

Begin Your Journey to the 4th Dimension Here!

(Check out the Building Tips on the back panel.)

Start with these Building Tips

Build it BIG!
Build it Fast!



HYPERSPACE CUBE

4-DIMENSIONAL HYPERCUBE

BUILDS A MODEL

15 INCHES HIGH!

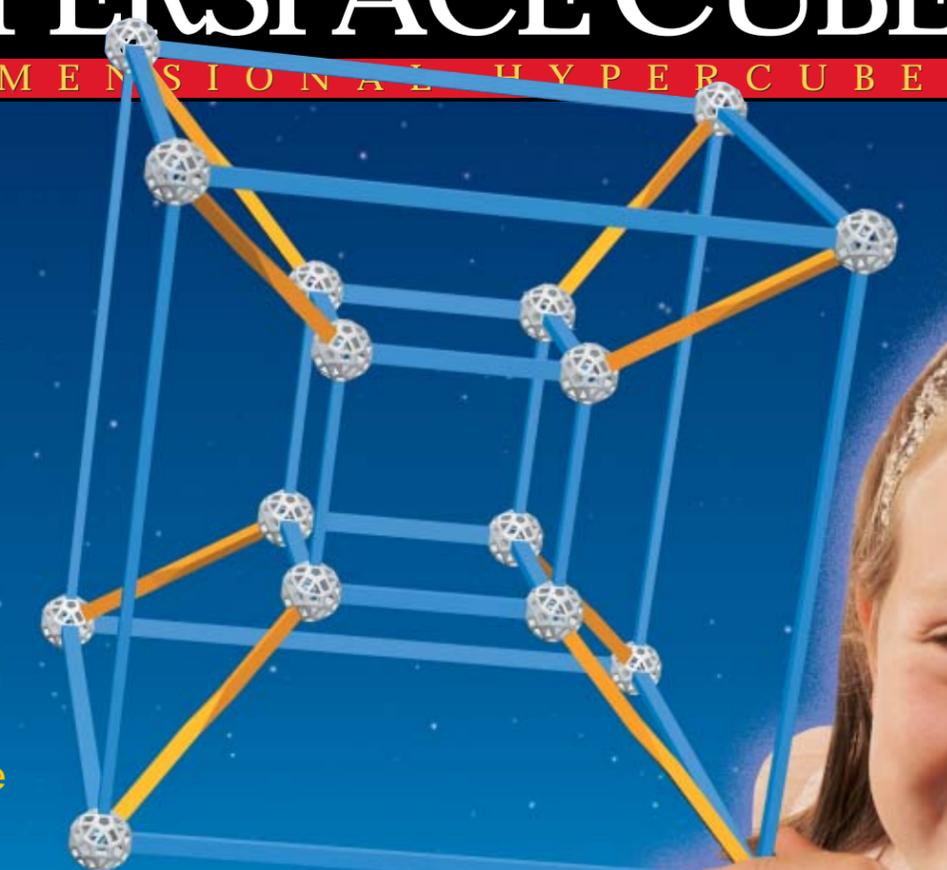
Parts are keyed by shape and color — it's easy!

Collect them all!

All Zome System Pieces are Made in America. Packaging 100% postconsumer recycled plastic.

ZOME **74** PIECES

Warning: Swallowing Danger CONTAINS SMALL PARTS that are NOT suitable for children under 3 years of age.



Shadows from the 4th Dimension

Try building a cube with your Zome pieces (follow steps 1–3 for the parallel hypercube inside). You can cast different shadows using sunlight or a penlight.

While a cube is 3-dimensional (3D), its shadow is flat (or 2-dimensional (2D)). Whenever you cast a shadow, you create a 2-dimensional projection of a 3-dimensional object!

With this kit, you can build 3-dimensional “shadows” of an imaginary cube in the 4th dimension!

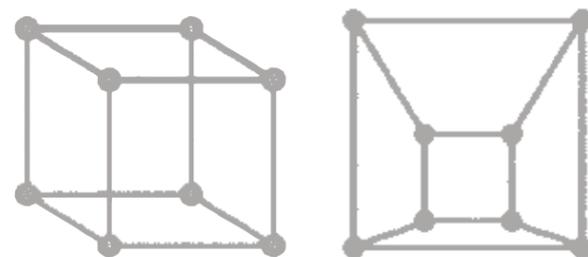
What is a Hypercube?

A 4-dimensional cube is a **Hypercube**. To understand the difference between a hypercube and a cube, it helps to think about the difference between a cube (in 3D) and a square (in 2D).

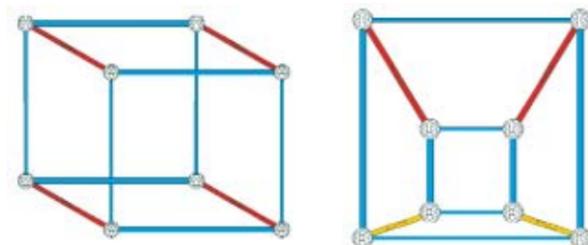
A square is 2-dimensional. It has width and height. A cube has width, height and depth—3 dimensions. A hypercube has width, height, depth and an “invisible” 4th dimension that 3-dimensional creatures have no name for!

2D Shadows of 3D Cubes

2D shadows of 3D cubes can take different forms, depending on the light source and the rotation of the cubes. The first example below is a **parallel** shadow cast in the sunlight. The second one is a **perspective** shadow cast in a dark room using a penlight.



A 3D cube has six square faces. These shadows have two regular squares and four “squares” which have been distorted by projection. Now try building these cube shadows with Zome parts.



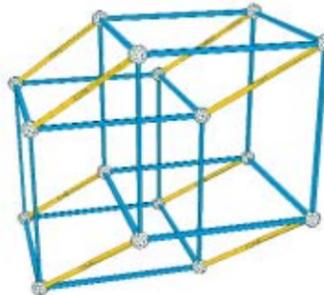
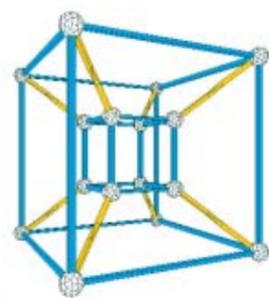
Parallel Projection

Perspective Projection

3D Shadows of a 4D Hypercube

With the Hyperspace Cube Structures Kit, you can build the hypercube shadows shown below (follow the directions on the other side). They are both shadows of the same 4D cube, but one is a perspective shadow and the other is a parallel shadow.

Perspective Hyperspace Cube
Can you see how it looks like the perspective cube shadow to the left?



Parallel Hyperspace Cube
Can you see how it looks like the parallel cube shadow to the far left?

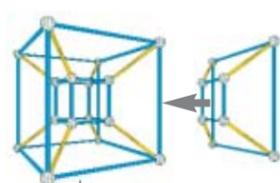
(For step-by-step instructions to build these models, see other side.)

Find out where to get more Zome Kits — call 1-888-ZOMEFUN or visit us at www.zomesystem.com!

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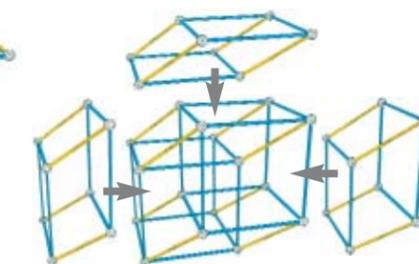
Just as a cube is made up of square faces, a hypercube is made up of cube “faces.” Zome hypercube shadows are flattened out into three dimensions, but you can still see the cubes that make up a hypercube. Some of them are still regular cubes, but some have been distorted by projection. In the 4th dimension, they are all the same size!

How Many Cubes in a Hypercube?

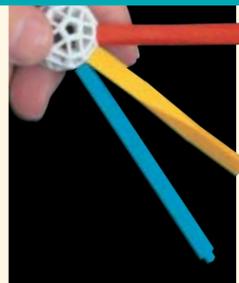


Count the cube faces in each hypercube model.

(Hint: Here are some of the squashed cubes. Now can you count them all?)



Everyone knows there are eight cubes in a Hypercube.



The Color & Shape of the Struts Point the Way!

Each Zome System strut connects to holes of matching shapes. Blue struts fit only into rectangular holes, yellow struts into triangular holes and red struts into pentagonal holes. This makes it easier to build even complex models.

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It's OK to Bend the Struts.

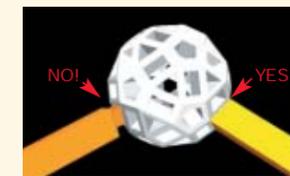
Sometimes, to fit a strut into a tight spot, you'll need to bend the strut slightly between your fingers before you insert it. Make sure that



nearby connections are tight, then place the stub of one end into a hole, and bend until the other end pops in.

Always Tighten the Connections as You Build.

Make sure each stub goes all the way into the hole, with the shoulder of the strut tight to the face of each node. Keep tightening up all the parts of your model as you go. Keep your hands close together, always applying pressure along the length of the struts.



Now Get Into the Zome in a BIG WAY!



Explorer Kit

484 Pieces means a whole lot of fun, packed into a neat attaché. The Explorer Kit lets you build much bigger, more amazing structures than you might believe possible!



Creator Kit

968 Pieces makes The Creator Kit a powerful tool for serious structure builders. It's used by architects, mathematicians, chemists — and just for fun — around the world.

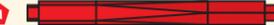
To find out where to get more information and parts, call 1-888-ZOMEFUN and visit us at www.zomesystem.com!

HYPERSPACE CUBE

The 4th dimension is real, and now you can experience it first hand! Simple instructions make child's play of the journey from zero to 4 dimensions, using that most familiar shape — the cube! (See other side for a multi-dimensional tour.) Build different “flat” cubes, “regular” cubes and amazing “shadows” from the 4th dimension. (There are two examples on this page.) Pretty soon, you'll be seeing in 4 dimensions yourself!

PARTS INVENTORY

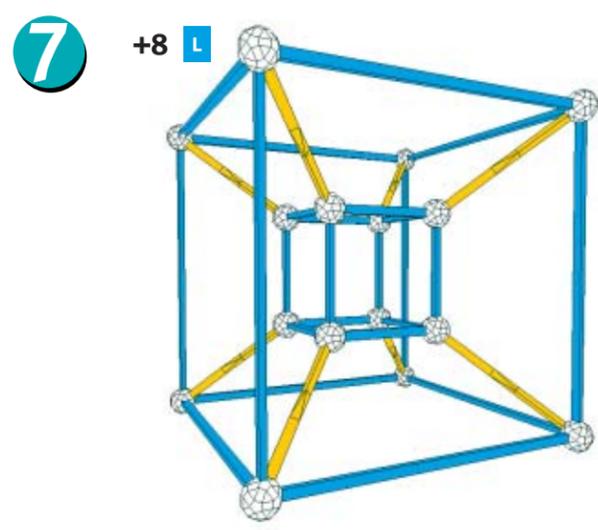
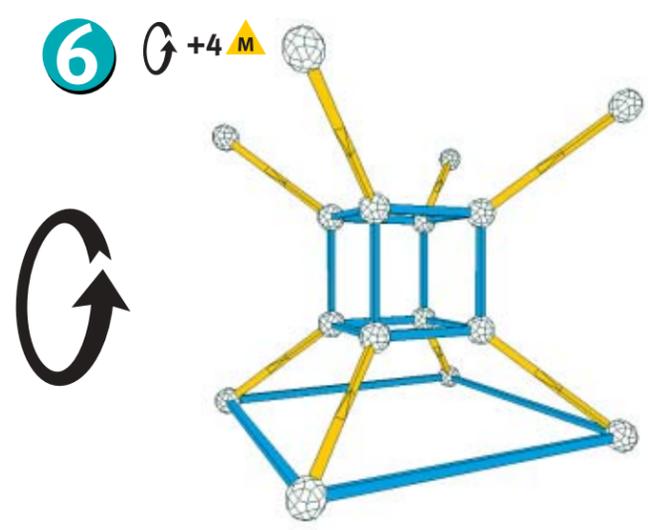
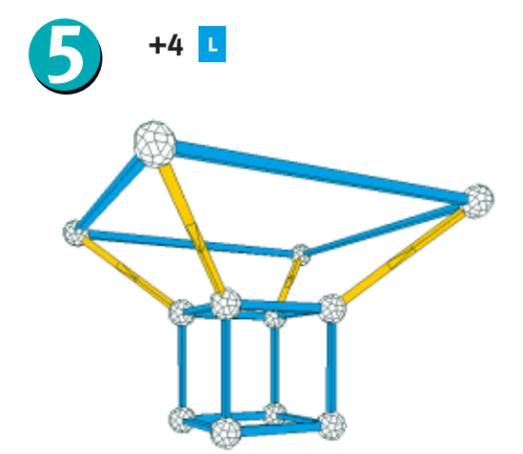
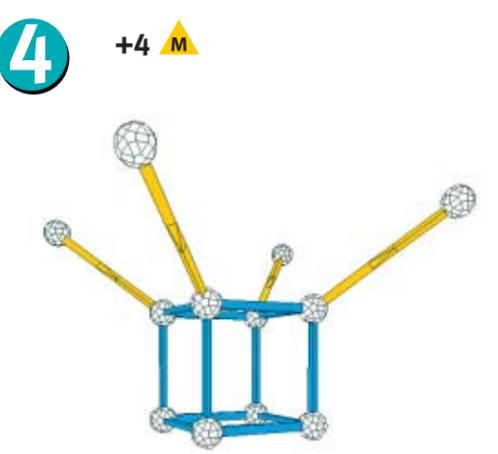
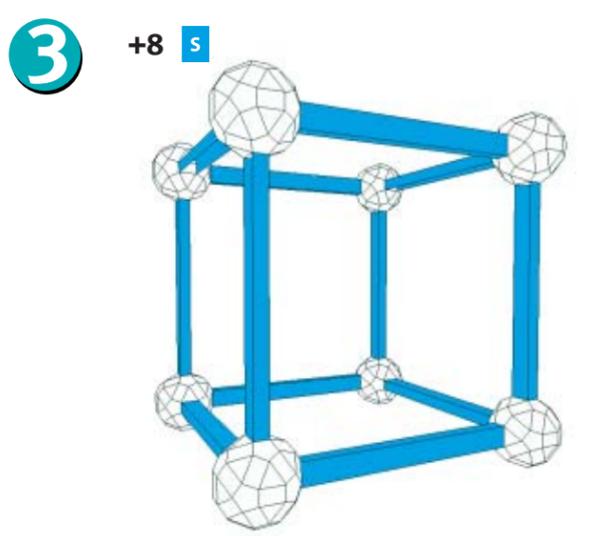
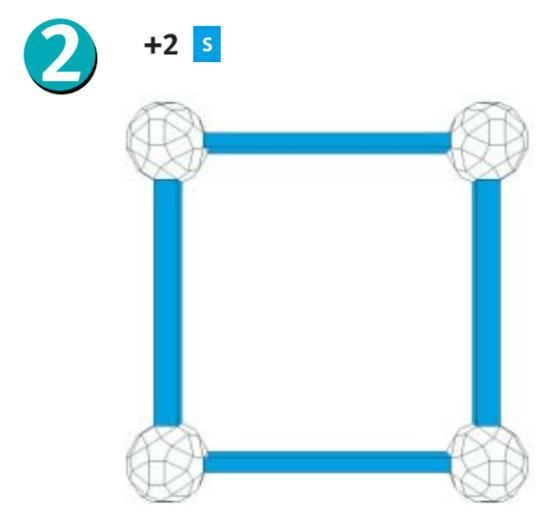
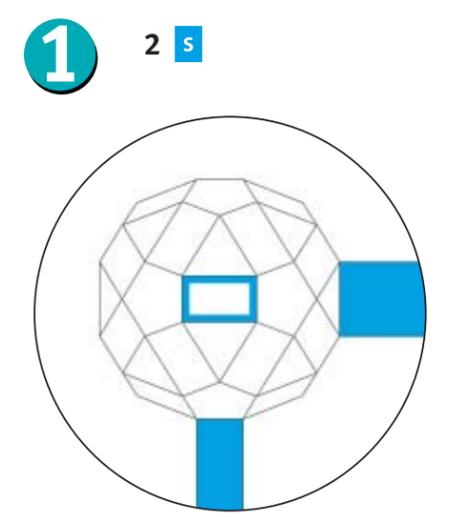
The **Hyperspace Cube Structures Kit** contains 74 Zome Pieces, with 16 Zome Balls and 58 Struts in the indicated lengths (short, medium or long) and colors (blue, yellow or red) shown below.

- 16 
- 12 **S** 
- 0 **M** 
- 24 **L** 
- 2 **S** 
- 8 **M** 
- 8 **L** 
- 0 **S** 
- 4 **M** 
- 0 **L** 

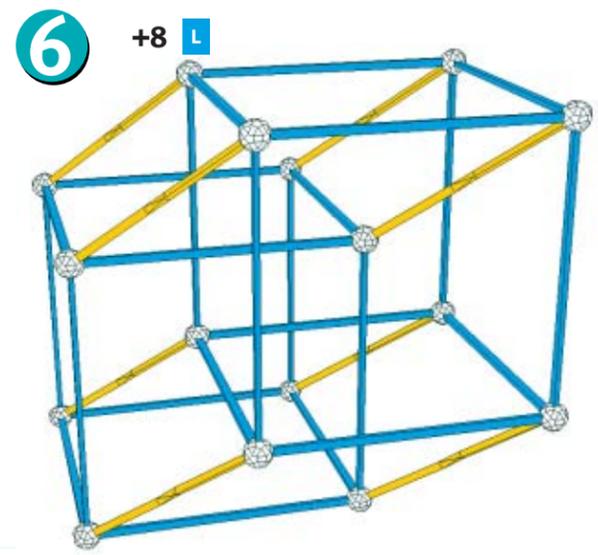
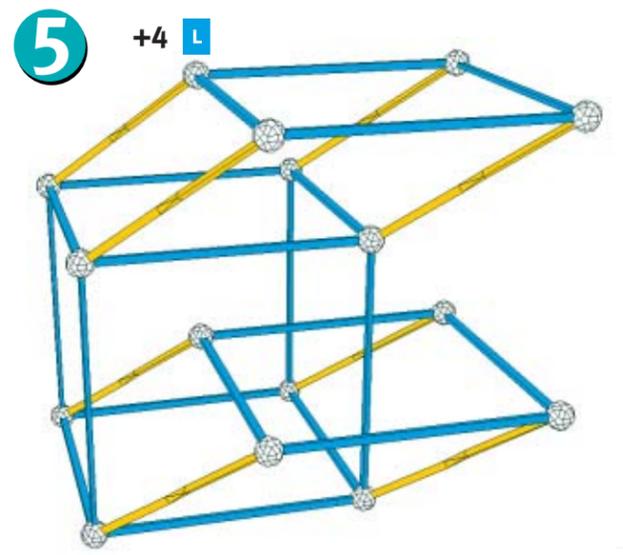
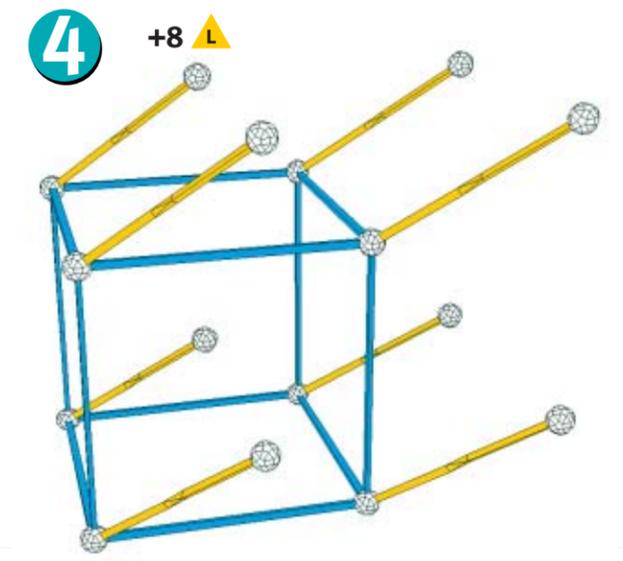
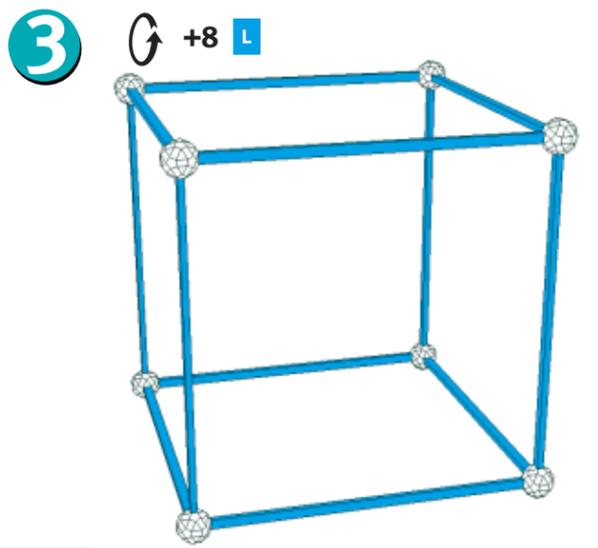
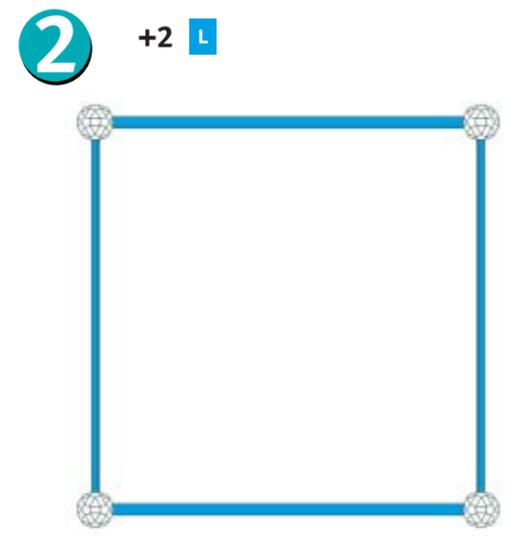
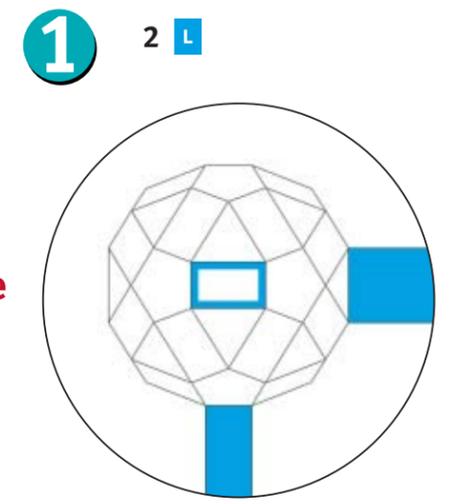
INSTRUCTIONS

BEFORE YOU BEGIN, READ THE BUILDING TIPS ON THE BACK PAGE.

Above each step, you'll find the number, length, shape and color of Struts you need for that step. Place Zome Balls at all positions indicated. On some steps you **rotate** a structure first, then add new parts.



Perspective Hyperspace Cube



Parallel Hyperspace Cube

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