



MISSION TO KENNEDY SPACE CENTER **Field Investigation #3 – Rocket Pinwheel**



Crew Members Present for Investigation:

Date of Investigation: _____

Problem: Does the circumference of a balloon at its widest point affect the number of times a rocket pinwheel spins?

Scientific Background: Newton's Third Law of Motion states that every action is accompanied by an opposite and equal reaction.

Materials: wooden pencil with eraser, straight pin, round balloon, flexible straw, tape, string, ruler

Procedure:

1. Inflate the balloon to stretch it out a bit.
2. Slip the nozzle end of the balloon over the end of the straw farthest away from the bend. Use the pictures above as a guide. Use a piece of tape to seal the balloon to the straw. The balloon should inflate when you blow through the straw.
3. Bend the opposite end of the straw at a right angle.
4. Lay the straw and balloon on an outstretched finger so that it balances. Mark the balance point. Push the pin through the straw at the balance point and then continue pushing the pin into the eraser of the pencil and finally into the wood itself.
5. Spin the straw a few times to loosen up the hole.
6. Inflate the balloon. Measure its widest circumference with the string and ruler.
7. Let go of straw and count number of times it spins.
8. Repeat steps 6 and 7 with different circumferences.
9. Does balloon circumference affect the number of times the pinwheel spins? Why? Record your observations in the Journal below.

Journal:
