

Institute for Inquiry **General Information**

The following four factors are most important in teacher professional development in order to significantly impact student achievement in science:

1. Increased content knowledge
2. Increased repertoire of teaching strategies
3. Knowledge of how learners learn
4. Ability to create classroom environments that facilitate learning

Teachers require up to 180 hours of ongoing support in order to fully incorporate the new learning into current teaching methods. Since the Connecticut Science Center's goal is to create long-lasting improvements in science learning for Connecticut students, the Center is focusing on depth and sustainability, rather than mere exposure to new teaching strategies. Ultimately, professional development achievement will be measured by student performance on the new CT Mastery Tests.

Commitment on behalf of the school board, superintendent, and school administration is imperative to the success of your teachers' professional development, which is why the Center asks for a 3-year commitment to the program. Both release time and funding will be necessary on behalf of the district in order to implement this paradigm-shifting program. CSC believes that quality, inquiry-based professional development can achieve the factors listed above.

In **Year One**, the Center will provide the five-day Introduction to Inquiry, which is based upon the Exploratorium's 20+ years of professional development experience. The Institute will introduce participants to the inquiry process of teaching and learning, guide participants in strategic planning for incorporating inquiry into the classroom, and assist participants in building capacity to incorporate inquiry in the entire school or district. Institutes will be offered in the summer or during the school vacation weeks. At the end of the school year, there will be two days of follow up sessions in the form of a conference, for all previous participants. These two days will focus on participants' meeting to share their successes and identifying areas of improvement. Following are some examples of session choices; participants may choose to: bring samples of lessons/units (written and videotaped), bring samples of student work, and/or teachers and administrators may begin to plan how to provide inquiry based professional development for others in their school(s) or district. The two day conference is very much designed to meet the needs of the participants.

In **Year Two**, participants from the previous year's Introduction to Inquiry Institute will be eligible to attend the second workshop in the series; the Classroom Applications Institute. This workshop will deepen participants' understanding of inquiry, provide an opportunity to further develop an inquiry-based lesson, as well as provide more training in the instructional coaching model. At the end of the school year, there will be another two day follow up conference based on participant needs and requests. The days will be spent in sessions varying from sharing all of the inquiry based revisions included in the district curriculum, as well as again looking at samples of student work, or sharing commonly developed grade level inquiry units. Another possible session might be that participating teachers and administrators will share their plans to provide inquiry-based professional development for teachers in their schools(s) or district or

discuss how implementation has progressed. Again, this two day conference is very much designed to focus on the needs/requests of the participants.

In **Year Three**, those participants who previously attended both the Introduction to Inquiry and the Classroom Applications Institutes will be eligible to participate in the last workshop in the series; Formative Assessment. This workshop provides practice in creating and using assessments in the science classroom, as well as further understanding and practice of instructional coaching methods. Once again, there will be a two day follow up conference at the end of the school year based on participant's needs and requests.

The following commitments are asked of the districts and of the teachers in order to participate:

Year One:

- A minimum of three to five teacher leaders, and one school or district administrator, and/or science leader to attend the 5-day Introduction to Inquiry workshop.
- Ongoing administrative support throughout the school year as evidenced by release time, stipends, substitutes, etc., to allow participants to implement and reflect on their new learning. Some examples might be:
 1. Participate in groups that will meet and begin discussing rewriting lessons/units to be more inquiry-based
 2. Lead inquiry-based professional development for fellow colleagues in their schools
 3. Observe inquiry lessons being taught, reflect on successful strategies, discuss student work
- Two days of follow up and discussion and analysis of student work and teaching experiences in the form of an end of the school year conference.

Year Two:

- A minimum of three to five teacher leaders, and one school or district administrator, and/or science leader to attend the 5-day Classroom Applications workshop.(prerequisite: Attendance of an Introduction to Inquiry workshop.
- Continued ongoing administrative support throughout the school year as evidenced by release time, stipends, substitutes, etc., to allow participants to implement and reflect on their new learning. Some examples might be:
 1. Participate in groups that will meet and begin discussing rewriting lessons/units to be more inquiry-based
 2. Lead inquiry-based professional development for fellow colleagues in their schools
 3. Observe inquiry lessons being taught, reflect on successful strategies, discuss student work
- Two days of follow up and discussion and analysis of student work and teaching experiences in the form of an end of the year conference.

Year Three:

- A minimum of three to five teacher leaders, and one school or district administrator, and/or science leader to attend the 5-day Classroom Applications workshop.(prerequisite: Attendance of Introduction to Inquiry workshop
- Ongoing support throughout the school year as stated above in Years One and Two
- Two days of follow up and discussion and analysis of student work and teaching experiences in the form of an end of the year conference.

Participants

- 3 - 5 teacher leaders (preferably at least 2 from one grade level or building)
- 1 school-level administrator or 1 district-wide administrator
- 1 local scientist per small group of teachers or district. The scientist can either be a university professor, or corporate scientist. He/she must provide content knowledge that is beneficial to the school.
- Districts may also invite a museum educator or science center educator to participate with the team.

District Commitment

Send teams of teachers and administrators to the Institutes

Provide teacher stipends if necessary

Provide release time for appropriate follow-up

Provide/pay for substitutes for appropriate release time

Participants must be willing to participate in possible student and teacher assessment activities

The Connecticut Science Center Commitment

Provide highly trained professionals to deliver inquiry-based training

Provide support and follow-up for each participant in the form of a two day conference at the end of each school year.

Provide continental breakfast and lunch for participants during day-long workshops