WELL-BEING BY DESIGN FELLOWSHIP 2025

CASE STUDY

The 2025 Well-Being by Design Fellows participated in a four-month professional development program for designers and producers of interactive kids' technology and media. They met online to workshop their current projects, network with other fellows, and gain insights from research and industry leaders as they worked to incorporate principles of well-being into their designs. We are delighted to share highlights from each fellow's experience.

Madlyn Larson

Madlyn Larson is a learning designer and project lead for Research Quest, a digital platform that empowers students to think like scientists. With a career-long focus on holistic learning, she designs inquiry-driven experiences that blend museum research, curiosity, and critical thinking to support the whole child—fostering confidence, creativity, and lifelong learning.

RESEARCHQUEST

Critical Thinking. Serious Fun.

PRODUCT: Research Quest: Fungus Farming Ants Investigation

A digital, inquiry-based science investigation that invites elementary students to explore the amazing world of fungus farming ants and develop early scientific thinking through data analysis, pattern recognition, and collaborative reasoning.

→ **RESEARCHQUEST.ORG**

Research Quest was initially designed for middle school science learners as standards-aligned, online investigations that replicate authentic scientific inquiry using museum collections and research. Recently, the Natural History Museum of Utah identified a need and opportunity to extend this model to younger learners, particularly 3rd graders, who are at a critical stage in developing curiosity, reasoning skills, and confidence in science. As highlighted in *Taking Science to School* (National Research Council, 2007), children in early grades are capable of engaging in scientific practices and benefit from inquiry-based learning environments that promote explanation and argumentation.

The Fungus Farming Ants (FFA) investigation is the first Research Quest experience tailored for younger learners. And, it addresses the clear need for high-quality, accessible science experiences for elementary students that foster critical thinking, as outlined in the *Framework for K-12 Science Education* (National Research Council, 2012) and the *National Science Education Standards* (National Research Council, 2012). The investigation invites 3rd graders to explore the symbiotic relationships within a fungus-farming ant community—relationships that have persisted for over 60 million years! By rooting the investigation in the museum's research and collections, these interactive learning experiences (embedded game and simulator) nurture curiosity, foster collaboration, and introduce scientific modeling in age-appropriate ways. It aims to scaffold foundational inquiry practices while making space for learner agency in exploration—key elements of childhood learning and well-being.

LEARNING GOALS

+ Support developmentally appropriate scientific reasoning in 3rd grade learners
+ Nurture curiosity and intrinsic motivation by offering surprising, real-world content
+ Foster early collaboration and discourse skills through structured discussion prompts
+ Build a sense of scientific identity and capability through low-stakes, high-engagement exploration

WHAT COMPONENTS OF WELL-BEING DOES MY PROJECT ADDRESS?

The Fungus Farming Ants investigation supports key components of well-being, including competence, social connection, and empowerment. Learners build competence through developmentally appropriate scientific reasoning, modeling, and problem-solving. Social connection is fostered through collaborative discussions, peer-to-peer sharing and interpretation of evidence. Empowerment emerges as students discover that their questions and ideas matter—they can think like scientists, engage in authentic inquiry, and contribute meaningfully to understanding the natural world. These experiences help build confidence, curiosity, and a positive sense of self as a learner.

HOW CAN MY PRODUCT BETTER ADDRESS CHILDREN'S WELL-BEING?

+ **We are examining ways to foster creativity by giving learners agency in how they learn and communicate.** Supporting learner choice fosters creativity by letting students research as either ants or scientists, and express ideas through drawing, acting, or writing about FFA communities. These playful options deepen learning and give students greater ownership of how they connect with content.
+ **We're working to create a safe space for exploration and sharing.** Through encouraging language and thoughtful feedback design, we aim to help students feel comfortable making mistakes and offering ideas—an essential foundation for building confidence and participation. For example, rather than telling a student their claim is incorrect, we prompt critical reflection by letting them compare their response to that of a scientist. The more accurate claim appears on-screen, and the student is asked to consider how their thinking aligns or differs from the scientist they're "working" with in the investigation.
+ **We are exploring ways to support self-actualization through personal strengths.** We want learners to recognize how their own traits—like being curious, observant, or persistent—are central to scientific thinking. Helping students see their unique abilities as valuable builds stronger connections to learning and boosts self-belief.

REFLECTION

Working through the RITEC framework helped me recognize the often-invisible emotional journey that young learners go through while using digital tools. The Youth Design Team reminded me that third graders value being taken seriously but also love moments of humor and choice. Well-being isn't a side goal—it's central to learning.

> *Designing with children's well-being in mind helped me slow down and really consider how the product feels emotionally—not just cognitively—for a third grader. That shift made the whole experience better. RITEC recontextualized much of our work and sharpened our focus on creativity, safety, and self-actualization.*

LOOKING AHEAD

We're currently beta-testing the *Fungus Farming Ants* investigation in classrooms across the U.S., gathering feedback from both teachers and students to inform the next round of revisions. This collaborative testing phase helps ensure the investigation is not only educationally effective but also engaging, developmentally appropriate, and accessible. In addition to refining content and interactivity, we're actively exploring ways to integrate more well-being "checkpoints" throughout the experience—moments that invite students to pause, reflect on their thinking, receive encouragement, and emotionally connect with the material. We hope these intentional design choices will help learners feel supported and empowered as they engage with science.

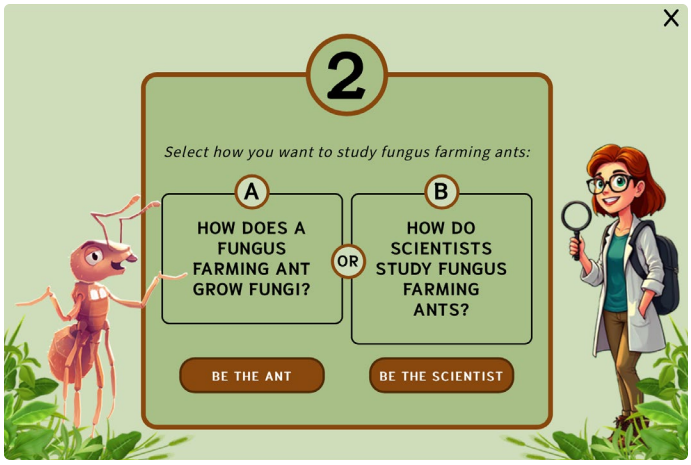
Beyond this single investigation, we're using this opportunity to apply and extend the RITEC framework to the next generation of *Research Quest* experiences. From initial concept development to late-stage revision, RITEC is now an essential guide in developing our design priorities—especially as we expand into elementary grades. Further, we are eager to use the framework as we evaluate how we can increase access for a wider range of learners by addressing diverse needs across our digital tools, content structure, and classroom supports (teacher instructional guides and student research assistant notebooks). By embedding well-being and inclusion from the start, we hope to create science learning experiences that are not only rigorous and research-informed but also joyful, meaningful, and welcoming for all children.

POTENTIAL IMPACT FOR KIDS (USERS) AND THE FIELD

+ **Designing for creativity through imaginative play supports deeper engagement and personalized learning.** By incorporating drawing, role-play, and perspective-taking into our digital experiences—like imagining life as a fungus-farming ant—we invite learners to approach science through creativity and storytelling. This kind of imaginative play fosters deeper cognitive connections and empowers kids to take ownership of their learning. For designers, this highlights the value of integrating open-ended, expressive modalities into content-driven experiences to increase emotional investment and accessibility across diverse learners.

+ **Psychological safety is a design choice—and a critical one for fostering participation.** We've learned that the tone and structure of feedback profoundly influence student confidence. Rather than flagging answers as right or wrong, we prompt students to reflect on how their thinking compares with that of a scientist. This encourages iteration and curiosity over perfection. For designers, this suggests that thoughtful language and reflection-driven feedback can turn mistakes into powerful moments of learning—and that these micro-interactions shape whether users feel safe, seen, and motivated.

+ **Designing for self-actualization strengthens learning and identity formation.** We're exploring how to help students recognize personal traits—like curiosity, persistence, and careful observation—as integral to scientific inquiry. By naming and validating these strengths in context, we're helping kids connect their sense of self to how science "works." For designers, this points to the importance of building systems that affirm users' existing capacities, not just build new skills—laying the groundwork for more inclusive, empowering learning experiences that honor a wider range of intelligence and identity.



SESAME WORKSHOP

Joan Ganz Cooney Center

For more information about the Well-Being by Design Fellowship program, please visit joanganzcooneycenter.org/fellowship2025