Application Form
Asian Try Zero-G

1. Activity Title
Capillary in Zero gravity

## 2. Hypothesis and Theory
<Hypothesis>

Surface tension is the force which makes fluid surface acquired the least area possible. Its direction is parallel with fluid surface and perpendicular with the edge of surface is act by force in any direction. In molecules at the surface is acted by force in only under directions. So, that made fluid have surface force act into the center. We can see it normally in daily life when we drain water into tube. Then, water surface is concave down because water in the tube have surface tension with surface adhesion force and cohesion force. It's call

<Schematic Model>

<Mathematical Assumption> (For young scientists and engineers, ages up to 27)
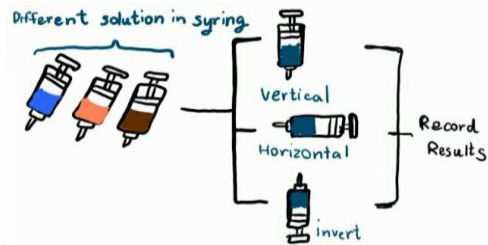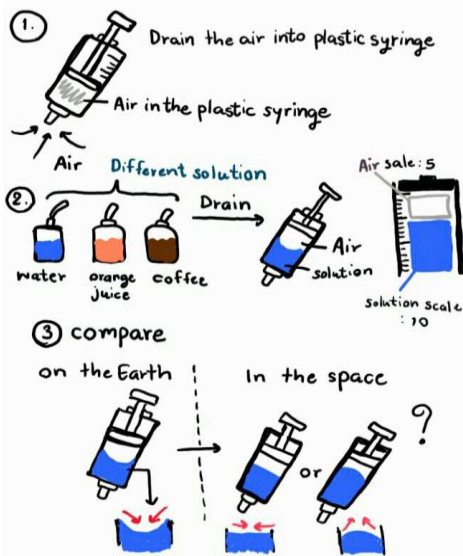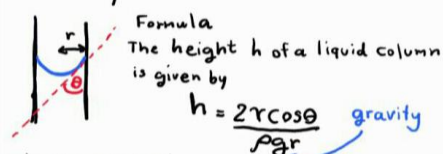
The height of liquid column is given by

$$h = 2\gamma cos\theta / rpg$$

we can apply this equation to find θ
γ is the liquid-air surface tension (energy/area)
θ is the contact angle
ρ is the density of liquid (mass/volume)
g is acceleration due to gravity (lenght/time^2)
r is radius of tube (lenght)

3. Verification method and Requirement
Compare and analysis syringe in zero gravity condition and compare contact angle(θ) from equation with contact angle from experiment.

< Break down of procedure and estimated crew time >

1. Drain air into the syringe to 5 ml scale
2. Drain different solotion (water ,orange juice and coffee) into syringe 10 ml scale
3. Observe it and took photo and video
4. Measure contact angle and compare with syringe in normal condition
Estimated crew time : 10 minutes

4. Tool, Item
1. plastic syringe 2. camera and video camera 3.three solution (water, orange juice and coffee) 4.tap measure