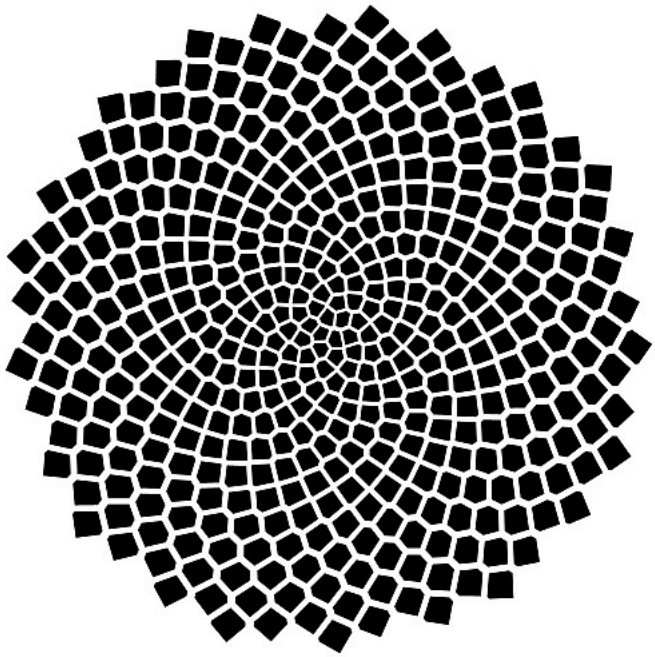
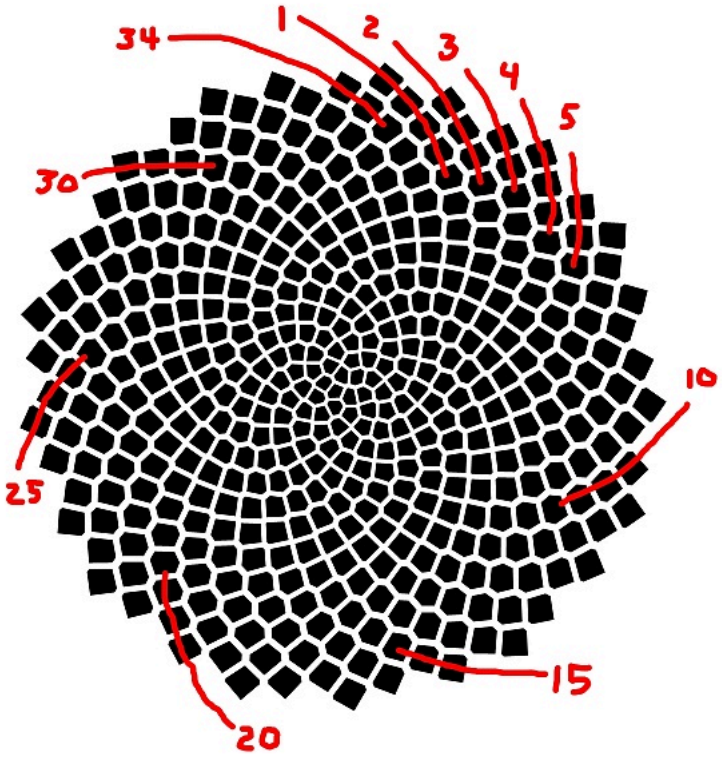
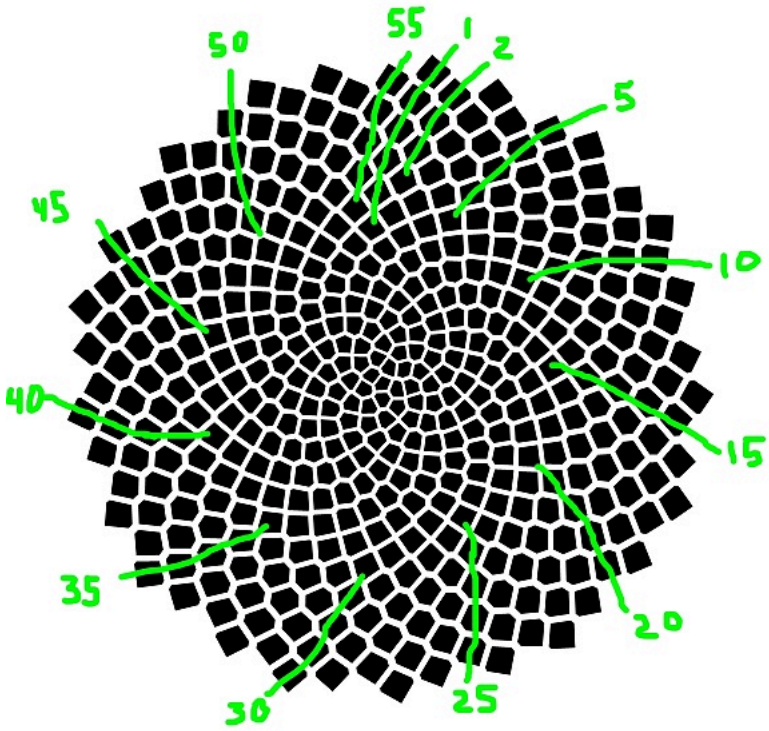
How to Count the Spirals



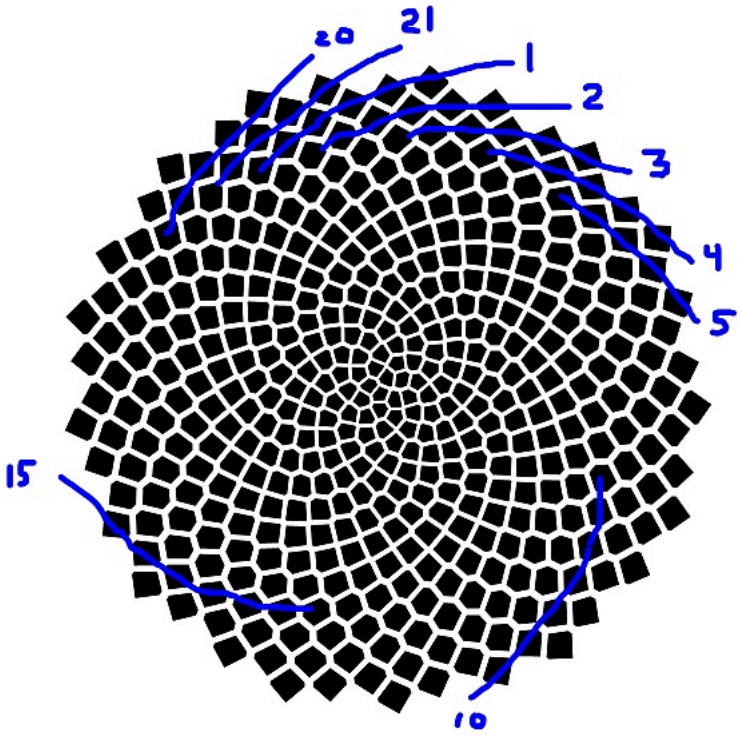
The sunflower seed pattern used by the National Museum of Mathematics contains many spirals. If you count the spirals in a consistent manner, you will always find a Fibonacci number (0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, ...). Below are the three most natural ways to find spirals in this pattern. Note that the black pattern is identical in all the images on this page. Only the colored lines indicating the selected spirals are different.



The red lines show 34 spirals of seeds.



Choosing another slope, the green lines show 55 spirals of seeds.



And choosing a very shallow slope, the blue lines show 21 spirals of seeds.

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