire region, Raintree School, the first Forest School in Missouri, created the first Forest School Congress of the Midwest. With more than 120 educators from 8 states in attendance the first year, the reach of our message was far. Determined to promote the need for citizen action projects based on outdoor, wild experiences for students of every age, we created trainings to move Midwest educators through locally specific skills and knowledge while reviewing research and theory within Forest School approaches. The remarkable end of the 2<sup>nd</sup> Annual Forest School Congress of the Midwest saw collaboration between prek-12<sup>th</sup> grade educators and college professors forming a non-profit for the training of Midwest Forest School practitioners and enthusiasts – an initiative Raintree School is leading.
- Producer of Children and Nature Documentary – to be released 2019 and available for training use for schools, it highlights the important role of time in wild, outdoor spaces for young girls.

## MEDIA



A crew of Pre-Kindergartners gathered under their self-made shelter. A serious meeting was taking place to discuss the event that shook the forest: a tree fell down.



Circle time in a forest clearing.



Kid initiated and led action project



Observing and writing about nature