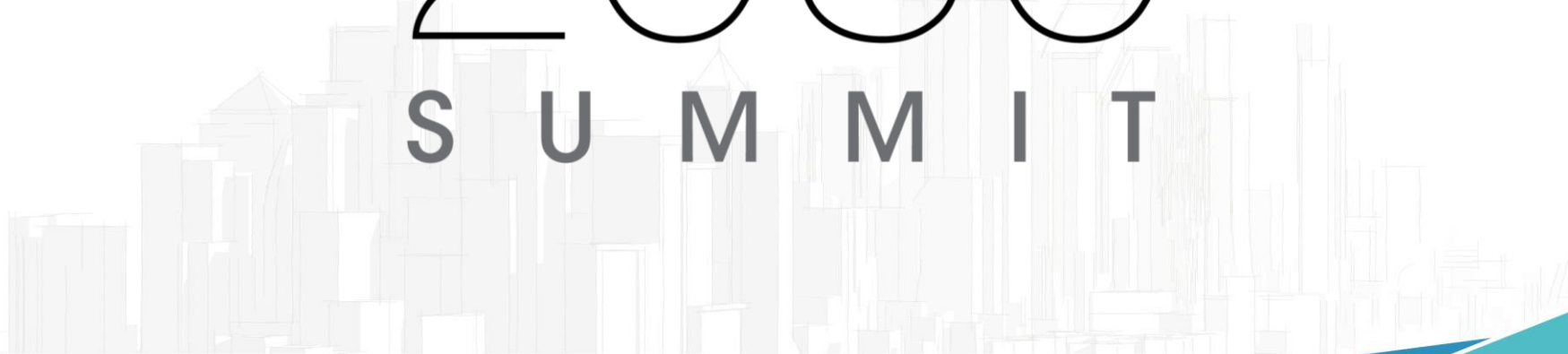


V I S I O N



2030

S U M M I T



**MATHEMATICS EDUCATION
FOR UNLOCKING THE GATEWAY
TO SKILLS DEVELOPMENT AND INCLUSIVE
ECONOMIC GROWTH**

Prof Renuka Vithal
21 June 2018

Mathematics Education has a key role and function in the twin challenges of:

- Growing an inclusive and competitive economy and
- Deepening and strengthening democracy

National Development Plan Long-Term Goals for Basic Education

- ❖ improving literacy and numeracy/mathematics outcomes;
- ❖ increasing the number of learners eligible to study mathematics and science degrees at university;
- ❖ improving performance in international comparative studies;
- ❖ retaining learners

NDP GOAL: improve performance in international comparative studies

NDP Target: TIMSS grade 8 scores should reach 500 points by 2030

Trends in Mathematics and Science Study (TIMSS)	
Mathematics Grade 9	Average Scale Score (SE)
2003	285 (4.2)
2011	352 (2.5)
2015	372 (4.5)
Mathematics Grade 5	
2015	376 (3.4)

Human Sciences Research Council Reports (2017)

**TIMSS Benchmark category
“low”: 400-475 points**

“intermediate”: 475-550

➤ 34% of Gr 9

➤ 39% of Gr 5

Obtained scores above 400

NDP GOAL

increasing the number of learners eligible to study mathematics and science degrees at university

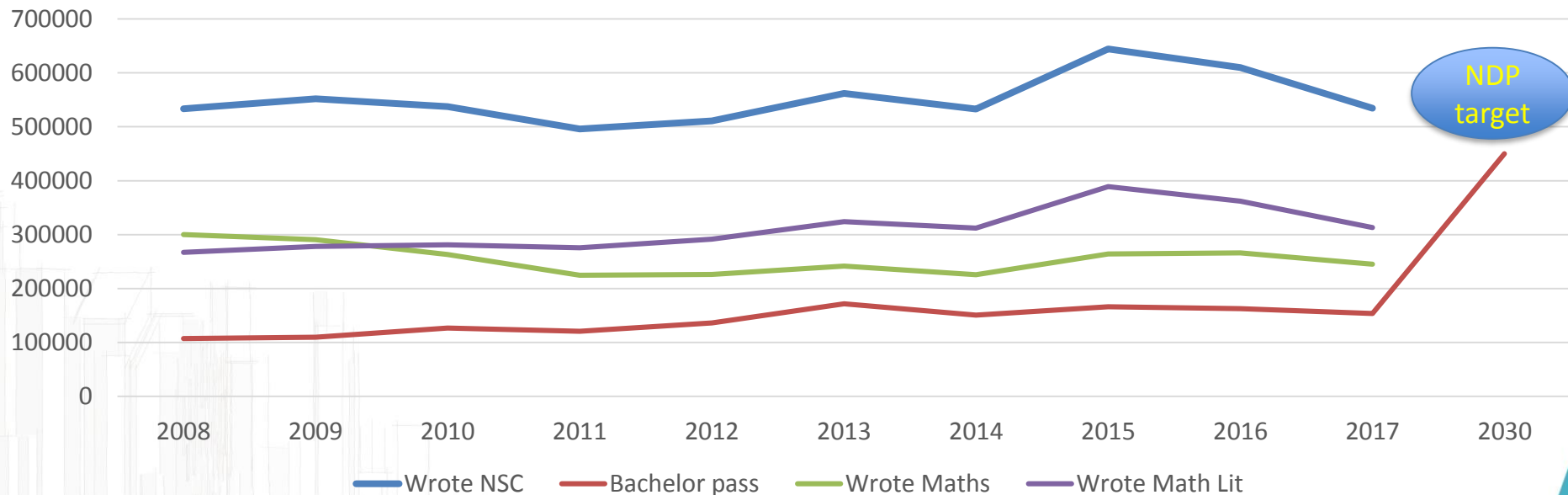
NDP Target: 450 000 learners eligible for a Bachelor's programme with maths and science

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Wrote NSC	533561	552073	537543	496090	511152	562112	532860	644536	610178	534848
Bach Deg	107274	109697	126371	120767	136047	171755	150752	166263	162374	153610
%	20.1	19.9	23.5	24.3	26.6	30.6	28.3	25.8	26.6	28.7

CAPS

NSC: Number wrote; degree pass; mathematics and mathematical literacy

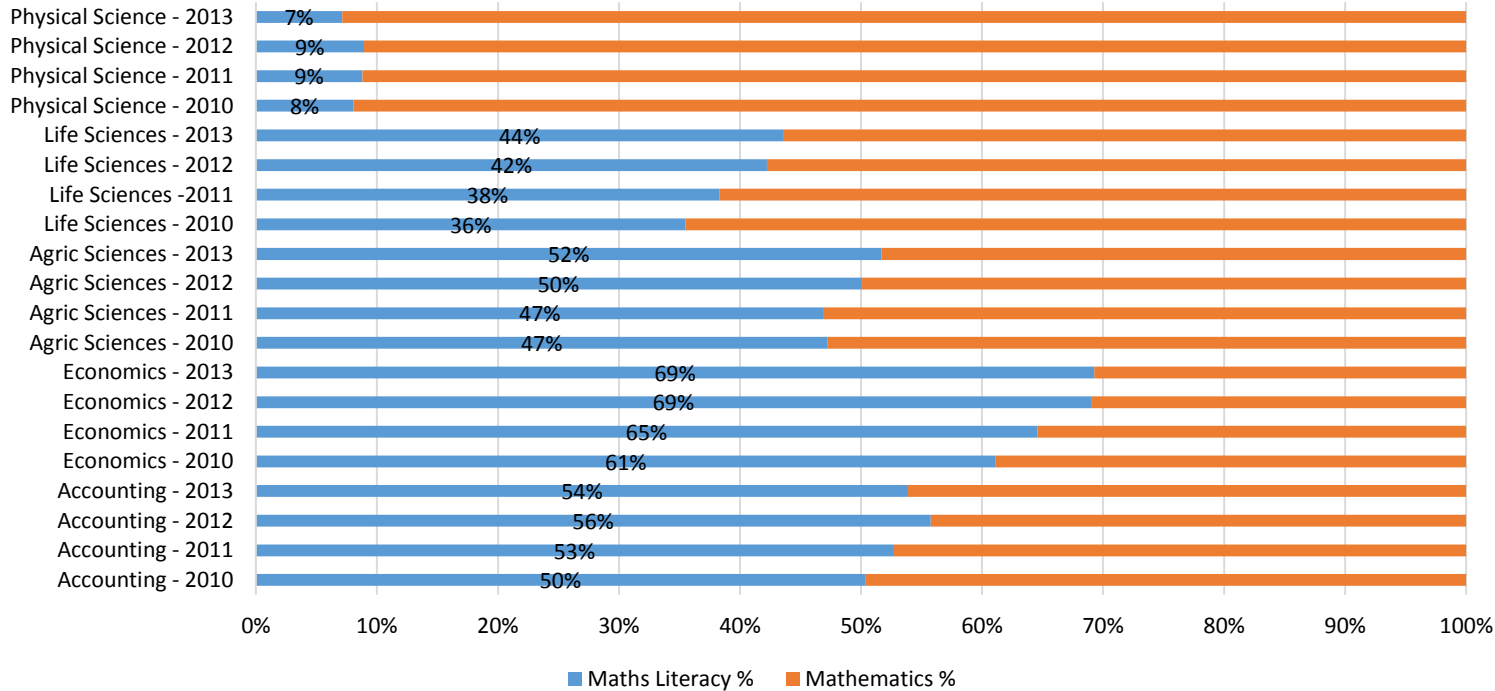
A decade of the NSC (2008-2017)



NSC: Wrote Mathematics and passed

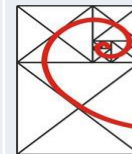
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Wrote Maths	300008	290630	263034	224635	225874	241509	225458	263903	265810	245103
Pass +30%	136503	133505	124749	104033	121970	142666	120523	129481	135958	127197
%	45.5	45.9	47.4	46.3	54.0	59.0	53.5	49.1	51.1	51.9
Pass +40%	89788	85356	81506	67592	81000	97748	79037	84273	89084	86098
%	29.9	29.4	30.0	30.1	35.9	40.5	35.1	31.9	33.5	35.1

Grade 12 Examination Subject Combinations in the NSC (2010-2013)



SNAP CALCULATOR SURVEY

CALCULATOR SURVEY	Grade 12		Grade 10+11+12		FET
	Without Calculator	% Without calculator	Without Calculator	Enrolled	% Without calculator
High Schools (Urban Township)					
School A	104	78%	316	442	72%
School B	52	73%	204	267	76%
School C	22	47%	60	119	50%
School D	117	91%	346	408	85%
School E	12	63%	47	75	63%
TOTAL	307	70%	973	1311	69%
	Without Calculator	% Without calculator			
School F (Rural)	43	86%			



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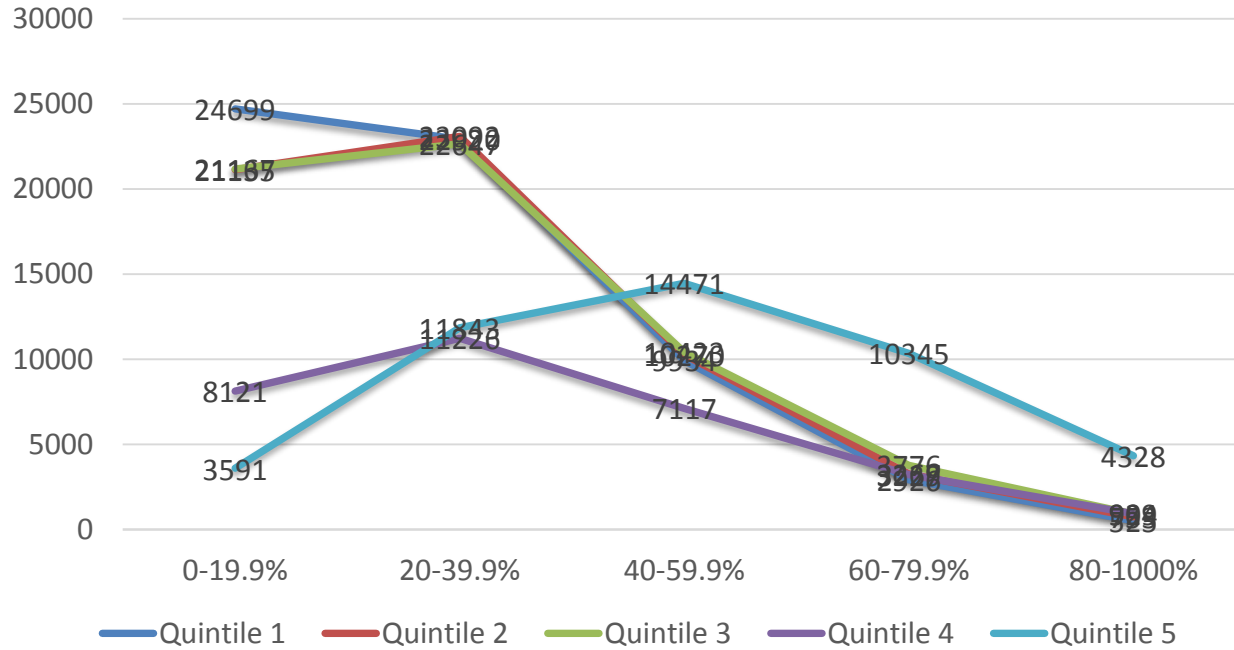
CENTRE FOR THE ADVANCEMENT OF SCIENCE AND MATHEMATICS EDUCATION

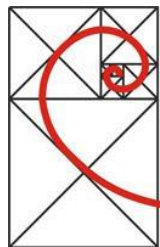
NSC MATHEMATICS PERFORMANCE BY QUINTILE

School Quintile* Rank	Total Number 2016	0-19.9 %	20-39.9 %	40-59.9 %	69-79.9 %	80-100 %
1	61018	40.5	37.6	16.3	4.8	0.9
2	58527	36.1	39.5	17.5	5.6	1.3
3	58933	35.9	38.4	17.7	6.4	1.5
4	30621	26.5	36.7	23.2	10.5	3.0
5	44590	8.1	26.6	32.5	23.2	9.7
0	12121	18.9	32.7	27.6	15.7	5.2
Total	265810	30.5	36.0	20.9	9.6	3.0

*Quintile 1+2+3 are No-Fee Schools

NSC Mathematics Performance by School Quintiles (2016)





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CENTRE FOR THE ADVANCEMENT OF SCIENCE AND MATHEMATICS EDUCATION

<http://www.casme.org.za/news/futurefund-aims-high-to-put-10000-calculators-into-learners-hands>

SUPPORT THE FUTURE FUND

DONATION BANKING DETAILS:

The Centre for the Advancement of Science
and Mathematics Education Trust
(Trust registration Number T623/85)

Standard Bank of SA
Glenwood Branch

Branch Code: 042526

Account Number: 051193132

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