



A Public Awareness Initiative to Build Support for Science Literacy

Sponsored by the American Association for the Advancement of
Science with a grant from the National Science Foundation



Goals

- Increase public awareness of the need for high-quality science education for all students, particularly for Hispanic and African American students
- Encourage public commitment to reforms that will help all students achieve literacy
- Provide resources that will help the public to take an active role in supporting these reforms



Audience

- Parents & families
- Educators
- Students
- Policymakers
- Business leaders
- Faith-based groups
- Community organizations
- Media
- Higher education



Opinion Research

Fall 2001



- Focus groups to develop polling questions
- Baseline polling on attitudes & messages
- Focus groups to test messages

Conducted by Global Strategy Group, Inc.



Methodology



Qualitative Pre-Survey Methodology



- Two focus groups were conducted in Philadelphia on October 17, 2001, with parents of Philadelphia-area school children in grades 4-10. One of the groups included only women and the other group only men. The groups were conducted in English.
- Two focus groups were conducted in Philadelphia on October 18, 2001, among parents of Philadelphia area school children in grades 4-10. One of the groups included only women and the other group only men. The groups were conducted in Spanish.



Quantitative Methodology

- A questionnaire consisting of 62 questions, including one open-ended question, was administered by phone between November 7 and 13, 2001, to a representative national sample developed from lists of parents of school-age children.
- To qualify, respondents had to be parents of children attending school in fourth through tenth grade.
- 600 interviews were conducted in English; an additional 200 were conducted in Spanish.
- The margin of error for the English-language survey is $\pm 4.0\%$ and $\pm 6.9\%$ in the Spanish-language survey. The margin of error is somewhat higher for subgroups which are examined in the presentation.



Qualitative Message Testing Methodology



- Two focus groups were conducted in San Antonio, Texas, on December 11, 2001, with mothers of San Antonio area school children in grades 4-10. The groups were conducted in English.
- Two focus groups were conducted in San Antonio on December 12, 2001, among parents of San Antonio area school children in grades 4-10. One of the groups included only women and the other group only men. The groups were conducted in Spanish.



Initial Phase Overview

Overview



- Parents agree with some of the basic tenets of science education reform, namely that science education is too oriented toward memorization and should be about teaching students the skills and concepts needed for understanding the world and the way it works and for problem-solving.
- An increase in hands-on science education would, in the opinion of parents, result in improved science literacy among their children.
- Nevertheless, substantial gaps in parents' knowledge of science and of science education must be overcome in promoting high-quality science education and the means for achieving it.
- Although parents clearly showed an interest in the themes that were tested, science does not currently have the same importance in their minds as do other subjects such as reading and math.



Overview

- Thus, while parents express the view that their children will not receive enough science education in school, and that changes (like more hands-on learning) are important, it will be critical to first connect adults with science on a basic level.
- Once the initial gaps (in relevance and interest) have begun to be addressed in the initial messaging, specific gains can be realized through subsequent communication targeted more specifically at effecting change in science education with the support of parents.



Science as a subject in schools

Relevance of science vs. other subjects

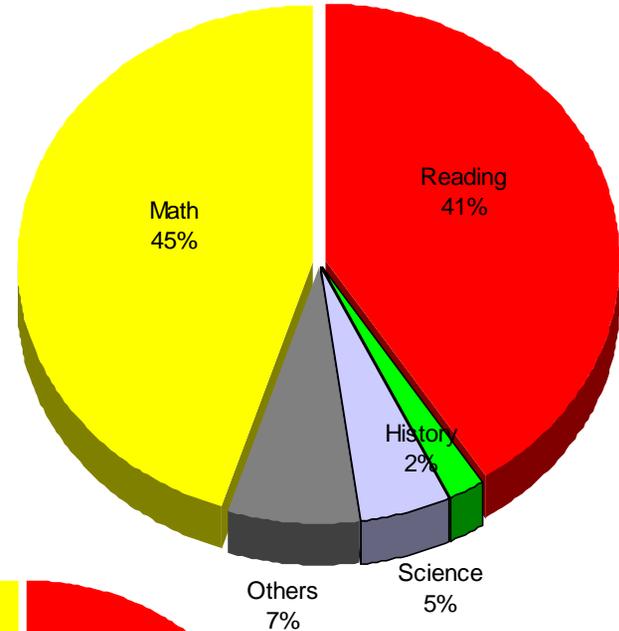


- Parents recall math and reading as their own favorite school subjects and consider them the most useful today.
- However, parents are more likely to say that their **child's** favorite subject is science rather than reading.
- When asked about their children's education, science is rarely mentioned (less than 20%) as the subject most relevant to success, taught best in school, most valuable regardless of career path, etc.
- Math and reading are seen as the “relevant” subjects, while others (history and science) are in the second-tier.
- Few believe that either schools or parents are currently doing their best job in educating children in science as opposed to other subjects.

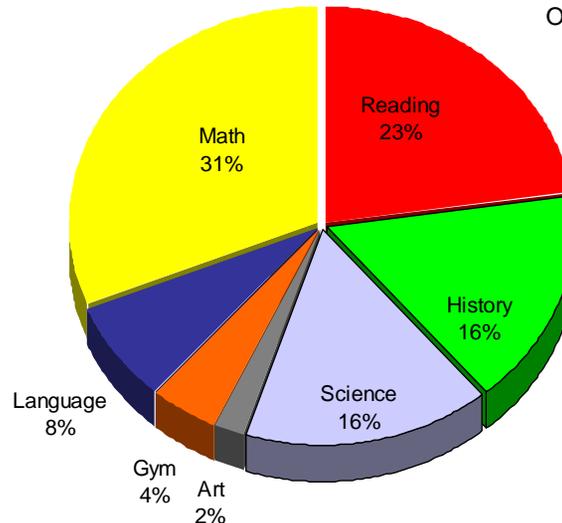
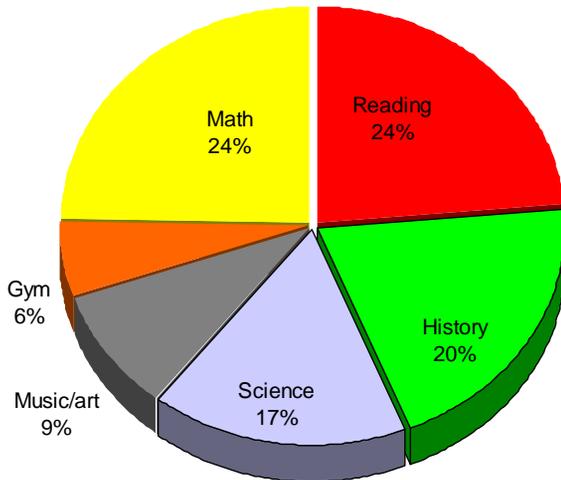
Parents emphasize math and reading as the subjects that were most relevant in their own experiences.

Q.3, 4, 6. Which subject...?

...do you use the most in everyday life?



...was your favorite?



...was your least favorite?

Favorite and least-favorite subjects

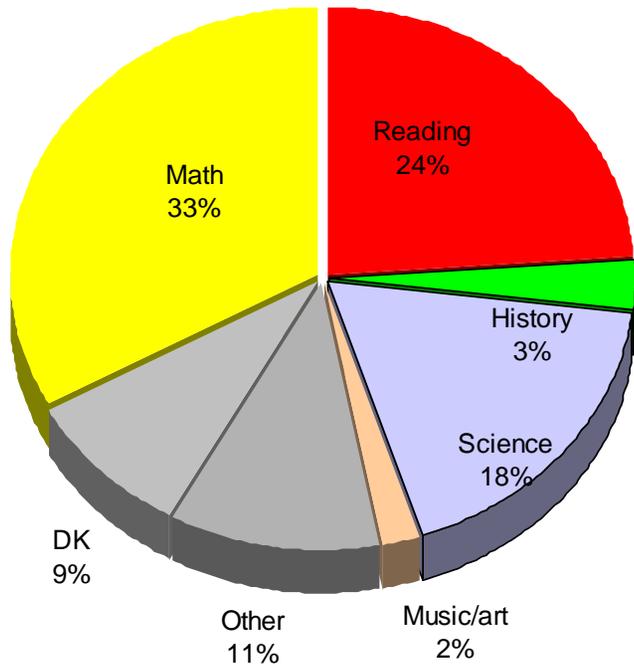


- *“I hated math. I hated science.” (Mother, English-speaking group)*
- *“I always liked math. It was the one I always did best in. It was easier than the other stuff.” (Mother, English-speaking group)*
- *“Math was easy. It has a beginning and a solution, and then you get it right.” (Father, Spanish-speaking group)*
- *“I had one year I was very interested in (science), and it was all about how that teacher was teaching. She would put some oomph into her lessons.” (Mother, Spanish-speaking group)*
- *“To me, reading is the most important thing. If you know how to read, you can get anywhere.” (Mother, Spanish-speaking group)*
- *“I liked math best, because you use your mind more. And you need to count your money.” (Father, Spanish-speaking group)*

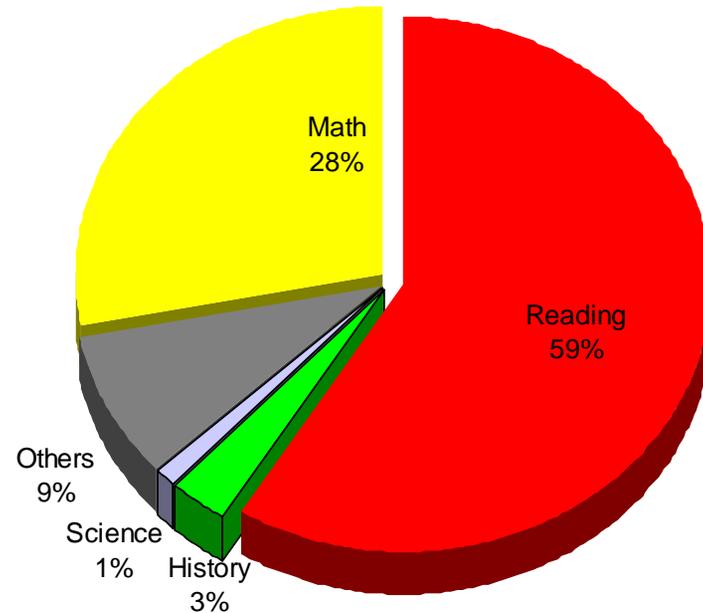
Parents also tend to cite reading and math as critical subjects in which children should excel, unless their child is specifically going into a science career.

Q.12 and 13. Which subject...?

...does your child need to do well in in order to succeed in his/her chosen line of work?



...is most valuable to kids no matter what job they have as adults?



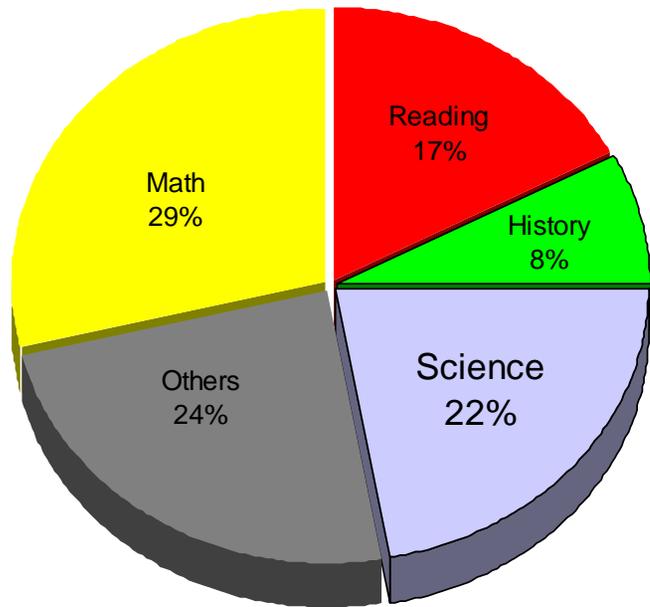
The value of science



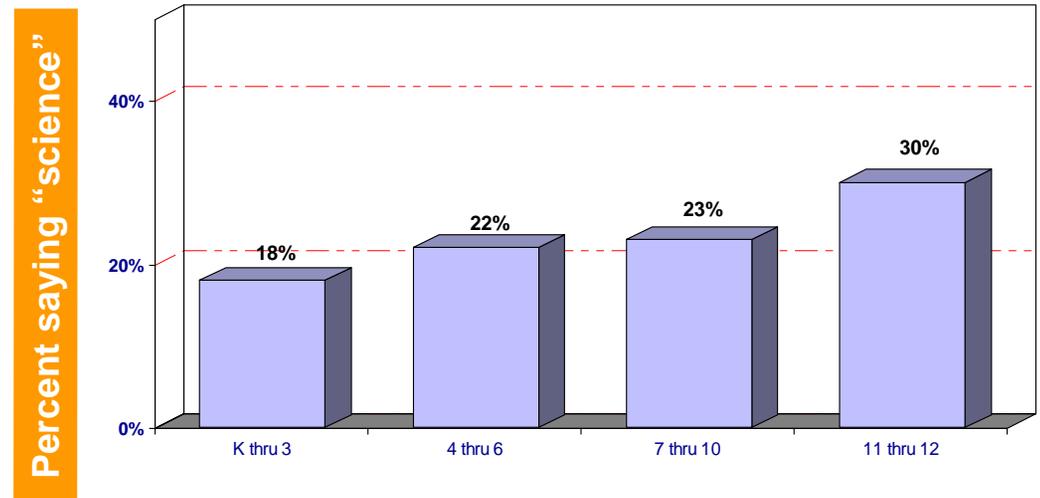
- *“The high salaries are in the science field.” (Mother, Spanish-speaking group)*
- *“If we don’t give kids the chance to explore what these subjects are about, they might never get motivated to go into these fields.” (Father, English-speaking group)*
- *“We use science every day, but we just don’t know that it’s science. If you have a load in your truck, you can’t go too fast. Inertia. But you don’t think about it.” (Father, Spanish-speaking group)*
- *“I wasn’t interested in science because I couldn’t see a use in it. I was never going to be in a chemical field, so I don’t need to know what a compound is.” (Father, English-speaking group)*
- *“I don’t think that knowing anything more about (science) is going to make my life more interesting.” (Mother, English-speaking group)*

Encouragingly, a significant number of parents believe that their child's favorite subject is science.

Q. 8 Which subject is your child's favorite?



Parents' perceptions of their children's interest in science grows as students get older.



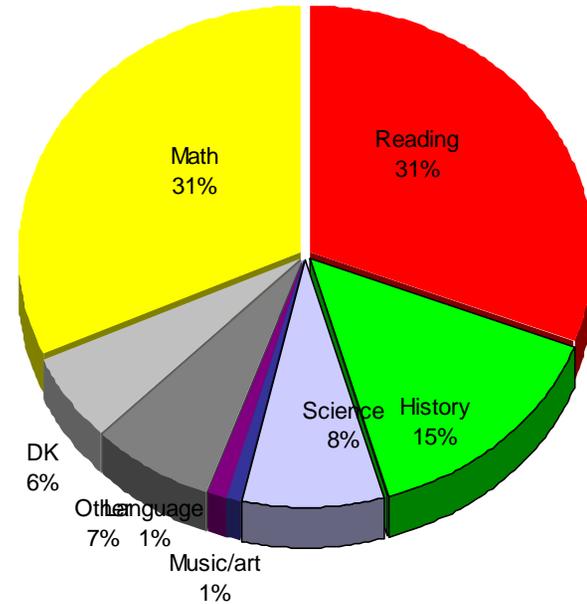
Children and science



- *“My daughter likes science. The teacher’s great. He just makes it enjoyable.” (Mother, English-speaking group)*
- *“My son loves it. The girl, she wants nothing to do with math or science.” (Father, Spanish-speaking group)*
- *“My son’s weakest subjects were my weakest subjects, and I wish I learned it better, because now I’m struggling helping him with his fifth-grade homework.” (Father, English-speaking group)*

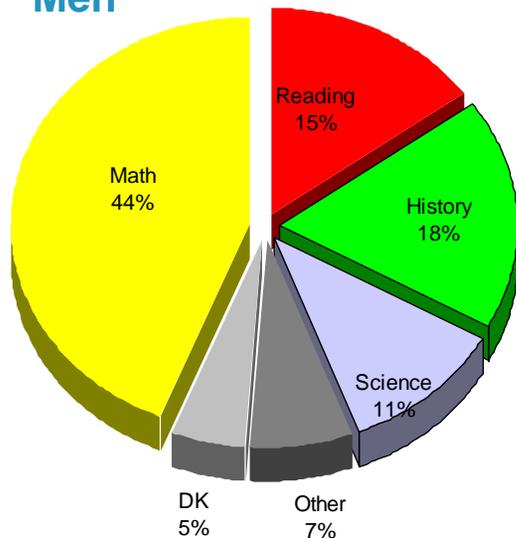
When it comes to helping their children with their homework, few parents say science is the subject in which they are most confident.

Q. 15 When you help your child with his or her homework, in which subject do you feel most confident?

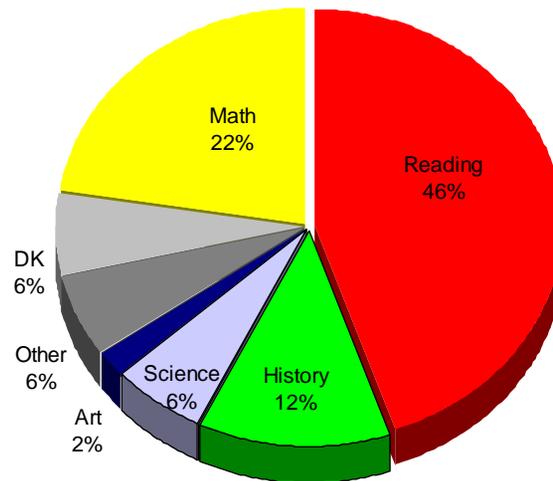


A key difference exists between men and women on this issue; Minorities are much more likely than whites to say “history”.

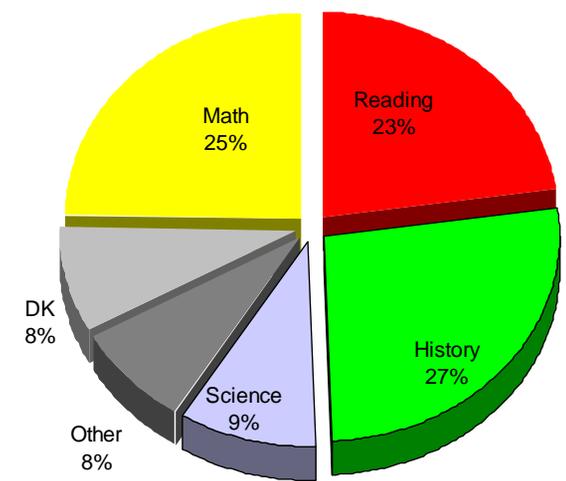
Men



Women

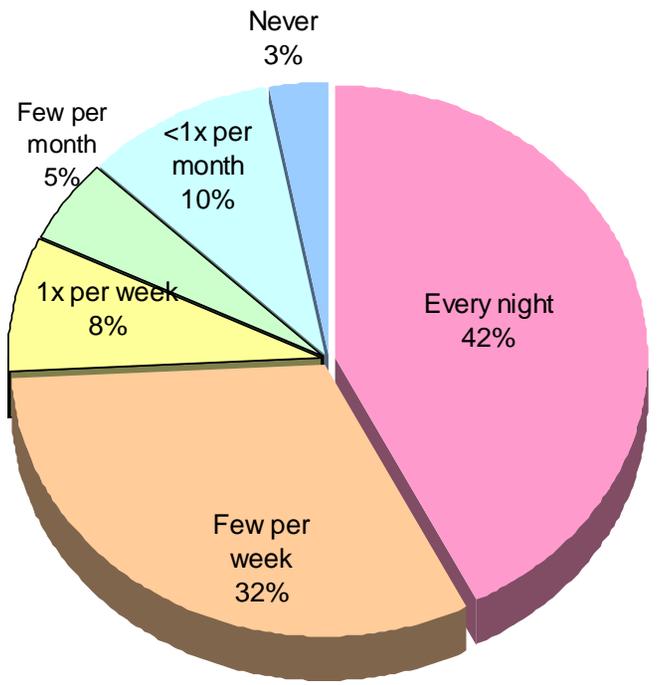


Minorities



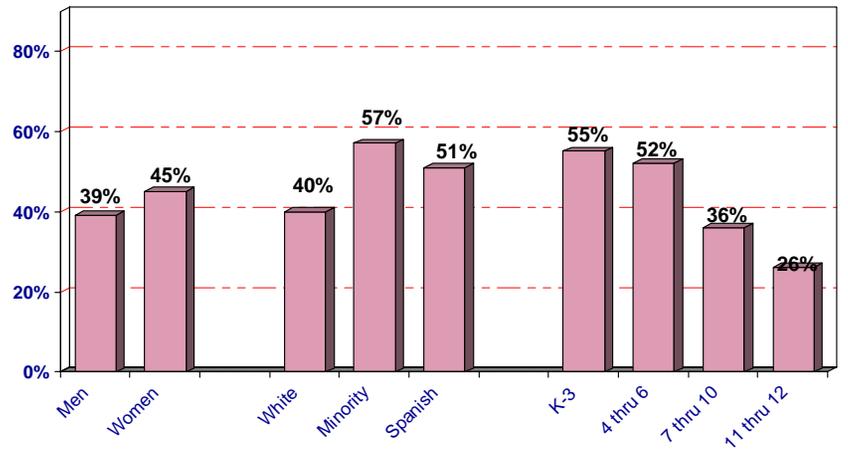
Parents say they help their children with their homework at least a few times per week. But, there are clear differences depending on the child's grade in school on this key question.

Q. How often do you help your child with his or her homework?



Women are slightly more likely than men to say “every night,” while minorities and Spanish speakers are most likely. There is a sharp downward trend as a child gets older.

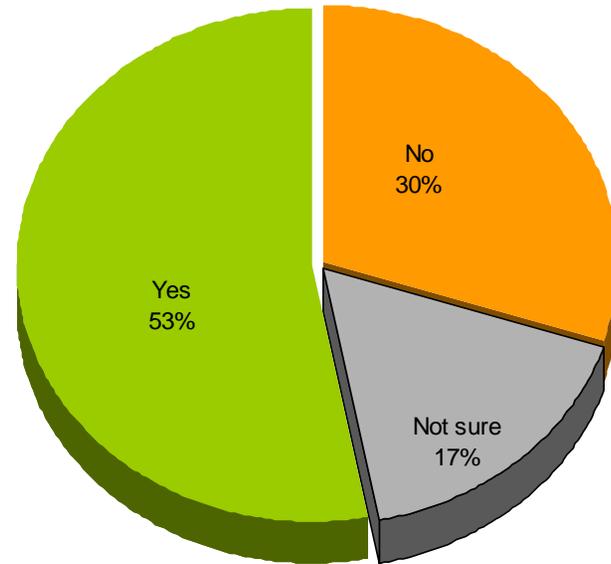
Percent saying “Every night”



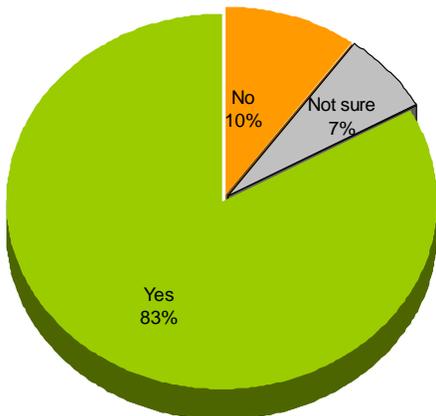
Parents typically say their children have been tested in reading and math; only half say their children have been tested in science.

Q. 18-20 Has your child taken a district- or state-wide test in...?

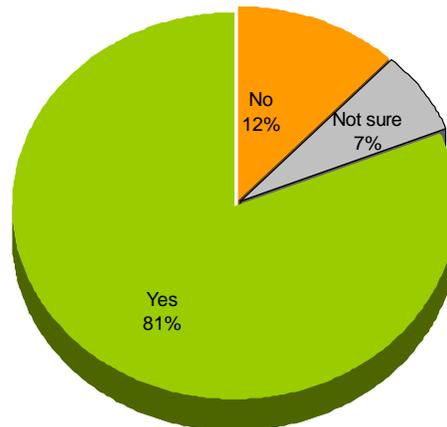
...science?



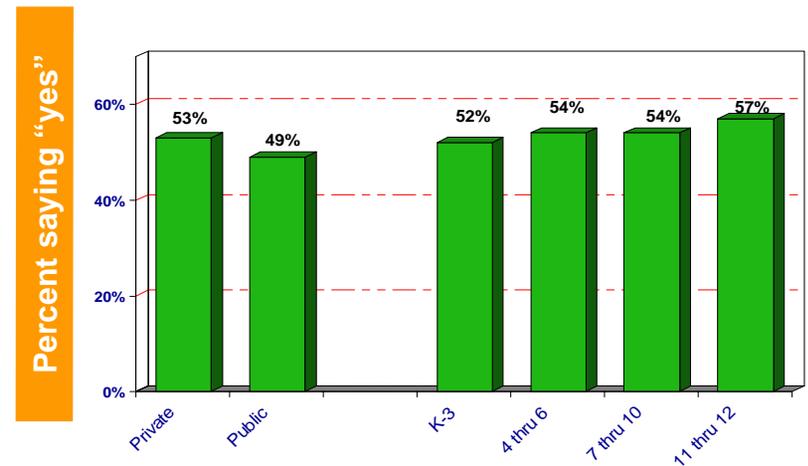
...reading?



...math?



There is little difference between public or private schools or grade levels in terms of science testing.





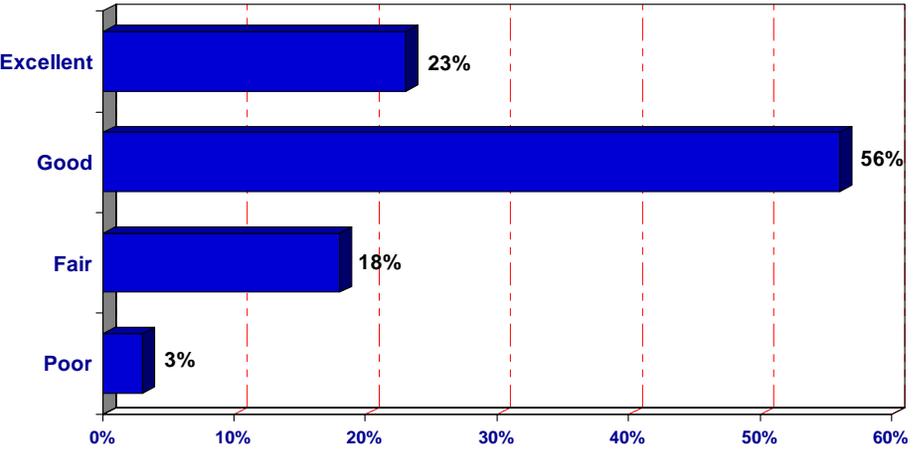
Attitudes toward science education



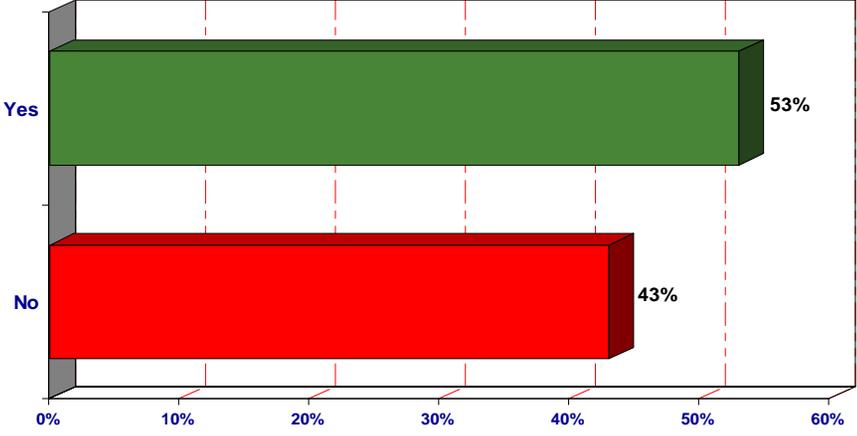
- Parents are generally satisfied with the quality of science education in schools, but there is little intensity to this view, with only one-quarter saying it is “excellent.”
- This is due in part to the lack of specific knowledge and involvement that parents have in regard to their child’s science education.
- As we will see, parents cite “hands-on” education, as well as other specific ideas, as ways they believe science education could be improved.

Parents tend to be fairly ambivalent (though positive) about the quality of science education. As children get older, parents are more likely to say the education is “excellent”...but are less likely to believe their child will have enough science education.

Q.17: How would you rate the quality of science education at your child’s school?



Q.32: By the time your child has graduated from high school, will they have learned enough about science?



-- The older a child gets, the more likely their parents are to say “excellent.”

- K-3: 19%**
- 4-6: 21%**
- 7-10: 24%**
- 11-12: 29%**

-- The older a child gets, the more likely their parents are to say “NO.”

- K-3: 42%**
- 4-6: 39%**
- 7-10: 44%**
- 11-12: 51%**

Science education today



- *“It’s a lot of memorization, I think. A lot of formulas and stuff.” (Mother, English-speaking group)*
- *“It’s a holistic approach. They put these kids in the world. It’s different than when I was in school.” (Father, English-speaking group)*
- *“I think our kids know more about everything than we do. I look at what they’re learning and it’s more than I ever knew.”
(Mother, English-speaking group)*
- *“When we were little, we all did the same projects. Today, it’s your own idea, and you work on it, and they take off with it.”
(Mother, English-speaking group)*
- *“I think the kids like it because it’s hands on. When we did it, everything was in the book. Now, it’s hand’s on, going out there and doing things.”
(Mother, English-speaking group)*

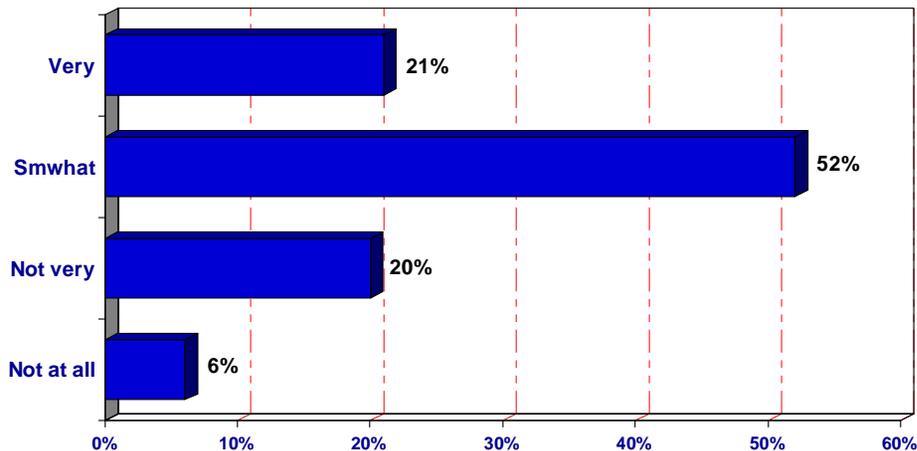
Science education today



- *“It’s not as boring as it used to be. It’s not just about memorizing the molecules.” (Mother, Spanish-speaking group)*
- *“The projects are different. Ours were more basic. Now they are more in-depth. More detailed projects.” (Father, Spanish-speaking group)*
- *“In the Latino communities, the children are learning more about science. Back then, we didn’t learn much.” (Father, Spanish-speaking group)*
- *“Today they have a lot more interactive audio-visual stuff to teach them the basic theories. And I think that helps them to understand things better.” (Father, Spanish-speaking group)*

Parental involvement in science education is similarly ambivalent, with little intensity of interest.

Q.33: How familiar are you with the science education standards at your child's school?

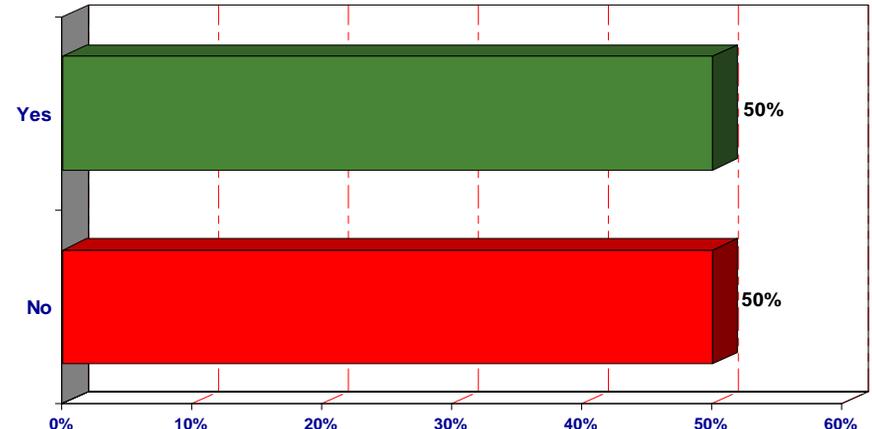


-- Parents in private schools are much more likely to say "very," 41%-18%.

-- Parents in the East and West are also more likely to say "very":

East: 27%
South: 16%
Middle: 18%
West: 24%

Q.34: Have you ever talked about your child's science curriculum with his or her teacher?



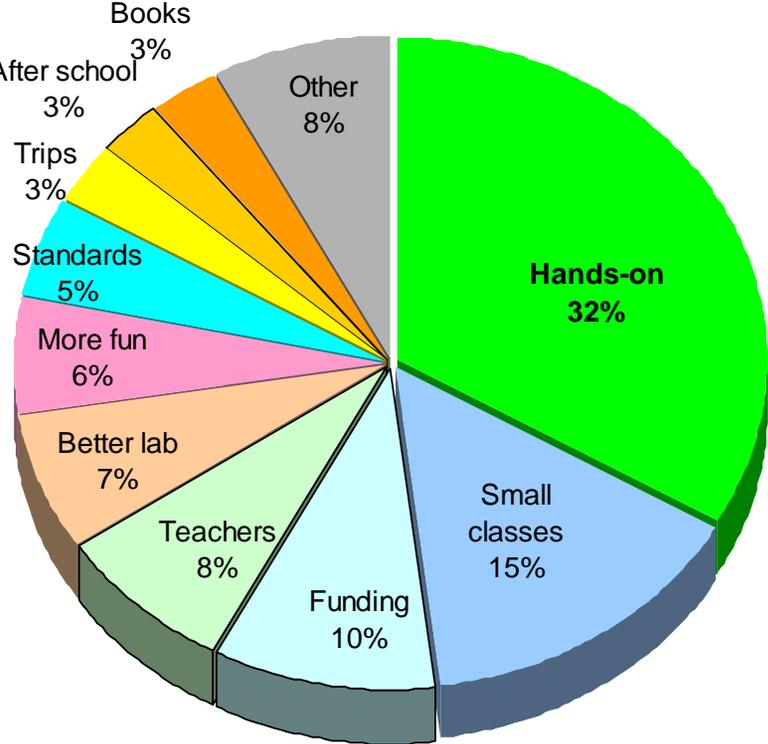
-- Parents in private schools are more likely to say "Yes," 61%-49%.

-- Parents in the East and West are also more likely to say "Yes":

East: 57%
South: 44%
Middle: 47%
West: 53%

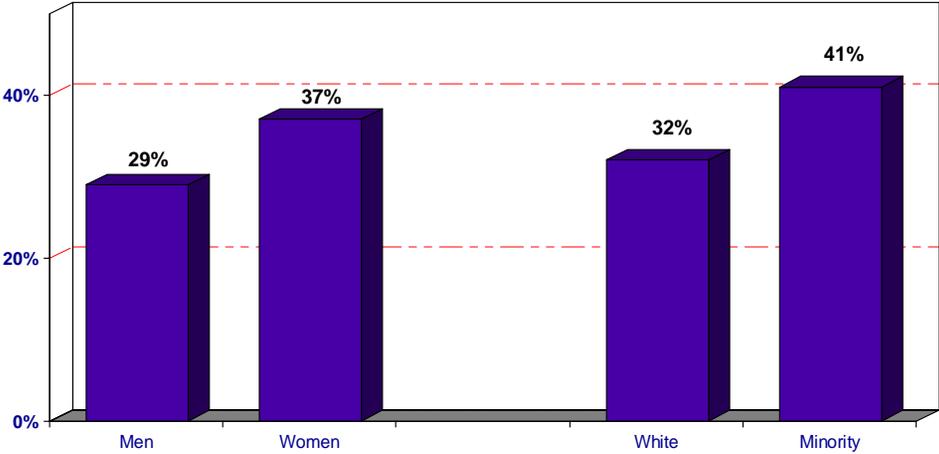
Parents believe that increased hands-on learning would do the most to improve science education.

Q. 35 Which of the following do you think would do the most to improve the science education in your child's school?



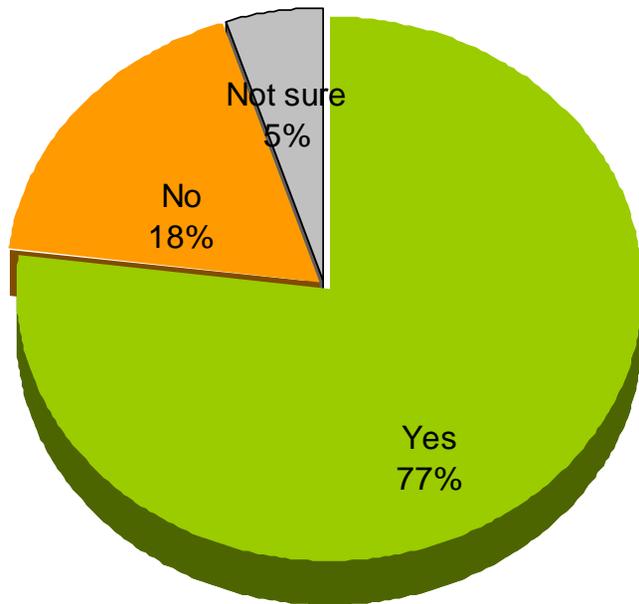
Percent saying "hands-on"

Interest in hands-on education is highest among women and minority parents.



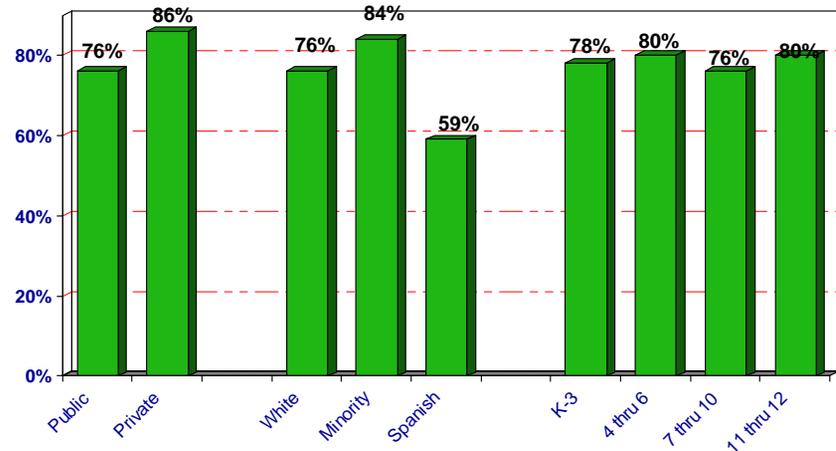
Student engagement: Three-quarters of parents say their child has done something in science class they have been “really fascinated” by.

Q. 23 Has your child ever done anything in science class that he or she liked and was really fascinated by?



Private school kids are only slightly more likely to have parents say “yes,” and there is also little difference by grade. Latinos are considerably less likely to say “yes.”

Percent saying “Yes”



Building a science curriculum



- *“School should not just always be job-related. It should be to help a person grow.” (Father, English-speaking group)*
- *“First of all, I would get rid of all the text books.” (Mother, English-speaking group)*
- *“Make it like a salsa. Put some spice in it.” (Mother, Spanish-language group)*
- *“Teach them how a computer works from the inside out, or a TV, or a rocket, or a video.” (Father, English-speaking group)*
- *“I’d start with the things that they are familiar with, and take it from there.” (Father, English-speaking group)*

Building a science curriculum



- *“Do projects that kids would be interested in doing rather than dreading it.” (Father, English-speaking group)*
- *“Science is fun when you do hands-on experiments.” (Mother, Spanish-language group)*
- *“With science, there’s some flexibility. You have to memorize it, but you also have to figure things out.” (Father, Spanish-language group)*



Attitudes toward science in general

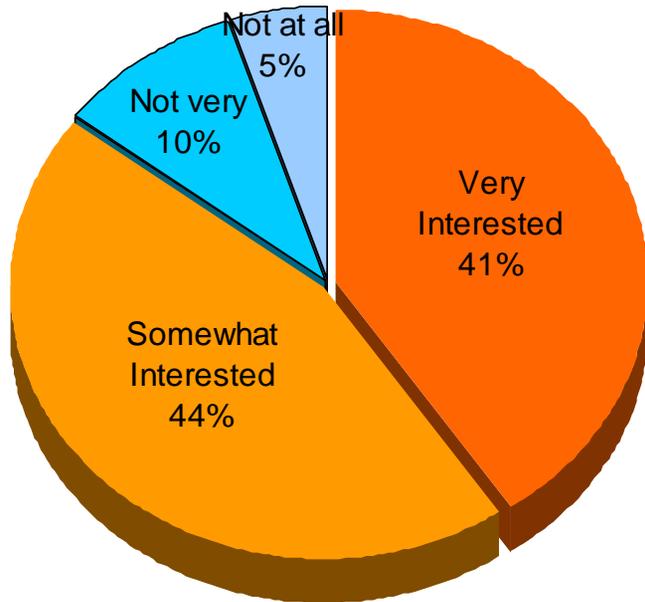
Beliefs about science in society



- Parents express interest in science and agree that their children are very interested in science as well.
- They believe science is all around us in our daily lives and that advances in science are making the world safer and healthier.
- At the same time, our challenge is clear: Fewer than half of parents believe “strongly” that science education is a key subject for children to learn to succeed in their careers or that science is as important as reading and writing.
- Building on the general interest that parents already have in science to demonstrate the importance of science education specifically should be a key strategy of the media campaign.

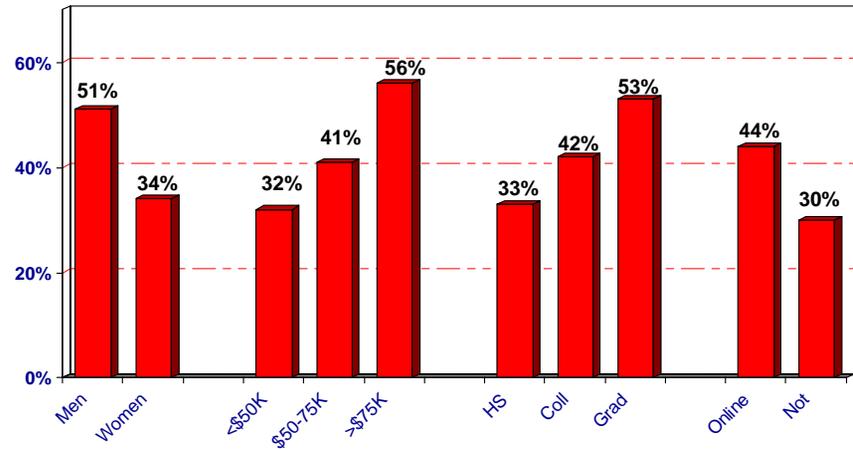
Once prompted, parents are quick to express interest in science, with 85% saying they are at least somewhat interested.

Q. 21 How interested would you say you are in science?



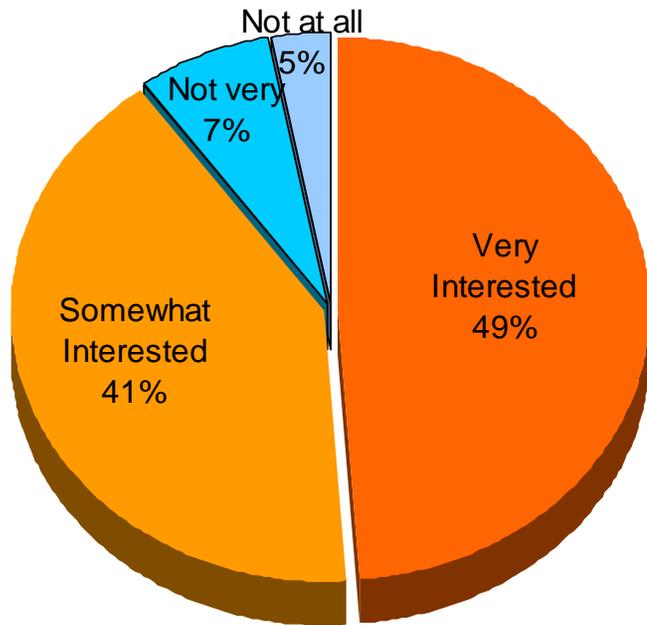
Interest in science is strongest among men and those on the Internet, and tends to increase with education and income.

Percent saying "very"

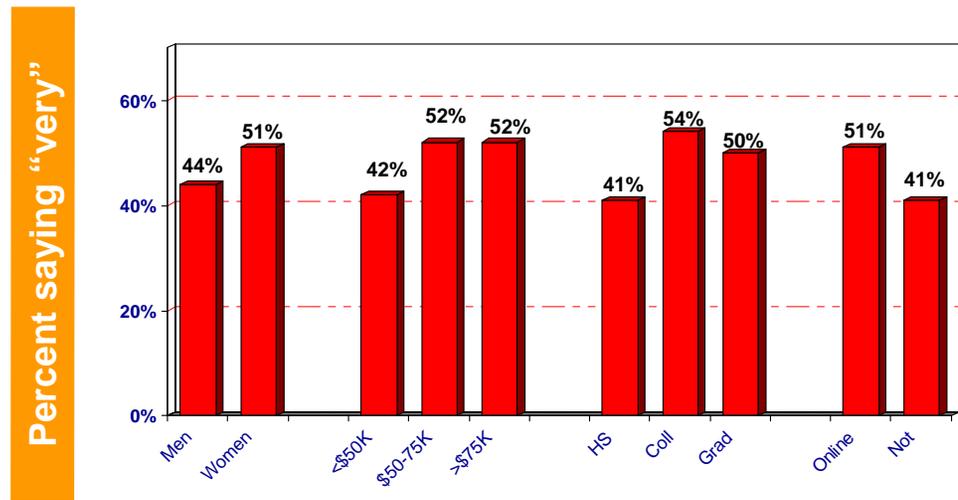


Parents also recognize that their children are typically very interested in science as well.

Q. 22 How interested would you say your child is in science?



The patterns that exist in terms of their *own* interest in science do not apply when parents think about their kids.



Yet, the lack of intensity or direct awareness of science is evident in the low number of parents who can name a living science figure.

Q. 44 When you think of science, what person, now alive, comes to mind? (*Open-Ended*)

- 59% of the English-speaking interviewees, and 57% of the Spanish-speaking ones, said they “don’t know” or “no one” on this question.
- Many of the responses given (other than the direct “don’t know”) were not the names of individuals:
 - Teachers/Science teachers (4%)
 - Doctors (general) (3%)
 - Family member (3%)
 - Surgeon General (1%)
 - NASA/astronauts (1%)
- And while some of the names fit the criteria for the question, others did not:
 - Stephen Hawking (5%)
 - Albert Einstein (3%)
 - Bill Nye (3%)
 - Bill Gates (3%)
 - Jonas Salk (1%)
 - Neil Armstrong (1%)
 - Carl Sagan (1%)
 - Ben Franklin (1%)
 - Isaac Newton (1%)
 - Jane Goodall (1%)

Parents agree with the basic underlying tenets that science is an integral part of everyday life and that boys and girls are equally able to understand science. There is room for growth in intensity when this general belief is applied to science education specifically.

Questions 24-31: Now I am going to read you some statements about science. I want you to tell me if you agree or disagree with these statements?

	% Strongly agree	% Total agree
Science is all around us in everyday life.	86%	97%
Scientific advances in medicine are making the world safer and healthier.	75%	95%
Girls and boys are equally able to understand science.	75%	89%
Science education is an important part of the education children need to get a good job.	41% →	85%
Science is as valuable as reading and writing.	46%	77%
Girls are discouraged from being interested in science.	9%	28%
A knowledge of science is not very important for most jobs today.	7%	27%
Science is only for a few really smart kids, not for all kids.	5%	11%

Interestingly, while Latinos are no more likely to think girls are not able to understand science as well as boys, one in five say girls are discouraged from being interested in science.

Questions 24-31: Now I am going to read you some statements about science. I want you to tell me if you agree or disagree with these statements?

% STRONGLY AGREE SHOWN	English interviews whites	English interviews minorities	Spanish interviews
Science is all around us in everyday life.	86%	88%	76%
Scientific advances in medicine are making the world safer and healthier.	78%	70%	66%
Girls and boys are equally able to understand science.	78%	68%	74%
Science education is an important part of the education children need to get a good job.	42%	43%	56%
Science is as valuable as reading and writing.	42%	62%	65%
Girls are discouraged from being interested in science.	7%	13%	20%
A knowledge of science is not very important for most jobs today.	5%	12%	18%
Science is only for a few really smart kids, not for all kids.	4%	8%	9%



Messages

Messages on science education



- Parents believe that science class should not be just about memorization, but should give children skills and concepts for problem solving using science.
- Parents also believe very strongly that all Americans should receive a strong science education; this message would serve well as a broad, introductory theme; the message regarding making science education less dependent on rote memorization so that more students would be interested and successful in science naturally follows.
- Parents believe that success in life depends on “the ability to figure things out”; linking science education to the building of analytical skills for problem solving would be a very effective means of conveying the need for enhanced science literacy to American parents.

Most of the message statements tested rather well. The most effective hook for engaging the public is that “Science classes shouldn’t be about simply memorizing facts...”

Questions 37-42: Now I am going to read you some statements made by people who believe it is very important that our children be “science literate.” How convincing is each statement? (sorted by % “very”)

	% very convincing	% total convincing
Science classes shouldn’t be about simply memorizing facts. What our children need to learn are the concepts and skills that will help them to understand how the world works and to solve problems. (n=300)	70%	95%
Americans of all backgrounds should receive a quality education, and that includes learning about science.	65%	92%
You can’t succeed in life if you don’t have certain skills, like the ability to figure things out.	65%	87%
America can’t be competitive in the world if our people don’t understand science. Our children must learn about science, so this country can compete in the changing world economy.	58%	92%
A quality education is necessary for the advancement for our community. An important part of that education is learning about science. (Spanish-language version only; n=200)	56%	91%
All people should know something about science. People can make informed decisions on issues that affect all of our lives only if they understand something about how the world works.	53%	93%
Science classes don’t work because there is an over emphasis is on memorization, not on figuring out how things work. Lesson plans are overstuffed with facts, when what our children really need is to be given the tools needed to understand how the world works and to solve problems. (n=300)	38%	72%

Message statements tested fairly equally among key demographic subgroups. The best messages overall emphasize that a quality science education will give students the skills to figure things out.

<i>% VERY CONVINCING ONLY</i>	English/ whites	English/ minorities	Spanish
Science classes shouldn't be about simply memorizing facts. What our children need to learn are the concepts and skills that will help them to understand how the world works and to solve problems. (n=300)	71%	63%	63%
Americans of all backgrounds should receive a quality education, and that includes learning about science.	66%	61%	66%
You can't succeed in life if you don't have certain skills, like the ability to figure things out.	64%	65%	57%
America can't be competitive in the world if our people don't understand science. Our children must learn about science, so this country can compete in the changing world economy.	58%	59%	66%
All people should know something about science. People can make informed decisions on issues that affect all of our lives only if they understand something about how the world works.	52%	61%	59%
Science classes don't work because there is an over emphasis is on memorization, not on figuring out how things work. Lesson plans are overstuffed with facts, when what our children really need is to be given the tools needed to understand how the world works and to solve problems. (n=300)	35%	46%	51%
A quality education is necessary for the advancement for our community. An important part of that education is learning about science. (Spanish-language version only; n=200)	n/a	n/a	56%

America and Science



- *“Every test I’ve seen in the last 15 years, we’re falling behind Japan, Germany and other countries.” (Father, English-speaking group)*
- *“Where are we supposed to go? Backwards? No, we’re Americans. But we’re stuck.” (Father, English-speaking group)*
- *“We’re not keeping up with Japanese students, who spend 12 hours a day in school.” (Mother, English-speaking group)*
- *“Remember when we used to be number one?” (Mother, English-speaking group)*
- *“All the things that we have in technology are from somewhere else. Chinese, Japanese.” (Father, Spanish-speaking group)*
- *“Yeah, but we’re still the best.” (Father, Spanish-speaking group)*

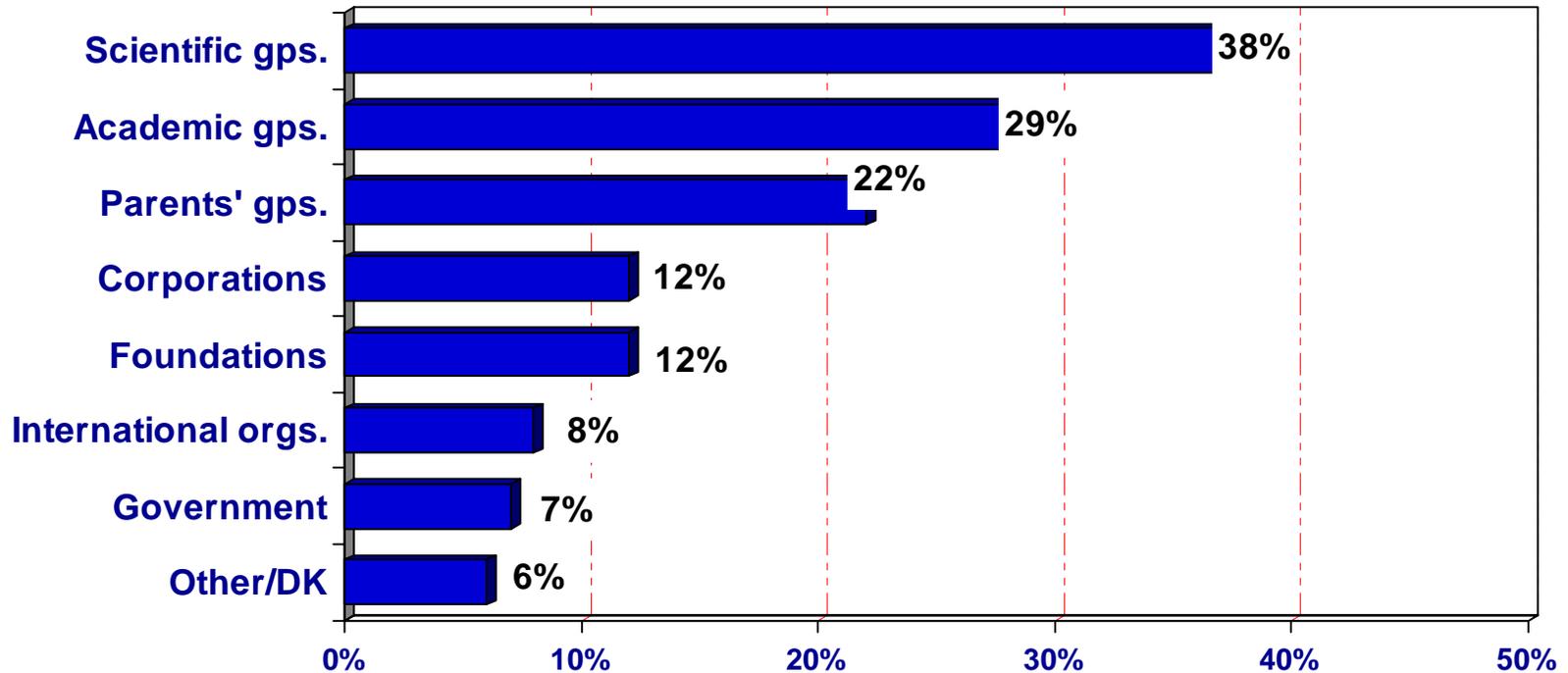
What is Science Literacy?



- *“I think you have to have common sense. You have to know problem solving and you have to have analytical skills.”
(Mother, English-speaking group)*
- *“To be able to function in an every day world, because science is all about us.” (Father, English-speaking group)*
- *“To be able to read a newspaper and have a basic knowledge understanding what it’s talking about.” (Father, English-speaking group)*
- *“To me, science literacy means you can take any subject in the science field and you will know something about it.” (Mother, Spanish-speaking group)*

Science groups are the preferred spokespeople, followed by academics and parents' organizations.

Q.43: When thinking about groups involved in the promotion of science and science education, what kinds of groups would you trust most?





Computer literacy

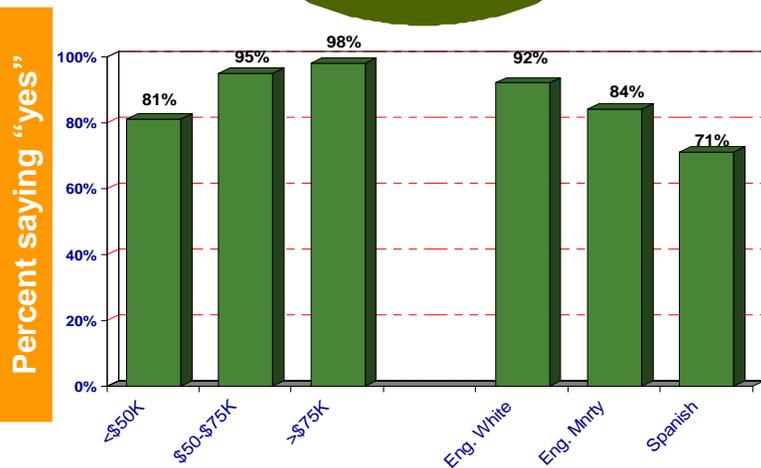
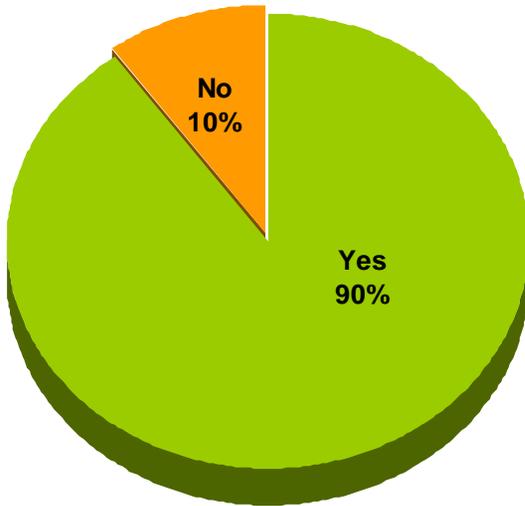
Computers and connectivity



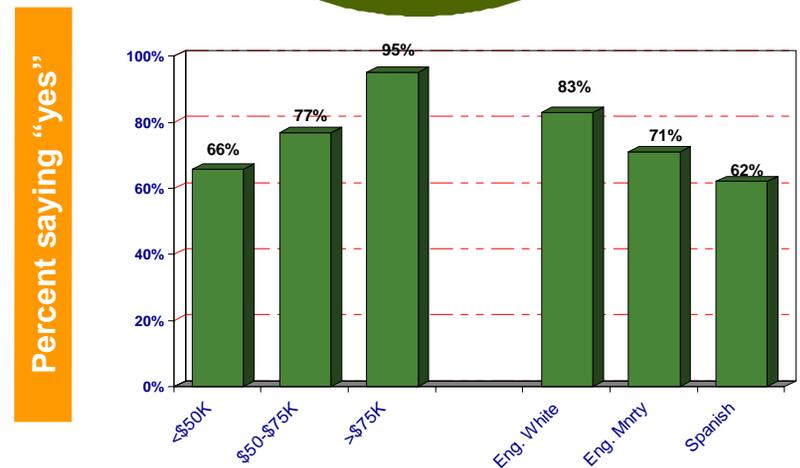
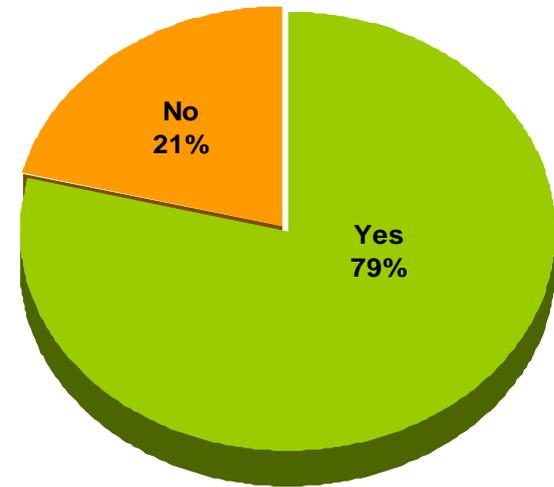
- As we saw earlier, clear differences exist in terms of “interest in science” for parents and their kids depending on whether they are connected to the Internet or not.
- In general, parents feel that their children are more skilled and comfortable with computers than they are.
- Not surprisingly, key gaps exist in connectivity depending on income and other demographic differences. In all households, however, children are seen as “most comfortable” in terms of using a computer.

While most have computers, and nearly 4 in 5 have Internet access, there is a clear gap in terms of income and ethnicity in these key questions.

Q. 45 Do you have a computer in your home?

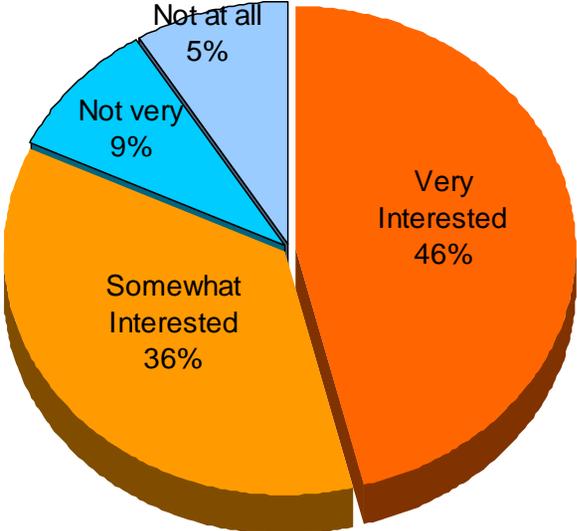


Q. 51 Are you connected to the Internet at home?

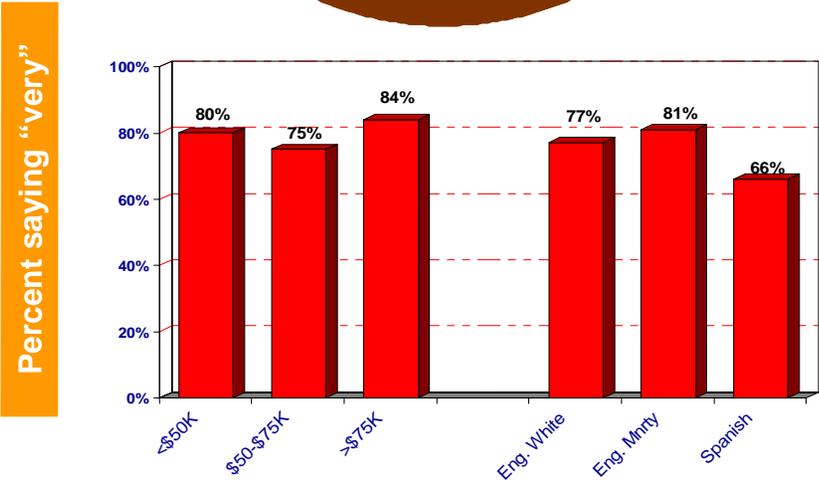
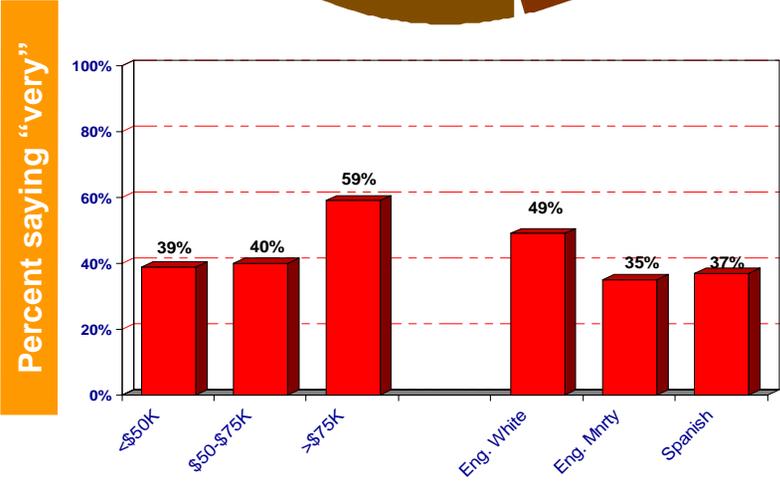
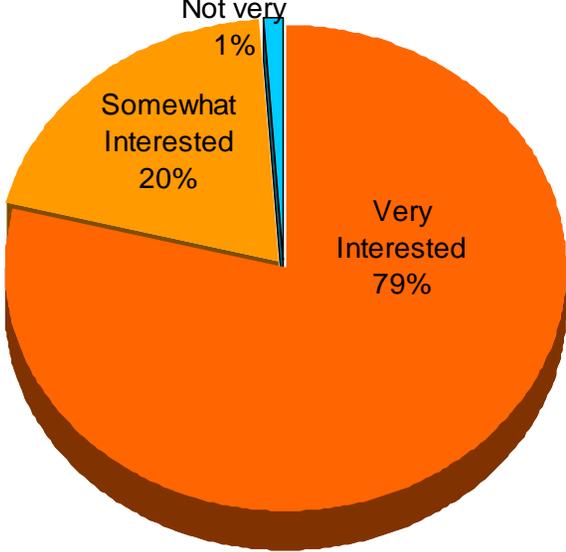


Parents are fairly comfortable using a computer, but have a lot of work to do if they are to catch up to their children's level. Income and ethnicity seem to matter in terms of parents, but not children.

Q. 48 How comfortable would you say YOU are using a computer?

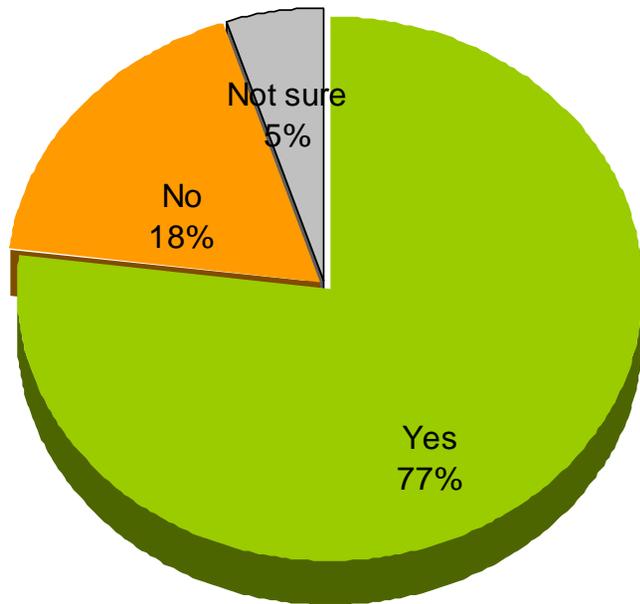


Q. 49 How comfortable would you say your CHILD is using a computer?

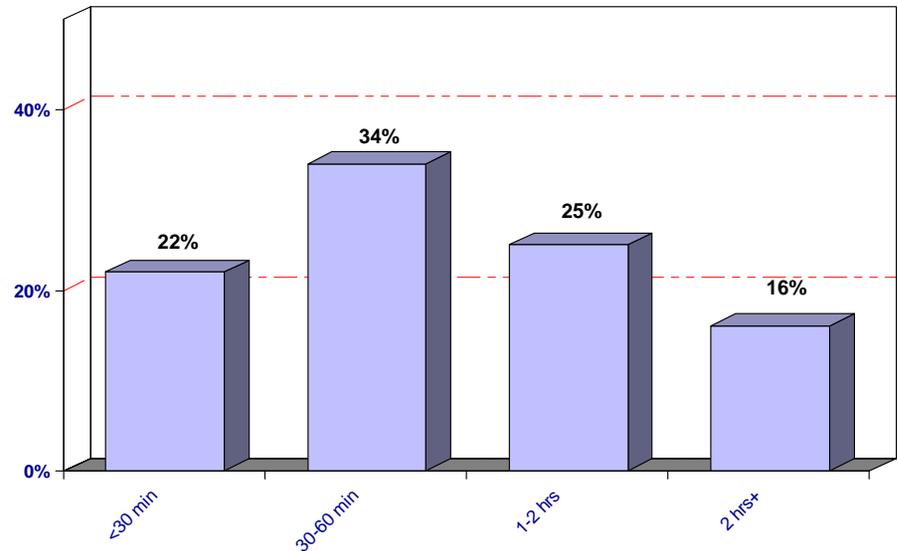


Parents regularly use computers with their children. This is encouraging, since more than 75% of children are on the computer for at least a half-hour a day.

Q. 47 Do you use a home computer with your child?



Q. 46 On average, how much time per day is your child using the computer?





Conclusions and Recommendations For Media

Conclusions and Recommendations



- Parents agree with the following basic philosophy and tenets:
 - *Science is a critical part of learning*
 - *Current science education should not be just about memorization, but should teach children skills and concepts for effective problem-solving and for understanding the world and how it works*
- But, as we have seen, there is a substantial disconnect between American parents' interest in science in general and a specific, intense interest in their child's level of science literacy
- Thus, it will be critical that the communications build on the general interest people have in science, and link this interest to more specific aspects of science education itself



Conclusions and Recommendations



- Parents agree with the following statements:
 - Science is a critical part of learning
 - Current science education should not be just about memorization, but should teach children skills and concepts for effective problem-solving and for understanding the world and how it works
- Messages that work:
 - “Science is all around us every day” was one of the most effective statements we tested (86%).
 - “Americans of all backgrounds should receive a quality education, and that includes learning about science.” (65%)
 - “You can’t succeed in life if you don’t have certain skills, like the ability to figure things out.” (65%)
- The communications should also make use of parents’ belief in the importance of experiences that help make science concepts and skills real for children.

Conclusions and Recommendations



- Then, as we seek to link this interest in science to science literacy specifically, the best message is clear:
 - Once prompted, parents almost universally agree that “science classes shouldn’t be about simply memorizing facts...” (95%)
 - This theme is particularly effective in the context of skills and problem-solving that can be used in every day life (because science is all around us...)
- At this point, we will have created a link between science in general (what people are already interested in) and science education (what people agree with, when prompted)
- With this link in place, we are readily able to communicate to parents specific ways in which they can improve science literacy in our schools
 - These can include the importance of meeting with teachers, studying the curriculum and standards, doing science homework with their children, helping the school procure better materials and resources and others.

Conclusions and Recommendations



- The research suggests that women, and minority/Latino women in particular, would make a strong target for the communications effort
 - A key gap which should be addressed for these targets is the need to boost parental confidence in getting involved in science education (w/ teachers or their kids)
 - While they do not believe that their children face a gender gap, the research shows that mothers, in their own perceptions, clearly do
- In addition, there is a clear need to recognize the importance of computers in this discussion
 - Parents, and schools, have an opportunity to link computers with science more directly, and messaging could explore images or themes that tie in to this concept



Message Testing

“If I’m doing science everyday, I can teach my kids that”

- Parents like the idea that many of the things they do everyday at home can be considered “Science,” even if they are unaware of that fact they are doing it. While they may not now think that following a recipe has anything to do with science, when the idea is presented to them they get it, and are interested in seeing other examples.



“The images they show, the little girl with her mother making cookies, these are real, everyday things.”

“It’s important to realize that even using just a basic electrical appliance, they are already using science.”

Hands on, interesting and fun



- Parents (in both the Spanish and English groups) also believe that “Science is changing our world -- Let's change science education” and thankfully, they want it changed the way the AAAS wants it changed!
- Unlike the way they talk about their children’s relationships to subjects like math or history, many parents use words like “interested,” “fascinated,” and “fun,” when they talk about science.

“It seems like you can participate more when you help your kids with science.”

“Hands on. It’s what life is about.”

“It’s giving you a hands-on experience, so you’re not just having the boring facts any more.”

A positive message works best



- Advocacy of science literacy is more effective when it is presented affirmatively. As seen in the quantitative research, the poorest-testing statements and messages are those that emphasize the negative. Parents resist and resent messages that their children will suffer if they don't get a good science education.

“I just don't understand why children will ‘suffer consequences’ if they don't develop an aptitude in science. They should put ‘they're going to learn interesting things if they learn about science.’

Don't threaten them.”

“It's important that kids know about science, but I don't like where it says they will suffer consequences if they don't. I don't like that and I don't believe that.”



Science may mean success, but most parents do not make that connection yet

- When it comes to equating the words “science” and “success,” English-speaking parents are not quite there yet. The slogans “science succeeds” and “science means success” are the two least effective statements tested. (In the Hispanic men’s group, the correlation between science education and success was much more concrete.)

“There are plenty of professional careers that do not involve science.”

- “Being able to solve problems” is seen as a valuable payoff that comes from understanding science. A revelation from the focus groups is that this payoff is especially appreciated when these problems are “ones you didn’t expect.”

“Children need to learn how to solve big problems and small ones.”

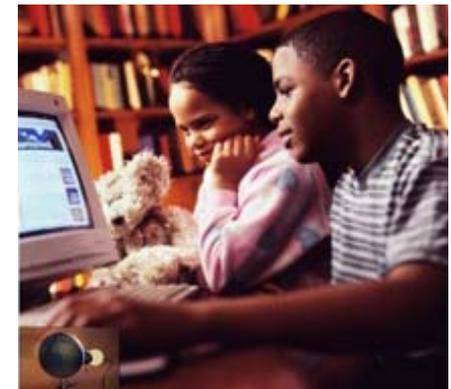
Working and Learning -- Together

- Images of the family together – the father and son watching the sunset, the children working at the computer or looking into a microscope – are the ones parents say they like the best.

“I thought of the wonder of the universe when I saw the little boy and the man looking up together.”

“My kids are fascinated by the computer. Those look like my kids.”

“There’s lots you can do with your kids, especially the younger ones. You can take children to the museum.”



Public Engagement



- Why is a good science education important for my child? My community? The nation?
- Are ALL children in my community now getting the kind of education that will lead to science literacy?
- What do good science education programs look like?
- How can I help in making our schools' programs better?



Initiative Components



All components in English & Spanish:

- Community partnerships & events
- Community guide to science resources (print & online)
- Public service ad campaign
- Customized web site
- Teacher awareness



Web Site



Developed in partnership with TryScience.org:

- Facts & figures on the value of good science education
- User-friendly information on standards and benchmarks, textbooks, teaching, and tests
- Guidelines for judging quality of science education programs
- Recommended science books, films, field trips, and activities for adults & kids
- Links to science centers, museums, & other community-based and Web-based science sites for adults & kids
- Access to key education decision makers
- How to get involved as an advocate for science education