Re: Proposal for an Improved Scientific Notation

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- *From*: "ABarlow" <impartially_insane@xxxxxxxxxxx>
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donaldsauter@xxxxxxxxx wrote:

> I was gratified by the enthusiasm with which my proposal for a vastly simplified system of units of measure was embraced by the visionaries within sci.physics. If you missed it, it can still be found here:
>
> http://www.geocities.com/donaldsauter/units.htm
>
> That proposal works hand−in−hand with one for an improved scientific notation. Since there are so many billions of web pages out there, and the proposal is not very long, I thought I would make it easier to find by putting it up here in sci.physics.
>
> Thanks for your consideration.
>
> Donald Sauter
>
> NOTE: This article must be viewed in a FIXED−WIDTH FONT.
>
> ***
>
> Proposal for an Improved Scientific Notation
>
> Scientific notation is a way of expressing very large and very small numbers in a reasonably concise manner. I'm presuming you're familiar with it. (It'd be pretty weird for you to be reading up on how to improve something you don't even know about!)
>
> Scientific notation is less than ideal for the following reasons: it's cumbersome to say,

cumbersome to write, and has always been and still is impossible to type on a keyboard. Hard to imagine who thought it up... It's no wonder that it never caught on with the masses. Which is a shame.

I argue in my proposal for a fantastically simplified system of units of measure that we would surely gain a better feel for how things in nature compare if we always measured the same property using the same unit − all the way from the size of an atom to the size of a cell to the size of a person to the size of the earth... to the size of the universe.

To do that, we need to be perfectly comfortable with big and small numbers.

To be fair, I should have conceded above that the basic idea of scientific notation is great − using powers of ten in expressing large and small numbers. It's just that the written notation and the spoken words associated with it are a total pain in the neck.

Where there's a problem, I always say, there's a solution. And most of the time the statement of the problem practically cries its own solution.

In this case, all that's needed is a simple character and a simple syllable to stand for the "times ten to the plus" and "times ten to the minus" folderol of scientific notation.

The final decision on clear and efficient characters and syllables can be left to a panel of clever people, but here are some suggestions to get the ball rolling. How about an overscore and an underscore to indicate "times 10 to the (plus)" and "times 10 to the minus", respectively? It would look like this:

_
In with the NEW: 4 7 5_6 (Yaaayy!!!)

7 −6
Out with the OLD: 4x10 5x10 (Booooo...)

If over− and underscores have uses at all, I can't think of what they are or how they might create confusion with this notation. But there certainly

> may be better ideas for the new symbols.
>
> Next we need a simple syllable for each case of positive and negative powers of ten. For years I've been thinking "bip" for "times ten to the plus", and "bop" for "times ten to the minus". I'm sure that can be improved upon. Sounds like a kid's song. ("I never knew just what it was, and I guess I never will...")
>
> The NEW rap The OLD song and dance
> −−−−−−−−−−−−− −−−−−−−−−−−−−−−−−−−−−−−−−−−−−
> Four bip seven. Four times ten to the (plus) seven.
> Five bop six. Five times ten to the minus 6.
>
> Scientific notation requires the placement of a decimal point after the first digit. For this streamlined notation, perhaps we might feel freer to choose a power of 10 so that the leading factor is a simple one− to three−digit integer, and dispense with the fly specks. Notice how often two digits provide more than enough precision for our needs. Does anybody really care if someone has 6.37 million dollars, as opposed 6.4 (or just 6) million dollars?

I agree with your idea up to this point. There are ABSOLUTELY reasons that you need more than two digits of precision. Many measurements may require three, four, or even many more digits of precision than that. For example, for determining the moment of inertia of a planet, three digits of precision is absolutely necessary just to determine the difference between a physical model and a completely non−physical one. I'm sure other people could come up with other examples where higher degrees of precision are needed. That said, I don't see any reason why you couldn't do 6.42353677_5 or 1.4569 (up) 3.

A.

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