Make a Paper Airplane that Flies Far
Task – Perform Rapid PDSA to Achieve Peak Distance Performance

Hand out:
• 4 sheets of A4 copier paper to each team.

Optional materials for each team- may be used if desire.
• One standard paper clip

Instructions:
• Participants to form into a group of 3 each
• Team to use the paper given to make airplane that flies the longest distance
• All teams are given 15 minutes to complete 3 tests
• Team to document the test/change and distance achieved in each of the test
Task – Perform Rapid PDSA to Achieve Peak Distance Performance

<table>
<thead>
<tr>
<th>PDSA</th>
<th>Description of Test /Change</th>
<th>Distance Achieved</th>
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<tbody>
<tr>
<td>#1</td>
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<td>#2</td>
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<td>#3</td>
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What Makes Paper Airplane Fly?

**Aerodynamics**
How easily an airplane moves through the air

**Drag and Gravity**
Planes that push a lot of air, are said to have a lot of "drag," or resistance, to moving through the air. If you want your plane to fly far, you want a plane with as little drag as possible. A second force that planes need to overcome is "gravity." You need to keep your plane's weight to a minimum to help fight against gravity's pull to the ground.

**Thrust and Lift**
"Thrust" and "lift" are two other forces that help your plane make a long flight. Thrust is the forward movement of the plane. The initial thrust comes from the muscles of the "pilot" as the paper airplane is launched. After this, paper airplanes are gliders, converting altitude to forward motion. Lift comes when the air below the airplane wing is pushing up harder than the air above it is pushing down. The wings of a plane are curved so that the air moves more quickly over the top of the wing, resulting in an upward push, or lift, on the wing.

**The Four Forces in Balance**
A long flight occurs when these four forces — drag, gravity, thrust, and lift — are balanced.
THANK YOU