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## Letters

### Edifying thoughts

While I am as appalled as anyone at the poor  
science and math schooling—I will not dignify  
it by calling it education—our children are  
receiving, I must take issue with some of the  
priorities expressed by Andrew Gleason, et al.  
("Math Education—Does It Have the Right  
Stuff?" SN: 5/28/83, p. 346).

Teaching "...when to multiply, not how to  
multiply" will merely shift deficiencies, not  
eliminate them. Neglecting fundamentals never  
improved anyone's education, even if other  
fundamental skills are taught in their stead.  
Teach *all* fundamentals, not just one instead of  
the other. Until basic skills of all sorts are effec-  
tively taught, increasing classroom time will  
accomplish nothing, except more schooling in  
drivel.

People's attitude toward numeracy is a still  
more basic problem, and was not addressed at  
all. I frequently hear people say "Oh, I'm terrible  
at math!" not regretfully, but with a sort of pride.  
Ditto with most other sciences, especially the

### This Week

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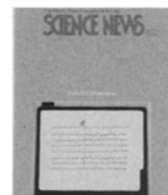
### Research Notes

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### Articles

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Cover: Just as electrical activity in the human brain can suddenly become disordered during an epileptic seizure (as shown in the brain-wave trace), computers may also suffer similar "convulsions." Mathematical concepts of "chaos" seem to link these and other situations in which well-ordered systems shift into irregular, chaotic behavior. (Brain waves used in composite illustration reprinted by permission of Perigee Books, from *The Brain: A User's Manual* by The Diagram Group, © 1982 by Diagram Visual Information)



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"hard" sciences. Until attitudes like that are eliminated we will not have any math or science education worthy of the name....

K. A. Boriskin  
Framingham, Mass.

... **Nowhere in the articles** (on public education) do I see a large sampling of math teachers' observations, only thoughts by study committees, college personnel or school administrators—all well removed from the "front line." As a high school math teacher for 17 years, during the declining test score era, I have observed the following: a drastic increase in student absenteeism, administrative attitudinal change from role of team leader to that of adversary, increase in student and parent apathy, increase in student discipline problems, less personal responsibility by students, ... impairment due to drugs, increased ... student passivity ..., textbook shift to greater theory and more reading ..., more students entering high school with reduced basic skill proficiency ...

While all avenues for improvement should be pursued I can't help but believe the root prob-

lems are more in attitudes and values than in content.

Don Beattie  
Detroit, Mich.

### Corrections:

In "The Longest Day" (SN: 7/9/83, p. 21), the sentence "In 1972 ... the time for the earth to complete one turn on its axis was decreasing by four-thousandths of a second every day" should have said increasing. While the rate of rotation is decreasing, the time for a complete rotation is increasing.

The photo of sky glow over San Diego (SN: 7/23/83, p. 58) should have been credited to the California Institute of Technology.

In "Marine Fossils Hint Antarctic Ice Cycles" (SN: 7/2/83, p. 6), rocks containing marine microfossils were scraped from the ocean basin and carried up the Transantarctic Mountains by an advancing, rather than receding, ice sheet. When the ice began to shrink, the rocks were left behind.

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