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What could be more adorable than beavers building dome-shaped homes, teamed with Richard Buckminster Fuller, AKA Bucky, building his first successful geodesic dome? This environmentally caring STEM book uses a parallel free-verse structure similar to Hannah Holt’s *The Diamond and the Boy* , except it’s from a young beaver’s POV asking, “If I were a human, who would I be?”

BEAVERS AND BUCKY BUILD DOMES: A BIOGRAPHY OF SORTS

Dr. Mira Reisberg

Hey busy beavers, have you ever thought, If I were a human, who would I be?

Well, I have a favorite human who back in the 1960s was an inventor/architect/builder called Bucky (short for Richard Buckminster Fuller).

And like beavers, he built domes.

**Home in a Dome**

We beavers build our dome-shaped homes, called lodges,  PLOP in the middle of the pond

[Illustration note: Show beavers building a dam to make a pond with a lodge in the center]

Equally busy Bucky built domes for homes

And convention centers, weather stations, and more.

**A Little History**

Beaver history goes all the way back

To pre-historic times when we were

huge and lived in burrows.

When we got smaller

We started building our homes in water.

Bucky’s history can be traced to 1600s England

Before coming to North America.

His family were known for

Being smart and deeply caring people

Which Bucky was too.

**Learning to Build Domes**

We use instincts

Passed down over centuries

Watching and helping our elders,

Who watched and helped their elders

We learned to build our dams and lodges

From early on, Bucky watched how

Things worked in nature and then figured out

How to use what he saw

[Show Bucky looking at early human’s cave homes and imagining the geodesic dome]

**Let’s Talk Tools and Techniques**

Our main tools are our ever-growing, long, sharp, teeth

We use them to gnaw down trees

Dam the water

And build our domes.

[Illustration note: Show beavers dragging logs and building their dome-shaped lodge with sleeping above and below-water entrance and escape tunnels under the water]

We also use our cool paws and tails

To layer logs, sticks, moss, and mud

And then, we smear our scent to

To keep scary predators away

[Illustration note: Show beavers smearing their scent]

Bucky tried and failed, tried and failed

To build his domes until... One day...

Teaching at a special college

He and his students connected tubing

To form triangles, then diamonds, and then octahedron shapes

They added a type of vinyl skin

On the outside to protect the inside

For the first stable geodesic dome

[Illustration note: Show the different shapes and also Bucky and his students hanging from the stable dome laughing like monkeys. Explanation of the word geodesic – from geometry it’s the shortest line of a curve]

**Is bigger better?**

Some of Bucky’s domes were huge

His light-filled Montreal Expo dome

Had a monorail running through it.

At 249 feet wide x 203 feet high

It was amazing!

The biggest recorded beaver lodge

Was 40 feet long and 16 feet tall

It was amazing too,   
Especially considering we don’t use machines!

**Let’s Make the World a Better Place**

Our dams create wetlands and ponds

Making homes for other animals and plants

Wetlands store water from floods

To use during droughts, helping everyone

Bucky’s work was all about doing more with less

To save earth’s limited resources

Bucky believed the earth was like a giant spaceship

Where everything needed was on board

And everyone had to work together to survive.

Quick to build, Bucky’s affordable domes

Use fewer materials and create less waste

than regular rectangle buildings

Like caves, dome temperatures stay

Warmer in winter and cooler in summer

Needing less fuel to heat and cool

**Can a Really Good Thing Last?**

After we move, and build new dams

And domes for lodges

Other animals move into our old shelters

The dams live on

As wetland habitats for all sorts of

Birds, fish, lizards, and animals

Eventually, without us patching them

The dams break down

And the wetlands turn into beautiful meadows

Meanwhile, Bucky’s geodesic domes are still being built

Creating strong structures able to withstand hurricanes

And tornadoes and other acts of nature

There’s even one at Disney’s Epcot Center in Florida

Called “Spaceship Earth” (Hooray)

Although most of Bucky’s other inventions

Didn’t take catch-on like the geodesic dome

His ideas continue inspiring

Engineers, builders, activists and scientists

To do more with less to care for

Our beautiful Spaceship Earth

Like beavers, Bucky was

Hard working

Environment saving

And oddly cute

So that’s why when I grow up

I’d like to be like Richard Buckminster Fuller,

Also known as Bucky

Wait a minute, I kind of already am

(Except for all the other inventions)

Now it’s my turn to ask you, young beavers

“If you could be a human, who would you like to be?”

[Illustration note: Show collage with Bucky as a child building pyramids with toothpicks and peas, on a boat at Bear Island, on a US Postage stamp, and standing in front of his many inventions and accomplishments with beavers building in the background or on the side]

**About Beavers**

Beavers are part water/part land creatures with front teeth that keep growing throughout their lives. These long, strong teeth allow them to chew through wood and harvest the logs for their dams and lodges. Building beaver’s dams and domes for homes is a family affair where mom and dad teach their young so that they can build their own when they leave home. The wetlands they create help nearly half of North America’s threatened and endangered species survive.

They’ve been around since pre-historic times when they were the size of bears. There were two kinds, the giants and the smaller beavers we see today. Like dinosaurs and other megafauna , giant beavers died out. Beaver’s earliest homes were underground burrows, but over time, they started building the part underwater and part above water lodges we see now. Sadly, they were nearly hunted to extinction in the late 1800s mostly for their fur and because they were seen as pests. Happily, they survived and are going strong today.

Beavers are giant rodents who do much good. But not all property owners want their trees cut down or their creeks and shallow rivers dammed. They need the water flow to water crops. Sometimes it’s a battle between beavers and farmers.

**About Buckminster Fuller**

Bucky was a wonderful mix of brilliance and showmanship. But he wasn’t a great businessman. While geodesic domes are still being built, they didn’t change the world in the way that Bucky hoped. Some early domes weren’t always built well and leaked or had noise problems. Because they are so different, some places make it hard to legally build them.

Bucky wanted to design and build things “to make the world work for 100% of humanity, in the shortest possible time” while caring for the environment and each other. His designs included: the Dymaxion Car, which could hold 11 people, go 90mph and used only 30mpg of gas; the round Dymaxion House, which was inexpensive, water and energy-efficient, and so light it could be airlifted anywhere; the Dymaxion Map, which showed the world in a more realistic and fair way; and the World Peace Game that encouraged people to think very differently about resources and humanity.

Some people thought that the geodesic dome was the highlight of Richard Buckminster Fuller’s career, but for Bucky, his life was his greatest invention. He lived it as an experiment to see what one person, using the fewest resources, could do to make a better world.

References

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Don’t forget Beaver references

A World Without Beavers Is a World Without Wildlife We Love

[https://www.audubon.org/news/a-world-without-beavers-world-without-wildlife-we-love#:~:text=So%20unappreciated%20that%20in%20the,individuals%20around%20the%20same%20time](https://www.audubon.org/news/a-world-without-beavers-world-without-wildlife-we-love%22%20%5Cl%20%22:~:text=So%20unappreciated%20that%20in%20the,individuals%20around%20the%20same%20time) Viewed Feb 20 2021