A buckyball is a spherical molecule made entirely of carbon atoms — the roundest and (some say) most beautiful of all known molecules. Scientists believe it may be one of the most useful, too.

It’s for kicks

A buckyball has much more in common with a soccer ball than just looks. It spins, bounces against hard surfaces, and when squeezed and released, springs back to its original shape. Buckyballs are so strong, they’ve survived 15,000 mph collisions!

Why bucky?

Buckyballs were named after the visionary design scientist R. Buckminster Fuller, because they resemble the geodesic domes he popularized, like the Biosphere in Montreal. Fuller died in 1983, two years before Harold Kroto, Richard Smalley, Robert Curl and colleagues discovered buckyballs, but his name lives on: a whole class of molecules related to buckyballs are now called fullerences.

Fullerences

Made entirely of carbon, they form spheres (buckyballs), ellipsoids (C70) or tubes (buckytubes, or nanotubes), and have chemical properties more similar to graphite (pencil lead) than diamond — both of which are also different forms of pure carbon!

LANguAe OF THE BuCky-VERSE

Allo trope - one of several forms of the same substance

Buckyball - the original form of the fullerene molecule

Buckytubes - or nanotubes. These forms are elongated shapes that can be used in electronics and as nanoscale wires in devices that require superconducting properties

Carbon - Buckminster Facit

Graphite - layered form of carbon

Diamond - the hardest form of carbon. It is made when carbon is exposed to high pressure, like in a diamond anvil cell. Diamonds are used in jewelry and for cutting.

How close are we?

Uses for the buckyball are being explored all around the world. Scientists in government and industry are characterizing its dynamic properties and safety profile. Beyond超越ing knowing what, buckyballs may soon be a household item — in cosmetics, dynamic properties and safety profile. By learning about buckyballs today, you might find a cure for cancer tomorrow!

Revolution in progress

Buckyballs have tremendous potential as a building block in the nanoworld:

- squashed buckyballs, 2x as hard as diamond, may be used in commercial drilling
- superconducting potassium-doped buckyballs could be used in nanoelectronics
- buckyballs filled with taxol and attached to antibodies may act as anti-cancer drugs

Buckyballs offer a tool to enter the nanoworld, because they can act as scaffolds or carriers of chemicals with unique properties.

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How to Make Shadows
1. Place a blue, yellow or red strut* in any hole.
2. Point the strut at the sun.
3. Cast shadow on a white board at 90º to sun’s rays.

Rules
1. If it works, it works perfectly.
2. Don’t break it apart; take it apart!
3. Don’t crush models.

Our mission:
• make learning fun
• create value
• build a better world

Zometool Buckyball Kit — Dr. Steve Yoshinaga, copywriting; Dr. Scott Vorthmann, zome software for images; Anna Walzer, graphic design; Bruce Camperio-courtesy of R. B. Fuller & R. Marks, The Dymaxion World of Buckminster Fuller; Southern Illinois University Press, 1960, and Wichita State University Libraries Department of Special Collections Paul Hildebrandt, copywriting and project management; Contact paulh@zometool.com. Based on the 31-zone system discovered by Steve Baer, Zomeworks Corp., USA. © 2010