

## **Counting folds**

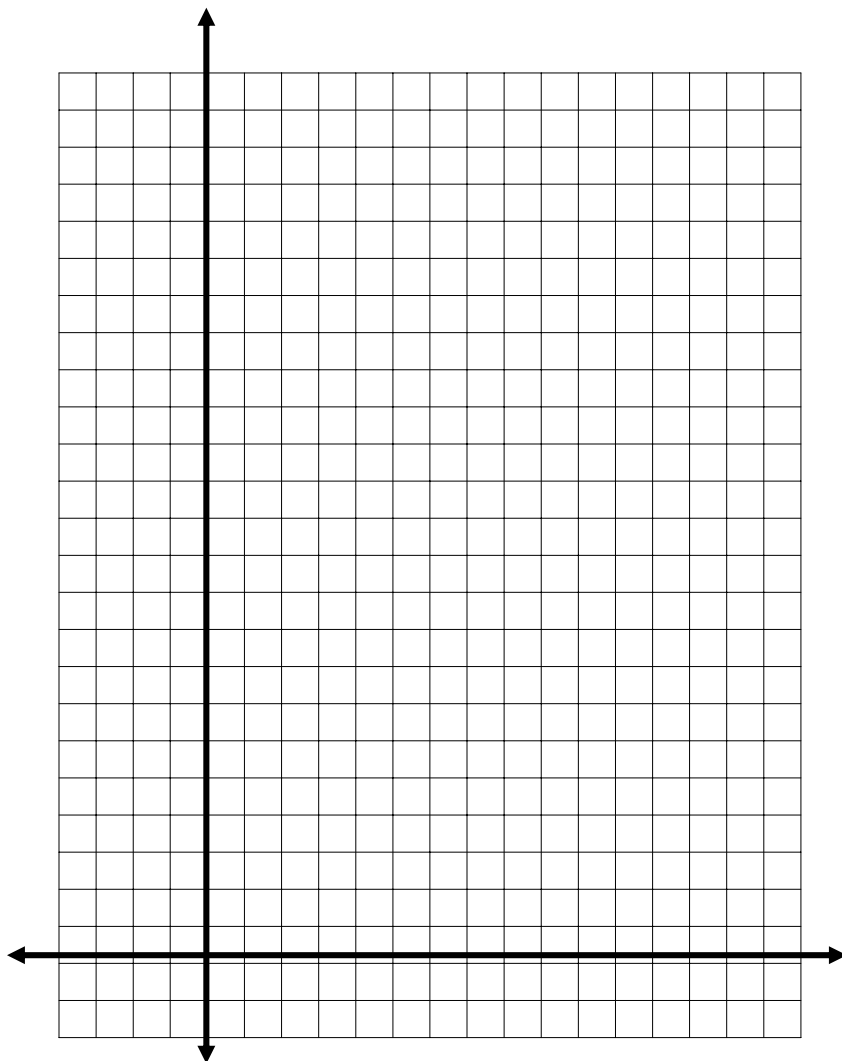
### **Part A: Construction a function**

Using an 8.5" x 11" piece of paper, you are going to count and record the number of layers of paper made by folding the piece of paper in half.

1. Record the number of layers (1) of paper before any folds are made (0 folds).
2. Fold the piece of paper in half. Count the number of layers of paper. Record the result.
3. Fold the paper in half again and count the number of layers. Record the result.
4. Continue folding in half and counting the number of layers after each fold. Fill in the following table:

<b># of folds</b>	<b># layers</b>
0	
1	
2	
3	
4	
5	
6	
⋮	
$n$	

5. Create a graph using your data. Label axes appropriately.



6. How many paper layers should there be after 10 folds? 15 folds? Explain how you arrived at your solution.

7. Write a function to determine the number of layers from the number of folds. Test out your function – does it work?





15. Suppose you folded a single sheet of paper into thirds each time? How would that change the function? Express this situation using a table, a graph and a formula. (Use the same grid as #5) Compare this function to the original function as well as the function expressed in #14.
