

Rhyming Researcher "Seussifies" Science for Kids

Prologue

With a four-year-old at home, I read a lot of verse by Dr. Seuss. The rhythms are calming and the verbal images engaging. Deep thinkers on the subject of Dr. Seuss claim that his books shape the values of

young listeners, like my daughter on subjects such as ecology (*The Lorax*) or limits to political power (*Yertle the Turtle*).

Since the nature of materials is a theme of interest to me, I wish Dr. Seuss had left

us with a story that would give little ones a notion of what their world is made of—ATOMS!! I'm no Dr. Seuss, but I've begun such a tale. Maybe some of you out there could do even better.

ATOMS

By Dr. Schnee

A is for atoms—they're awfully small,
 An Angstrom across or a bit more is all.
 (But what is an Angstrom, you want me to tell?
 A unit of distance that works very well
 When measuring things that are not very far
 Like space between atoms when stuck where they are
 As pieces of things that we all can call matter,
 Including a rock and a baseball team's batter.)

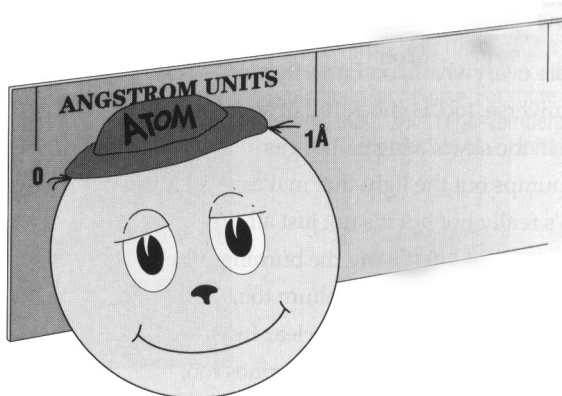
An atom is small so you really can't see it,
 But one thing's for sure—it really is needed.
 The whole universe has a hundred of kinds,
 More than enough to make all that you find.
 Atoms are just the littlest bits
 Of stuff we call matter, the world's made of it.
 The mountains, the people, the clouds, and the trees,
 The animals, oceans, are all made of these.

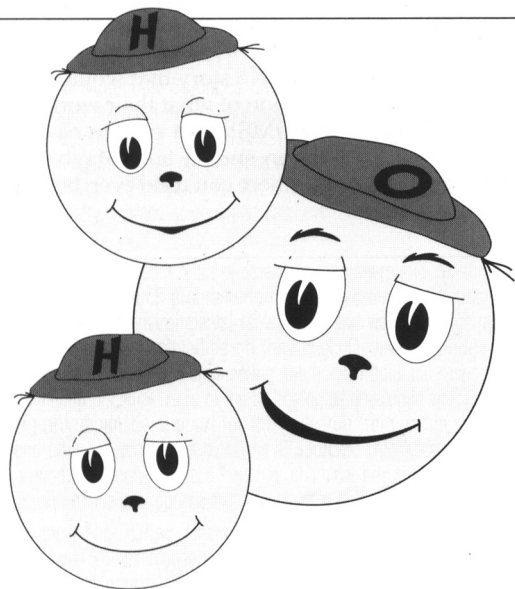
Some atoms join groups with just two atoms there.
 Oxygen likes to go 'round as a pair.
 Others join big giant atom-full groups,
 With atoms by thousands in piles and in loops.
 The name molecule tells that the atoms are bunched,
 And we even ate bunches of them when we lunched!

A few kinds of atoms make up you and me,
 And all of the other nice things we can see.
 Carbon and oxygen, hydrogen, too,
 Are the main stuff of life, we have them all through.
 With phosphorous and nitrogen these almost suffice,
 But a number of others are there to add spice.

Water is stuff that we critters are full of;
 Two hydrogens and oxygen that fit like a glove.
 Water fills oceans and rivers and puddles,
 It falls down as rain to make muddy muddles.
 When cold, water freezes and falls down as snow,
 Which we use to make snowmen and snowwomen grow.

The air is all atoms we use for our breathing.
 But they're mostly two kinds, even when we are sneezing.
 The atmosphere's like a big nitrogen tent
 Oxygen's there a lot; twenty per cent.
 It's oxygen gas that we need when we breathe,
 But aren't there some others we need to grow trees?
 Carbon dioxide is used to grow plants,
 But there's only a trace in your breath or an ant's.





An atom's a ball
 But that's really not all!
 An atom has big parts—three types as you'll see,
 Protons and neutrons and electrons are free
 To gather together in different numbers
 Making atoms of different kinds and different wonders.
 (There are rules that these three atom parts must obey.
 If they don't get it right then the atom can't stay
 Altogether, but will fall apart in a poof,
 So the parts do not usually make such a goof!)

Inside, an atom's a marvelous place
 Mostly made up of just free empty space.
 Protons and neutrons sit deep down inside
 Of nuclei where they just usually hide.
 The electrons fly all around them like the planets.
 They're important. We cannot just take them for granted.

Atoms are everywhere; on Earth they're enough.
 The universe, too, is chock full of stuff.
 The sun in the sky is a big ball of gas
 That pumps out the light that makes most life last.
 The sun's really hot but it's not just all fire.
 It's atoms up there fueling the burning pyre.
 The sun's mostly hydrogen, helium too,
 It's burning the hydrogen (nuclear fuel).
 (Besides all that light, it makes neutrinos too,
 That are measured in very fine units called snu's.)

The universe grows; it keeps getting much fatter.
 It's full of two things: those are energy plus matter.
 And how do we know just what (stuff) is the matter?
 The matter is weighty and takes up some space there!

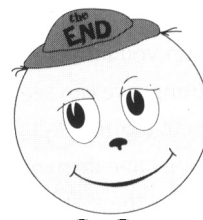
Some atoms make our eyes glow bright;
 Take diamonds in the perfect light.
 It's only carbon there you know,
 Same as charcoal in the fireplace's glow.
 In diamond the pattern formed by the atoms is such
 That each carbon atom is in touch
 With four other carbon atom neighbors who
 Each touch four carbon atoms, too.

Some atoms are noble, they like to stay single.
 They don't bond together, they don't like to mingle.
 They're usually gases, and helium's one,
 We find it at parties, in balloons that are fun.
 Neon helps make lots of pretty lights glow,
 Argon is for welding just so,
 And krypton is one very strong noble gas
 Around which a Superman just can't last.

Aluminum foil is so shiny and smooth.
 It looks mighty neat when it wraps up our food.
 A metal it is; it carries current and heat,
 And for airplane bodies it cannot be beat.

Gold is so lovely. It's heavy to hold.
 And it stays nice and yellow when new or when old.
 Kings like this metal for crowns and for rings,
 For scepters and thrones and for all kinds of things.

The rules of chemistry give us a clue
 About what these atoms will usually do.
 It's a big world out there, with neat things to study.
 So learn—don't be a know-nothing fuddy duddy!



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