Aspen Science Center
Preschool Education Program (PEP)
Fall 2017 Program Report

Aspen Science Center (ASC) began developing a **Preschool Education Program (PEP)** to teach STEM (Science, Technology, Engineering and Mathematics) in preschools across the Roaring Fork Valley in the summer of 2016. The ASC approach is based on teaching the **scientific process** as well as **scientific content** to young children using hands-on guided activites, and encouraging scientific exploration during free play.

PEP contains four key elements: **1)** direct interaction with students by ASC staff who teach in the classroom; **2)** extended classroom support, including additional teacher-led activites and science journaling, enabling the children to record and share their observations of the world; **3)** teacher training and ongoing support by ASC staff; and **4)** connection to parents through take-home information and additional activites for families to do at home. **We believe that combining these four elements will create a sustainable preschool education program that delivers real impact. We are not aware of other programs that have tried this before anywhere in the United States.**

We are currently designing 10 Learning Modules for the classroom that contain all of the necessary materials to study a topic over a two-week period, making this easy for educators to implement. The modules that we are developing are:

1. Be a Scientist
2. Observing With the Senses
3. Sinking and Floating 1 & Sorting
4. Sinking and Floating 2 & Noticing Details
5. Light and Shadow 1 & Designing Experiments and Testing Predictions
6. Light and Shadow 2 & Designing Experiments and Testing Predictions
7. Light and Color
8. Air
9. Rolling and Sliding & Measuring and Comparing
10. Asking Questions and Finding Answers

This program is generously underwritten in part by
- John and Jessica Fullerton
- Mike and Becky Murray
- David Newberger
- Arnie Porath
- Alpine Bank

We are still seeking additional funding for this program to ensure its broader rollout. If interested, please contact David Houggy, Aspen Science Center President.
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2016 – 2017 School Year Progress

During the school year, we worked with approximately 11 classroom in 7 different preschools, reaching approximately 130 children. Schools were located in Aspen, Snowmass Village, Basalt, Carbondale, Glenwood Springs and Rifle, to ensure a wide variety of schools, and community demographics. The goal of this first year was to test concepts, and different pieces of the ultimate program. Five protypte Learning Modules were created, and delivered to the classrooms by Aspen Science Center.

Learnings

- The **teachers were enthusiastic** about the program, with most indicating they want to continue in the program next year. We have also received requests from other schools to join the program for next year, including one kindergarten. The program was evaluated based on teacher feedback for the first year.
  > **"This was great in every aspect and even better that it is an Aspen based science center that is doing this." – Aspen-based preschool educator**
- **Student engagement during activities was high;** Learning Modules were well received.
- We had a flexible schedule with the schools for the first year (by design), rather than a set time. This was not ideal, and we plan to set up a regular schedule for the second year.
- Though engagement was high, teachers/classrooms seem more receptive to shorter scheduled blocks, so we will be shortening the time of the main activity (with continued flexibility to stay longer for guided free play).
- We will be adding more specific activity directions for teachers to complete with students outside of the main activity. More formal teacher training should also help this, and we will continue to experiment with tools that can help (like idea "tags" to go around the classroom that teachers can glance at quickly and use.)

2017-2018 School Year Plan

The first year of the program was designed to test various elements of the ultimate program. This second year will be delivering the full program, with all of its elements, including: 10 Learning Modules, fully designed; creating and delivering formal teacher training (the first year was more ad hoc); introducing the student journaling; more rigorous enrollment process and scheduling; and experimenting with different ways to get more rigorous evaluations.

The fall of 2017 will be spent creating the program and enrolling the schools. We will return to the classrooms in January of 2018 for a 20-week run. This will basically be a more formal beta test of the full program. The goal is to test a nearly-complete program, rather than individual elements. We hope to increase the number of students reached to 200 or more.

We may also experiment with adding one kindergarten class, to see how the program works in that environment.

2018-2019 School Year Plan

The plan for the third year is to make any revisions necessary based on learnings from the second year, and make the program more widely available across the valley.

For more information on this program, and to learn how you can get involved in supporting it, please contact David Houggy, Aspen Science Center President, dhouggy@aspensciencecenter.org