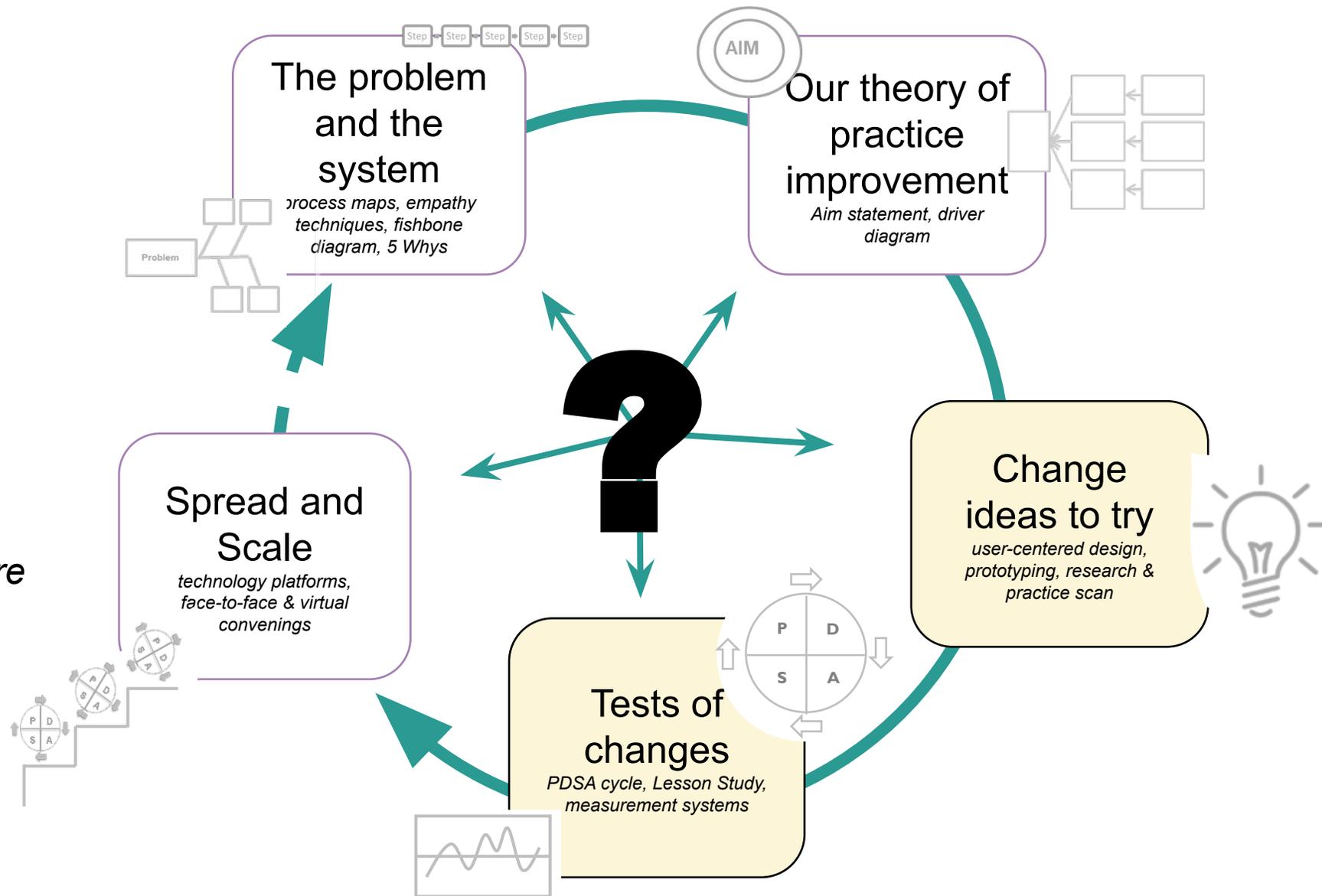# Data Processes for Improvement: The Paper Airplane Game

# Session Objectives

- Consider the qualities of data that best support improvement.

- Experience the relationship between testing, data, and a theory of improvement.

**What next?**

*Determining our next step means we need to know more about…*

The problem and the system
*process maps, empathy techniques, fishbone diagram, 5 Whys*

Our theory of practice improvement
*Aim statement, driver diagram*

Change ideas to try
*user-centered design, prototyping, research & practice scan*

Tests of changes
*PDSA cycle, Lesson Study, measurement systems*

Spread and Scale
*technology platforms, face-to-face & virtual convenings*

# Your Task

Using a simulation activity of paper airplanes, practice using improvement science tools and processes.
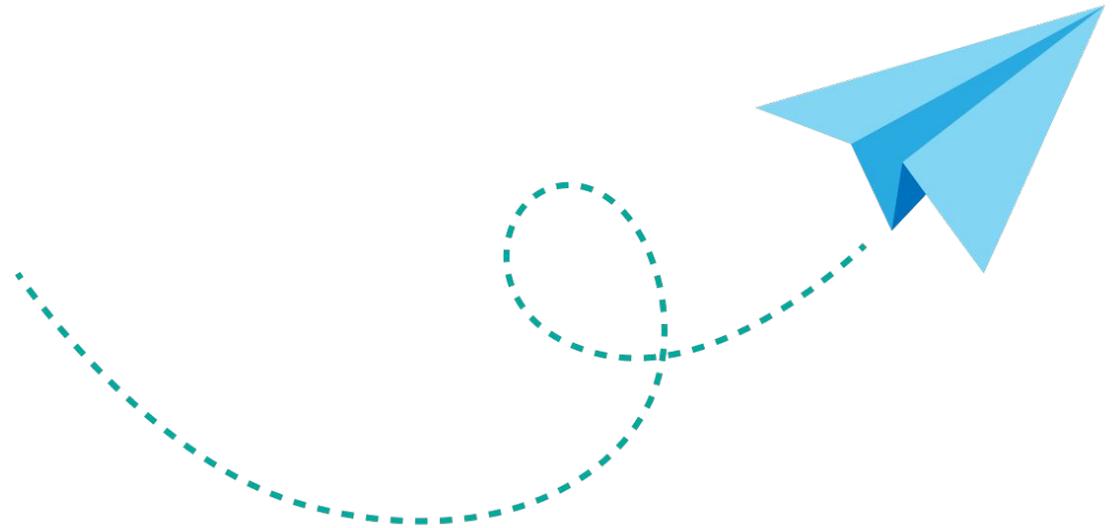
# Flight Path



White Board

Landing Zone
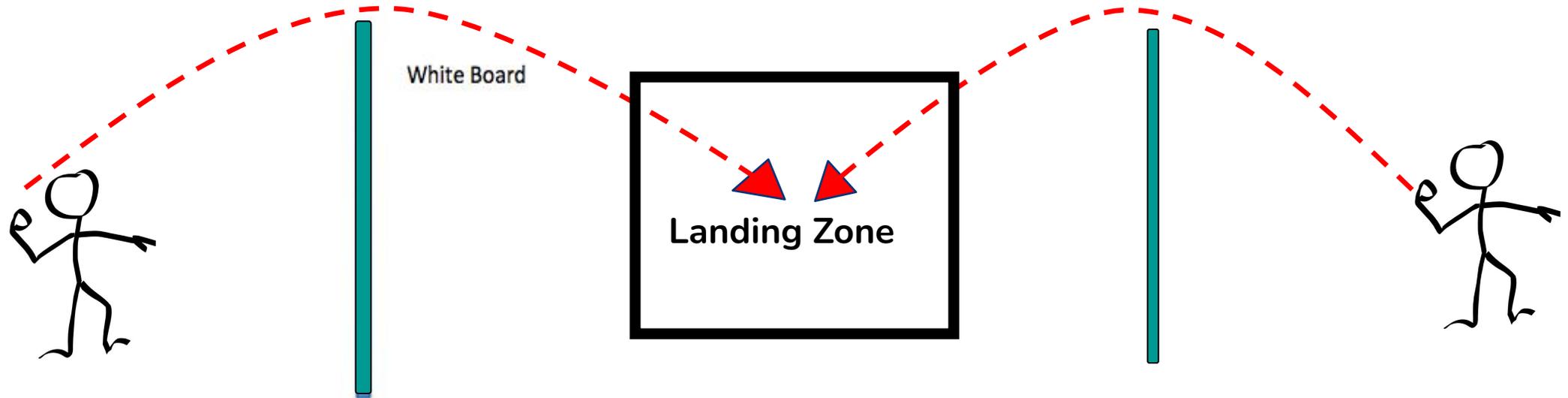
# Simulating Measurement for *Accountability*

Volunteers will throw paper airplanes over a whiteboard or poster board.

AUDIENCE
* Observe Silently
* Think about how you might improve performance.

Carnegie Foundation
for the Advancement of Teaching

# Simulating Measurement for *Improvement*

- What do we need to know?

- What do we need to do?

Carnegie Foundation
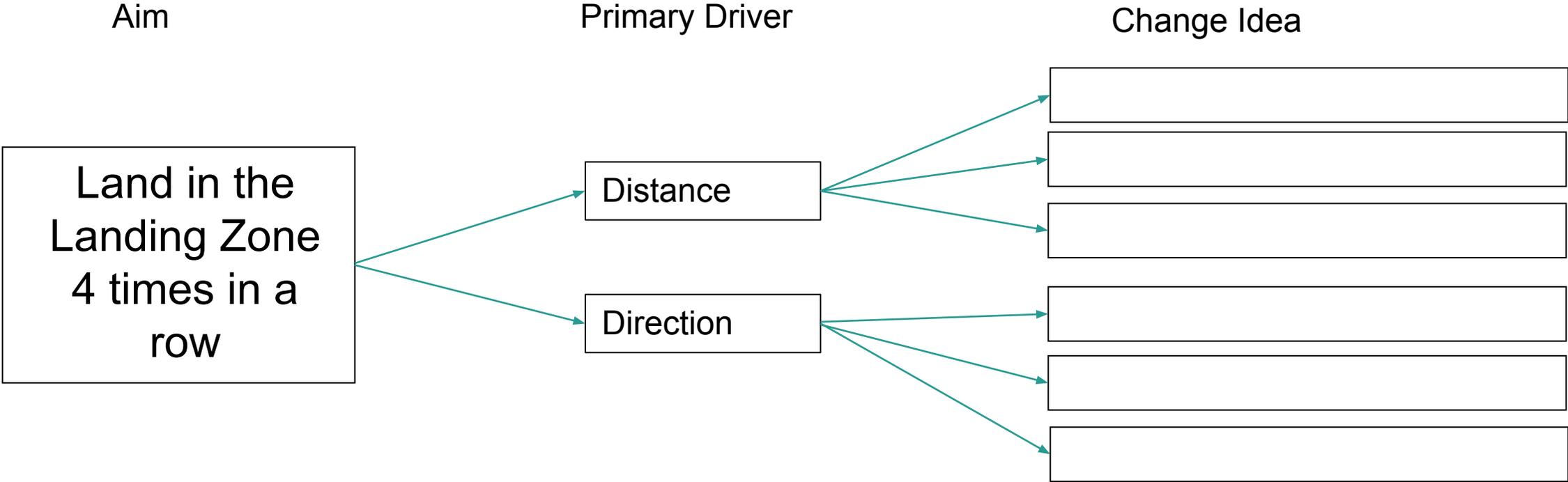for the Advancement of Teaching

# Content Expertise: Construction and Flight Tips

- Concentrate weight in nose

- Maintain symmetrical folds on both sides

- Create tight creases

- For distance, use a smooth, straight pushing motion instead of a curved throwing motion
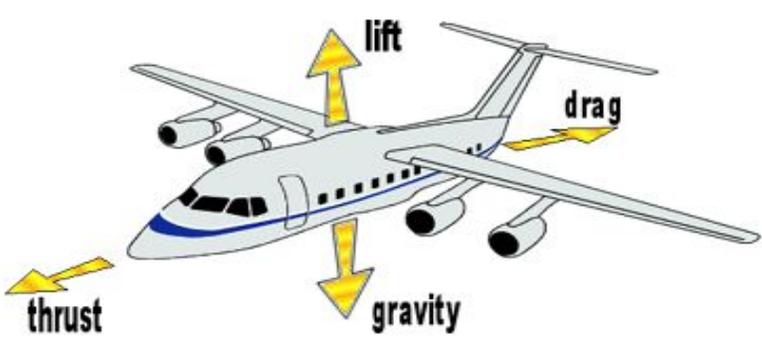


(More tips and troubleshooting advice in your packet)

# Tools: Driver Diagram

Aim

Primary Driver

Change Idea

Land in the Landing Zone 4 times in a row
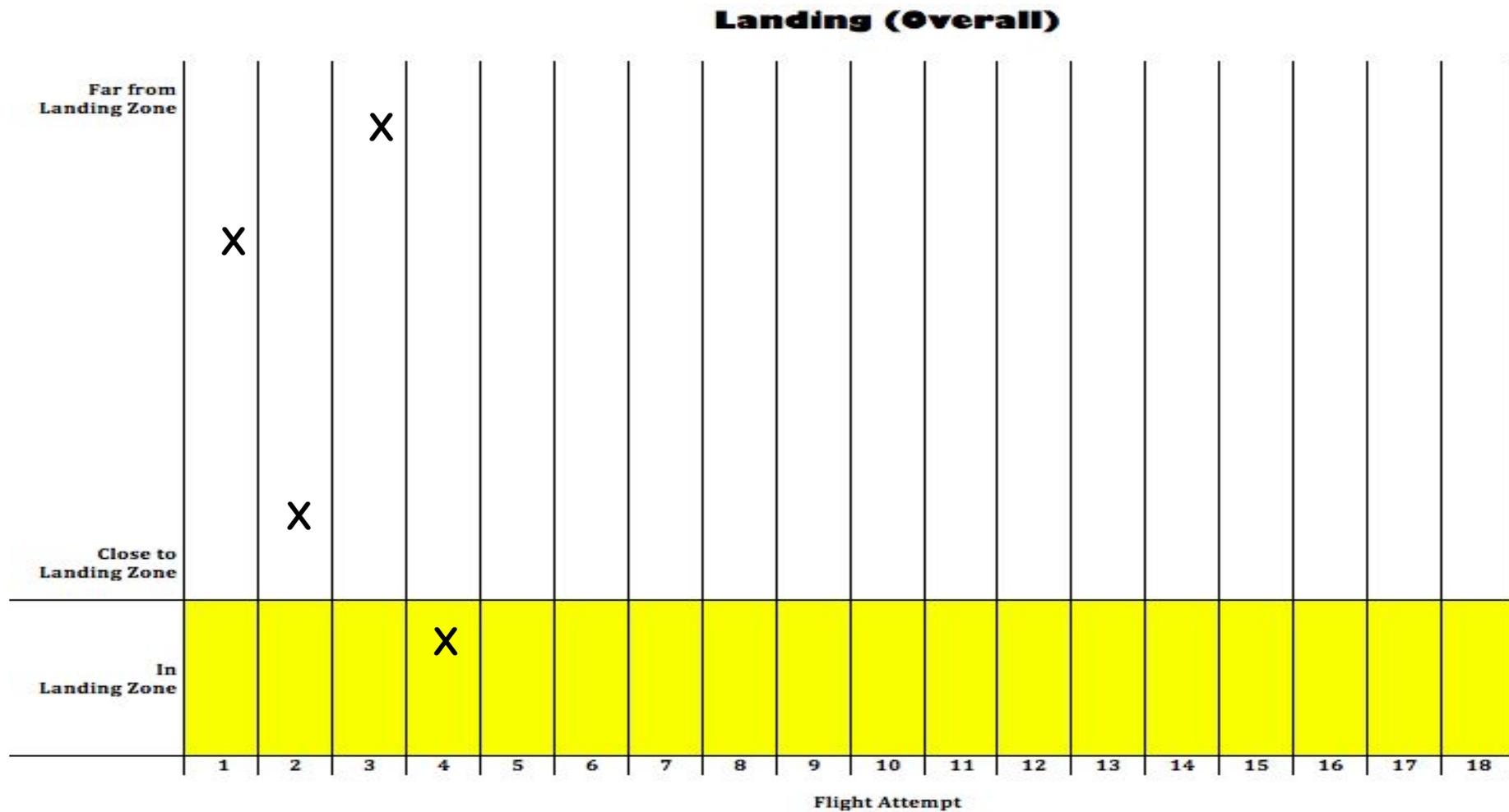
Distance

Direction

# Theory and Change Ideas

- With Measurement for *Improvement*, we generate theories of change based on evidence on what improves flight performance and practical knowledge you gain from throwing those planes.

# Testing Change Ideas, Recording Sheet

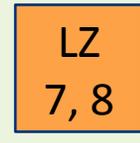| Flight | What change idea are you testing? | What's a prediction you have about what the plane will do? Why do you think this? | Did predicted outcome happen as expected? |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| | | | |

# Landing Zone Data

# Team Time: Measurement for Improvement

1. Fold planes – as many as you like
2. Bring colored paper & paper clips to your flight path.
3. Designate a data recorder.
4. Test one flight at a time.
5. Data recorders note and share data for *each* flight.
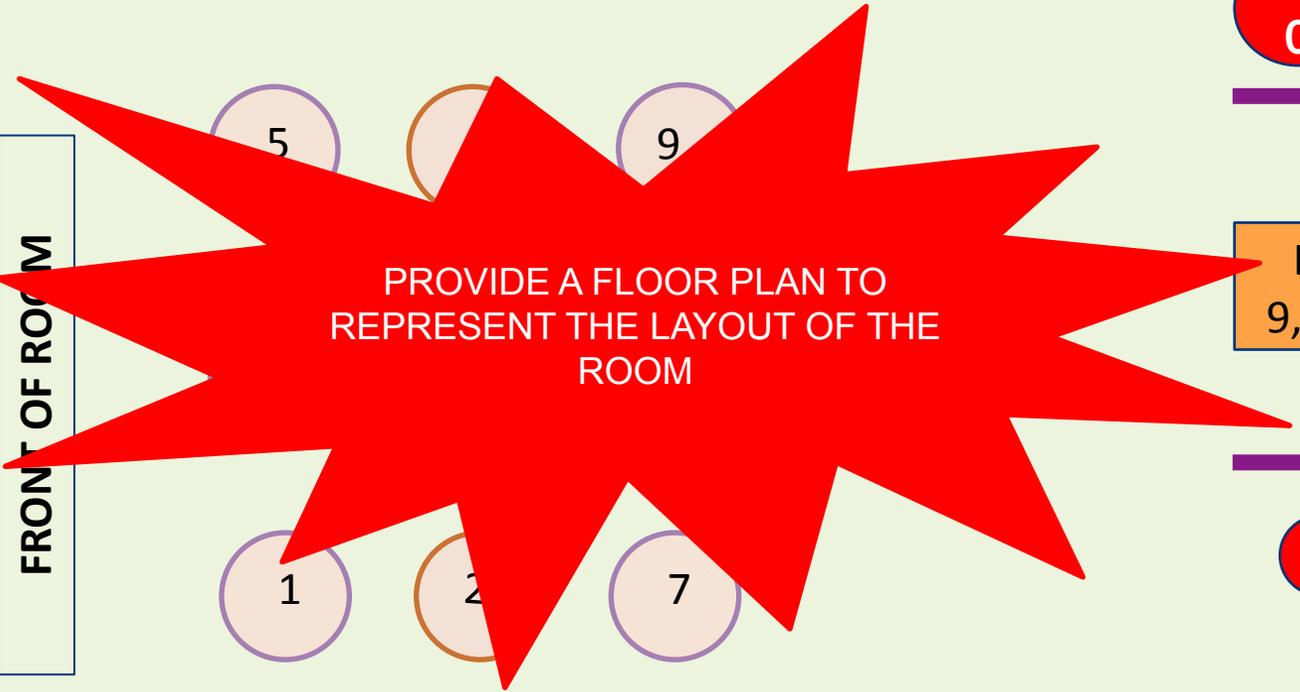6. Record your change idea and prediction for the next flight

# Rules & Tips

- A "paper airplane" must resemble an airplane (e.g., have a front and back, have wings).

- If you settle on a promising plane, tweak it rather than test a brand-new plane every time.

- Please be careful of your surroundings when in your or someone else's flight path – let's avoid eye injuries!

# Floor Plan

PROVIDE A FLOOR PLAN TO REPRESENT THE LAYOUT OF THE ROOM

FRONT OF ROOM

1 — LZ 1, 2 — 2 — 3 — LZ 3, 4 — 4 — 5 — LZ 5,6 — 6 — 7 — LZ 7, 8 — 8

5 — 9 — 1 — 2 — 7

10  <= poster board

LZ 9, 10  <= Landing Zone

9  <= Table team #

What did you **learn** today that was **surprising** or **interesting**?

# Qualities of Practical Measures

**What is measured:**

*Needs to be closely connected to the work, predictive of outcomes, and actionable.*

**How and when it is measured:**

*Needs to be timely, regular, and minimally burdensome to people on the front lines of work.*

**Social processes of use:**

*Requires collective sensemaking, transparency, safety to take risks and learn from failure.*