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Alan Alda: Fired up about science

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Lately I've spent a lot of time trying to help scientists explain in simple words what it is they do. Why in the world, you might wonder, should a nonscientific person worry about a thing like that? There are two pretty good reasons.

For one thing, before a surgeon slices me open, I'd like him or her to do at least two minutes on what this is all about. What's the problem? What are the chances this will work? Will I be able to play the violin when I wake up?

In a way, scientists are operating on us all the time. We're surrounded by science. It's in the air we breathe, the food we eat. In our privacy, or lack of it. Don't we deserve good, clear explanations of what scientists are doing? How else can we ask the questions that can keep them prudent? Scientists can't just speak to us in a secret, sacred language. If we can't understand the lingo, we're excommunicated.

Reason No. 2 is just as much in our self interest: When scientists explain their world in words we can understand, listening to them is one of the deepest, most exhilarating kinds of [fun](#) a person can have without actually sky diving or discovering America. It can be thrilling.

I have a long history of wanting science to be a little clearer. I was very curious as a boy and when I was 11 years old I got fascinated with the flame at the end of a candle. I couldn't figure out what was happening in there. So, I asked my teacher and she said -- a little abruptly, I thought -- "It's oxidation."

That doesn't quite explain it when you've never heard the word oxidation before.

It's been many years since I asked that question, but I recently decided to ask it again. I started a contest to see if scientists would rise to the challenge of explaining this [common](#) thing -- a flame -- so that an 11-year-old would understand it.

The idea was not primarily to teach kids science, but rather to encourage scientists to think about the tough problem of making science clear and vivid, without dumbing it down -- and thereby disrespecting both the kids and the science.

This is what we teach at [The Center for Communicating Science](#) at [Stony Brook University](#), which offers classes and workshops in which young scientists can learn the skills of communication as a fundamental part of their education.

The center set up a panel of scientists to check entries for accuracy before they went to the judges. But the best part of the contest was that the judges were real 11-year-olds. The winner they chose will be announced June 2. (You can see the finalists by [clicking here](#).)

Once it got under way, we were surprised to find that the question was way harder to answer than we had suspected. Explaining a flame requires reference to some of the most basic structures in the universe. Even so, we had more than 800 submissions from scientists all around the world.

We were even more surprised to see how excited the kids were about judging the scientists' entries. They were signed up by their teachers in droves: more than 6,000 students, from [Alaska](#) to [Australia](#) and from [Belgium](#) to [Brentwood](#). For a glimpse of how much [fun](#) this question was for the kids, take a look at the Worldwide Assembly we had on the Web for 10 schools in several different countries, at [flamechallenge.org](#).

But it was more than [fun](#). The kids learned something about chemistry and physics -- and we learned a lot about communicating science. Much of what we learned was from the kids themselves. They didn't like entries that were too long, but they also didn't like them too short. A [common](#) complaint was that they wanted more information -- they clearly wanted to learn. They appreciated humor, but not at the expense of clarity or insight. (As one student said, "We're 11, not 7.") And they appreciated the use of metaphor, but they wanted metaphors that opened their eyes to understanding -- not comparisons that simply said something was like something else. In short, they wanted to be engaged, but they wanted the experience to end in the pleasure of new knowledge.

It was very clear that these minds are longing for scientists to share their excitement with us. After all, scientists are on a great adventure.

They're off discovering the universe, and we want them to take us along.