



Teacher's Guide for

Uncle Wiggly Wings

Activity Booklet
Grades K-5

This booklet is designed for:

1. Students to learn about the humanitarian spirit of Col Gail Halvorsen and apply lessons in the booklet to subjects such as reading, geography, writing, science and math.
2. Students to learn how small acts of kindness can affect many people.

Teacher Instructions and Worksheets for Uncle Wiggly Wings Booklet Pages

Pages 1 - 10

(English)

Have students read or listen to the story of Col Halvorsen. Discuss vocabulary words. Definitions found on page 3.

Page 10

(Writing)

Use the friendly letter format on page 4 of this guide to instruct students in writing a letter to the Candy Bomber.

Page 11

(Geography)

Use the attached pages 5-7 of Europe and U.S. maps to show the students where these places are located. Also, have reference books or internet access for students to find out more about Germany, Albania, Utah, and Mississippi to make postcards.

(Map websites)

Find a U.S. map at:

http://www.lib.utexas.edu/maps/unted_states/united_states_pol02.jpg

Find a map of Europe at:

http://www.lib.utexas.edu/maps/europe/europe_ref_2008.pdf

Page 12

(Character Education)

Allow students time to share and discuss what simple acts of kindness they have done or seen lately. Ask them why this makes them feel good.

Page 13

(Timelines and ordering)

Have students take a piece of construction paper, scissors, and glue to put the pictures in sequential order. You may want to photocopy the page from their book and have them use your copy instead of cutting from their book.

Extension: students could make a script for a play about Col Halvorsen's experiences.

Page 14-16

(Science)

Have students follow instructions in their booklets on

pages 14-16 to make parachutes.

Extra ideas:

There is a lesson plan attached on page 8-11 that has more details and also contains a parafoil pattern. Children can compare the parachute with the parafoil.

(Answers to questions on page 16)

1. The candy Uncle Wiggly Wings dropped landed safely because he attached a handkerchief parachute to the candy to slow its descent.

2. A parachute is a device used to slow down the falling (or descent) of a person or object through the air. A parachute can be square or round and can be used for work or for enjoyment.

3. Parachutes are used as emergency lifesaving devices, to transport and deploy supplies, equipment and people, and to assist in slowing down an object for landing. Food and medical supplies are dropped by parachute to disaster-struck areas. Parachutes are used to drop very heavy equipment onto land, and life rafts and other survival equipment in air-sea rescue operations.

Some high-speed airplanes use parachutes to slow down during landing. During the early years of the space program, parachutes were used to slow returning space capsules after reentering the Earth's atmosphere. The space shuttle glider uses a parachute during landing.

Also, the new NASA constellation program will use parachutes. Parachutes are also used for recreation.

4. Gravity is the natural force of attraction exerted by a celestial body, such as Earth, upon objects at or near its surface, tending to draw them toward the center of the body.

5. If a parachute was not used to get an object or person from the plane to

the ground, the object or person would hit the ground with such force as to destroy it and/or severely damage anyone or anything it hit.

Page 18

(Crossword Puzzle)

Answers to the crossword puzzle are below:

Pages 21-22

(Reading)

Read the book *Mercedes and the Chocolate Pilot* to the class and have them answer the questions on page 22. This book can be purchased from a bookstore for your library.

Answers to questions about the book:

1. Chickens
2. Raisinbombers
3. Two
4. He boxed up candy bars and gum and sent them to Peter's address by West Berlin Post.
5. January 1949

Extra information:

There is also a Teacher's Guide on the internet that you can download at <http://www.gale.cengage.com/pdf/TeachersGuides/MercedesGuide.pdf>

Answer Key														
	1	P	R	O	M	I	2	S	E	D				
		I						H						
		L		3	A	L	B	A	N	I	A			
		O			I			R						
		T			R		4	G	E	R	M	A	N	Y
					P									
				5	B	L	O	C	K	A	D	E		
					A									
		6	H	U	N	G	R	Y						
					E									
					S									



National Content Standards:

Science Standards:

Content Standard A: Science as Inquiry

- Abilities necessary to do scientific inquiry
- Understanding about scientific inquiry

Content Standard B: Physical Science

- Position and motion of objects

Content Standard G: History and Nature of Science

- Science as a human endeavor

Social Studies Standards:

1. Culture
2. Time, Continuity, and Change
3. People, Places, and Environments
9. Global Connections
10. Civic Ideals and Practices

English Language Arts Standards:

1. Reading for Perspective
2. Understanding the Human Experience
12. Applying Language Skills

Mathematics Standards:

1. Number and Operations Standard

Vocabulary Words

Allied Forces - A group of countries that are working as a union to promote a common interest. A classmate is an ally.

Blockade - The isolation or "block off" of a place, usually by troops or ships. A blockade can be built to stop traffic on highways with traffic cones, policemen, or fences.

Boxcar - A box-shaped car on a train used to transport materials from one location to another.

Humanitarian - Good will toward all people, especially in effort to promote human welfare. Having a humanitarian spirit means one wants to make life better for others without asking anything in return.

Operation - A performance of a practical work. Although an operation can also mean having a surgical procedure on one's body, the word operation in this story means doing an organized project.

Parachute - A device used to slow down the falling (or descent) of a person or object through the air. A parachute can be square or round and can be used for work or for enjoyment.

Runway - A strip of ground for the landing and take off of aircraft. A runway can be made of dirt, or, more commonly, of cement or asphalt pavement.

Savor - To taste or smell with pleasure.

Vittles - Food

Sample Friendly Letter Format

For use with page 10

The Heading

(The heading can include your address and the date. In friendly letters, your address is not necessary.)

Date

Salutation (Greeting)

(The Salutation usually begins with Dear _____. The blank is for the name of the person you are writing. After the person's name you put a comma.)

Body

(The body of the letter is the information you are writing in your letter - in this case, you are asking Uncle Wiggly Wings to drop one of his candy parachutes at your house.)

Closing

(The closing has the first word capitalized and you put a comma after the last word. Some examples of closings are: Sincerely, Your friend, Love, and Very truly yours,)

Your Signature



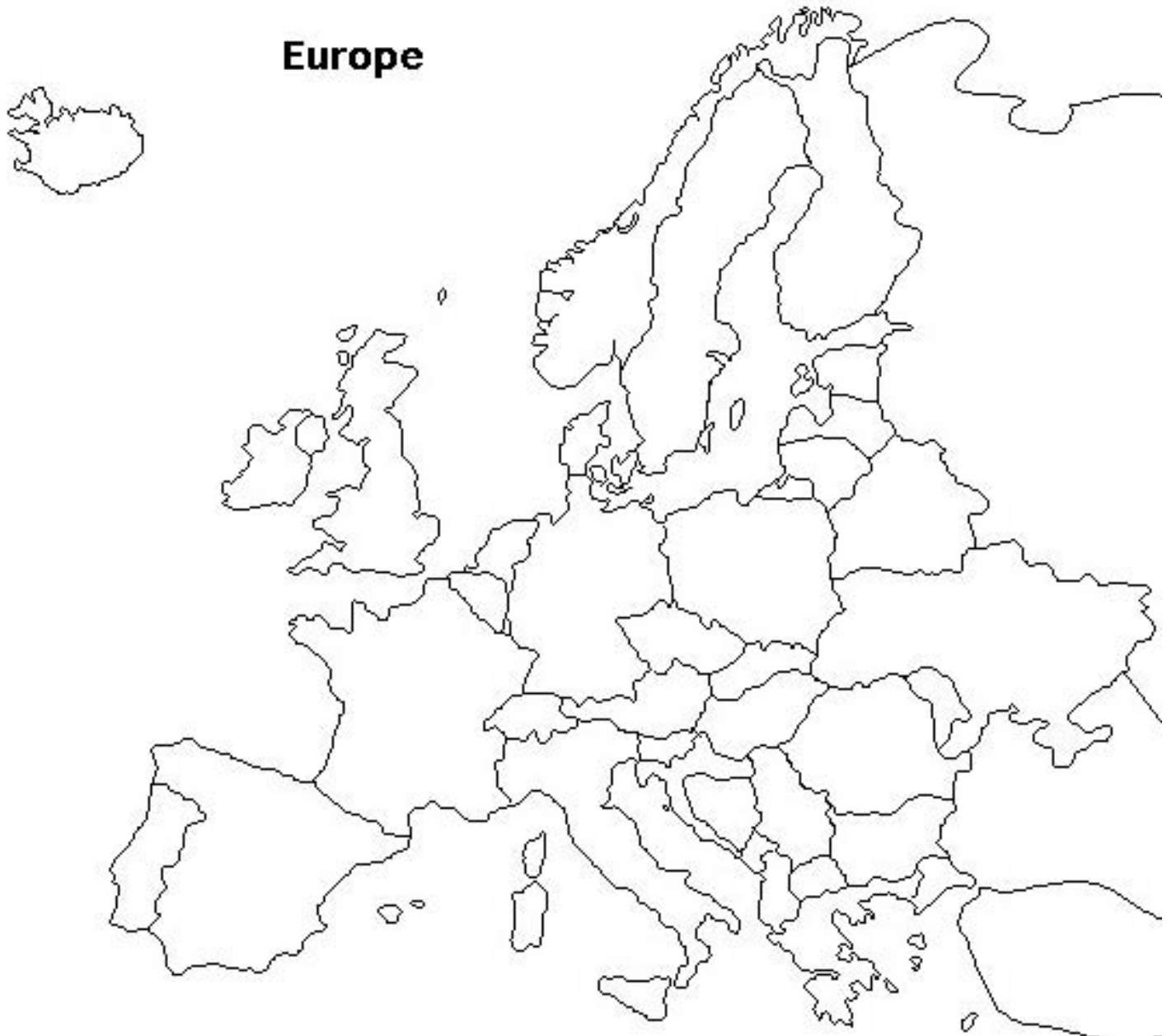
Map of U.S. for Activity on page 11



Find a U.S. map at:

http://www.lib.utexas.edu/maps/united_states/united_states_pol02.jpg

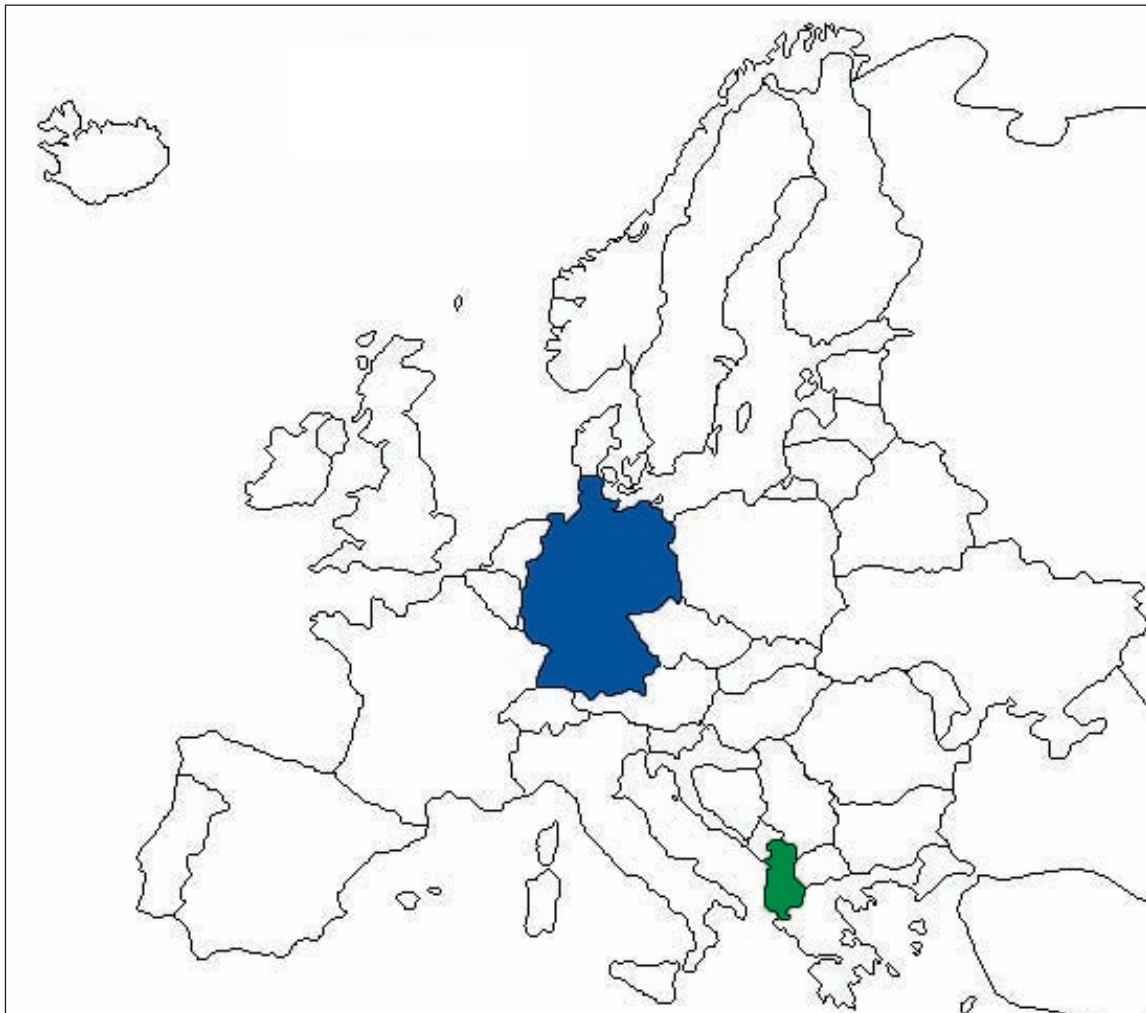
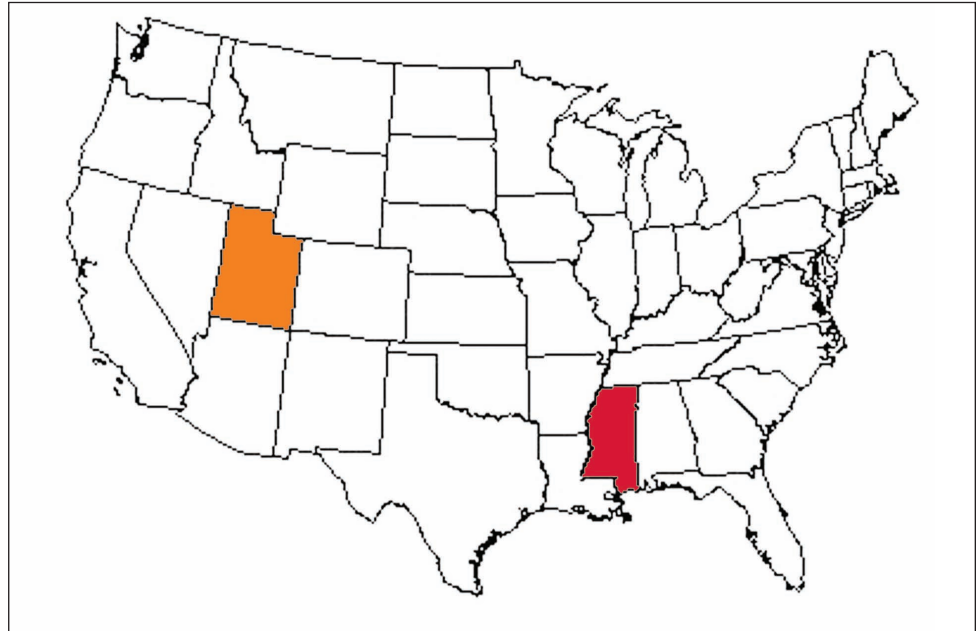
Map of Europe for Activity on page 11



Find a map of Europe at:
http://www.lib.utexas.edu/maps/europe/europe_ref_2008.pdf

Map of U.S. and Europe Answers

For use with
page 11



Enrichment Activity for Pages 14-17

Lesson Title: Parachutes and Parafoils

Lesson Reference: The Society of Women Engineers (www.swe.org)
http://www.swe.org/iac/LP/para_02.html

Length of Lesson: 30 minutes (if students work in pairs)

Objective:

- Students will compare and contrast two deceleration devices: parachutes and parafoils.
- Students will build a parachute and a parafoil.
- Students will test and observe the motion of their parachutes and parafoils.

National Science Standards Alignment:

- Content Standard A: Science As Inquiry
- Content Standard B: Physical Science
 - Properties of objects and materials
 - Position and motion of objects
- Content Standard C: Earth and Space Science
 - Objects in the sky
- Content Standard D: Science and Technology
 - Abilities of technological design



How a Parachute Works

Parachute comes from the French word meaning "to guard against falling." A parachute slows an object's fall from a great height. This device is affected by two forces: gravity pulling it down toward the center of the Earth and air resisting that movement. Ultimately, the pull of gravity is greater than air resistance so the parachute is slowed down but not stopped. The larger the parachute's surface or canopy, the slower the fall. A person with a parachute falls at about 5.5m per second. Older parachutes had a round shaped canopy, but now they are more like arches or boxes. They have fabric compartments called cells in which the air can be trapped. These new parachute designs can descend more slowly than the older designs. Modern parachutes can be steered by pulling on guide lines. Whereas older parachutes were made of silk, today most parachutes are made of nylon because it is stronger and cheaper.



Background Information: (from http://www.swe.org/iac/LP/para_03.html)

You may think of a parachute as a type of flying machine, but parachutes really do not fly. Parachutes are considered "deceleration" devices. Deceleration means, "to slow down." A parachute allows for a much slower and safer landing.

Parachutes are used as emergency lifesaving devices, to transport and deploy supplies, equipment and people, and to assist in slowing down an object for landing. Food and medical supplies are dropped by parachute to disaster-struck areas. Parachutes are used to drop very heavy equipment onto land, and life rafts and other survival equipment in air-sea rescue operations. Some high-speed airplanes use parachutes to slow down during landing. During the early years of the space program, parachutes were used to slow returning space capsules after reentering the Earth's atmosphere. The space shuttle uses a parachute during landing. Also, the new NASA constellation program will use parachutes.

To prevent the parachute from oscillating (erratically swinging back and forth), early parachute designers added a vent or hole at the top center of the parachute. The vent allowed some of the air to escape and reduced most of the oscillations. This made the parachute more stable (helped keep the parachute along the same path).

An important expansion of the parachute idea was the development of the parafoil in the 1970's. You can see how different the parafoil looks. Air inflates the parafoil, which acts like an airplane wing and creates lift. Even the language is different: while you "jump" with a parachute, parafoils are "flown."

Materials:

- light-weight plastic grocery store bag with handles
- 5 copied parafoil patterns (preferably on colored paper) for each student or pair of students. (patterns attached)
- fishing line, light-weight string, or thick thread
- glue
- clear tape
- safety scissors
- copy of "Parachute and Parafoil Instructions" for each student (attached)
- objects that can provide weight, such as clay, action figures, washers, etc.

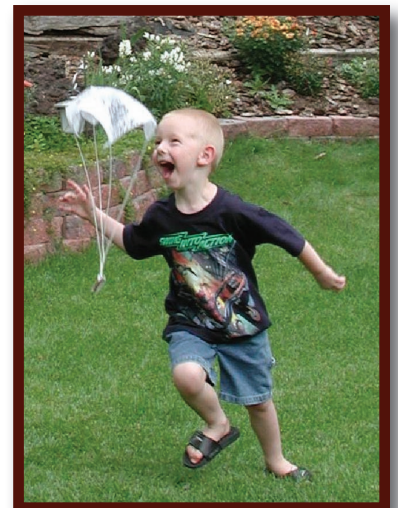
Note:

Prior to teaching this lesson, make a parachute and a parafoil in order to have an example to show the students.

If time is an issue, arrange students in pairs. Have one student make the parachute while the other makes the parafoil, or have the students work together to construct each device. Another time-saving tip is to put distributive materials per student or pair of students, including a copy of the "Parachute Parafoil Directions," in individual plastic grocery bags.

Lesson Presentation:

1. Write the words "parachute" and "parafoil" on the board. Ask students to share what they know about these two words, and write their information on the board in a compare/contrast format.
2. Explain that students will learn about parachutes and parafoils in this lesson so that they can better compare and contrast the two deceleration devices. Ask students what "deceleration" means. (Deceleration means to slow down.)
3. Read the "background information" to the students and show your parachute and parafoil examples.
4. Tell students that they will build a parachute and parafoil to learn more about the devices. Tell students to follow the instructions and raise their hand if they have any questions. Tell students that they may look at your examples, if necessary.
5. Distribute the materials and directions for making the parachutes and parafoils.



6. Have an area, either outside or inside, for students to test their parachutes and parafoils. Remember to tell students to observe carefully how their devices move through the air.
7. Have students return to their seats and look again at the board. Now that they have completed their parachute and parafoil test, ask students what they should add or change from their earlier comparison. (Help students realize that the parafoil sinks down and moves forward.)

PARACHUTE AND PARAFOIL INSTRUCTIONS

To make the parafoil:

1. Make 5 copies of the pattern on the next page and cut out patterns.
2. You can form each pattern into a rectangular prism. Make sure you leave room to overlap one side. After folding the parafoil pattern and overlapping the ends, glue together. Make 5 of the rectangular shapes.
3. Tape these 5 parts together to make a ram air parafoil.
4. Cut 4 pieces of string about 18" long.
5. Tape one piece of string to each corner of the parafoil.
6. For the parafoil weight: If you are using clay, make a ball and mold the four ends of the strings into the clay. If you use an action figure, washer, or other object, draw the strings together and tie them to the action figure.



To make the parachute:

1. Fold the plastic grocery bag flat.
2. Using the safety scissors, cut across the bag removing the handles and about 2 inches above the handles.
3. Cut 4 strings 18" long.
4. Tape one end of each string to the parachute, spacing the strings equally around the parachute.
5. For the parachute weight: If you are using clay: make a ball and mold the four ends of the strings into the clay. If you use an action figure, washer, or other object: draw the strings together and tie them to the action figure.
6. Decide whether or not you want to make a small hole (or vent) in the top of your parachute.

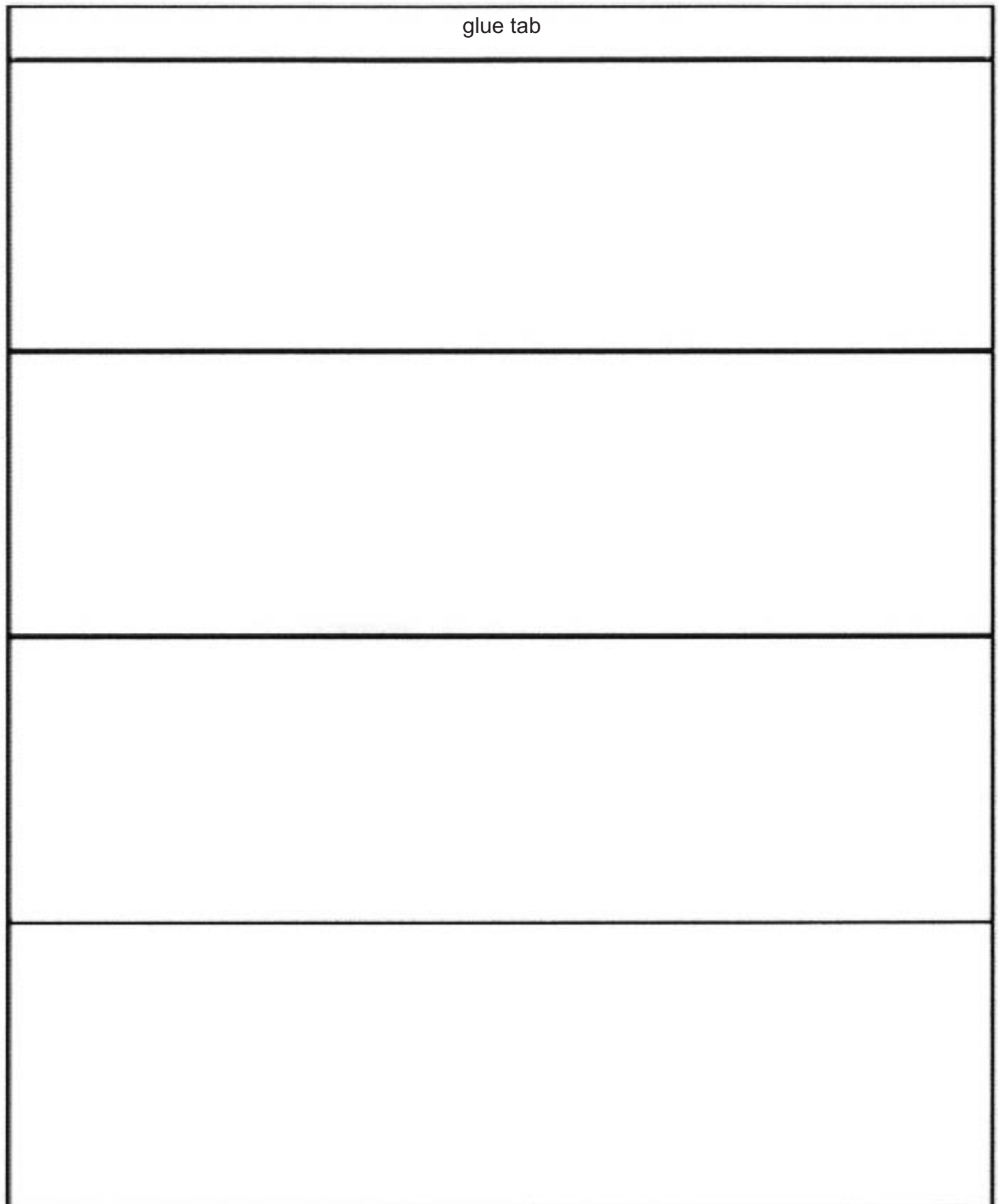


When you test your devices, **OBSERVE** (watch closely) to see what happens! How does each one seem to move?

Parachute	Parafoil
How fast did it fall? (Use stopwatch to time drop from specified distance)	How fast did it fall? (Use stopwatch to time drop from specified distance)
Which direction did it fall?	Which direction did it fall?
What difference does a different weight make?	What difference does a different weight make?
If you drop it in front of a fan, what happens?	If you drop it in front of a fan, what happens?
If you drop it from a different height, what happens?	If you drop it from a different height, what happens?

Pattern to make Parafoils

You need a total of 5.





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