2014 PhysicsBowl Results

Dear Physics Teachers,

Thank you for having your students participate in this year's AAPT PHYSICSBOWL contest.
This year there were more than 4500 students participating from 280+ schools across the United States, Canada, China and Spain!
Enclosed are lists of

- the overall top 10 students in each division
- the overall top 5 schools in each division
- the first and second place students in each division by region.
- the top 4 schools in each region by division
- a list of the top 20 student scores in each division that did not win a prize

Unfortunately, we received many answer sheets which did not properly fill in the required information which resulted in the student's score being disqualified for consideration of either individual prizes or for the team score. This is an unfortunate necessity because of the amount of data that must be analyzed. Also, some instructors appear not to have followed the instructions resulting in students being disqualified. We cannot go and check exams individually to look for errors, so it is up to the proctors and instructors to be sure to follow the instructions.

This year, we are able to award the following prizes:

- To the top overall school in each Division
    - $100 gift certificate awarded from Pasco Scientific
- To the top 5 overall schools in each Division:
    - $100 gift certificate awarded from CPO Science
    - "PhysicsBowl Champion" T-shirts awarded to the five top students from each school from AAPT.
- To the top two scoring schools in each region/division:
    - $50 gift certificate awarded from Vernier Software & Technology
    - "PhysicsBowl Champion" T-shirts awarded to the five top students from the *1st place* school in each region from AAPT.
    - A rattleback from Arbor Scientific.

All student winners will receive a copy of "Used Math" from AAPT. In addition, student winners receive

- To the top 10 overall students in each Division:
    - Div. 02 only: A copy of "Electricity and Magnetism" from Cambridge University Press.
    - Div. 01 only: A copy of "Introduction to Classical Mechanics" from Cambridge University Press.
    - Both Divisions: A book from either Cambridge University Press, Pearson, Princeton University Press, or John Wiley & Sons
- To the 1st place student in each Division by Region
    - A copy of "Mad about Modern Physics" from John Wiley & Sons
- To the 2nd place student in each Division by Region
    - A Mysterious Glowing Ball from Educational Innovations, Inc.
    - TI-30 XS MultiView Scientific Calculator awarded from Texas Instruments.

Finally, additional prizes are awarded to the 2 highest scoring schools in each Division that did NOT finish in the top 2 of their region. This also is true for students in both divisions.

A copy of this year's test along with solutions, as well as individual and team winners can be found at the following web site: http://www.delta.edu/michaelfaleski/PhysicsBowl

We had the good fortune of having many wonderful sponsors again this year. We hope to continue our relationship with these companies in the future. One way to ensure that this happens is for teachers to send thank you's to the companies when ordering materials and to use the gift certificates provided. We hope that you use your certificates to help your physics program in the coming years.

Instructors can obtain the scores of their students from the AAPT website and that link will be provided to you in an email from the national office. Please realize that we were able to retrieve some scores that were disqualified for improperly recording the required information, but this was done after-the-fact. If the information was not encoded correctly, the student was immediately disqualified from winning prizes even though we may be able to link that student to your code now. Some students provided no codes, the wrong regions, no name, just a last name, etc. There are a lot of records and we cannot go back and fill in missing information. While it is unfortunate to disqualify anyone, these are the rules of the contest. Sadly, some very high scores were disqualified. If you still are missing a student's score… please email jlane@aapt.org with student information (CEEB, teacher codes, etc.) and we can try to find the information.

In addition, emails often are received about the competitive balance in some regions. That is, there are questions about whether some schools should really be competing in a regular region or Region 01. It truly is a very difficult thing for the Board to rule on because names of schools can be deceiving with regard to identifying if it is a magnet school, charter school, specialized school, school of science and math… we must rely on instructors to use their best judgment. This is a very difficult task for those of us not actually at the schools in question, but a good rule of thumb… if your school has "math, science" and/or "technology" in its name, it should probably be in region 01! ☺

Based on recent trends, the PhysicsBowl Advisory Board will again be looking at the competitive balance in regions. There could be some very exciting additions this coming year as well which would cause more changes. Change is good, especially in that it is change related to growth!! 2014 was a particularly difficult year for some schools with regard to competing because of the particularly harsh winter throughout much of the country. We hope that many of these schools will return for the 2015 contest!!

The statistics from this year's contest are shown below.

Division 01 had an average score of 17.5. Statistically, the easiest question was **#6** (83 % correct) while the most difficult question was **#39** (11 % correct).

Division 02 statistics were similar to last year's contest with an average of 15.7. Statistically, the easiest question was **#13** (77 % correct) while the most difficult question was **#46** (6 % correct)

The production of a challenging contest of only 40 questions that has a small percentage of very high scores while still not being overly difficult to discourage the majority of students is an enormous task. We will continue to write the best contest that we can and hope to make it even better next year!

Statistics for exam

Average Score for Division 01 = **17.5** with a standard deviation of 5.9
Average Score for Division 02 = **15.7** with a standard deviation of 5.4
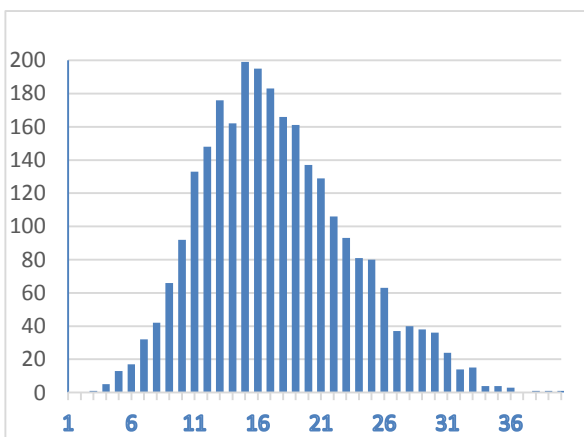
Figure 1.   Division 01... # students vs. Score
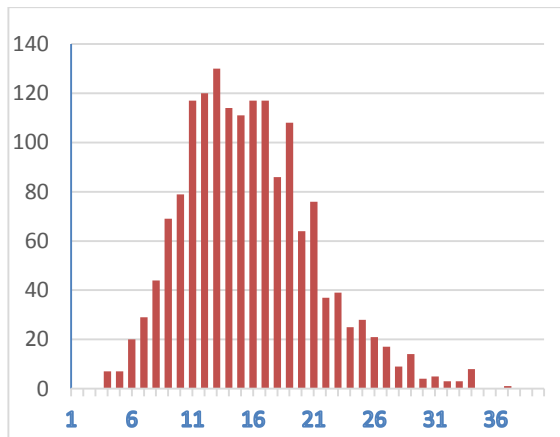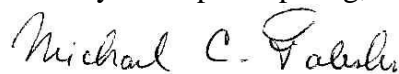
Figure 2. Division 02.... # students vs. Score

We look forward to having you participate in next year's contest… and please let your colleagues at schools near you know about the contest! We are considering how to expand the contest to include more schools and students next year as well as making some more changes with the contest to improve it. Work will continue on the PhysicsBowl website (please keep checking it) as we look to make some possibly more substantial changes in the near future.

Thank you for participating,

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AAPT PHYSICSBOWL 2014

TOP TEN OVERALL DIVISION 01 SCORES

#	Reg	Score	Student	School	City	State
1	13	*40*	**Samineni, Aneesh V**	The King's Academy	Sunnyvale	CA
2	03	*39*	**Singhal, Karan**	Brown Academy	Great Neck	NY
3	13	*38*	**Lu, Kelvin**	Mission San Jose HS	Fremont	CA
4	03	*36**	**Liu, Stephen**	Bayview Secondary School	Richmond Hill	ON
5	14	*36**	**Liang, Junhao**	Guangdong Country Garden School	Foshan	China
6	08	*36*	**Yim, Justin H**	Vernon Hills HS	Vernon Hills	IL
7	01	*35**	**Kim, Leon M**	Thomas Jefferson HSST	Alexandria	VA
8	01	*35**	**Dempsey, Ross**	Thomas Jefferson HSST	Alexandria	VA
9	14	*35**	**Huang, Taowen**	China-UK College	Shenzhen	China
10	07	*35*	**Yap, Brendan S**	Carmel HS	Carmel	IN

TOP TEN OVERALL DIVISION 02 SCORES

#	Reg	Score	Student	School	City	State
1	07	*37*	**Fei, Kevin C**	Carmel HS	Carmel	IN
2	01	*34**	**Winer, Michael H**	Montgomery Blair HS	Silver Spring	MD
3	04	*34**	**Shi, Jason**	West Windsor-Plainsboro S	Princeton Junction	NJ
4	01	*34**	**Bourzutschky, Alexander**	Montgomery Blair HS	Silver Spring	MD
5	13	*34**	**Huang, Matthew Z**	The Harker School	San Jose	CA
6	13	*34**	**Pan, Christina A**	Monta Vista HS	Cupertino	CA
7	13	*34**	**Sridhar, Rahul**	The Harker School	San Jose	CA
8	03	*34**	**Wu, Henry**	Univ of Toronto Schools	Toronto	ON
9	06	*34*	**Park, Edward S**	Walton HS	Marietta	GA
10	14	*33**	**Xia, Shangzhou**	Shenzhen Middle School	Shenzhen	China

Note: Ranking for tied scores is based on the tiebreaker rules… scoring from the end of the test to the front. There were multiple other scores of 33 both in Divisions 01 that did not make the top 10 overall because of the tiebreaks.

Note: These students are recognized as "overall" winners and are removed from the regional winners pool.

AAPT PHYSICSBOWL 2014

Top Two Highest Scoring *Division 01* Students in each Region

Reg	Score	Student	School	City	State
01	32*	Shanker, Nirmaan	Thomas Jefferson HSST	Alexandria	VA
01	32*	Lin, Raymond T	Montgomery Blair HS	Silver Spring	MD
02	31*	Lipman, Matt	Boston Univ Academy	Melrose	MA
02	31*	DiCarlo, Steven	New Canaan HS	New Canaan	CT
03	34	Du, Richard	Marc Garneau CI	Toronto	ON
03	33	Chen, Christina	Marc Garneau CI	Toronto	ON
04	33*	Raguram, Aditya	Princeton HS	Princeton	NJ
04	33	Wen, Albert M	Union County Magnet HS	Scotch Plains	NJ
05	31	Taylor, Benjamin A	Morgantown HS	Morgantown	WV
05	29	Zheng, Matthew D	William G Enloe Magnet HS	Raleigh	NC
06	34	Doman, Josh	The Westminster Schools	Atlanta	GA
06	29	Jang, Eujin	Walton HS	Marietta	GA
07	33	Patel, Joshen P	Detroit Country Day HS	Beverly Hills	MI
07	29*	Dhungana, Asim	Carmel HS	Carmel	IN
08	30*	Gharrity, Matthew J	Stoughton HS	Stoughton	WI
08	30	Chang, William J	Adlai Stevenson HS	Lincolnshire	IL
09	32	Zhang, Mason	Wayzata HS	Plymouth	MN
09	29	Mangalick, Varun R	Mounds View HS	Arden Hills	MN
10	30*	Sui, Victor	Alabama School of Fine Arts	Birmingham	AL
10	30	Cao, Amanda Q	John Burroughs School	Saint Louis	MO
11	33	Ashqeen, Kaab A	Grapevine HS	Grapevine	TX
11	32	Zhou, Fan F	William P Clements HS	Sugar Land	TX
12	33	Fan, Frank P	Arcadia HS	Arcadia	CA
12	32	Chen, Kevin	San Diego Math Circle	San Diego	CA
13	33*	Lin, Michael J	Olympia Institute	San Francisco	CA
13	33*	Zhang, Kristine A	Saratoga HS	Saratoga	CA
14	34*	Zhang, Mengchun	Jinan Foreign Language Sch	Shandong Prov.	China
14	34	He, Li Le	New Westminster Secondary	New Westminster	BC

* = place determined by tiebreaker

AAPT PHYSICSBOWL 2014

Merit Roll – Division 01 – Top 20 scores not in Top 2 of Region

Reg	Score	Student	School	City	State
14	33*	Liu, Shaoyu	Shenzhen Foreign Language	Shenzhen	China
14	33*	Yu, Sean	Newport HS	Bellevue	WA
14	33(tie)	Li, Yifei	Qingdao Shandong A-Level	Jinan, Shandong	China
14	33(tie)	Dong, Hongyang	Qingdao Shandong A-Level	Jinan, Shandong	China
14	33*	Yang, Yuepeng	Shenzhen Middle School	Shenzhen	China
14	33*	Huang, Rundong Y	Gao Xin No. 1 HS	Xi'An	China
13	33	Park, Jongho	University HS-Irvine	Irvine	CA
04	32*	Dai, Samuel	Princeton HS	Princeton	NJ
13	32*	Qian, Jimmy J	Mission San Jose HS	Fremont	CA
13	32*	Zeng, Kevin S	Mission San Jose HS	Fremont	CA
03	32*	Chen, XinTong	Rockland Country Day School	Congers	NY
01	32*	Chen, Lucas M	School for Talented & Gifted	Dallas	TX
14	32*	Xu, Rongzhen	Cambridge Int Cent Shanghai	Shanghai	China
14	32*	Jin, Ruiyang	Cambridge Int Cent Shanghai	Shanghai	China
01	32*	Anandasivam, Nirosha	Science Academy of S Texas	Mercedes	TX
14	32	Yang, Chuanlin	Shenzhen Foreign Language	Shenzhen	China
12	31*	Nichani, Eshaan	Canyon Crest Academy	San Diego	CA
04	31*	Zhao, Richard L	Millburn HS	Millburn	NJ
14	31*	Yan, Shiyu	Cambridge Int Cent Shanghai	Shanghai	China
14	31*	Xu, Xiaoqing	Qingdao Shandong A-Level	Jinan, Shandong	China

The students identified in yellow will be receiving prizes for the highest 2 scores outside of the top 2 in a region.

AAPT PHYSICSB**O**WL 2014

Top Two Highest Scoring *Division 02* Students in each Region

Reg	Score	Student	School	City	State
01	33	**Offertaler, Bendeguz**	Montgomery Blair HS	Silver Spring	MD
01	31	**Busis, Adam R**	Montgomery Blair HS	Silver Spring	MD
02	28	**Chaisena, Premanan**	Salisbury School	Salisbury	CT
02	25	**Jing, Zilun**	The Gunnery	Washington Depot	CT
03	30	**Ni, Chris**	Ay Jackson Secondary School	Toronto	ON
03	29	**He, Andrew Z**	Kings Park HS	Kings Park	NY
04	33	**Shao, Christopher**	West Windsor-Plainsboro North	Plainsboro	NJ
04	32	**Tao, Sean H**	North Allegheny Senior High	Wexford	PA
05	27	**Neves, Paul M**	Thomas S Wootton HS	Rockville	MD
05	24	**Luo, Justin Z**	William G Enloe Magnet HS	Raleigh	NC
06	29	**Leekung, Chingyeu**	Stanton College Prep School	Jacksonville	FL
06	28*	**Agrawal, Shreyash**	Suncoast HS	Riviera Beach	FL
07	29	**Zeng, Aaron L**	Detroit Country Day HS	Beverly Hills	MI
07	28	**Wang, Andrew**	Centerville HS	Centerville	OH
08	31	**Li, Timothy**	Libertyville HS	Libertyville	IL
08	29	**Baumruk, Jack**	Libertyville HS	Libertyville	IL
09	22	**MacDonald, William**	Minnetonka HS	Minnetonka	MN
09	21*	**Yoon, Seiyoung**	St. John's Prep School	Collegeville	MN
10	26*	**Smith, Kai A**	Farragut HS	Knoxville	TN
10	26	**Ouyang, Richard L**	Memphis Univ School	Memphis	TN
11	32*	**Ashqeen, Quaan A**	Grapevine HS	Grapevine	TX
11	32	**Todes, Jordan P**	Glenda Dawson HS	Pearland	TX
12	31	**Chiu, Chih Yuan F**	Temple City HS	Temple City	CA
12	30	**Li, Tung**	Arcadia HS	Arcadia	CA
13	29*	**Han, Youngjean**	Monta Vista HS	Cupertino	CA
13	29*	**Li, Lawrence**	The Harker School	San Jose	CA
14	29	**Zhao, Zhiyue**	Shenzhen Foreign Language	Shenzhen	China
14	28	**Sivaprasad, Abhinand**	Interlake HS	Bellevue	WA

* = place determined by tiebreaker

PHYSICSBOWL 2014

Merit Roll – Division 02 – Top 20 scores not in Top 2 of Region

Reg	Score	Student	School	City	State
04	31*	Huang, Brice	West Windsor-Plainsboro N	Plainsboro	NJ
11	31	Schaumann, Jared M	John Foster Dulles HS	Sugar Land	TX
04	30*	Chen, Catherine	Ridge HS	Basking Ridge	NJ
01	30	Bell, John H	North Carolina SSM	Durham	NC
12	29*	Gentili, Paolo Y	Canyon Crest Academy	San Diego	CA
04	29*	Huang, Yan	West Windsor-Plainsboro S	Princeton Junction	NJ
04	29*	Liu, Samuel Z	Millburn HS	Millburn	NJ
01	29*	An, Michael	North Carolina SSM	Durham	NC
01	29*	Zhao, Dennis	Montgomery Blair HS	Silver Spring	MD
11	29*	Nagvekar, Rahul	John Foster Dulles HS	Sugar Land	TX
13	29	Gujjula, Preetham Reddy	Monta Vista HS	Cupertino	CA
11	28*	Patel, Aman S	John Foster Dulles HS	Sugar Land	TX
08	28*	Lu, Jason	Adlai Stevenson HS	Lincolnshire	IL
06	28*	Shih, Ryan M	Stanton College Prep School	Jacksonville	FL
13	28*	Xu, Congwen	Mission San Jose HS	Fremont	CA
01	28	Upshaw, James A	School for Talented&Gifted	Dallas	TX
01	27*	Are, Sreenath	Thomas Jefferson HSST	Alexandria	VA
07	27*	Fernando, Chrishan M	Carmel HS	Carmel	IN
04	27*	Li, Kevin Q	West Windsor-Plainsboro S	Princeton Junction	NJ
03	27*	Yang, Xiaocheng	St. Anthony HS	Melville	NY

The students identified in yellow will be receiving prizes for the highest 2 scores outside of the top 2 in a region.

TOP FIVE OVERALL DIVISION 01 TEAM SCORES

#	Reg	Score	School	City	State
1	01	*162*	Thomas Jefferson HSST	Alexandria	VA
2	14	*157**	Qingdao, Shandong A-level Center	Jinan, Shandong	China
3	14	*157**	Shenzhen Foreign Languages School	Shenzhen	China
4	14	*157*	Cambridge International Center of Shanghai Normal University	Shanghai	China
5	13	*155*	Saratoga HS	Saratoga	CA

TOP FIVE OVERALL DIVISION 02 TEAM SCORES

#	Reg	Score	School	City	State
1	01	*161*	Montgomery Blair HS	Silver Spring	MD
2	13	*150*	The Harker School	San Jose	CA
3	04	*139*	West Windsor Plainsboro South	Princeton Junction	NJ
4	11	*137**	Carmel HS	Carmel	IN
5	07	*137*	John Foster Dulles HS	Sugar Land	TX

Note: The team tie-break (*) is that the tie goes to the school with the highest scoring student.

Note: These schools are recognized as "overall" winners for each Division and are removed from that Division's regional winners pool.

AAPT PHYSICSBOWL 2014

Top 4 schools in each Region by Division
The columns are "Rank," "Score," "School," "Location"
Yellow indicates First Place winner
Blue indicates Second Place winner
Green indicates highest scoring non top 2 winner!
Top 5 overall schools are removed from the Regional competition

REGION 01

		DIV 01				DIV 02	
1	136	Science Academy of S Texas	TX	1	119	Bergen County Academies	NJ
2	135	Montgomery Blair HS	MD	2	112	Stuyvesant HS	NY
3	134	Oklahoma School Science/Math	OK	3	111 (tie)	Oklahoma School Science/Math	OK
4	133	Stuyvesant HS	NY	3	111 (tie)	Thomas Jefferson HSST	VA

REGION 02

		DIV 01				DIV 02	
1	144	New Canaan HS	CT	1	106*	The Gunnery	CT
2	142	Guilford HS	CT	2	106	New Canaan HS	CT
3	114	Middlesex School	MA	3	95	Hopkins School	CT
4	102	Hopkins School	CT	4	90	Middlesex School	MA

REGION 03

		DIV 01				DIV 02	
1	140	Marc Garneau CI	ON	1	116	University of Toronto Schools	ON
2	136	Olympiad Academia	NY	2	110	Herricks HS	NY
3	127	Great Neck South HS	NY	3	102	Brewster HS	NY
4	120	Brown Academy	NY	4	99	Kings Park HS	NY

REGION 04

		DIV 01				DIV 02	
1	153	Millburn HS	NJ	1	132	West Windsor-Plainsboro North	NJ
2	143	Princeton HS	NJ	2	126	Ridge HS	NJ
3	140	Watchung Hills Regional HS	NJ	3	117	Millburn HS	NJ
4	125*	John P Stevens HS	NJ	4	116	North Allegheny Senior HS	PA

AAPT PHYSICSBOWL 2014

REGION 05

	DIV 01				DIV 02		
1	132	William G Enloe Magnet HS	NC	1	116	Thomas S Wootton HS	MD
2	128	Thomas S Wootton HS	MD	2	73	Poolesville HS	MD
3	115	Morgantown HS	WV	3	68	Academy of the Holy Cross	MD
4	94	Archmere Academy	DE	4	56	William G Enloe Magnet HS	NC

REGION 06

	DIV 01				DIV 02		
1	135*	Walton HS	GA	1	127	Stanton College Preparatory School	FL
2	135	Stanton College Preparatory School	FL	2	119	Suncoast HS	FL
3	124	West Shore Jr/Sr HS	FL	3	118	Weber School	GA
4	116	Johns Creek HS	GA	4	112	West Shore Jr/Sr High	FL

REGION 07

	DIV 01				DIV 02		
1	145	Carmel HS	IN	1	119	Detroit Country Day HS	MI
2	133	Hawken School	OH	2	111	Hawken School	OH
3	119	Detroit Country Day HS	MI	3	106	Centerville HS	OH
4	114	Beachwood HS	OH	4	92	Brother Rice HS	MI

REGION 08

	DIV 01				DIV 02		
1	140	Vernon Hills HS	IL	1	134	Libertyville HS	IL
2	133	Libertyville HS	IL	2	118	Vernon Hills HS	IL
3	106	Stoughton HS	WI	3	104	Glenbrook South HS	IL
4	88	College Preparatory School of America	IL	4	102	Northside College Prep HS	IL

REGION 09

	DIV 01				DIV 02		
1	127	Wayzata HS	MN	1	98	Saint John's Prep School	MN
2	121	Minnetonka HS	MN	2	78	Minnetonka HS	MN
3	112	Lourdes HS	MN	3	76	Mayo HS	MN
4	106	Mounds View HS	MN	4	63	Millard South HS	NE

AAPT PHYSICSB*O*WL 2014

REGION 10

	DIV 01				DIV 02		
1	130	**Alabama School of Fine Arts**	**AL**	1	120	**Memphis Univ School**	**TN**
2	128*	**John Burroughs School**	**MO**	2	109	**Farragut HS**	**TN**
3	128	Baton Rouge Magnet HS	LA	3	102	Clayton HS	MO
4	118	Montgomery Bell Academy	TN	4	89	Oak Ridge HS	TN

REGION 11

	DIV 01				DIV 02		
1	124*	**Grapevine HS**	**TX**	1	111	**William P Clements HS**	**TX**
2	124	**John Foster Dulles HS**	**TX**	2	109	**Grapevine HS**	**TX**
3	113	Wylie HS	TX	3	105	Allen HS	TX
4	111	William P Clements HS	TX	4	90	Glenda Dawson HS	TX

REGION 12

	DIV 01				DIV 02		
1	150	**Arcadia HS**	**CA**	1	115	**The Bishop's School**	**CA**
2	130	**North Hollywood HS**	**CA**	2	95	**South Pasadena HS**	**CA**
3	119	Palos Verde Peninsula HS	CA	3	84	Westlake HS	CA
4	118	San Diego Math Circle	CA	4	78	Palos Verde Peninsula HS	CA

REGION 13

	DIV 01				DIV 02		
1	153	**University HS-Irvine**	**CA**	1	135	**Monta Vista HS**	**CA**
2	143*	**Monta Vista HS**	**CA**	2	102	**Mission San Jose HS**	**CA**
3	143	**SpringLight Education Institute**	**CA**	3	96	Stevenson School	CA
4	127	Mission San Jose HS	CA	4	72	University HS-Irvine	CA

REGION 14

	DIV 01				DIV 02		
1	154	**Gao Xin No. 1 HS**	**China**	1	121	**Shenzhen Middle School**	**China**
2	152	**New Westminster Secondary School**	**BC**	2	119	**Interlake HS**	**WA**
3	143	**Jinan Foreign Language Schools**	**China**	3	112	Westview HS	OR
4	135*	Newport HS	WA	4	110	WHBC	China