

Curious Creatures Overview & Activities



Program Overview

Curious Creatures Family Learning Adventures are monthly family learning experiences that foster curiosity and understanding of the world of arthropods. While each month has a new theme, the structure and format remain the same from month to month.

Guiding Principles and Values:

- Being curious brings benefits to individuals and to society at large. Fostering curiosity in our visitors helps us to participate in building a thriving community of lifelong learners.
- Adults deserve to have their sense of curiosity nurtured as much as kids do.
- Firm goals, flexible pathways - there are multiple ways to learn and to express what you've learned.
- Educators play a critical role in fostering curiosity in our visitors

Learning Objectives:

By the end of each program families will...

- feel empowered to ask new and authentic questions
- be able to discuss scientific concepts connected to that month's theme
- feel welcome and comfortable at the Missoula Butterfly House & Insectarium

Program Overview: Total Run time 2.25 hours (including the optional "welcome and gathering" free time)

- Welcome and Gathering (optional free time) - 30 minutes
- Introduction - 20 minutes
- "What are you wondering?" - 20 minutes
- *Transition from Questions to Stations - 5 minutes*
- Station Activities - 40 minutes
- *Transition from Stations to News Casting - 5 minutes*
- Newscasting - 20 minutes
- Wrap up - 5 minutes

Materials:

- Bug Ambassadors
- Corkboard, pins
- Post-It notes
- Pens and pencils
- Station supplies
- "Station Overview" cards
- "KBUG Newscast Overview" cards
- KBUG Newscast Graphic Organizer
- Station Overview Take Home Activities

Capacity:

Capacity will be determined by room layout and will be measured by "families" rather than "participants". A good estimation is 3 to 4 families per station, a total of 9 to 12 families total.

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Program Activities

Welcome and Gathering: 30 minutes

This is an optional time that allows families to gather and get familiar with the space. This is a great time for families to:

- Hang up coats and park strollers
- Get the lay of the land and ask questions about what to expect
- Have some snacks
- Take a look at the Bug Ambassadors and other available books, toys, and models
- Explore the exhibit space after getting settled in the classroom

Introduction: 20 minutes

Once all families are gathered the lead facilitator will:

- Introduce themselves and explain their role in supporting families throughout the program.
- Introduce the culture of the program and expectations. The facilitator will emphasize that a background in a STEM field is not required to participate and that an open and curious mind is all that is needed.
- Remind families of the program's theme and introduce the flow of activities.

After this information is shared, families will have a chance to hold the Bug Ambassadors that are inspiring the program's theme.

What Are You Wondering?: 20 minutes

During this activity families will have five minutes to write down as many questions about the program's theme as they can. This should be done without judgement or editing of the questions from either the facilitator or the families themselves. After generating their list of questions, each family's next task is to select their top three questions, copying them onto post-it notes. From these top three questions, families will choose one read aloud to share with the entire group. Once all families have shared, post-it notes will be collected and pinned onto the classroom corkboard.

Activity Timing:

2 minutes: Explanation of the activity and rules by the facilitator.

5 minutes: Families write down as many questions as they can think of.

3 minutes: Families pick their top three questions and write them down onto post-it notes.

10 minutes: Families share their favorite question with the larger group. All post-it notes are collected and added to the corkboard.

Activity Rules:

- Ask as many questions as you can.
- Do not stop to discuss, judge, or answer any questions.
- Write down every question exactly as it is stated.
- Change any statement into a question.

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Make sure families know that if they come up with more questions during the remainder of the program they are welcome to add them to the corkboard as they think of them. Share with families what will happen to all of these questions after the program: answers to these post-it note questions will 1) be sent to families via email and letter and 2) be posted on the corkboard for visitors to view during later visits.

Transition from Questions to Stations: 5 minutes

At this point the facilitator should commend families for their great work creating questions and let them know that the MBHI staff and their families did the very same question generation activity. Let families know that the questions generated by that staff-led process inspired the station activities that they are about to participate in. Review the logistics of the stations with the group: each family will choose a station to participate in together for the remainder of the program.

At this point the staff or volunteers facilitating each station should introduce their station by sharing:

1. The title of their station.
2. The question that inspired it.
3. What families will be doing at that station.

Encourage families to talk amongst themselves to choose a station. Station activities can commence once all families have chosen a station and physically relocated to that area. Let families know that they will be able to take home instructions for the activities happening at other stations if they'd like to try those stations out at home at a later date.

Station Time: 40 minutes

Each station activity will have its own lesson plan. There will be four stations with three to four families at each station. Stations will:

- feature activities that are self-paced and open-ended.
- require families to work as a team.
- help families develop answers to the "guiding question" of that station.

Transition from Stations to Newscasting: 5 minutes

As families finish their station work help them transition to the "KBUG Newscast" activity by explaining the process and the timing. During this activity families will present a mock newscast for an imaginary news station, "KBUG". Let families know **why** we're doing this activity (because sharing what you've learned helps you to remember it in the long run and it's FUN to teach other people cool new facts that you've just learned) and **how** the process is going to work (a mock newscast). Let families know this is their chance to be the experts. Make sure families know that this is a simple, quick and informal "presentation", not a test, to reduce any stage fright or anxiety.

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KBUG Newscast: 20 minutes

Families have eight minutes to plan what they are going to say during their "newscast". To help in the planning process, each family will be given a simple graphic organizer. As families work on their newscasts, hand each family a numbered card. When the "planning phase" ends, families with the same numbered cards will find each other and decide who will present first. Ideally, families will present to a family who did a different station than they did.

Planning Phase: 8 minutes

Family One: Give their news report and answers questions: 6 minutes

Family Two: Give their news report and answers questions: 6 minutes

Wrap Up & Goodbyes: 5 minutes

- Thank everyone for joining and attending, congratulate them on a job well done.
- Share some observations you've made of families in action. For example: "I really like how often I saw families working together as a team to solve problems".
- Remind families that at the start they were told that they didn't need to be scientist to participate. Let them know that despite that, *"believe it or not, you just "did science!" you asked questions, tinkered, figured things out, and told people about what you learned. You did the work of a scientist without even realizing it! Great work!"*
- Reiterate the lifecycle of the questions they asked earlier and posted to the corkboard. Remind them that those questions will be answered and the mailed and added to the corkboard which will be posted in the exhibit space.
- Invite families to add any more questions they may have before they go.
- Remind families that they are welcome to take home the "at-home versions" of the stations they didn't participate in.
- Linger as families pack up to go in order to answer any additional questions.

Extensions and Expansions

Extending the Program's Reach

One of the goals of this program is to set up a framework that can be easily replicated monthly. This framework is also designed to be taken "on the road" to partner organizations and schools to offer this experience to their communities.

Potential partners include:

- The Missoula Food Bank
- Family Resource Centers at Lewis and Clark, Russell and other area elementary schools.
- All Nations Health Center
- Missoula Public Library

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Opportunities to Expand the Program's Capacity

- Facilitating the program twice a day - once in the morning, once in the afternoon.
- Facilitating the program on a weekday evening in addition to the weekend daytime session.
- Facilitating the program in a larger room, like the conference space at MBHI or in the gym of an area school.

Post-Program Extensions:

Question Corkboard: During the "What are you wondering?" activity (and throughout the rest of the program) families are encouraged to write down their questions about the month's theme on post-it notes and pin them to a large corkboard. After the program, MBHI staff will answer those questions and post the answers on the corkboard alongside the original question and post the corkboard in the exhibit space. Hanging this corkboard in a public space, like the main exhibit area, can have several benefits:

- Posting participant questions (and the eventual answers) encourages families to visit again and demonstrates the value MBHI puts in visitor questions. Seeing their questions valued and posted in a public space can be empowering for families.
- Including fyers for upcoming Curious Creatures programs near the corkboard can serve as a powerful awareness and marketing tool
- Highlighting visitor generated questions demonstrates the value MBHI places on curiosity.

Post-Program Letter: After the program ends and the corkboard questions have been answered, families will receive a letter mailed to them (at home or school, depending on where the original program took place). This letter will include answers to the questions generated during the opening "What are you wondering?" activity. The letter will include resources to further investigate the topics discussed as well as a few question prompts for families to use and discuss at home. This information can also be emailed to families.

At-Home Station Activity Resources: During the program families will have chosen one station to visit together as a team. At the end of the program they will have the opportunity to take home printouts of other stations they ended up not choosing so they can try them out at home.

Program Passports A booklet that families (or individual family members) can receive stamps or stickers in to acknowledge their participation in that month's Curious Creature Family Learning Adventure could act as a powerful motivator for families to participate. A simple prize can be given to families or individuals that attend a certain number of programs.

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Program Development and Status

"Curious Creatures" was developed as part of coursework for the Harvard Extension School's ALM in Museum Studies. This program was created with immense support from professors Stacie Cassat Green, Lynn Baum, and Katherine Burton Jones. "Curious Creatures" is currently still in development and requires further prototyping and piloting to ensure success. While it is anticipated that the overall structure of the program will remain in place, some nuances will likely change and improve with piloting.

Inspiration

The "What are you Wondering?" question generation activity was inspired by and adapted from the Question Formulation Technique created by the Right Question Institute. Their work on learner generated questions is groundbreaking and insightful. www.rightquestion.org

Inspiration for many of the curiosity fostering elements came from *Cultivating Curiosity in K-12 Classrooms* by Wendy L. Ostroff. This detailed and powerful book is a great resource for anyone looking to get started fostering curiosity in their programs.