

The OEIS: 50 years of identifying number sequences

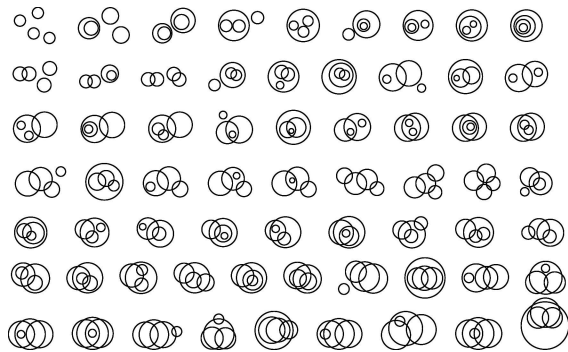
On October 9-10 2014 the DIMACS Center at Rutgers University will host a conference to celebrate this anniversary and the imminent arrival of the 250,000-th sequence (and its founder’s 75th birthday). Sequence fans, most of whom have never met in person, will arrive from all over the world. Speakers include John Conway (*The Symmetries of Things*) and Douglas Hofstadter (*Gödel, Escher, Bach: An Eternal Golden Braid*).

The On-Line Encyclopedia of Integer Sequences, now <http://oeis.org>, was started in 1964 by Neil Sloane. Fifty years later the OEIS is still the place to go if you want to know what comes next after 1, 2, 4, 9, 21, 51, 127, 323, say. The OEIS receives over 100 new sequences and updates per day, all handled by volunteer editors.

The OEIS has often been called one of the most useful mathematical sites on the web. It receives over nine million hits per month, from mathematicians, scientists, and number lovers everywhere. There are 3800 registered users. A recent quote: “the OEIS is awesome for our research in mathematical physics!”. It has been cited by thousands of publications, and “for each one that does, there are at least ten who do not mention it” because its use has become so standard (Doron Zeilberger). A list of 4000 such articles and other works will scroll on the screen during the coffee breaks.

Every entry in the OEIS has a “listen” button, so you can hear how it sounds (try <http://oeis.org/A086099>) and a “graph” button, so you see how it grows (try <http://oeis.org/A246830>).

Even with a quarter-million sequences there’s a lot left to discover. Some beautiful and quite simple sequences have only just made their way into the OEIS. For example, <http://oeis.org/A241601>, added in April, gives the number of ways one can draw n circles on a piece of paper. There are three ways to draw two circles (tangential contacts are not allowed): they can be nested, disjoint, or intersect. The sequence starts 1, 3, 14, 168, but the number of ways to draw five circles in not known. Even less is known if tangential contacts are allowed.



Some of the ways to arrange four circles on a plane.

For more information see <http://dimacs.rutgers.edu/Workshops/OEIS/announcement.html>