Purpose and Materials Needed

In this activity we will consider Practice 3 of the Next Generation Science Standards (NGSS), planning and carrying out investigations. In Extension I, you will be guiding children through a similar activity. You should have completed Extension H, in which you should have watched a video about children carrying out investigations and brought the notes from your observations with you to class.

What are the teachers’ and students’ roles in planning and carrying out investigations?

Predictions, Observations and Making Sense

Part 1: Your ideas about how teachers facilitate investigations

Engaging children in science and engineering learning requires facilitating their investigations. Consider the investigations you have been doing in NextGen PET as well as any other examples of classroom science or engineering investigations you have observed.

What were the students doing during the investigation?

What was the teacher doing during the investigation?
Share your ideas with your group members.

**Part 2: Video Reflection**

At home, you should have watched a video of children participating in an engineering design activity. In the interview extension in this unit, you will be guiding students through a modified version of this investigation.

In the video, the overarching (engineering) challenge was to design a parachute that will land a payload softly on the surface of the planet. Recall that this engineering problem led to the identification of three variables: 1) canopy material, 2) canopy size, and 3) length of suspension line.

Chose one of these variables, and think of a scientific (testable) question that could guide a scientific investigation.

Share this question with your group.

Look at your notes about the video, especially the questions about what the students and teacher were doing during the investigations. Share your notes with your group members.

Look again at the chart for student expectations for this practice. Which expectations of the practices did you notice that students engaged in?

How might you modify this activity to engage students in more of the expectations?
Summarizing Questions

S1: In activities where the students are planning and carrying out investigations, what do you think teachers need to do before instruction?

S2: In activities where the students are planning and carrying out investigations, what do you think teachers need to do during instruction?