

# Math and Science Confidence Study

November 10, 2010

# Methodology

## Objectives:

- Gauge US teens' perceptions of the importance of math and science
- Assess US teens' confidence in these subjects and the implications of these attitudes
- Determine teens' perceptions of the US' standing on math and science relative to other countries and how it relates to confidence

PSB conducted online interviews among US Teens (age 13-18) between September 24 and 28, 2010

A total of **1000** interviews were conducted (margin of error +/-3.1%, larger for sub-groups)

# Key Findings

1. **US teens fully understand the importance of Math and Science education**
2. **They are also very confident in their own Math and Science abilities**
  - Far more confident than recent performance scores would suggest
3. **Yet despite personal confidence, they are not confident in the US' ability to compete in Math and Science**
4. **Teens primarily blame lack of national work ethic and discipline as reasons why other countries are ahead of us in Math and Science**

→ Suggests teens might need to be challenged more in order to close the personal (over)confidence vs. national ability gap and thereby build our global competitiveness

# Key Findings: Additional Detail

# US Teens Strongly Recognize the Importance of Math and Science

**99%** of teens believe it is very or somewhat important to be good at math and science



Teens know math and science is **important to their futures**



**69%** believe it will be required of most jobs in the future

**59%** believe it is important to get into college

**58%** aspire to pursue a math or science related career



Implications

Lack of emphasis on Math and Science education may not be as big of a problem as thought given teens clearly understand the value and importance of these subjects

Other factors like lack of focus/discipline may actually be playing a more central role and should become a larger part of the Math and Science discourse if so.

# High Confidence Levels Relative to Low Performance Rankings Suggest US Teens May Be Overconfident in Their Personal Math and Science Abilities

**85%** of US teens are confident in their math and science abilities



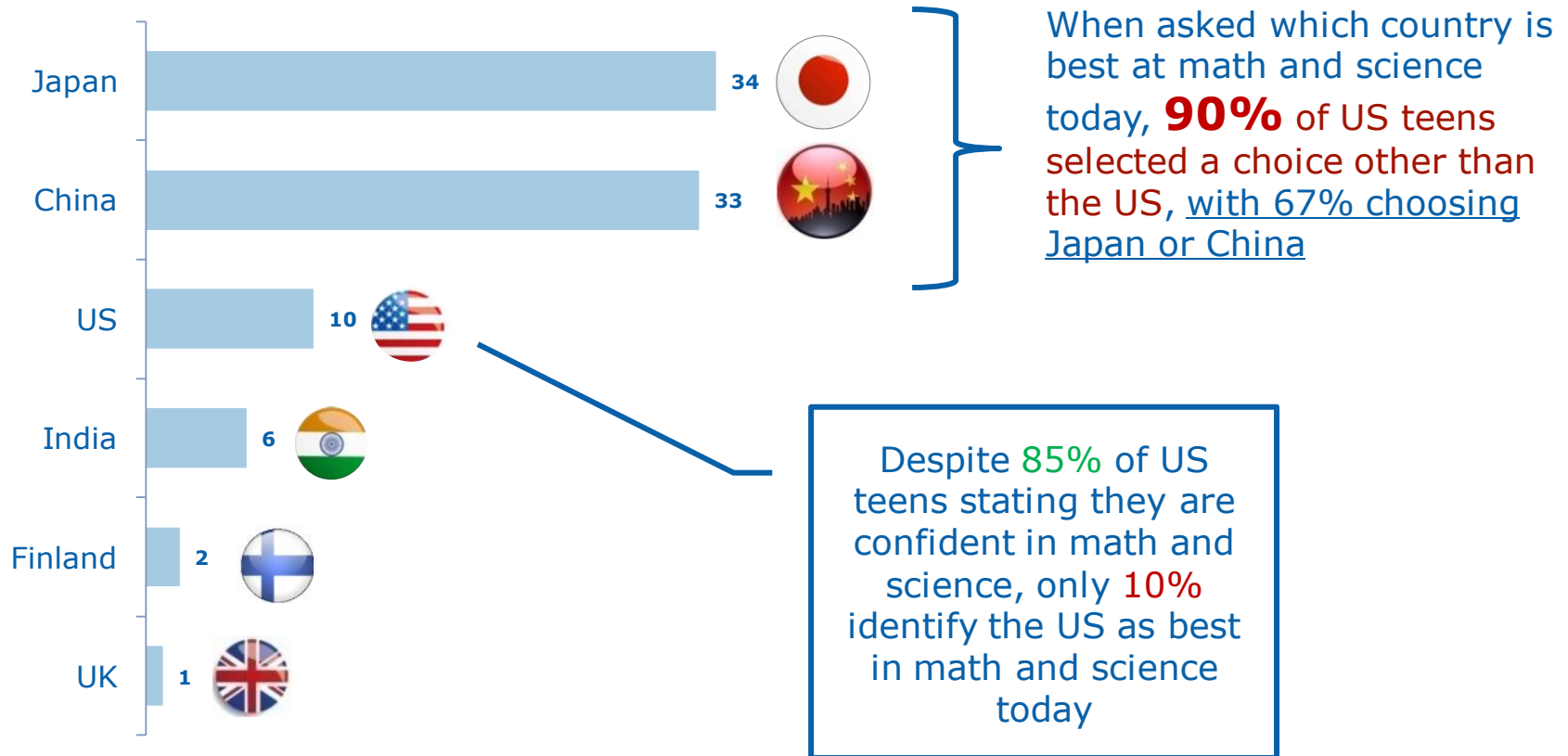
Yet US teens rank **21st** out of 30 in science and **25th** out of 30 in math literacy<sup>[1]</sup> among students from developed countries

## Implications

Teens may need to be challenged more around math and science to successfully close the US' competitive gap given many view math and science as easy yet are slipping in global rankings.

<sup>[1]</sup>Source: Programme for International Student Assessment (PISA) 2006

# Despite High Levels of Personal Confidence, Teens Are Not Confident in the US' Math and Science Competitiveness



# Teens Believe the US As A Country Doesn't Work Hard Enough to Succeed in Math and Science

**51%** of US teens who don't have confidence in America's math and science capabilities believe we don't work hard enough as a country



**44%** of US teens who don't believe America is the best at math and science think that this is due to a lack of discipline in the US

Only 1/3 of teens blame lack of funding or school emphasis for poor math and science abilities in the U.S.

## Implications

We may need to take steps to improve teens' work ethic and discipline in addition to putting more resources and attention against Math and Science education specifically if we want to improve the US's competitiveness.

President Obama's initiative to extend the school year by one month could be one step in this direction.



# Backup

# 99% of Teens Acknowledge the Importance of Math and Science

- Regardless of gender, teens consistently recognize the value of math and science, with over two thirds saying these subjects are “very” important

How important do you think it is to be good at math and science?  
(Showing All)

**Total Important**  
99%



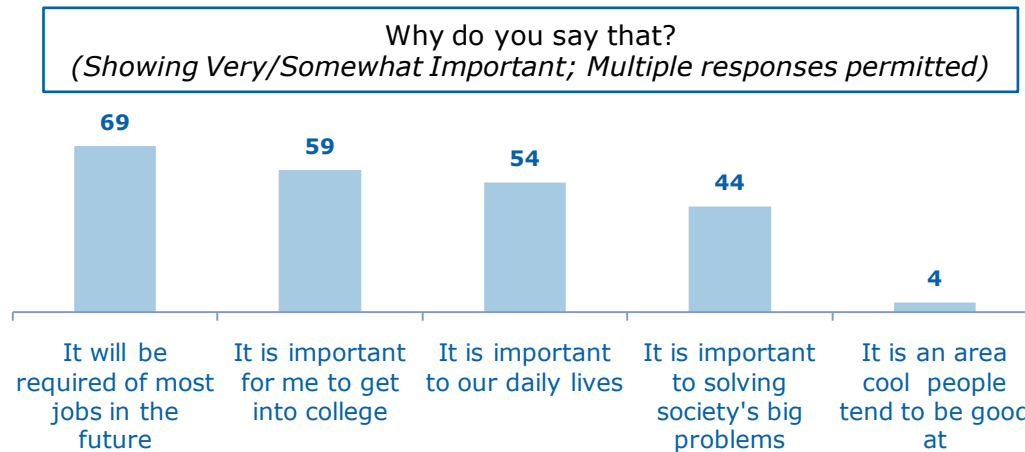
**Total Not Important**  
1%

■ Very Important   ■ Somewhat Important   ■ Not very Important   ■ Not at all important

	All	Gender		Confident	
		Male	Female	Yes	No
n=	1001	401	600	832	163
<b>Total Important</b>	99	99	99	99	96
Very Important	68	72	64	72	44
Somewhat Important	31	27	35	27	52
<b>Total Not Important</b>	1	0	2	1	3
Not Very Important	1	0	2	1	3
Not at all Important	0	0	0	0	0
Don't Know	0	0	0	0	2

# Teens Identify Math and Science as Important Because of Its Relevance to Their Futures

- They believe these subjects will be required of most jobs in the future and that they are important for getting into college



	All	Gender		Confident	
		Male	Female	Yes	No
n=	988	398	390	826	156
It will be required of most jobs in the future	69	67	71	71	59
It is important for me to get into college	59	55	63	60	52
It is important to our daily lives	54	49	58	55	43
It is important to solving society's big problems	44	44	44	46	32
It is an area cool people tend to be good at	4	6	2	7	2
Other	6	6	7	5	1
Don't know	1	1	0	0	2

# Math and Science Relevance Translates to an Interest in Math- and Science-Related Careers

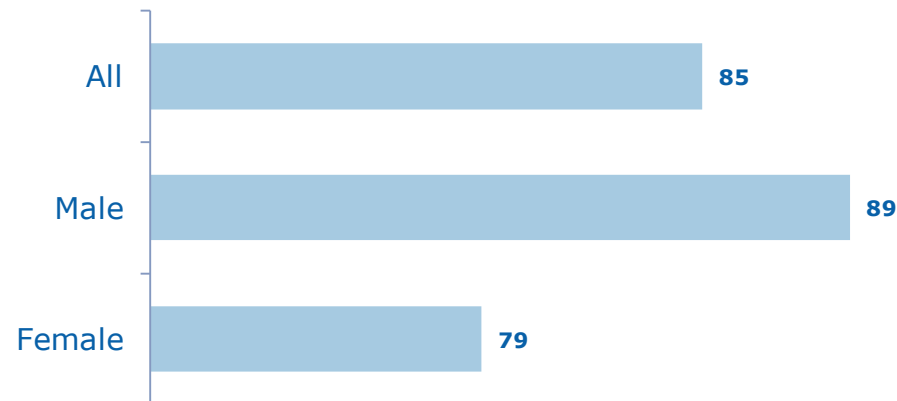
- Over half (58%) aspire to a math or science-related career field

What do you want to be when you grow up?	All	Gender		Confident	
		Male	Female	Yes	No
n=	1001	401	600	832	163
Medical Professional	27	13	40	28	25
<i>Doctor</i>	10	8	12	11	4
<i>Psychologist / Psychiatrist</i>	4	1	6	4	4
<i>Nurse</i>	4	1	7	4	5
<i>Other specific medical professional: Dentist / Pathologist / Physical therapist, etc.</i>	4	2	6	4	6
<i>Veterinarian</i>	4	1	6	3	6
<i>Pharmacist</i>	1	0	3	2	0
Engineer	9	14	4	10	1
Business Professional (Accountant, Financial Analyst)	7	6	6	7	4
Teacher	6	3	9	6	6
Computer/IT	5	9	2	6	2
Other specific type of scientist: Biochemist / Physicist / Meteorologist, etc.	4	4	4	4	1
Author/Journalist	3	2	4	3	5
Sports: Professional Athlete / Agent / Manager, etc.	3	5	0	3	4
Lawyer	2	1	3	2	4
Military: Soldier / Pilot / Special Forces, etc.	2	3	0	2	2
Actor / Actress	2	0	3	2	1
Music: Producer / Musician / Manager, etc.	2	2	2	2	2
Game/video game designer	2	3	1	2	2
Law enforcement: Police officer / FBI agent	2	3	2	2	3
Forensic Scientist / Criminalist	2	2	2	2	1
Chef	1	1	1	1	2
Architect	1	2	1	2	1
Fashion: Designer / Marketer / Model, etc.	1	0	2	1	2
Artist	1	1	2	1	3
Graphic designer	1	1	2	1	2
Others	11	13	9	10	17
Don't Know / No Response	4	5	3	3	10

# Majority of Teens are Confident in Math and Science

- Males in particular are confident, with almost 9 in 10 stating that they are at least somewhat confident
- While females are also confident overall, there is a gender gap, with 1 in 5 females saying they are not confident in math and science compared to only 1 in 10 among males

How confident are you at math and science at school?  
(Showing % 6,7,8,9)



	All	Gender	
		Male	Female
n=	1001	401	600
<b>Total Confident</b>	85	89	79
Very Confident (8,9)	43	49	36
Somewhat Confident (6,7)	42	40	43
<b>Total Not Confident</b>	16	9	21
Not Very Confident (3,4,5)	14	8	18
Not at all Confident (1,2)	2	1	3
Don't Know	1	0	1

# Japan and China Perceived as Leaders in Math and Science Today

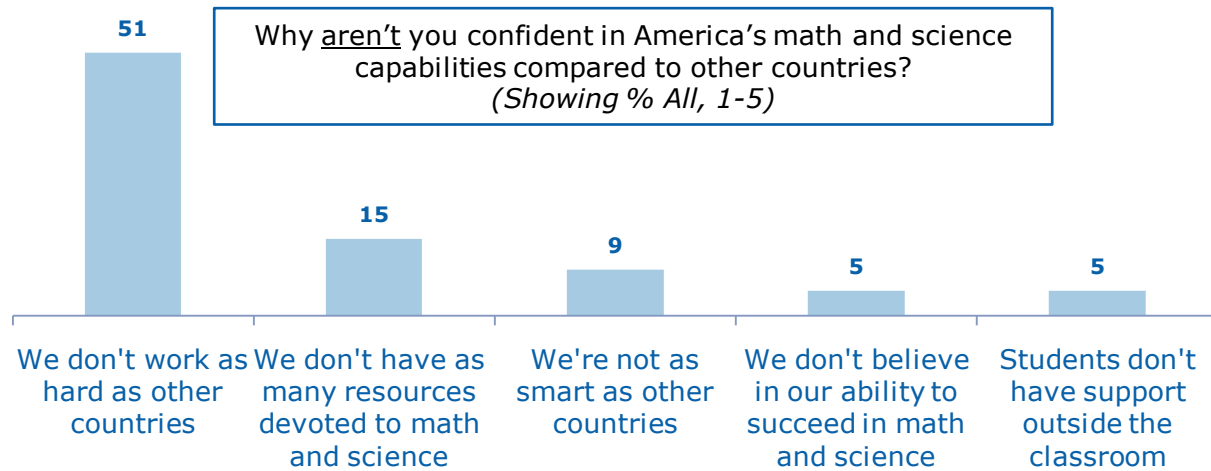
- Teens' lack of confidence in the US shows in their global rankings: Japan and China are in their own league, while the US is grouped in a distant second tier

Which country do you think is best at math and science today?

	All	Gender		Confident	
		Male	Female	Yes	No
n=	1001	401	600	832	163
Japan	34	38	31	36	29
China	33	30	37	33	36
US	10	11	8	10	7
India	6	6	7	7	4
Finland	2	2	2	2	1
UK	1	1	1	1	2
Other	2	3	2	2	3
Don't know	11	8	13	9	18

# Lack of Confidence in the US' Ability Is Based on the Belief that the US Doesn't Work as Hard as Other Countries

- Lack of resources and support outside of the classroom are not perceived to play as big a role among teens as lack of effort

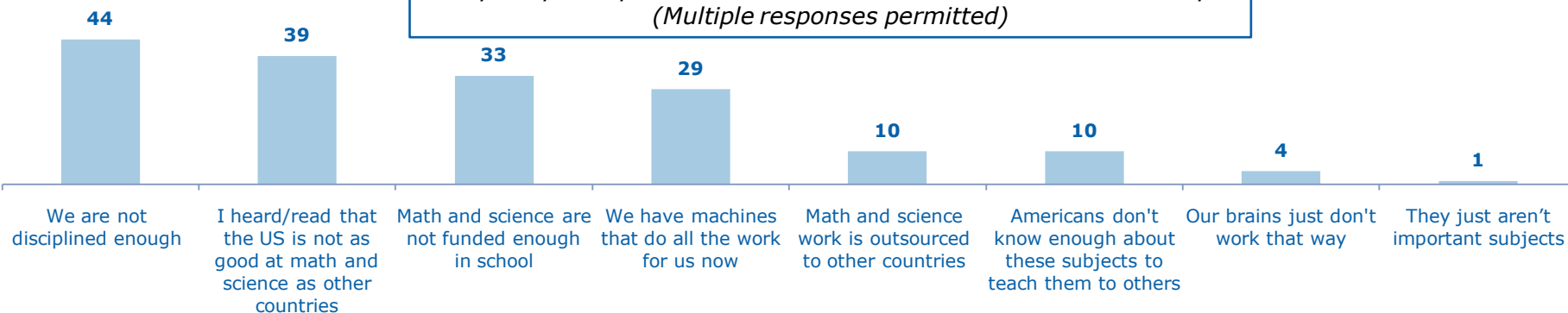


Showing %, 1-5	All	Gender		Confident	
		Male	Female	Yes	No
n=	368	123	254	286	81
We don't work as hard as other countries	51	49	52	52	46
We don't have as many resources devoted to math and science as other countries	15	15	15	16	14
We're not as smart as other countries	9	10	9	9	9
We don't believe in our ability to succeed in math and science	5	6	4	4	9
Students don't have support outside the classroom, such as tutors and/ or practice groups	5	5	5	5	7
Other	11	13	9	12	4
Don't know	4	2	6	3	10

# Belief that Teens Are Not Disciplined Enough to Excel in Math and Science Undermines Confidence in US

- Teens tie lack of confidence in the US to lack of discipline
- The media is also viewed as playing a part in lack of confidence in the US among teens along with lack of funding

Why did you say the US is not the best at math and science today?  
(Multiple responses permitted)



Among 90% who do not think US is best at math and science today; multiple responses permitted	All	Gender		Confident	
		Male	Female	Yes	No
n=	909	355	554	751	152
We are not disciplined enough to excel in math and science	44	41	47	46	38
I heard/read that the US is not as good at math and science as other countries	39	38	40	41	31
Math and science are not funded enough/emphasized enough in school	33	28	36	33	28
We have machines that do all the work for us now, so we don't really need to excel in these subjects ourselves	29	23	35	29	31
Math and science work is outsourced to other countries anyway, so we don't need to focus on those subjects in the US	10	9	10	9	11
Americans don't know enough about these subjects to teach them to others	10	10	10	10	14
Our brains just don't work that way	4	5	2	3	6
They just aren't important subjects	1	1	1	1	2
Other	14	14	13	14	10
Don't know	7	6	7	6	9