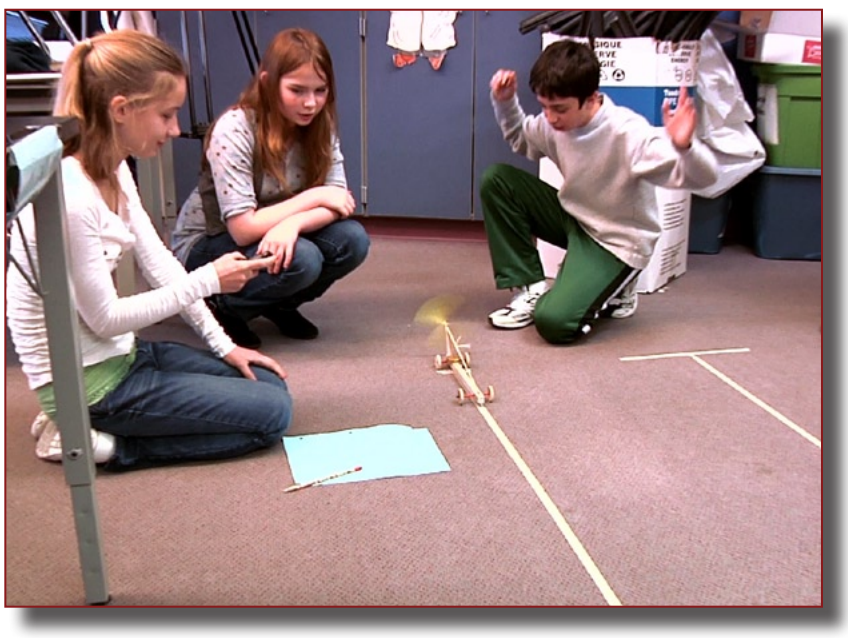
Social Practices in PBIS

A hallmark of *Project-Based Inquiry Science* is a set of *social practices* that are aligned with scientific reasoning, communication, and collaboration skills. These social practices are woven throughout each unit. They fall into two general categories: small-group work and whole-class discussions.

Small-Group Work and Discussions



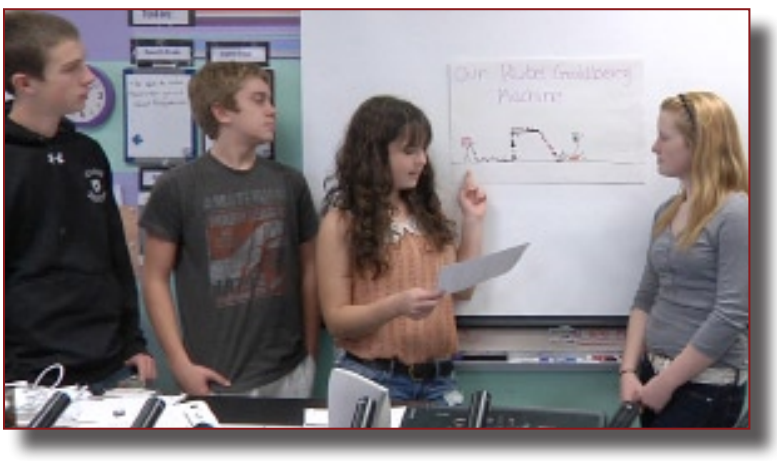
In *Project-Based Inquiry Science*, students are engaged in cooperative and collaborative learning. Students often work cooperatively in small groups to accomplish a task such as completing an investigation procedure, planning and designing a model or an experiment, making observations, analyzing data, looking at case studies, or creating recommendations or explanations. Subheadings in each section indicate the type of activity in which the group will be engaging, and text in the student edition provides guidance for what students need to be doing and how to divide the tasks among the group members.

Students also work collaboratively to make sense and share understanding. Each group member shares his or her understanding and experiences, and members help each other troubleshoot their conceptions. Throughout *Project-Based Inquiry Science*, students often discuss their thinking about a question or topic in pairs or small groups during a *Conference.* The *Stop and Think* questions and *Reflect* questions also provide students the opportunity to help each other share answers and make meaning.

Whole-Class Discussions

In *Project-Based Inquiry Science*, some whole-class discussions are called *Communicates*. There are many different types of *Communicate* activities: *Investigation Expos, Plan Briefings, Solution Briefings, Share your Explanations, Share your Ideas,* and *Solution Showcases*. In a *Communicate*, each small group of students has a chance to present results or ideas or what they are learning to the rest of the class, and in many cases, the class discusses what each group has presented. They make public presentations of their results, ideas, or solutions, submitting them for peer review and comment. Then the class discusses what can be learned by considering the entire set of presentations. These social practices give students opportunities to engage in doing science together–they learn from each other, they help each other, sometimes they need each other's solutions. During *Communicate* activities, they collaborate as scientists do.

For each *Communicate,* the text provides prompts about what to put on posters (if posters are used), how to present, what to present, what to listen for, questions students might ask each other, and what to notice across presentations. Sometimes the text suggests topics to discuss after all of the presentations have been made. *Communicates* are often followed by *Reflects* in which students draw conclusions and predict implications of what they have just heard and discussed. *Communicates* provide opportunities for learning to communicate and collaborate, for deepening understanding of science content, and for learning the skills and practices involved in scientific reasoning and argumentation.



Each time students carry out an investigation, for example, they present to each other in an *Investigation Expo*. If they have all done the same investigation, they post their results on the walls, walk around the room looking at everyone's procedures, results, and conclusions, and then discuss, as a class, why they got the results they did and the conclusions they can draw from them. If they got different results, they discuss why, providing opportunities to discuss good design of investigations and what it means to consistently carry out a procedure so that results are repeatable. If they have all done different investigations, each group presents to the class the question they were answering, the procedure they used, their results, and their conclusions. They have the opportunity to examine each other's procedures and results and ask each other questions about data that seems not to be consistent. This provides opportunities to discuss consistency of data, what outliers are, and how they can know when evidence is trustworthy.

At times when students *Create an Explanation* or *Make a Recommendation*, they share their explanations or recommendations with each other, providing opportunities for them to publicly express their understanding of the science they are learning and its applications and to help each other debug their understanding. After that, students participate in a *Revise Your Explanation* or *Recommendation* and may develop a whole-class explanation or recommendation.

At other times when students are applying what they are learning to addressing the unit's big question or challenge, they present to each other in *Plan Briefings* or *Solution Briefings*, showing the class their plans or solutions in progress and the science content and evidence they used to derive their plans and solutions. This provides opportunities for peers to correct each other's understanding of science content, to question their use of evidence to form conclusions, and to provide constructive feedback. At the end of each Unit, they hold a *Solution Showcase*, where they present their solutions to each other and the reasoning that got them to those solutions.

In addition to *Communicates*, *Create* and *Update the Project Board* also involve whole-class discussions. The use and the importance of the *Project Board* are covered in depth in the video *How to Use the Project Board.*

These whole-class discussions that are integrated throughout all the *Project-Based Inquiry Science* units provide opportunities for students to grapple together about the meanings of difficult concepts and to help each other understand these concepts.