

Next Generation Science Standards Statewide Parent Survey Findings

October 2018

California State
PTA[®]
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Conducted for the California State PTA
Supported with a grant from S.D. Bechtel Jr. Foundation
Prepared by 2B Communications

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I. INTRODUCTION

The California State PTA is the largest children’s advocacy association in the state, whose mission is to improve the lives of all children and families. One of its primary areas of focus is to ensure that all California’s public school students have access to a broad course of study, including instruction in science and art. As California embarks on statewide implementation of the Next Generation Science Standards (NGSS), which constitute the biggest shift in how science will be taught in over twenty years, it is critical that parents understand and support the changes that schools will be making. PTA is part of the fabric of the United States’ public-education system and a trusted partner to millions of parents, families, educators and community members, as it advocates for education, welfare, health and safety of all children. PTA has been instrumental in establishing programs and services to improve children’s lives, and California State PTA has a long and rich history of advocating for a full curriculum.

To inform its efforts to educate and engage parent support for the new standards, in Spring of 2018 the California State PTA undertook a multi-faceted process aimed at developing a comprehensive, research-based messaging platform that is aligned with complementary efforts and will support the successful rollout of the NGSS in California. The project was supported with a grant from the S.D. Bechtel Jr. Foundation, and was designed and implemented by 2B Communications.

Research steps included:

- Conducting a series of one-on-one interviews with identified experts on NGSS at collaborating organizations and partners.
- Gathering and reviewing existing messaging being used to promote and inform teachers, community members and parents about the new standards.
- Convening a series of focus groups with parents from around the state during the PTA’s annual convention in Ontario, CA, supplemented with specially invited graduates of local School Smarts programs/ELAC parents. These groups were used to surface the spectrum of parent perceptions and behaviors relating to science education, and gather feedback and suggested refinements to potential messages regarding the NGSS.
- Development and fielding of a statewide survey among public school parents, to test and validate the directional findings of the qualitative research. These findings will serve as the basis for the California State PTA’s comprehensive messaging platform for parent engagement around the NGSS, that will seek to enhance their successful implementation.

This report presents the final deliverable for the project, the findings of the statewide parent survey.

II. METHODOLOGY

Survey Fielding

The online survey was conducted during the month of July, 2018.

Sample Size

A total of 2,056 parents responded to the survey, which slightly exceeded the grant target of 2,000.

Respondent Sources

To obtain a sample size that was large enough to enable subgroup analysis by grade levels, gender and other factors, and would be statistically projectable, respondents were drawn from two sources:

- A list of 15,000 names was pulled from the California State PTA's database. This list was comprised of active PTA members who have been involved with the organization via participation in events, online communities, leadership or other activities. The list yielded 1,374 respondents, for a response rate of approximately 9%.
- An independent market research firm, Research Now, was engaged to provide a supplemental sample of public school parents in California. As one of the largest online consumer research firms in the world, their database provided 682 additional respondents from outside the PTA network. These respondents were pre-screened to reach California public school parents who are not currently active in the PTA, spanned a range of ethnic, economic and educational backgrounds, and expanded the sample to include a broader cross section of parents in the state.

NOTE: Due to the preponderance of respondents from the CAPTA database, the sample is more representative of CAPTA's membership than the broader demographics of public school parents in California, who are more ethnically and economically diverse.

Survey Languages

Because of the importance of including the opinions of both English and Spanish-speaking parents, survey invitations and questionnaire were provided in both languages. 135 surveys were completed in Spanish, comprising 6.5% of the total sample.

Statistical projectability

The findings of the full sample of 2,056 respondents can be considered statistically projectable to within ± 3 percentage points, at a 95% confidence level; that is, there is a 95% likelihood that if the survey were to be repeated with another set of individuals matching these demographics, the results would fall within 3 percentage points of those reported here. Sampling margins of error for the individual sub-groups, whose sample sizes vary from 130 to 620 respondents, range from between ± 4 to $\pm 8\%$. *Note that sample of African Americans was too low to be analyzed as a separate subgroup.*

III. RESPONDENT DEMOGRAPHICS – PARENTS

■ Gender		■ Educational attainment	
Male	17%	Less than high school	2%
Female	81%	High school grad	7%
Non binary/ other/not stated	2%	Some college/tech school	16%
		2-yr college grad	8%
		4-yr college grad	36%
		Grad school	31%
■ Age		■ Country of K-12 Education	
Under 18	1%	US	88%
18-25	3%	Other country	12%
26-30	5%		
31-40	34%		
41-50	40%		
50-60	14%		
60+	3%		
■ Ethnicity (multiple responses allowed)		■ Immediate family member employed in science-related job	
White	57%	No	56%
Hispanic/Latino	21%	Yes	42%
Asian/Pacific Islander	14%	Don't Know	2%
African American	4%		
Multiple races	2%		
Native American	1%		
Prefer not to state	7%		
■ Household Income		■ Number of school-aged children living in their household	
<\$20k	3%	None	3%
20-34K	6%	1	39%
35-49K	6%	2	43%
50-74K	10%	3	11%
75-99K	14%	4	2%
100-149K	19%	5	1%
150-199K	11%	6 or more	1%
200+K	16%		
Prefer not to state	15%		

III. RESPONDENT DEMOGRAPHICS – STUDENTS

NOTE: Parents were asked to respond to the survey based on the experience of their oldest school-aged child.

■ **Type of school child attends**

Public	90%
Public Charter	6%
Private/Independent	3%
Parochial/religious	1%
Home schooled	0.3%

■ **Gender of oldest child**

Male	53%
Female	46%
Non binary/other	1%

■ **Grade level of oldest child**

Elementary /K-5	758
Middle/6-8	505
High School/9-12	612
Did not state	181

IV. SUMMARY OF KEY FINDINGS

SECTION 1: PARENT PERCEPTIONS OF THEIR CHILD'S CURRENT SCIENCE EDUCATION

Question 1: How strongly do you agree with the following statements about your child's science education?

Overwhelmingly, parents believe that science is equal in importance to reading, writing and math.

Learning science is equally important as reading, writing and math.



I have the knowledge and ability to help my child with science homework.



My child's teacher is enthusiastic about science.



I understand the science requirements my child needs to complete to be admitted to a 4-year college.



I understand the science requirements my child needs to complete in order to graduate from high school.



My child's teacher is skilled in teaching science.



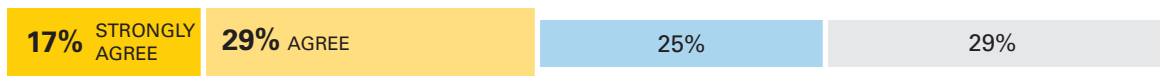
I know a lot about the science my child is learning in school.



I am satisfied with the amount of science education my child is getting in school.



I believe the science program at my child's school is equal to the best schools in California.

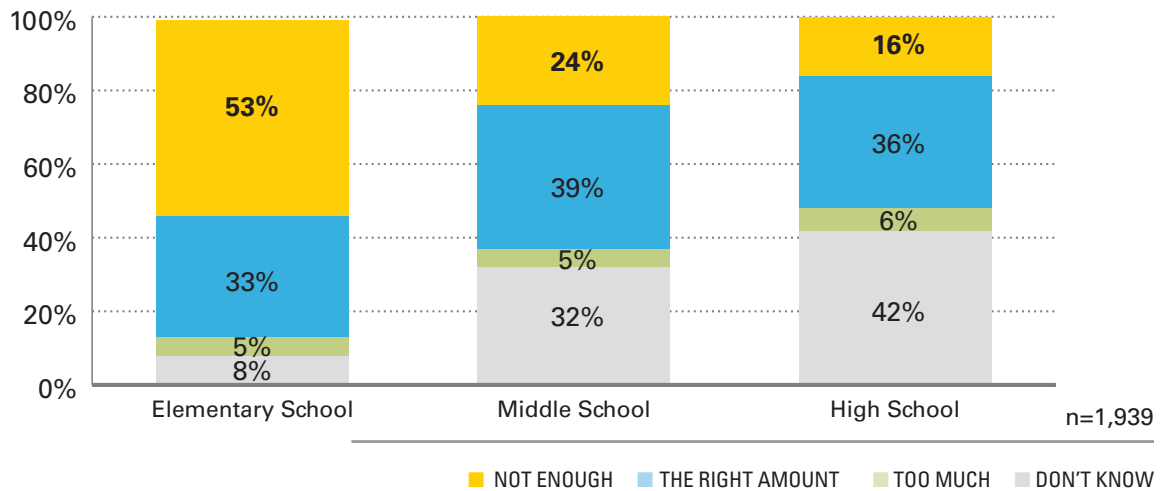


n=1,948

■ STRONGLY AGREE
 ■ AGREE
 ■ SOMEWHAT AGREE
 ■ DISAGREE

Question 2: From your perspective, what best describes the amount of science instruction provided in your school district in different grade levels?

Parents feel most informed about science instruction in their district's elementary schools; a majority also think there is not enough science at that level.



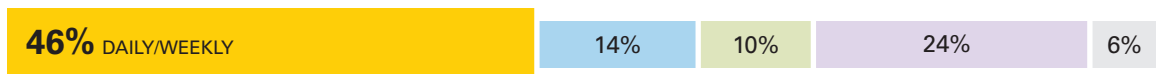
Question 3: How often does your child do the following science-related activities in connection with their school?

72% of parents believe their child has a daily or weekly science lesson at school; less than half report that their child has science homework at least weekly.

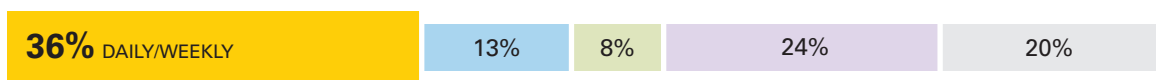
Attends a science class/has a science lesson



Has homework related to science



Works in a science lab at school



Participates in school clubs or groups that do science-related activities



Goes on field trips related to science (museum, lab, nature hikes, etc.)



Participates in a school science fair

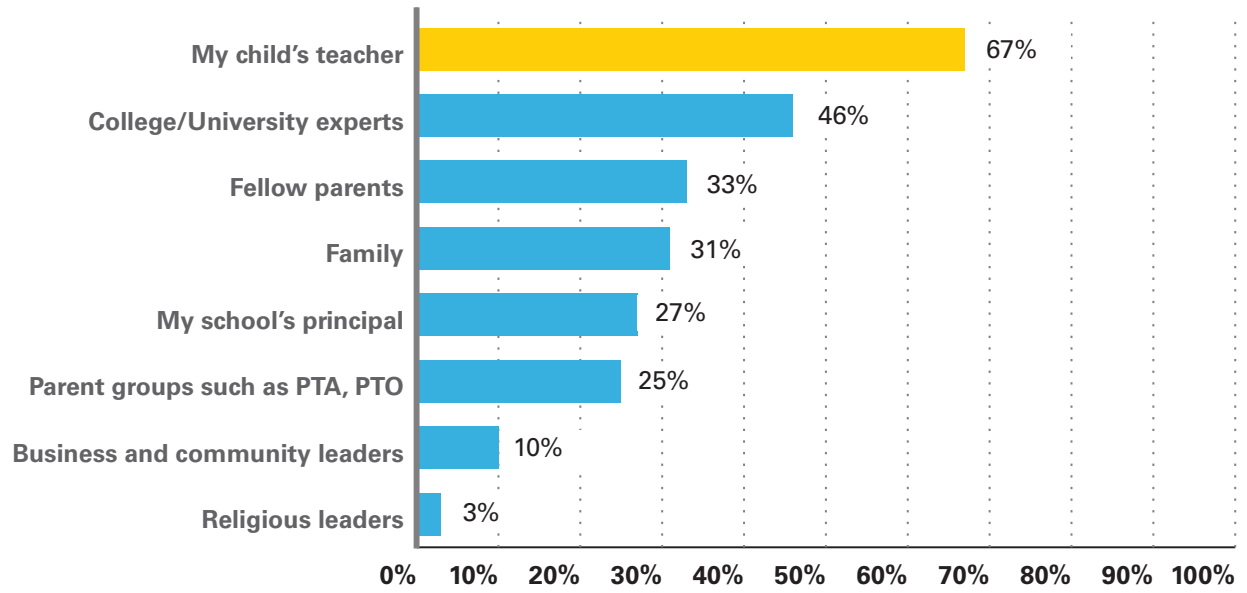


n=1,938

■ DAILY/WEEKLY ■ MONTHLY ■ ONCE A SCHOOL YR ■ NEVER ■ DON'T KNOW

Question 4: Whose opinion do you value most when it comes to your child's science education?

Their child's teacher is by far the most influential opinion; college experts also carry significant weight.



n=1,924

SECTION 1: SUBGROUP DIFFERENCES OF NOTE

OVERALL: Parents of every grade level, gender, ethnic and educational background are united in valuing science equally with math, reading and writing.

Grade Level Differences

Elementary parents have the least knowledge and have the greatest level of concerns about their child's science program; opinions become progressively more positive for respondents with middle and high school children.

COMBINED "STRONGLY AGREE + AGREE" RESPONSES

	K-5	6-8	9-12
Science is equally important as math, reading, writing	89%	89%	88%
I am satisfied with amount of my child's science education	43%	55%	72%
My school's science program is equal to the best in California	37%	46%	60%
My child's teacher is enthusiastic about science	57%	67%	74%
My child's teacher is skilled in teaching science	51%	64%	72%
I know the science requirements for HS graduation	42%	48%	77%
I know the science requirements for college admission	43%	48%	75%

Regarding the opinions they most value regarding their child's science education, parents at all grade levels named their child's teacher as #1. Comparatively, high school and middle school parents were more likely to cite university experts (50% HS and 49% MS vs. 41% elementary) while elementary and middle level parents were comparatively more likely to value their principal's opinion (31% elementary and 28% MS % vs. 21% HS).

Parent Ethnicity Differences

Parents of all ethnic backgrounds feel the same about most aspects of their child's current science education; White and Asian respondents did not differ in any area asked. Hispanic parents had comparatively higher knowledge than Asians and Whites of the science requirements for high school graduation, and comparatively lower perceptions of the enthusiasm of their child's science teacher, and their ability to help with science homework. *As noted earlier, the sample of African American parents was too small to be analyzed as a subgroup.*

	White	Asian	Hispanic
Science is equally important as math, reading, writing	89%	90%	89%
I know the science requirements for HS graduation	53%	54%	63%
I have the knowledge to help my child with science HW	70%	68%	62%
My child's teacher is enthusiastic about science	69%	70%	58%

Regarding the amount of science provided in their school district the only area of difference was that Hispanic and Asian respondents were comparatively more likely than White respondents to say there is not enough science in their middle school (30% of Asians, 27% of Hispanics vs. 21% of Whites).

Regarding the opinions they value most regarding their child’s science education, all ethnic groups named their child’s teacher as their #1 choice. Asians and Whites were comparatively more likely to value university experts (48% of both these groups vs. 38% of Hispanics).

Parent Gender Differences

Although over 80% of respondents were women, on every measure except the value of science (where results were the same for all), male respondents have comparatively more positive opinions than women.

	<i>Women</i>	<i>Men</i>
Science is equally important as math, reading, writing	89%	88%
I have the knowledge to help my child with science HW	66%	79%
My child’s teacher is enthusiastic about science	64%	76%
My child’s teacher is skilled in teaching science	60%	72%
I am satisfied with amount of my child’s science education	52%	70%
I know a lot about science my child is learning	53%	71%
Know the science requirements for HS graduation	52%	69%
Know the science requirements for college admission	52%	71%
My school’s science program is equal to the best in California	44%	66%

Regarding the amount of science provided in their school district, women were comparatively more likely to state there is not enough science in elementary school (55% of women vs. 40% of men); however, there was no difference in women’s and men’s opinions regarding the amount of science available in their middle and high schools.

Regarding the opinions they value most regarding their child’s science education, both men and women named their child’s teacher as their #1 choice. Women were comparatively more likely to value university experts (48% of women vs. 38% men); men were comparatively more likely to value the opinions of fellow parents (41% of men vs. 32% of women) and family members (50% of men vs. 27% of women).

SUMMARY OF KEY FINDINGS *(continued)*

SECTION 2: SCIENCE LEARNING OUTSIDE SCHOOL

Question 5: How strongly do you agree with the following statements about science learning outside the school?

9 out of 10 parents say science experiences outside school are important, and more than three-quarters also say they enjoy learning science together with their child.

It's important for my child to have science-related learning experiences outside of the classroom.



I like to learn about science along with my child.



My child and I often talk about science topics (e.g. health, nature, etc.).



I would like my child to have a career/job that is related to science.



I know a lot about science.



My child's teacher gives me ideas about science activities to do at home.



n=1,942

■ STRONGLY AGREE ■ AGREE ■ SOMEWHAT AGREE ■ DISAGREE

Question 6: How often does your child do the following science-related activities outside of school?

The majority of children engage in independent or parent-involved science activities outside school; many do so on a weekly or monthly basis.

Watches TV shows, videos or plays videos about science



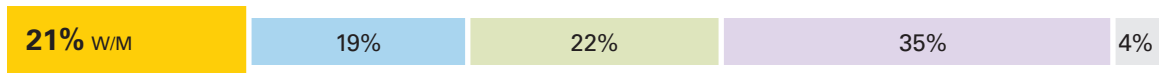
Does an activity with a family member that is science-related (e.g. cooking, gardening, building, tech, other)



Reads books or magazines about science



Participates in clubs or groups that do science-related activities (e.g. robotics, scouts, church groups)



Participates in a science-oriented camp or other special program (e.g. a fee-based program)

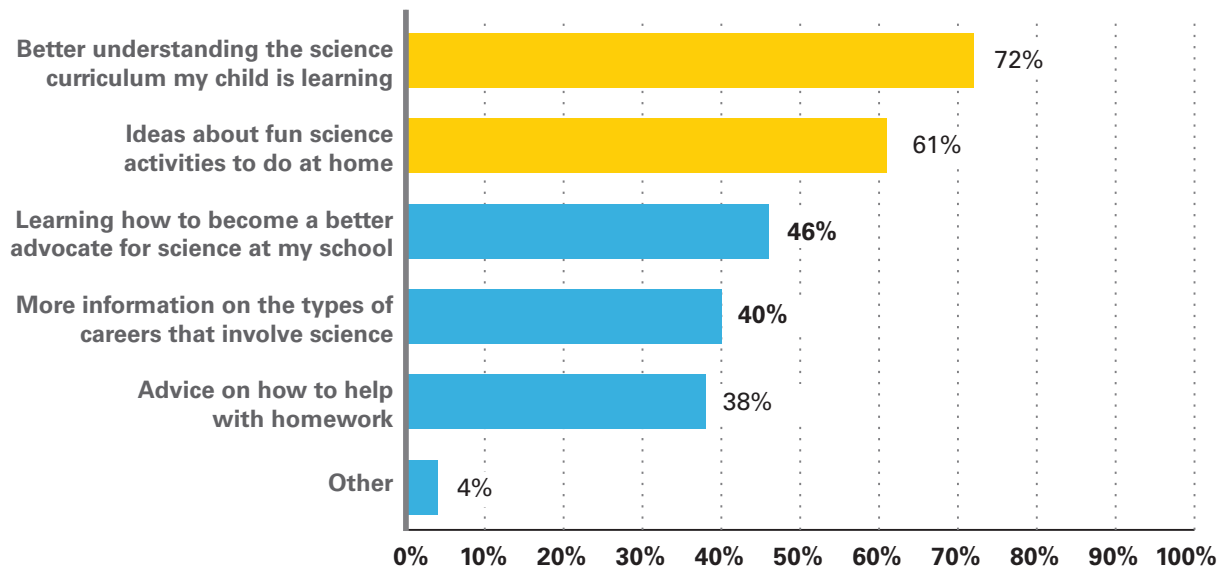


n=1,933

■ WEEKLY/MONTHLY
 ■ DAILY
 ■ ONCE A SCHOOL YR
 ■ NEVER
 ■ DON'T KNOW

Question 7: As a parent, what would help you to support your child's science education?

A majority of parents express a desire to better understand their child's science curriculum and get ideas for science activities they can do at home.



n=1,889

SECTION 2: SUBGROUP DIFFERENCES OF NOTE

Grade Level Differences

Generally, science activities conducted outside school are most frequently reported by elementary school parents; the amount science homework continues to increase in higher grades.

COMBINED “STRONGLY AGREE + AGREE” RESPONSES

	<i>K-5</i>	<i>6-8</i>	<i>9-12</i>
I like to learn science along with my child	86%	81%	68%
My child watches TV /plays games about science on a daily or weekly basis	60%	55%	51%
My child does a science-related activity with a family member on a daily or weekly basis	63%	55%	51%
My child reads books or magazines about science on a daily or weekly basis	48%	35%	33%
My child goes on a science field trip at least once a year	78%	71%	55%
My child has science homework daily or weekly	18%	50%	80%

Regarding how they can better support their child’s science education, parents of elementary school students express a comparatively stronger desire to learn about their child’s science curriculum and how to become a better advocate for science in their schools. Parents of middle and high school students are comparatively more interested in getting information on science related careers.

COMBINED “STRONGLY AGREE + AGREE” RESPONSES

	<i>K-5</i>	<i>6-8</i>	<i>9-12</i>
Better understand the curriculum	77%	74%	62%
Ideas about doing science at home	70%	63%	50%
Learning to be a better advocate for science at school	52%	48%	36%
Information on science-related careers	33%	45%	45%

Parent Ethnicity Differences

Overall, Asians and Whites were comparatively more likely to strongly agree or agree that they know a lot about science (58% of Whites, 55% of Asians vs. 46% of Hispanics).

Regarding how they can better support their child’s science education, 54% of Asians expressed interest in learning how to be a better advocate for science at their child’s school, followed by Whites (48%) and Hispanics (38%).

Parent Gender Differences

Overall, men were comparatively more likely to strongly agree or agree that they know a lot about science (72% of men vs. 51% of women) and that their child’s teacher gives them activities to do at home with their child (51% of men vs. 22% of women).

Regarding how they can better support their child’s science education, women expressed a comparatively stronger interest in learning how to be a better advocate for science at their child’s school (48% of women vs. 36% of men).

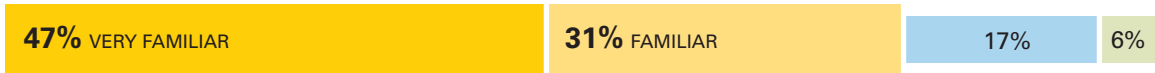
SUMMARY OF KEY FINDINGS *(continued)*

SECTION 3: PARENT AWARENESS OF EDUCATION REFORM INITIATIVES

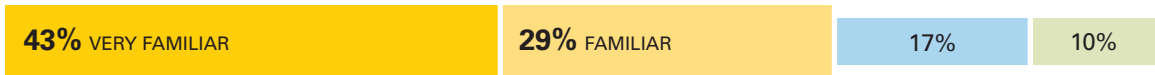
Question 8: How familiar are you with the following terms that are sometimes used by educators and schools?

STEM and STEAM are recognized by about three-quarters of respondents; NGSS is currently familiar to less than one-third.

STEM Education



STEAM Education



Common Core Standards



School Dashboard



NGSS (Next Generation Science Standards)



n=1,935

■ VERY FAMILIAR ■ FAMILIAR ■ SOMEWHAT FAMILIAR ■ NOT FAMILIAR WITH TERM

SECTION 3: SUBGROUP DIFFERENCES OF NOTE:

Grade Level Differences

There were no notable differences for this question.

Parent Ethnicity Differences

Overall, White and Asian respondents were comparatively more familiar with the terms Common Core, STEM and STEAM than Hispanic respondents.

There were no meaningful differences in familiarity with the term NGSS.

	<i>White</i>	<i>Asian</i>	<i>Hispanic</i>
Common Core	80%	71%	66%
STEM	83%	78%	65%
STEAM	78%	71%	60%

Parent Gender Differences

Both genders were equally familiar with the term “Common Core” (75% of women, 77% of men). Men were comparatively more familiar with the term “NGSS” (47% of men vs. 29% of women).

V. PARENT REACTIONS TO NEXT GENERATION SCIENCE STANDARDS MESSAGING

Methodology notes:

Parents were first presented with a brief introductory description regarding the NGSS. They were then asked to carefully read and rate a set of 12 messages describing different aspects of the standards, on how personally appealing each was. After reading all the statements, parents were asked to give an overall impression of how favorably they felt about the NGSS, based on the points they had read.

SUMMARY OF OVERALL APPEAL

STRONGEST MESSAGES: RATED AS “EXTREMELY APPEALING” BY OVER 50% OF RESPONDENTS

Good news!! All messages tested were appealing to a high percentage of parents.

	EXTREMELY APPEALING	APPEALING
1. To be successful in life, children need to be equipped with critical thinking, problem solving, and analytical skills.	66%	24%
2. The new standards encourage students to ask lots of questions and emphasize hands-on investigation and discovery.	53%	31%
3. Science is central to how we understand and make sense of the world around us.	51%	33%
4. The new standards fuel kids’ innate curiosity by introducing science at an early age.	51%	32%

MESSAGES RATED AS “EXTREMELY APPEALING OR “APPEALING” BY MORE THAN 75% OF RESPONDENTS

5. The new standards are designed to ignite curiosity and interest in science and engineering, especially among students who don’t think of themselves as “science kids”	49%	34%
6. This new approach to teaching science is more engaging and interactive to align with how kids learn best.	49%	33%
7. We need to support our schools so that the standards can be successfully implemented.	49%	33%
8. The new standards will allow teachers to be more innovative and creative in the ways they teach science.	47%	35%
9. A strong science education is essential for college and/or career readiness.	46%	34%
10. The new standards will improve the way science is taught at all grade levels in all schools.	46%	33%
11. It is important that science learning also takes place out of school.	41%	37%
12. The whole community is needed to strengthen science education.	34%	36%

n =1,834

DETAILED MESSAGE RATINGS AND SUB-GROUP DIFFERENCES

■ MESSAGE #1: To be successful in life, children need to be equipped with critical thinking, problem solving, and analytical skills.

90% of respondents found this message “Extremely Appealing” or “Appealing.”



Statistically meaningful differences in percent of “Extremely Appealing” responses

Grade Level – No meaningful difference

Parent Gender – Women: 68% Men: 58%

Parent Ethnicity – Comparatively, this message is somewhat more compelling to White respondents than Hispanic respondents: White: 70% Hispanic: 59%

■ MESSAGE #2: The new standards encourage students to ask lots of questions and emphasize hands-on investigation and discovery.

84% of respondents found this message “Extremely Appealing” or “Appealing.”



Statistically meaningful differences in percent of “Extremely Appealing” responses

Grade Level – Message is comparatively more appealing to elementary and middle level parents: K-5: 59% 6-8: 53% 9-12: 45%

Parent Gender – Women: 56% Men: 41%

Parent Ethnicity – Comparatively, this message is somewhat more compelling to White respondents than Asian and Hispanic respondents: White: 58% Asian: 50% Hispanic: 48%

■ MESSAGE #3: Science is central to how we understand and make sense of the world around us.

84% of respondents found this message “Extremely Appealing” or “Appealing.”



Statistically meaningful differences in percent of “Extremely Appealing” responses

Grade Level – no meaningful differences

Parent Gender – no meaningful differences

Parent Ethnicity – Comparatively, this message is somewhat more compelling to White respondents than Hispanic respondents: White: 55% Hispanic: 44%



■ **MESSAGE #4: The new standards fuel kids’ innate curiosity by introducing science at an early age.**

83% of respondents found this message “Extremely Appealing” or “Appealing.”



Statistically meaningful differences in percent of “Extremely Appealing” responses

Grade Level – Message is comparatively more appealing to elementary and middle level parents: K-5: 58% 6-8: 50% 9-12: 41%

Parent Gender – Women: 53% Men: 40%

Parent Ethnicity – Comparatively, this message is somewhat more compelling to White respondents than Hispanic respondents: White: 55% Hispanic/Latino: 46%

■ **MESSAGE #5: The new standards are designed to ignite curiosity and interest in science and engineering, especially among students who don’t think of themselves as “science kids.”**

83% of respondents found this message “Extremely Appealing” or “Appealing.”



Statistically meaningful differences in percent of “Extremely Appealing” responses

Grade Level – Message is comparatively more appealing to elementary and middle level parents: K-5: 54% 6-8: 49% 9-12: 41%

Parent Gender – Women: 51% Men: 42%

Parent Ethnicity – No meaningful differences

■ **MESSAGE #6: This new approach to teaching science is more engaging and interactive to align with how kids learn best.**

82% of respondents found this message “Extremely Appealing” or “Appealing.”



Statistically meaningful differences in percent of “Extremely Appealing” responses

Grade Level – Message is comparatively more appealing to elementary and middle level parents: K-5: 53% 6-8: 49% 9-12: 42%

Parent Gender – Women: 51% Men: 40%

Parent Ethnicity – Comparatively, this message is somewhat more compelling to White respondents than Asian and Hispanic respondents: White: 55% Asian: 47% Hispanic: 43%

■ EXTREMELY APPEALING ■ APPEALING ■ SOMEWHAT APPEALING ■ NOT APPEALING ■ UNCLEAR

■ **MESSAGE #7: We need to support our schools so that the standards can be successfully implemented.**

82% of respondents found this message “Extremely Appealing” or “Appealing.”



Statistically meaningful differences in percent of “Extremely Appealing” responses

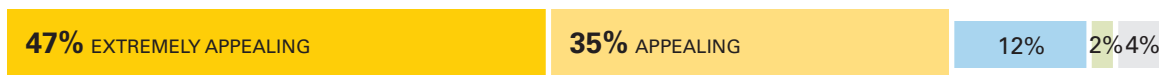
Grade Level – Message is comparatively more appealing to elementary and middle level parents: K-5: 52% 6-8: 48% 9-12: 43%

Parent Gender – Women: 50% Men: 44%

Parent Ethnicity – No meaningful differences

■ **MESSAGE #8: The new standards will allow teachers to be more innovative and creative in the ways they teach science.**

82% of respondents found this message “Extremely Appealing” or “Appealing.”



Statistically meaningful differences in percent of “Extremely Appealing” responses

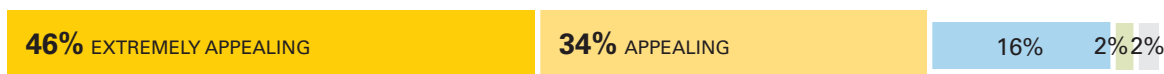
Grade Level – Message is comparatively more appealing to elementary and middle level parents: K-5: 50% 6-8: 49% 9-12: 38%

Parent Gender – Women: 49% Men: 34%

Parent Ethnicity – Comparatively, this message is somewhat more compelling to White respondents than Asian and Hispanic respondents: White: 50% Asian: 43% Hispanic: 40%

■ **MESSAGE #9: A strong science education is essential for college and/or career readiness.**

80% of respondents found this message “Extremely Appealing” or “Appealing.”



Statistically meaningful differences in percent of “Extremely Appealing” responses

Grade Level – Message is comparatively more appealing to elementary and middle level parents: K-5: 50% 6-8: 46% 9-12: 40%

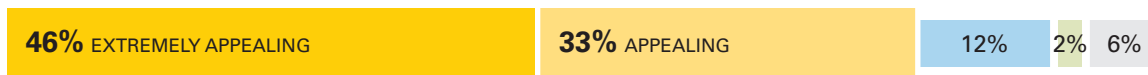
Parent Gender – No meaningful difference

Parent Ethnicity – No meaningful differences



■ **MESSAGE #10: The new standards will improve the way science is taught at all grade levels in all schools.**

80% of respondents found this message “Extremely Appealing” or “Appealing.”



Statistically meaningful differences in percent of “Extremely Appealing” responses

Grade Level – Message is comparatively more appealing to elementary parents:

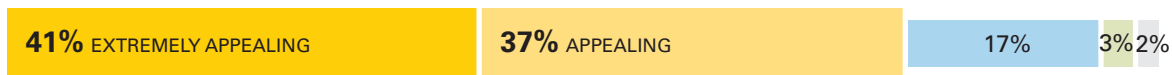
K-5: 52% 6-8: 45% 9-12: 40%

Parent Gender – Women: 48% Men: 39%

Parent Ethnicity – No meaningful differences

■ **MESSAGE #11: It is important that science learning also takes place out of school.**

78% of respondents found this message “Extremely Appealing” or “Appealing.”



Statistically meaningful differences in percent of “Extremely Appealing” responses

Grade Level – Message is comparatively more appealing to elementary parents:

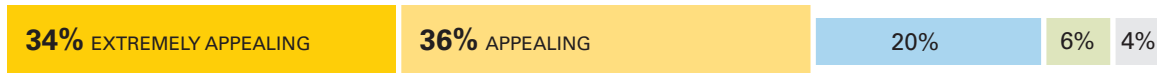
K-5: 47% 6-8: 39% 9-12: 34%

Parent Gender – No meaningful difference

Parent Ethnicity – No meaningful differences

■ **MESSAGE #12: The whole community is needed to strengthen science education.**

70% of respondents found this message “Extremely Appealing” or “Appealing.”



Statistically meaningful differences in percent of “Extremely Appealing” responses

Grade Level – Message is comparatively more appealing to elementary parents:

K-5: 38% 6-8: 31% 9-12: 29%

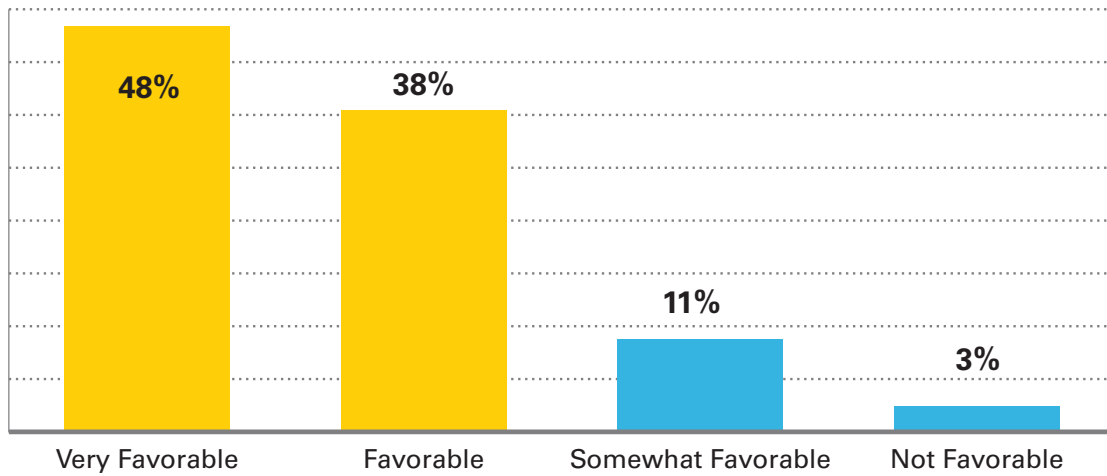
Parent Gender – No meaningful difference

Parent Ethnicity – No meaningful difference

■ EXTREMELY APPEALING ■ APPEALING ■ SOMEWHAT APPEALING ■ NOT APPEALING ■ UNCLEAR

OVERALL MESSAGING IMPACT

After reading the statements, 86% of parents had a “Very Favorable” or “Favorable” impression of the NGSS.



n=1,816

Statistically meaningful differences in percent of “Very Favorable” responses

Grade Level – Message is comparatively more appealing to elementary parents:

K-5: 55% 6-8: 48% 9-12: 41%

Parent Gender – No meaningful differences

Parent Ethnicity – No meaningful differences

ADDITIONAL PARENT FEEDBACK AFTER READING NGSS MESSAGES

Over 400 parents responded to this question. Key themes and representative comments are listed below:

■ There is an excitement about the new standards.

"I am excited for my students – can't wait to see the new standards implemented."

"I'm glad to see that science will be prioritized, instead of being on the back burner."

"These will better equip our children for the future."

"I support any efforts to have a better standardized STEM policy for all public schools."

"I wish this was around when I was young – I might have done better in school."

"I love the NGSS. They are inquiry-based and encourage creative thinking."

■ More information and/or parent education is needed to better evaluate and support the standards.

"I want to learn much more and take a class on this with other parents."

"I need to know more about what is changing and when."

"We need to know what will be different from what they are learning now?"

"I would like parent info as to what they are doing at that time in school, so I can be more involved in it with my son. The more I know the better I can help him and we can learn fun things together."

"If it's going to be new to our children it is also going to be new to the parents and some understanding will be helpful."

"A lot of parents grew up with different ways of learning – need to be sure we can help them when everything is changing so fast"

■ Thoughtful implementation, particularly teacher training will be needed.

"The standards are great. Successful implementation requires funding to train teachers, supplies, tools and equipment for a new approach and follow up to see what works, what doesn't and adjust as necessary."

"It all depends on implementation – I trust educators, and think standards should be designed for students, not tests."

"I have noticed that some teachers embrace change while others are reluctant and prefer to teach in their same old way. All students, regardless of their GPA, need opportunities to experience those inspirational teachers."

"So much depends on how the teachers are trained to teach and their willingness/ability to share knowledge and teach concepts."

"Science education should not JUST be kids asking questions and exploring. It also requires teachers who are trained in science and understand it themselves."

"We need to ensure proper professional development for all teachers and then ongoing professional development to help teachers implement new curriculum."

■ **Questions and concerns exist about funding and financial implications.**

“Money will be needed to implement all these standards – where is it coming from?”

“How will the schools be able to do this when they already lack funding.”

“The State needs to provide funding to school districts to support the new standards.”

“The State cannot expect PTAs and parents to fund the new standards. This is imperative.”

“Funding to support teachers and classroom activities is critical. Not just training but \$\$ for supplies and bonuses for teachers who do good work.”

“How will these new standards be affectively implemented in low-income schools where children have little to no support?”

“I have extreme doubts that the CA school system can make this work for the lowest income schools without drastically increasing the budget they give them. Parents in those schools can’t afford to send students on field trips.”

■ **There are some concerns regarding the time taken away from other subjects.**

“Science is such a broad area but it needs to overlap with language and math and art for students to benefit and for science to be PART of their whole child education, not just another silo/period/teacher/checklist item/requirement.”

“I want to make sure the standards are age appropriate, especially in regards to introducing sex ed.”

“Be cognizant of how much you ask teachers and parents to take on above and beyond their current workloads.”

“I just hope that teachers will be able to adequately cover the science standards with how much is already required in such little time.”

■ **A small number of parents expressed concerns about the values and content that might be embedded in the standards.**

“It’s OK as long as creationism, abstinence-only are not part of the curriculum.”

“I would greatly respect a science program that saw scientific theory as just that and not “the end all be all” answers to either the questions or conclusions on life itself.”

“I appreciate the delineation of science and religion immensely.”

VI . BIG TAKEAWAYS AND IMPLICATIONS

- Parents overwhelmingly believe in and value science as a central part of their child’s education, equally important to reading, writing, and math.

Implication: The timing is right to make this a priority focus of education reform.

- Only slightly more than half of parents think their child is currently receiving enough science instruction.

Implication: There is a hunger for more science and a recognition that a new focus and new approaches are needed.

- Even comparatively involved parents such as the California State PTA membership do not have pre-conceived notions of what the NGSS encompasses.

Implication: CAPTA and other partners have the opportunity to be leaders in introducing and framing the conversation in accurate, constructive and positive ways.

- A majority of parents expressed a desire to learn more about the new science curriculum and find out how they can support it at home.

Implication: There is an opportunity to develop organized parent education programs that meet these needs.

- A majority of parents recognize that they play a role in helping the standards be successfully implemented; many expressed a desire to learn how to become better advocates for science at their school.

Implication: If schools take the time to explain the new standards, address their questions and tap into their enthusiasm for science inside and out of school, parent support for the NGSS standards will likely be strengthened.

- Breaking with historical patterns of parent involvement, men show a comparatively stronger interest in NGSS than women.

Implication: Science and NGSS may represent a new area of opportunity for the California State PTA to engage men.

- All messages developed and tested appear to resonate positively with parents – and can be incorporated into the messaging platform. Strongest messages, that can become the core pillars, are:

- Science is a foundational subject equal in importance to reading, writing and math – and is central to how we understand and make sense of the world.
- Science plays an important role in building critical thinking, problem solving and analytical skills that are essential for life success.
- The new standards emphasize hands-on learning and encourage students to ask questions.
- The new standards provide an engaging gateway for children to become engaged in learning at an early age, by harnessing and building on their innate curiosity.