Topic: Flight

Hang Time **Primary Audience: 3rd – 5th Grade**

Description: Develop your own parachute.

Key Words: Forces, Parachutes, Drag

Materials:

- One crown cap
- One 12" square of tissue paper
- Four 12" pieces of string
- Tape
- Magnets or clay

Instructions:

1. Lay a piece of string on each corner of the 12" square tissue paper so they extend out from the corners like spokes.

2. Attach each piece of string to the corner with a piece of tape. Gather the ends of the strings and tape them together to the crown cap.

3. Hold up the cap so that the parachute hangs to the bottom.

4. Find the center of the parachute and hold onto that, letting the crown cap hang to the ground and the parachute close.

5. Drop the parachute from a high place. Watch its descent. Did it have a stable flight? What could you do to make it more stable? Try making two half-inch slits in the parachute approximately four inches in from opposite corners. Add weights by sticking magnets or clay on the crown cap. How do these changes affect the hang time of your parachute? Experiment with different weights and distances.

What's Going On?

Parachutes involve flight. When the closed parachute falls gravity pulls it to the ground. When the parachute opens, the air has to push against a larger surface area. This increases the amount of drag and slows the parachute's descent. Placing holes in the parachute will allow the air to flow more evenly through and

around the parachute (increasing stability) but will decrease the drag (decreasing hang time).

Relevant Ohio Science Content Standards:
Physical Sciences: K.4, K.5, 3.1, 3.3, 3.4