## Objectives

### Summer Institute

**Inquiry Sessions**
- Increase teachers’ understanding of 3D science inquiry and engineering design
- Increase teachers’ science and engineering content knowledge

**Unit Planning (Learning Architecture Planning)**
- Have teachers collaborate with grade level peers that supports teachers’ declarative, procedural and conditional knowledge building
- Guide teachers to unpack NGSS 3D performance expectations and plan instruction

### Academic Year Support

- Provide teachers opportunities to discuss and think about critical aspects of supporting young children to engage in 3D learning
- Provide teachers with PD regarding family engagement strategies, particularly for diverse populations

### Family Science Packs (FSP)

- Encourage families to engage in NGSS 3D-aligned scientific investigations together (through and inquiry cycle of Explore, Discuss, Think)
- Guide families to have meaningful science discussions

### Community Events

- Teach families how to use community resources to foster scientific inquiry/engineering design
- Teach families how to facilitate their children’s science experiences
- Teach families how to develop children’s scientific vocabulary

## Outcomes

### Summer Institute

- Teachers’ self-efficacy to teach science and engineering in PreK-3 classrooms will improve
- Teachers’ content knowledge will improve

- Teachers’ discussions will show evidence of increased intentionality and use regarding classroom discourse
- Teachers’ lessons will show evidence of attention to DCI, SEP and CCs

- Teachers’ lessons will show evidence of 3D science instruction
- Teachers’ lesson planning will result in more robust units of instruction (rather than one-off experiences/activities)

- Teachers demonstrate pedagogical goals regarding 3D teaching/learning during PLCs
- Teachers’ artifacts presented during PLCs show evidence of attention to 3D components
- Teachers will develop & maintain parent relationships

- Families will demonstrate evidence of completing the FSP
- Conversation between parent and child will reflect in-depth discourse & talk move strategies

- Families will demonstrate evidence of completing the Journal Sheets and returning the sheets to school

- Families will demonstrate evidence of seeking out additional science-based resources after using the FSP

- Families will demonstrate evidence of completing the FSP

- Children will use science vocabulary in the Community Events (pre/post observation

## Impact Measures & Data Collection Plan

### Summer Institute

- Children will be able to engage in 3D science
- Children’s science achievement scores will improve

- Lesson plan analyses (PT)
- Qualitative coding of PLC discussions and shared artifacts (PT)

- Lesson plan analyses (PT)

- Lesson plan analyses (PT)

- Lesson plan analyses (PT)

- Lesson plan analyses (PT)

### Family Science Packs (FSP)

- FSP Journal Sheet FUSE rubric (PT)
- Family survey (A)

- Teacher records of FSP distribution & return (A)
- Journal Sheet; FUSE rubric (PT)

- Family survey (A)

- FSP Journal Sheet FUSE rubric (PT)

- FSP Journal Sheet FUSE rubric (PT)

### Community Events

- Observation of Community Event vocabulary (A)

Key to outcomes: Teacher outcomes= **yellow**; Parent/family outcomes= **green**; Student outcomes= **blue**

Key to data collection: Project Team (PT), Acumen (A); NOTE: schedule for data collection is in Table 6 and the narrative