Module 1.5: Activity 2 - Flowcharts

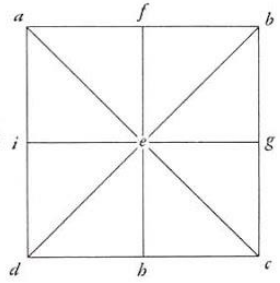
Compare the following instructions:

1. **Find a square sheet of paper.** If you're working with square origami paper, great. If you have an ordinary piece of printer paper, Just fold one of the top corners across the paper until it aligns with the bottom edge of the sheet, leaving a long strip of rectangular paper. Cut this paper to make the paper square.
2. **Fold the paper in half into a rectangle.** Fold the top of the paper down until the top edge aligns with bottom edge of the paper and then crease. Unfold the paper.
3. **Fold it in half the other way.** Fold vertically from right to left. Crease then unfold. You should end up with a cross crease.
4. **Fold the paper diagonally.** Fold the top right corner down to the bottom left corner. Crease then unfold. Fold the top left corner down to the bottom right corner. Crease then unfold. You should end up with an asterisk-like crease.
5. **Bring the the lower right side of the top flap to the middle line.** Crease. Repeat on the lower left side. You'll have a top that resembles a kite.
6. **Bring the right corner of the top flap to the middle crease.** This will make it so that the lower right edge lines up with the crease.
7. **Fold down the top corner to make the crease lie along the horizontal line created by the previous step.**
8. **Unfold the last three folds.** After you do this, you'll return to having a square with an opening that faces down.
9. **Fold the bottom corner of the square up along the horizontal crease from the previous steps up to the top corner.** Reverse the two creases on the upper flap by folding it in the opposite direction that it naturally folds. Bring the outer edges of the paper to the middle and flatten it. This will create a diamond shape with two flaps sticking out on the right and left sides.
10. **Turn the paper over and repeat steps 6-9 on this side.**
11. **Fold the outer edges of the diamond to the middle crease.**
12. **Fold the right flap over to the left.** Do this as you would turn the page of a book. Then, turn over the shape. Repeat step 11 on this side. Then fold the right flap over to the left again.
13. **Fold the bottom tip of the top flap up to the top corner.**Turn over and repeat on the other side.
14. **Fold the right flap over to the left.** Again, do this as you would turn the page of a book. Turn over and repeat on the back. Now the head and tail are nestled in between what will become the wings.
15. **Fold the wings down so that they are perpendicular to the body, head, and tail.**
16. **Fold the tip of the head down.**
17. **Pull the head and tail out so that they line up with the outer edges of the body.**
18. **Create 3D volume.** If you want a three dimensional body, you can grasp the opposite corners on the bottom of the body and gently pull the shape to create the desired volume.

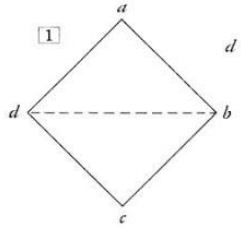
CRANE

鶴

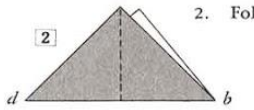
Start with a square piece of paper. Results are best if you use thin paper at least 9" square. Pre-fold paper as shown. These creases will be used as guidelines.



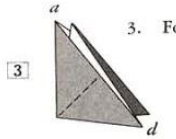
1. Fold *c* to *a*.



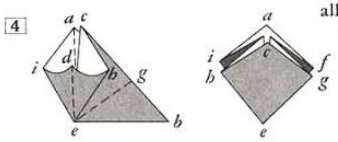
2. Fold *d* to *b*.

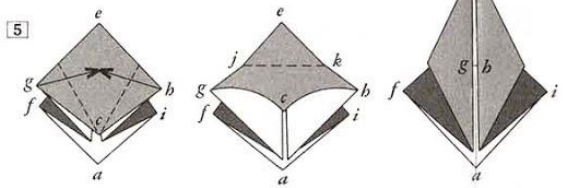


3. Fold *d* to *a*.



4. Reverse-fold *i* out, bringing *d* to *a*. Turn over. Reverse-fold *b* in, bringing all points together. Fold *f* to *g* and fold *h* to *i*.



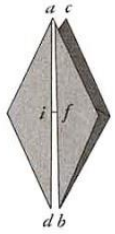


5. Turn open end down. Fold *g* and *h* in along dotted lines. Reopen.

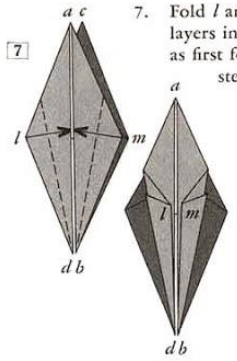
Lift *c* halfway up. Fold down forming crease between *j* and *k*. Lift *c* up and over *e*, then down.

Bring side flaps in by folding down so that *g* meets *h*.

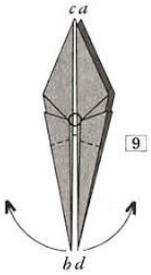
6. Turn over and repeat.



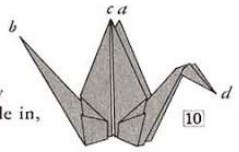
7. Fold *l* and *m* top layers in. (Same as first folds in step 5)



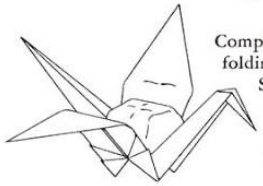
8. Turn over and repeat.



9. Hold body at dot. Reverse-fold in *b* point, at the same time folding out along dotted lines. Fold to form tail. Repeat with *d* point to form neck.



10. Form head by folding outside in, then down.



Complete by partially folding down wings. Slowly open back by pulling wings gently apart.

米国製

Which is easier to follow?

Why?

Most people respond best to multiple modes of receiving data rather than just one. For instance, combining images with text adds an extra element that makes it easier for the brain to process.

In this activity, we will be looking at using flowcharts as a tool for designing and documenting algorithms. Developers like flowcharts because it adds an extra visual element, similar to the image above, which allows the reader to more easily see the flow of the logic.