

Orange Blossom County Office of Education: California Early Math Initiative Plan

Organization: Orange Blossom is a County Office of Education.

Goals: The professional learning facilitators (PLFs) expressed three program goals to implement what they learned during the summer institute including:

- To “ensure ALL students engage in high quality mathematics”
- Support teachers to “understand the important foundation that early mathematics brings to future mathematics success (empower early learning teachers to know the important role they play)”
- “Increase our understanding of why hands-on learning is so important in the mathematics classroom (play)”

Orange Blossom Team Composition: The Orange Blossom Team is made up of 3 PLFs. Erika is from a curriculum and development office. Jasmine and Kelly are two long-term teachers with experience in professional development coaching. This initiative brings together PLF’ from two different departments that have not worked together in the past.

Plan: The PLFs plan to have 3 professional development learning events to support a group of 21 early childhood educators (ECEs) across 6 Head Start preschool classrooms during the 2019-2020 school year. Additionally, the group will implement coaching sessions where the PLFs will work with each school site individually. The coaching will provide feedback and site-specific guidance for supporting the ECEs. The major themes the PLFs would like to integrate into their program include 1) the teachers’ math identities, 2) hands-on, play based mathematics, 3) equitable mathematics, and 4) mathematics content and concepts related to counting and spatial thinking. The PLFs want to provide research-based materials to the teachers participating in the program (e.g., power points from the CAEMI Summer Institute, research articles, etc.).

Questions from Orange Blossom:

- How to support ECEs in attending the professional learning events? This includes getting substitutes, extra time for meetings and feedback, etc.
- Having all of the school sites welcome the support and help of the PLFs. How do the PLFs motivate and encourage participation?
- Budget and other logistical information (e.g., taxes on the stipend, allocating funds, etc.)

Cross-case Discussion Items:

1. What do you see as key elements (expertise, resources, contextual factors) that will contribute to this plan's success? What do you anticipate might be major challenges?
2. Which elements, if any, could you envision implementing in your work?
3. Have you addressed similar concerns in your own context? If so, how?
4. Do particular research questions, frameworks, or additional resources come to mind to inform this project?

Apple Orchard: California Early Math Initiative Plan

Organization: Apple Orchard is a resource and referral agency for children aged 0-5 and their families.

Goals: Use a project-based learning (PBL) approach with early childhood educators (ECEs) to instill playful attitudes about mathematics learning. The Apple Orchard team wants early childhood educators to see themselves both as learners and as capable of fostering playful mathematics experiences for their students.

Apple Orchard's Team Composition: The Apple Orchard Team consists of 4 professional learning facilitators (PLF's). Jill is a Quality Improvement Coach with over 40 years of experience as an early childhood teacher, coach, and evaluator. She leads the Apple Orchard team. Sonia is a Provider Services Coordinator who joined the Apple Orchard Team about 4 months into the CAEMI project. Jim, a Provider Services Manager, runs training and coaching sessions with early childhood educators. Jill, Sonia, and Jim will work together closely to develop and implement their CAEMI plan. Marla is the Director of Community Services for Apple Orchard. Though she previously thought of herself as "not a math person," she understands the importance of early childhood mathematics and wants to make space in her directorial duties to contribute to this project.

Plan: Between January and May, the Apple Orchard will run 3 learning events. They plan to organize these events around the project-based learning (PBL) cycle. ECEs will develop, implement, document, and present a playful math project in their child care setting (family-based childcare, center-based child care, pre-school, etc.). The 20 participating ECEs, recruited through Apple Orchard's extensive professional networks, will each receive 6 one-on-one coaching sessions, 1 before the first learning event and the remainder as check-ins between the subsequent learning events. The Apple Orchard has purchased copies of *Young Investigators* (Helm & Katz, 2016; Figure 1) to guide each participant's PBL work as well as tabletop math manipulatives, both for hands-on time in during the learning events and as give-aways for use in classrooms.



Figure 1. *Young Investigators*, around which Apple Orchard will organize their project-based work with ECEs.

Questions from Apple Orchard:

- How best to reach and support family-based childcare educators, many of whom are quite isolated?
- Techniques to strike a balance between actionable strategies (practical knowledge) and the research behind those strategies (theoretical knowledge)?
- How will ECEs fit the PBL approach into their schedules and existing responsibilities?

Cross-case Discussion Items:

1. What do you see as key elements (expertise, resources, contextual factors) that will contribute to this plan's success? What do you anticipate might be major challenges?
2. Which elements, if any, could you envision implementing in your work?
3. Have you addressed similar concerns in your own context? If so, how?
4. Do particular research questions, frameworks, or additional resources come to mind to inform this project?

Blackberry Patch: California Early Math Initiative Plan

Organization: The Blackberry patch team is a collective of preschool classroom teachers and representatives (we refer to these individuals as Professional Learning Facilitators, or PLF's) from a county-based resource and referral agency for children ages 0-5.

Goals: The Blackberry patch team seeks to promote hands-on/minds-on math learning that extends from children's natural curiosities and is connected to children's cultural and community funds of knowledge (Gonzalez, Moll, & Amanti, 2005). The team aims to support teachers and family care providers in their communities in providing mathematically vibrant environments for young children.

Blackberry Patch Team Composition: The team is made up of 3 PLF's. Laura is an assistant supervisor and lead preschool teacher at a children's center affiliated with a local college. Maggie is an adjunct professor at this same local college and teaches courses in early childhood education. The final team member, Brenda, is a lead preschool teacher. Brenda has expressed deep interest in math education that draws on students' home and community knowledge to empower her students to approach math confidently and playfully. These three PLF's have extensive experience working together through the county's Quality Counts program.

Plan: The Blackberry patch team plans to hold 5 professional learning events for early childhood educators (ECEs) in their community from September 2019 to March 2020. The number of ECE's at these vents is estimated to range from 30 to 100 attendees. These events will present information ranging a variety of topics related to early childhood mathematics education including teaching seriation/classification, number sense, and spatial relationships. These events will also include hands-on opportunities for ECE attendees to engage in math activities they can bring back into their own settings. This will include providing examples of resources and manipulatives that attendees could purchase or re-create for their own unique contexts. In addition to the 5 professional learning events, the Blackberry patch team will hold a community walk at a local farmer's market to engage attendees in noticing math as embedded in the everyday culture of their community.

Questions from Blackberry Patch:

- How to help ECE attendees connect the informal math that occurs during the day (such as during play or lunchtime) to formal math education in the classroom?
- How to help build strong math identities, helping ECEs in their community combat feelings such as "I'm not good at math" that might prevent them from intentionally incorporating math in their respective contexts?
- The PLF's all represent different organizations which presents logistical challenges. For example, they have difficulty finding time for common planning sessions in order to plan the professional learning events.

Cross-case Discussion Items:

1. What do you see as key elements (expertise, resources, contextual factors) that will contribute to this plan's success? What do you anticipate might be major challenges?
2. Which elements, if any, could you envision implementing in your work?
3. Have you addressed similar concerns in your own context? If so, how?
4. Do particular research questions, frameworks, or additional resources come to mind to inform this project?

Strawberry Field: California Early Math Initiative Plan

Organization: Strawberry Field is a resource and referral agency for children aged 0-8 and their families. This team also serves outside providers for their county.

Goals: The Strawberry Field team seeks to develop, secure, and promote a variety of programs and resources to serve the needs of children, families, and the community. The team strives to ensure that every child receives the quality child care he or she deserves. Their agency employs over 350 talented, caring and dedicated individuals to work in their programs and support services. They contract with thousands of dedicated Child Care providers locally and are a major contributor to the economic vitality of the county.

Strawberry Field Team Composition: The Strawberry Field team consists of three professional learning facilitators (PLF's) from the same resource and referral agency: Betsy, Ingrid, and Cindy. Betsy's official title is Child Care Supervisor and she is in charge of resources and referrals. She is also the leader of the group and the one responsible for all the logistics of implementing this initiative for their organization. Cindy is new to the team and started about a week before the summer professional development. Her title is Trauma Informed Care Trainer. Note, prior to the summer institute, Cindy referred to herself as "not a math person", but started to build confidence in her ability to be a math person as the week went on. Finally, Ingrid's title is a resource and referral specialist. She has been there for over 10 years.

Plan: Over the course of 3 months, the Strawberry Field team will run three professional learning events to support early childhood mathematics development. These learning events are for the early childhood educators (ECEs) that they hire who then go into the homes of the families their agency works with. Their main goal is to educate these ECE's (approximately 60 ECE attendees per workshop) on play-based learning for early mathematics development. The first workshop, held in early September, focused on culture, funds of knowledge (Gonzalez, Moll, & Amanti, 2005), and how to adapt their play-based skills depending on the age of the children they are serving. Their second session will focus on learning foundations and look at the California math curriculum for preschool children. In this workshop, they will provide resources for all their ECE's to use with the children they work with. Their final workshop will focus on spatial reasoning and counting concepts and skills for the ECE's to use when working with children, including how to appropriately adjust their progression depending on the age of the child.

Questions from Strawberry Field:

- How to stress to their ECE's that all children can learn math while they themselves are working to improve their personal identity as someone who can be successful in math?
- Providing valuable and age-appropriate materials to the ECE's to support and enhance what they have learned in the workshops and use with the children they work with. (What materials, how many, cost-effective, etc.)
- What are ways that ECE's can assess the children they work with for a baseline reading as well as to gauge improvement levels?

Cross-case Discussion Items:

1. What do you see as key elements (expertise, resources, contextual factors) that will contribute to this plan's success? What do you anticipate might be major challenges?
2. Which elements, if any, could you envision implementing in your work?
3. Have you addressed similar concerns in your own context? If so, how?
4. Do particular research questions, frameworks, or additional resources come to mind to inform this project?