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"The On-Line Encyclopedia of Integer Sequences" Moves to a New Home.

44 Years From Punched Cards to Wiki.

If you want to identify a sequence of numbers, such as $1, 2, 5, 15, 52, 203, 877, 4140, \ldots$, there is only one place to look, the *On-Line Encyclopedia of Integer Sequences* (or **OEIS**). Neil Sloane has been collecting sequences since 1965, when the collection was on punched cards. Since 1996 it has been on his home page at AT&T Labs. But starting in January 2010, the OEIS will have a new home, `oeis.org`, where it will be owned and maintained by the tax-exempt **OEIS Foundation**. The format will also change: from now on the OEIS will be a "wiki."

Reasons for change. The OEIS has grown tremendously and is now too big to be maintained by one person. On the AT&T Labs web site, all changes had to be made by Neil Sloane. On the new home, a board of fifty associate editors will have direct access to the database for approving changes. Also the OEIS is a "public good", and is now well enough established to exist as an independent entity.

About the OEIS: Widely recognized as one of most useful mathematical sites on the Web. As Harvey J. Hindin already said about the 1973 version, which contained 2372 sequences: "There's *The Old Testament*, *The New Testament*, and *The Handbook of Integer Sequences*." The OEIS now contains about $170,000$ entries and 1GB of data. Thousands of people use the database each day. Traffic is 155GB/month. Each day, contributors from Argentina to Zimbabwe send in roughly 45 new sequences and 150 updates. The main lookup page is available in 49 languages.

How the OEIS is used: Like a dictionary, to identify a sequence you have come across, to find a formula, reference or computer program for a sequence, to get the latest information about the computation of a difficult sequence, etc.

The sequences. OEIS entries come from mathematics, computer science, engineering, physics, chemistry, etc. An entry may contain anywhere from one term (e.g. entry A076337, where only one term is known) to a million terms (A002205). Most entries give many formulas, comments, references to the literature, links to other web sites, computer programs in many languages, cross-references to other sequences. Entries can also be plotted or converted to music (try A005132, using instrument #103!). There is a webcam for browsing.

Especially interesting sequences. The sequence people most often search for: the Catalan numbers, A000108. Sequences from famous unsolved problems: Goldbach's conjecture, A002375; Mersenne primes, A000043; Riemann Hypothesis, A057641. A classic puzzle: the eban numbers, A006933. Two different sequences that only differ after many terms (after $777,451,915,729,367$ terms, in fact): A078608. A slow-growing sequence: Dion Gijswijt's sequence A090822, which although it grows without limit, takes about $10^{10^{23}}$ steps before reaching 5. Omar Pol's toothpick sequence A139250, with a remarkable movie made by David Applegate (see Neil Sloane's talk, 3pm Jan. 13, Room 3018).

The future. As Vladeta Jovovic remarked on the party page celebrating $100,000$ sequences (`oeis.org/classic/100k.html`), the OEIS is one of the most successful examples of international cooperation. It is hoped that as a wiki, the OEIS will reach more people than ever, and in its own way play a role in promoting world peace.

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