# Open School

**Instructions:**

* *Watch the instructional video together with your group or class.*
* *Hand out fun-size packs of regular and peanut M&Ms to each person in your group. Most packs should be regular M&Ms, but also include a few packs of peanut M&Ms without calling attention to the different varieties.*
* *Draw a simple graph on a whiteboard or flipchart, with numbers from 1-20 on the vertical axis (which will represent number of M&Ms in each package) and the number of people in your group, from 1-X, on the horizontal axis.*
* *Call on each person in your group to count and report the number of M&Ms in their package. Plot the number on the chart.*
* *Watch the debrief video together.*
* *As a group, discuss your reactions to the activity, using the discussion questions below as a guide.*

### Video:

Candy Counting: Understanding Variation ([http://www.ihi.org/education/IHIOpenSchool/resources/Pages/AudioandVideo/QI-Games-Learning-about-Variation-by-Counting-Candy.aspx](https://www.ihi.org/education/IHIOpenSchool/resources/Pages/AudioandVideo/QI-Games-Learning-about-Variation-by-Counting-Candy.aspx))

*David Williams, Executive Director, IHI*

Learning Objectives

At the end of this activity, you will be able to:

* Define common cause variation and special cause variation.
* Discuss why common cause variation and special cause variation are important to process improvement.

**Description**

One of the key skills in improvement science is understanding variation. This activity illustrates the difference between common cause variation and special cause variation, and helps learners understand why being able to determine which type of variation they are seeing in their data can help them improve processes.

Related IHI Open School Online Courses

[QI 104: Interpreting Data: Run Charts, Control Charts, and other Measurement Tools](http://app.ihi.org/lmsspa/#/6cb1c614-884b-43ef-9abd-d90849f183d4/7ef37a50-827f-477b-b603-9b4eef065fe6)

Key Topics

Quality Improvement, Reliable Processes

Discussion Questions

1. What are special cause and common cause variation, in your own words?
2. Why are these two types of variation important to process improvement?
3. Think of a work process you’re familiar with. What would an example of special cause and common cause variation that you might see in looking at the data related to that process?