Coin Spinning Activity
Plan Do Study Act (PDSA) Testing

LEARNING OBJECTIVES
- Teach rapid cycle Plan Do Study Act (PDSA) testing.
- Emphasize the importance of prediction and measurement for learning.
- Demonstrate the value of collaborative learning.
- Illustrate the value of networked learning.
- Demonstrate how a theory of improvement can guide testing.

DESCRIPTION

1. Set up: Give each team a bag of coins, a tracker and rubric.

2. Introduce the objectives of the activity.
   a. NOTE: When setting up the activity, pointing to the current record as well as appointing a person from your team to be a "master spinner" sets up the energy in the room nicely, since they can act as the "expert."

3. Whole room baseline
   a. Identify someone to come to the front to conduct the baseline test.
   b. Use chart paper to solicit and record predictions for time and accuracy (if there are divergent predictions, ask for more opinions, then potentially find a number somewhere in the middle)
   c. Leave space to also record baseline results.
   d. Run the baseline test with everyone watching.
   e. Record the results.
   f. Solicit theories from the room as to what they they think will make a coin spin longer. You can draft a driver diagram of sorts, in which dimensions like "coin size" or "type of surface" work as primary drivers.
   g. NOTE: Emphasize the importance of predictions for learning.

Time
20 minutes

Topics
Testing Cycles, PDSA basics

Prior Knowledge
This activity is designed for beginner audiences, and assumes no prior knowledge of iterative testing.

Materials & Equipment
- ❑ Slide deck
- ❑ Bag with one quarter, one nickel, one penny, and one dime
- ❑ Example PDSA tracker & run chart
- ❑ PDSA Tracker
- ❑ Run chart

4. Launch testing at tables
    a. Tell tables to identify roles.
    b. Ask them to record baseline results on their trackers.
    c. Remind them they must record the change they are trying and a prediction before the run a cycle.

5. Teams test change ideas, iterate and document adaptations as necessary.
    a. Tell them they will have 15-20 minutes to test changes.
    b. Allow teams to start testing. As they work, circulate the room and listen for interesting comments/ anecdotes you could rely on in the debrief.
    c. Once teams have run 2-3 cycles, ask the room to STOP what they are doing momentarily. Prompt to consolidate their learning. What's your evidence?
    d. Ask, "Who has a time they are feeling pretty good about?" Call on a table to share their time, and once they do, ask them, "And what have you learned that has helped you achieve that time?" Tell the rest of the room to listen closely.
    e. Repeat the question for 2 more tables.
    f. Use their comments to update the initial "theory" that the room produced initially.
    g. Then tell the teams to use that learning to continue their testing for about 10 more minutes.

6. End testing
    a. After about 10 minutes, or once teams have run 5-6 cycles, tell the room that the current cycle they are on will be their last.
    b. It is often hard to get teams to stop, so be insistent.

7. Table debrief.
    a. What's your theory about what makes a coin spin for a long time?
    b. Did your theory change as you conducted tests? If so, in what ways? What did you learn?
    c. What roles did recording your theory and making a prediction play for you in the testing cycle?
    d. What value did you see in each step in the PDSA process?

8. Whole group debrief
    a. Allow a few folks to share insights from their tables focused on the last two questions (What did they learn about PDSAs? And what about accelerated learning?)
    b. Did anyone start to get close to your predictions?
    c. How many cycles did you run? Did anyone spend a lot of time debating what to do before running a test? (more cycles = more opportunities to learn.)
    d. Who experienced a "failure" where something they tried didn't work as they predicted? (Hopefully everyone. If not, they aren't pushing the realms of possibility and taking the opportunity to fail now, when the cost of failure is low. Failures produce the most learning.)
    e. How many of you got up and visited other tables to see what they were doing? (Usually no one. Why is this? Why don't we check in with our colleagues in the network to see what they are learning? Why is it that when a table cheers because they have experienced success, we turn more closely into the center of our own table and our own work, rather than going to talk to them?)

9. NOTE: Key Debrief Points:
   a. Predictions are a key part of theory-based learning
   b. When conducting tests of change ideas, it is important to document them in systematic ways so that you can recognize whether they led to improvements
   c. Tracking data over time helps you know if you improved