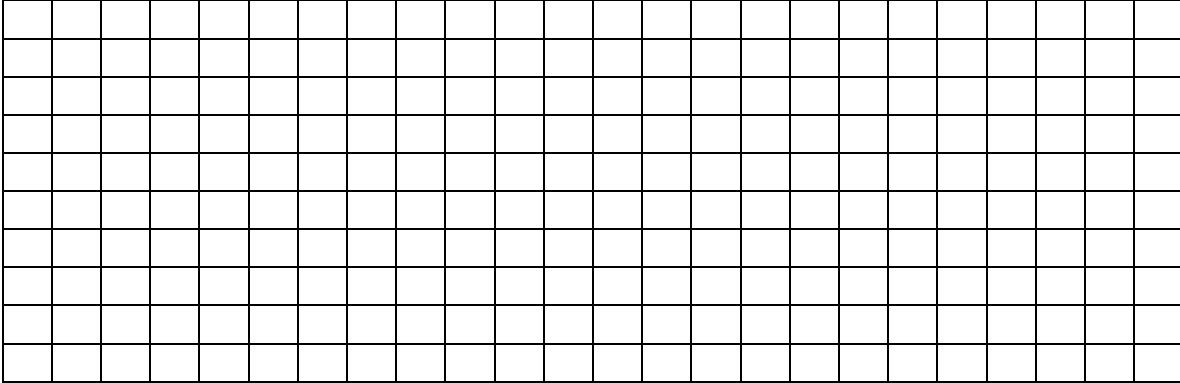


Pipe Cleaners and Area

1. Measure the pipe cleaner by using the grid below. How many units long is the pipe cleaner? _____



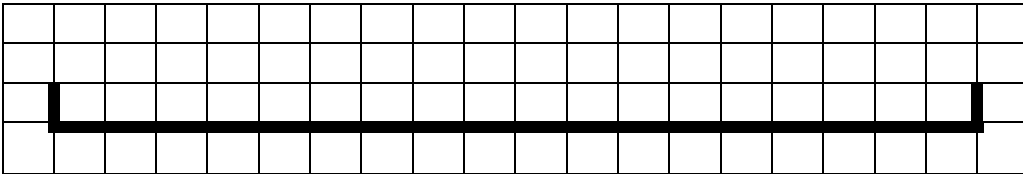
For the next part of this activity you will need to bend the pipe cleaner. Make the same bend at each end. The length of each piece bent upward is called the height of the pipe cleaner.

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Pipe Cleaner

Bend the pipe cleaner so that each end piece is one unit long. The pipe cleaner should match the one shown below. Place your pipe cleaner on the diagram to check.

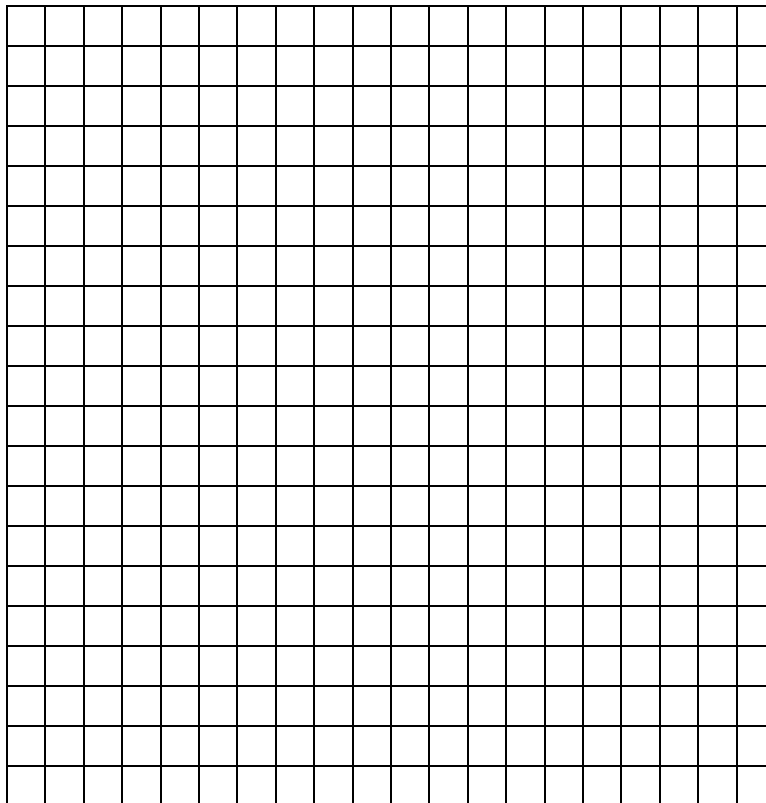


2. a. What is the height of the pipe cleaner in the figure? _____
- b. The bottom part of the pipe cleaner is called the base. What is the length of the base in the figure? _____
- c. The area of the figure is the number of squares above the pipe cleaner, but no higher than the tops of the pieces bent upward. What is the area of the figure? _____

3. a. Now straighten the pipe cleaner. Bend it again so the length of each piece bent upward is 2. What is the length of the base of the pipe cleaner now? _____
- b. Place the pipe cleaner on the grid and find the area. _____
4. Continue straightening and bending the pipe cleaner so that the length of the piece bent upward is one unit larger each time. Record the results in the table below. You may stop when there is no longer enough pipe cleaner to continue.

Height	Base	Area
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

5. Draw a graph of the base as a function of the height.



6. Write an equation for base as a function of height.

7. Write an equation that shows how area is related to base and height.

8. Use the equations above to find an equation for area as a function of height.

9. Draw a graph of the area as a function of the height.

