Gold Seal Lesson:

Copernicus Education Gateway

Author(s): *Michael Lucky Voiselle*			*Lesson Title:* *FLYING SUPER BUNNY*			
Grade Span			***ICLE Application Model***			
K-4	***5-8*** ***XX***	***9-12***	***A***	***B***	***C***	***D*** ***XX***

Instructional Focus:

Writing
Students write for a variety of purposes and audiences with sophistication and complexity appropriate to the grade level.

Basic Concepts and Knowledge
Students develop an understanding of scientific concepts using facts, theories, principles, and models.

Unifying Concepts and Processes
Students recognize patterns and processes, making connections in terms of systems and subsystems that explain the interrelationships of the natural and designed world.

Performance Task

Your task is to follow directions and make a flying super bunny. You may work with a partner but each must make a bunny and have a conclusion write-up

Use the accompanying diagram and follow these directions:

1. Cut along all of the dotted lines.
2. Fold forward along line 1.
3. Fold forward along line 2. (this will overlap)
4. Write your name on the back of the face of the super bunny.
5. Fold forward at line 3.
6. Fold backward at line 4.
7. Attach a paper clip to the leg area.
8. Stand up, hold the super bunny in the air, and let it drop.
9. Repeat the dropping several times until you have made at least five different observations. Record these observations in a neatly organized chart.
10. Make three more flying bunnies, but change one characteristic such as length of ears, length of body, width of body, etc. Fly these new bunnies, observe how your change made the flight different, and record these observations in another neatly organized chart.

Your conclusion write-up should include a discussion about the five observations made from the first super bunny. It should also include a discussion of the three characteristics you changed and how they affected the behavior during flight. Your write-up should address the following questions.

1. What makes the paper rotate when dropped to the floor?
2. What forces are working on the paper?
3. What happens when you reverse the direction of the ears and let the bunny go again?

Finally, you are to find at least 3 examples in nature making use of this principle of flight and include in your conclusion. (Hint: plant seeds, insects, or small underwater creatures)

ICLE Essential Skills

Apply in writing the rules and conventions of grammar, usage, punctuation, paragraphing and spelling. (ELA1)
Follow written directions carefully and accurately. (ELA6)
Plan and apply real or hypothetical models and constructions to facilitate investigation and learning and the solution to practical problems. *(S115)*
Make observations using senses and instruments. Inferences and interpretations are arrived at based on observations. Classify observable properties and organize observations in a meaningful and logical way. (S5)
Exhibit good data management skills by collecting, organizing, and graphing data. (S19)

Scoring Guide:

RATE THE CRITERIA: 3=Excellent, 2=Satisfactory, 1=Unsatisfactory, 0=does not attempt or does not understand

CRITERIA	**SCORE**
Student follows directions and makes a super bunny that works	_____
Student makes five observations on his first super bunny	_____
Student neatly organizes two data charts for observations	_____
Student makes 3 extra bunnies and changes one variable each time	_____
Student write-up includes the variable changes and a reasoning of why the behavior changes	_____
Conclusion write-up addresses all questions	_____
Write-up is well written and is free from spelling and grammatical errors	_____

Keywords

English Language Arts	Mathematics	Science
Reading-Directions	**Algebra**	**Earth Science-Air**
Writing-Spelling, Grammar	**Geometry**	**Life Science-Cause and Effect**
Communications	**Statistics**	**Chemistry**
Literature	**Calculus**	**Physics-Torque, Rotation**
Other	**Trigonometry**	**Other**
	Other	

Picture, Chart, or Graph file name(s):