Parachutes and Drag

Developed by: Linda Fenton

Discipline / Subject: Science

Topic: Aviation

Grade Level: 3, 4, 5

Resources / References / Materials Teacher Needs:
Tissue Paper
String
Timers
Paperciips

Lesson Summary:
Students will test the theory of surface and that fact of more surface area means more glide. Introduce drag as a force of flight.

Standard's Addressed: (Local, State, or National)

Common Core Standards Science (Draft) – Interaction of Forces

1. Investigate the motion of objects to determine observable and measurable patterns to predict future motions.

2. Investigate the motion of objects by comparing the relative sizes and direction of forces on an object at rest to the forces on an object whose motion is changing.

Common Core Standards Math

3.MD.1 Solve problems involving measurement and estimation of intervals of time.

Learning Objectives:	**Method of assessment for learning**
1. Measure the drag of 3 sizes of parachutes. 2. More surface area, the longer the glide. 3. The more surface area, the more drag.	Teacher observation. Grade Data Sheet.

Procedural Activities

1. Using tissue paper work with a partner to cut one 3”x5”, 8”x5”, and 11”x13”. (I have these cut out for students. Punch holes in all 4 corners.
2. Cut 6 pieces of string 20” long (2 pieces for each sheet).
3. Thread a piece of string through 2 holes, and the other piece of string through the other 2 holes. Meet the 4 ends in a knot. Add 2 paper clips at the knot.
4. Stand on a chair and hold the parachute out. Have timer count down “3-2-1-Go” and let go of the parachute.
5. Mark down the time.

Materials Students Need:
Tissue paper
String
Paper Clips
Timbers
Data Sheet

Technology Utilized to Enhance Learning:
Students can record results in Excel Spreadsheet
Teacher can use Excel Spreadsheet to record class times to compare.

Other Information:

I have tissue paper cut out for student use; older students can cut theirs out and figure out the area of each parachute to make comparisons.

Lesson Plan modified from Experimental Aircraft Association (EAA) education curriculum.

Modifications for Special Learners/ Enrichment Opportunities:

Special Needs students can work with paraprofessional.

Data Collection

Parachutes and Drag

Name_____ Date_____

Parachute Size	Time (In Seconds)	2nd Try Time (In Seconds)	Slowest Time

1. Which parachute took the longest time to fall?

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2. If you added another paper clip to your parachutes what do you think will happen and why?

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