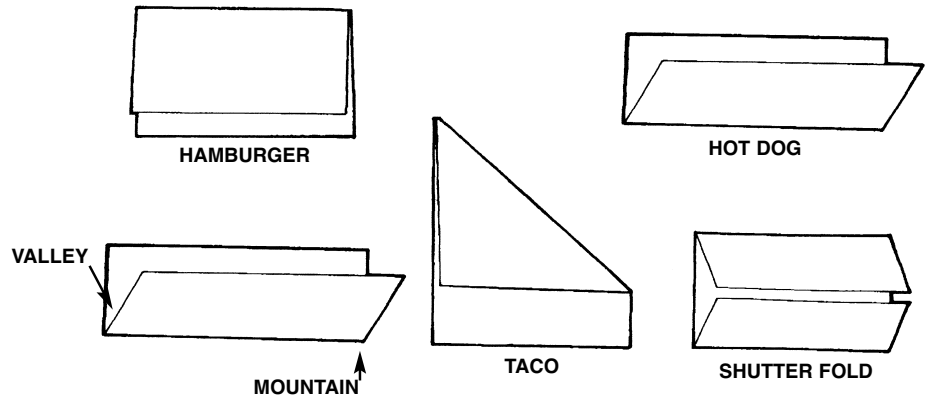


# These 3D Graphic Organizers are used throughout Great Science Adventures.

## Fast Food and Fast Folds

*"If making the manipulatives takes up too much of your instructional time, they are not worth doing. They have to be made quickly, and they can be, if the students know exactly what is expected of them. Hamburgers, Hot Dogs, Tacos, Mountains, Valleys, and Shutter-Folds can be produced by students, who in turn use these folds to make organizers and manipulatives."* – Dinah Zike



Every fold has two parts. The outside edge formed by a fold is called the “**Mountain.**” The inside of this edge is the “**Valley.**”

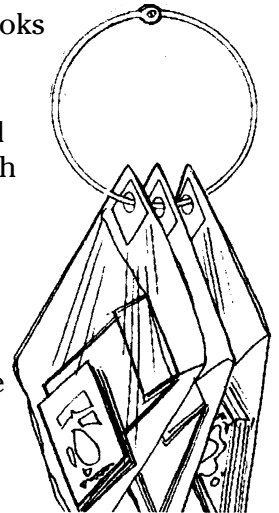
## Storage – Book Bags

One-gallon reclosable plastic bags are ideal for storing ongoing projects and books that students are writing and researching.

Use strips of clear, 2” tape to secure 1” x 1” pieces of index card to the front and back of one of the top corners of a bag, under the closure. Punch a hole through the index cards. Use a giant notebook ring to keep several of the “Book Bags” together.

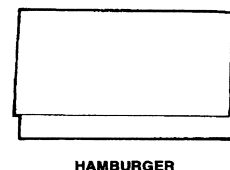
Label the bags by writing on them with a permanent marker.

Alternatively, the bags can be stored in a notebook if you place the 2” clear tape along the side of the storage bag and punch 3 holes in the tape.



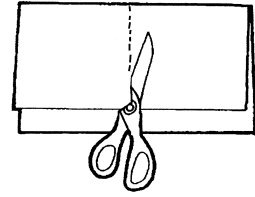
## Half Book

Fold a sheet of paper in half like a Hamburger.



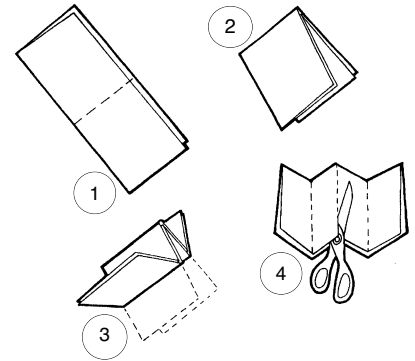
## Large Question and Answer Book

1. Fold a sheet of paper in half like a Hamburger. Fold it in half again like a Hamburger. Make a cut up the Valley of the inside fold, forming two tabs.
2. A larger book can be made by gluing Large Question and Answer Books “side-by-side.”



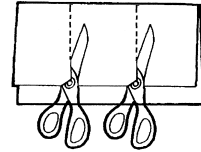
## Small Question and Answer Book

1. Fold a sheet of paper in half like a Hot Dog.
2. Fold this long rectangle in half like a Hamburger.
3. Fold both ends back to touch the Mountain top.
4. On the side forming two valleys and one Mountain top, make vertical cuts through one thickness of paper, forming tabs for questions and answers. These four tabs can also be cut in half, making eight tabs.



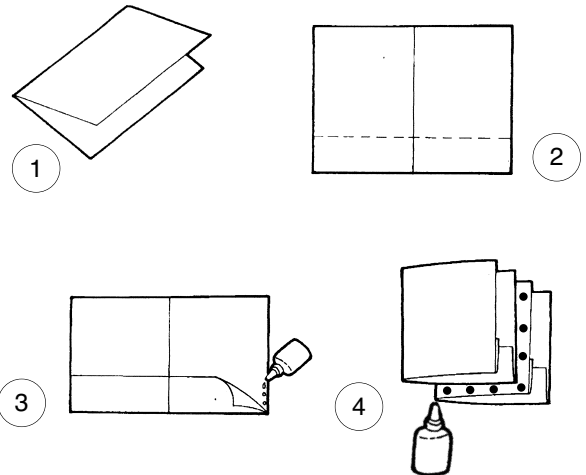
## 3 Tab Book

1. Fold a sheet of paper in half like a Hamburger or Hot Dog. Fold it into thirds. Cut the inside folds to form three tabs.



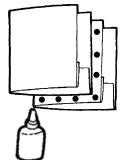
## Pocket Book

1. Fold a sheet of paper in half like a Hamburger.
2. Open the folded paper and fold one of the long sides up two and a half inches to form a pocket. Refold along the Hamburger fold so that the newly formed pockets are on the inside.
3. Glue the outer edges of the two-and-a-half-inch fold with a small amount of glue.
4. Make a multi-paged booklet by gluing several Pocket Books “side-by-side.”
5. Glue a construction paper cover around the multi-paged pocket booklet.



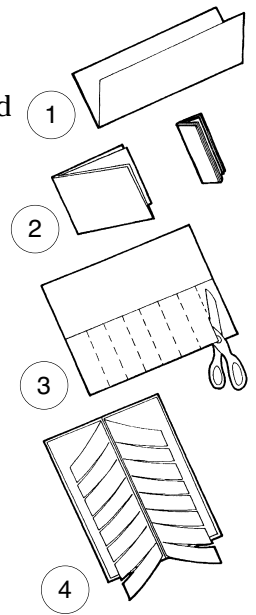
## Side-by-Side

Some books can easily grow into larger books by gluing them side-by-side. Make two or more of these books. Be sure the books are closed, then glue the back cover of one book to the front cover of the next book. Continue in this manner, making the book as large as needed. Glue a cover over the whole book.



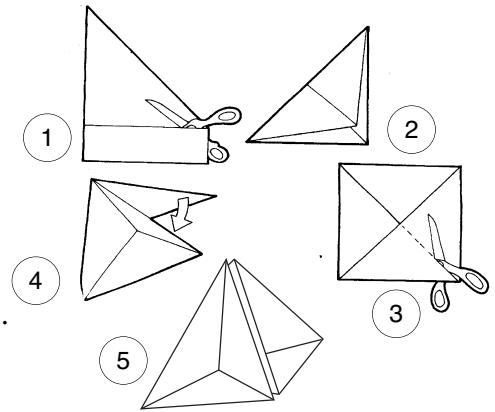
## Vocabulary Book

1. Take two sheets of paper and fold each sheet like a Hot Dog.
2. Fold each Hot Dog in half like a Hamburger. Fold each Hamburger in half two more times and crease well. Unfold the sheets of paper, which are now divided into sixteenths.
3. On one side only, cut the folds up to the Mountain top, forming eight tabs. Repeat this process on the second sheet of paper.
4. Take a sheet of construction paper and fold like a Hot Dog. Glue the back of one vocabulary sheet to one of the inside sections of the construction paper. Glue the second vocabulary sheet to the other side of the construction paper fold.
5. Vocabulary Books can be made larger by gluing them “side-by-side.”



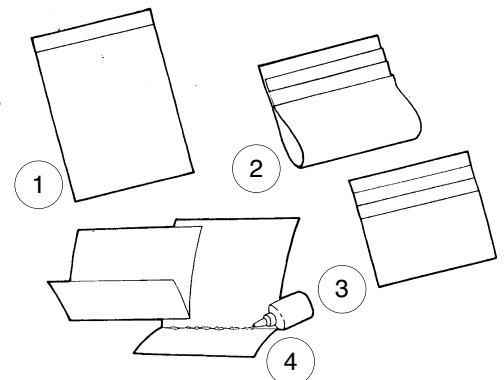
## Pyramid Project

1. Fold a sheet of paper into a Taco.  
Cut off the excess tab formed by the fold.
2. Open the folded taco and refold it the opposite way, forming another taco and an X fold pattern.
3. Cut up one of the folds to the center of the X and stop. This forms two triangular-shaped flaps.
4. Glue one of the flaps under the other flap, forming a pyramid.
5. Set the Pyramid up on one end or glue two or more together to make a diorama.



## Layered Look Book

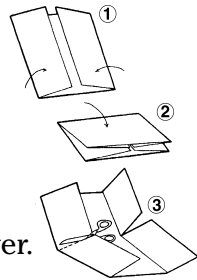
1. Stack two sheets of paper and place the back sheet one inch higher than the front sheet.
2. Bring the bottom of both sheets upward and align the edges so that all of the layers or tabs are the same distance apart.
3. When all tabs are an equal distance apart, fold the papers and crease well.
4. Open the papers and glue them together along the Valley/center fold.



## 4 Door Book

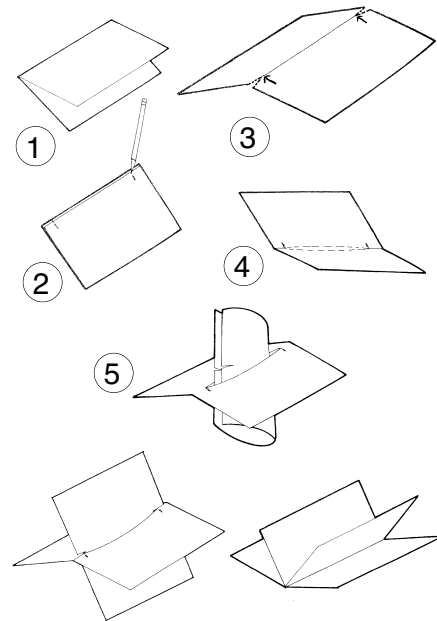
1. Fold a sheet of paper into a Shutter Fold.
2. Fold it into a Hamburger.
3. Open the Hamburger and cut the Valley folds on the Shutters only, creating four tabs.

Refold it into a Hamburger, with the fold at the top. Decorate the top sheet as the cover.



## Bound Book

1. Take two sheets of paper and fold each like a Hamburger.
2. Mark both folds 1" from the outer edges.
3. On one of the folded sheets, "cut up" from the top and bottom edge to the marked spot on both sides.
4. On the second folded sheet, start at one of the marked spots and "cut out" the fold between the two marks. Do not cut into the fold too deeply; just shave it off.
5. Take the "cut up" sheet and roll it. Place it through the "cut out" sheet and then open it up. Fold the bound pages in half to form a book.

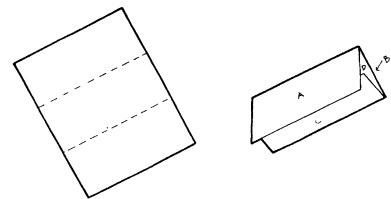


### Variation...

To make a larger book, use additional sheets of paper, marking each sheet as explained in #3. Use an equal number of sheets for the "cut up" and "cut out." Place them one on top of the other and follow the directions in #4 and #5.

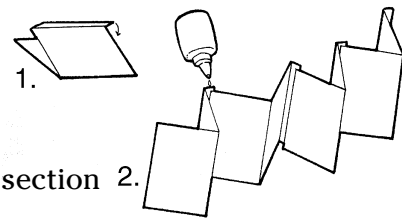
## Trifold Book

1. Fold a sheet of paper into thirds.
2. Use this book as is, or cut into shapes. If the trifold is cut, leave plenty of fold on both sides of the designed shape, so the book will open and close in three sections.



## Accordion Book

1. Fold each section of paper into a Hot Dog; however, fold one side 1/2 inch shorter than the other side. This will form a tab that is 1/2 inch long. Fold this tab back away from the shorter piece of paper. Do not fold this tab over the short side, fold it the opposite way.
2. Glue together to form an accordion by gluing a straight edge of one section into the Valley of another section.

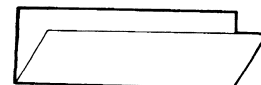


**Note:** Stand the sections on end and form an accordion with them before gluing. (See illustration.)

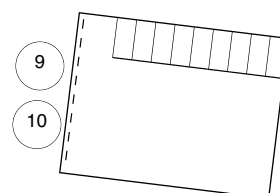
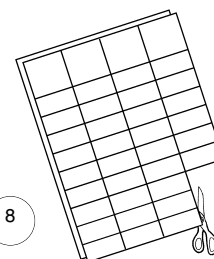
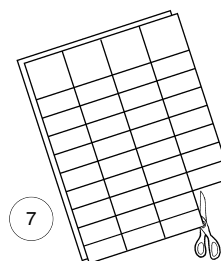
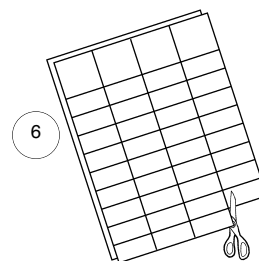
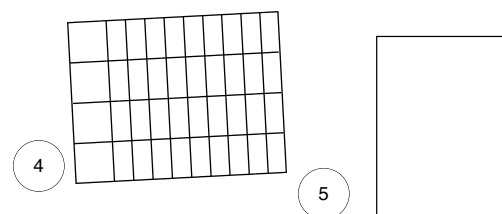
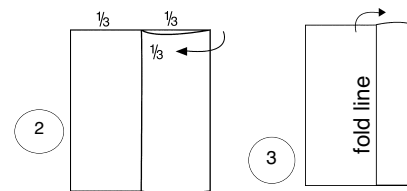


# 10 Top Tab Book

1. Fold one sheet of paper into a Hot Dog. Fold it into a Hot Dog again. Open the paper.
2. Lay the paper horizontally. Fold  $\frac{1}{3}$  of the paper to the left.
3. Fold the double thickness on the right side in half. Fold the single thickness on the left side backward on the fold line. See illustration.
4. Fold the five thicknesses in half again. Open the paper. This is your pattern for the 10 Top Tab Book. There is a 2" section on the left for the Sun and 1" sections for each planet.
5. You will now begin stacking the paper for the 10 Top Tab Book. Begin the stack with one sheet of paper.
6. Hold the pattern vertically and place another sheet of paper under the pattern. (The pattern was made in steps 1-4.) Cut the bottom right-hand section out of both sheets. Put the underneath sheet on the stack that you started in step 5.
7. Take a second sheet of paper and place it under the pattern. Cut the first and second right-hand sections out of both sheets. Place the underneath sheet on the stack.
8. Take a third sheet of paper and place it under the pattern. Cut the first, second, and third right-hand sections out of both sheets. Place the underneath sheet on the stack.
9. Continue this process with the next 5 sheets of paper. Cut the last sheet of paper all the way across the top. This makes a cover for the 10 Top Tab Book.
10. Stack the 11 sheets of paper together and staple or glue them on the left side.



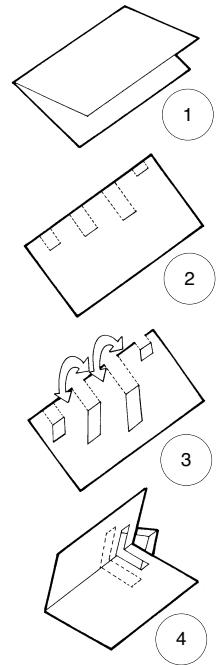
1 HOT DOG



# Pop-Up Book

Dinah's Rule for Pop-Up Books: Always cut on a fold; never glue on a fold.

1. Fold a sheet of paper (8.5" x 11") in half like a Hamburger.
2. Beginning at the fold, or mountain top, cut one or more tabs.
3. Fold the tabs back and forth several times until a good fold line is formed.
4. Partially open the hamburger fold and push the tabs through to the inside.
5. Using one small dot of glue, glue figures for the Pop-Up Book to the front of each tab. Allow the glue to dry before going on to the next step.
6. To make a cover for the book, fold a sheet of construction paper in half like a hamburger.
7. Place glue around the outside edges of the Pop-Up Book and firmly press inside the construction paper hamburger.

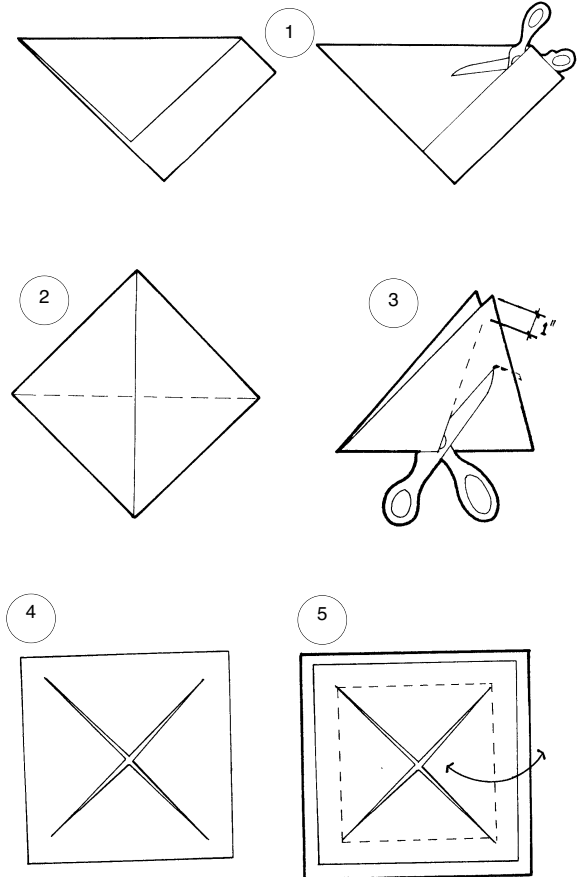


# Patch Word Quilt Square

1. Fold a sheet of paper (8 1/2"x11") into a Taco, forming a square. Cut off the excess paper strip formed by the fold.
2. Open the folded Taco and refold it the opposite way, forming another Taco and an X fold pattern.
3. Hold the Taco flat, so that it looks like a mountain with the long side of the triangle forming the base of the mountain, and the top the peak.

Cut up the center of the mountain from the base toward the peak. Stop one inch from the peak.  
Refold the Taco along the other fold of the X pattern, and cut up the center of the mountain from the base toward the peak again. Stop one inch from the peak.

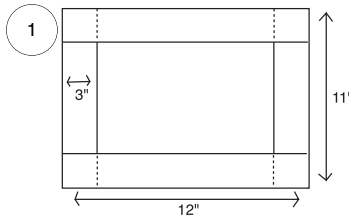
4. The cuts will form an X in the middle of the square.
5. Place a small amount of glue around the outer edges of the square, then glue it onto a slightly larger construction paper square. Fold the four triangular tabs back and forth to form windows. This hides whatever is glued or written underneath on the construction paper.



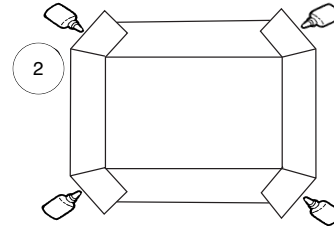
# The *Lots of Science Library Book Shelf*

Make a bookshelf for the *Lots of Science Library Books* using an appropriate sized box or by following the instructions below.

1. Begin with an 11" x 12" piece of poster board or cardboard. Mark lines 3" from the edge of each side. Fold up on each folded line. Cut on the dotted lines as indicated in illustration 1. Refold on the line.



2. Glue the tabs under the top and bottom sections of the shelf. See illustration 2. Cover your shelf with attractive paper.



3. If you are photocopying your *Lots of Science Library Books*, consider using green paper for the covers and the same green paper to cover your bookshelf.

