

COMPARISION OF MATHEMATICS CURRICULUM

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1



1



1



2



2



2



3



3



3



NATIONAL LANGUAGE

Bahasa Malaysia

CAPITAL

Kuala Lumpur

ECONOMY

CLICK HERE

BUDGET

RM52.7 billion (2013)
RM55.6 billion (2014)
RM56.63 billion (2015)
RM54.74 billion (2016)
RM52.4 billion. (2017)



POLITICS

Democratic

TRANSPORTATION

- **Railway System** covers a total of 1,849 km.
- **Has 6 International Airports.**
- **Main highway extends over 800 km, reaching the Thai border from Singapore.**

Foreign Trade Indicators	2011	2012	2013	2014	2015
Imports of Goods (million USD)	187,473	196,393	205,897	208,851	175,961
Exports of Goods (million USD)	228,086	227,538	228,331	233,927	199,869
Imports of Services (million USD)	38,083	43,131	44,973	45,161	39,814
Exports of Services (million USD)	38,751	40,498	42,005	41,860	34,759

Source: WTO – World Trade Organisation, 2016

ECONOMY
Exchange Rate on December 09, 2016:

National Currency: Malaysian Ringgit (MYR)

1 MYR = 0.2261 USD, 1 USD = 4.4227 MYR

1 MYR = 0.2134 EUR, 1 EUR = 4.6869 MYR

system which includes a variety of private freedom, combined with centralized economic planning and government regulation. Malaysia is a member of the Asia-Pacific Economic Cooperation (APEC), the Association of Southeast Asian Nations (ASEAN), and the Trans-Pacific Partnership (TPP).

EDUCATION SYSTEM

Overview of the Structure of Malaysia's Education Systems.

- ✓ Based on a 6+3+2 system.
- ✓ Pre-school (age 4-6)
- ✓ 6 years of primary school
- ✓ 3 years of lower secondary school referred as Secondary 1, 2 and 3.
- ✓ Secondary education for Malaysian students starts at the age of 13.
- ✓ 2 years of upper secondary school referred as Secondary 4 and 5.

Maths. Teaching Language

Primary Level

SK learn Maths in Bahasa Malaysia

**SJKC learn Maths in Bahasa
Mandarin**

SJKT learn Maths in Bahasa Tamil

Secondary Level

All learn in Bahasa Malaysia

University Level

Learn In English

Mathematics Curriculum

ASSESSMENT METHODS

Formative Assessment

Project work, (models,GSP)
Classroom
activities/homeworks
Discussion/presentation
Test/examination

Summative Assessment

Primary 6 : UPSR
Lower Secondary : PT3
Upper Secondary : SPM
Pre-University : STPM

TOPICS

- ❖ Numbers and Operations.
- ❖ Measurement and Geomet
- ❖ Relationship and Algebra.
- ❖ Statistics and Probability.
- ❖ Discrete Numbers.

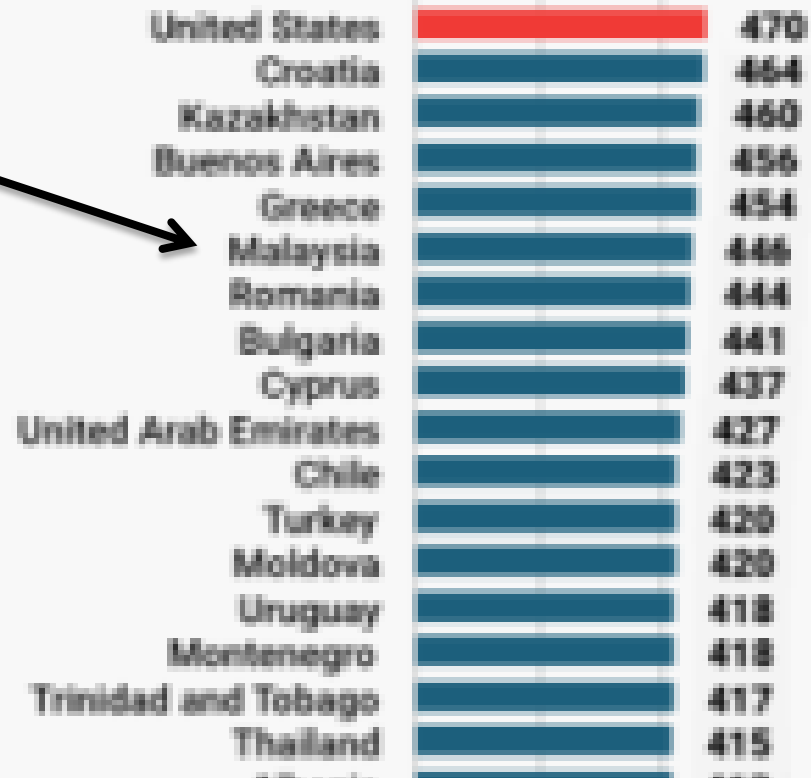
TEACHING APPROACHES

- ❖ Poblem based/Project Based
- ❖ Problem solving
- ❖ Inquiry-based Learning
- ❖ Constructivism
- ❖ Collaborative learning

ACHIEVEMENT IN MATHEMATICS

**TIMSS 2015
46th place**

**SCORE OF
TIMSS
FOR
GRADE 8
MATHS
465**



United States	470
Croatia	464
Kazakhstan	460
Buenos Aires	456
Greece	454
Malaysia	446
Romania	444
Bulgaria	441
Cyprus	437
United Arab Emirates	427
Chile	423
Turkey	420
Moldova	420
Uruguay	418
Montenegro	418
Trinidad and Tobago	417
Thailand	415



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MATHEMATICS CURRICULUM IN USA



1 Trillion

Rose

Eagle

Trans- 4 mode

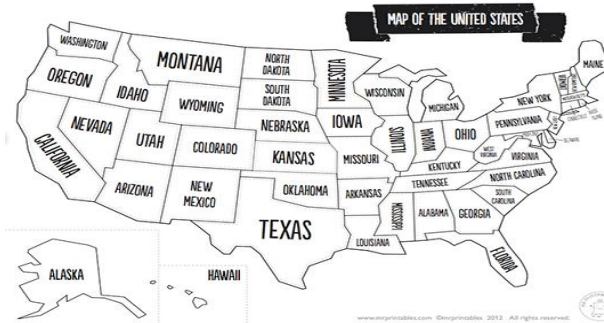
GDP 18.5 Tril

English

70.6% Kristian

July 4, 1776-GB

C.Columbus 1492



72.4% White

9.8 Mil km²

**Representative
Democracy**

50 States

USD

Washington D.C

325 Million

Barrack Obama



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AIM

to promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access

OBJECTIVES

- Universal literacy
- Knowledge & skills
- Welfare of individual, public and nation

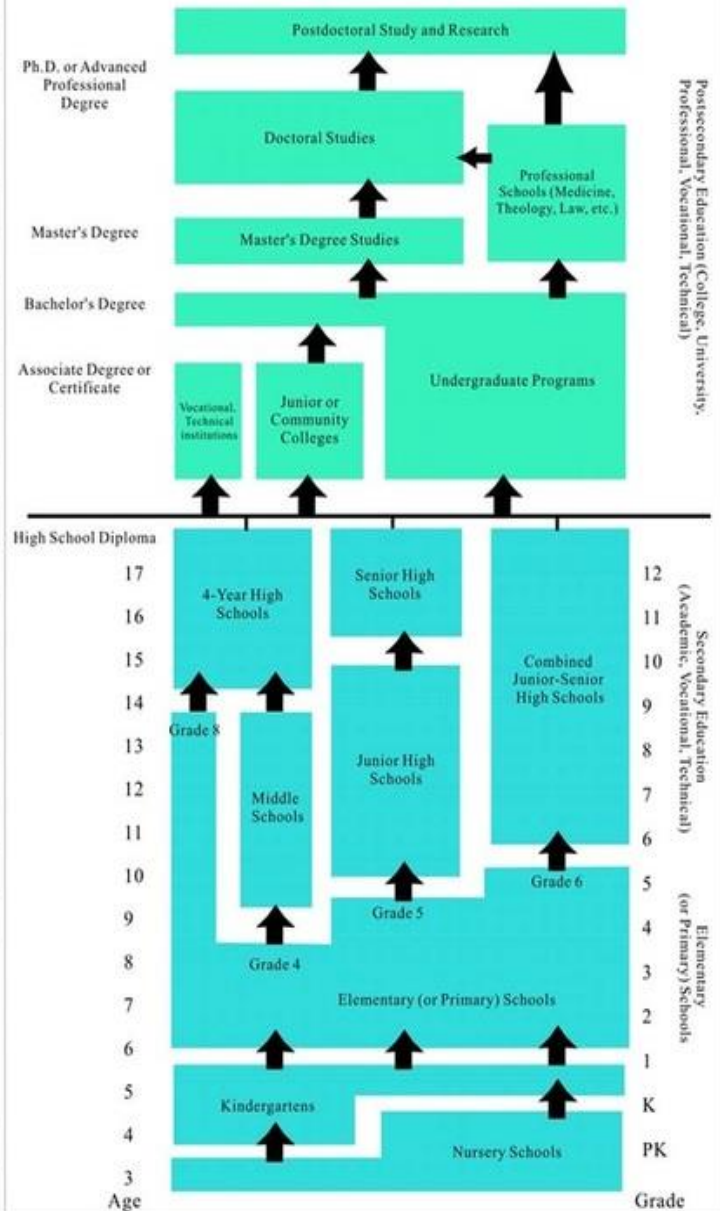


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Level/ Grade	Typical age
Preschool	
Various optional programs	Under 6
Pre-kindergarten	4-5
Elementary School	
Kindergarten	4-5
1st Grade	6-7
2nd Grade	7-8
3rd Grade	8-9
4th Grade	9-10
5th Grade	10-11
Middle School	
6th Grade	11-12
7th Grade	12-13
8th Grade	13-14
High School	
9th Grade	14-15
10th Grade	15-16
11th Grade	16-17
12th Grade	17-18
Post-secondary Education	
Tertiary education (College or University)	18-23
Vocational education	Ages vary
Graduate education	





TIMSS/PIRLS 2011

Math 4th Grade

Average = 500

US = 6th / 44

England	542 (3.5)
Russian Federation	542 (3.7)
United States	541 (1.8)
Netherlands	540 (1.7)
Denmark	537 (2.6)

Math 8th Grade

Average = 500

US = 4th / 37

Israel	516 (4.1)
Finland	514 (2.5)
United States	509 (2.6)
England	507 (5.5)
Hungary	505 (3.5)

Reading 4th Grade

Average = 500

US = 4th / 42

Russian Federation	568 (2.7)
Finland	568 (1.9)
United States	556 (1.5)
Denmark	554 (1.7)
Croatia	553 (1.9)

PISA 2012

Math

Average = 494

US = 29th / 58

Italy	485
Spain	484
United States	481
Sweden	478
Hungary	477

Science

Average = 501

US = 21st / 58

France	499
Denmark	498
United States	497
Spain	496
Norway	495

Reading

Average = 496

US = 17th / 58

Norway	504
United Kingdom	499
United States	498
Denmark	496
Czech Republic	493

Problem Solving

Average = 494

US = 11th / 37

Czech Republic	509
Germany	509
United States	508
Belgium	508
Austria	506



TEACHING APPROACHES

Teacher-Centered Approach

Direct Instruction

- Formal Authority
- Expert
- Personal Model

Student-Centered Approach

Inquiry-Based Learning

- Facilitator
- Personal Model
- Delegator

Cooperative Learning

- Facilitator
- Delegator



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Assessment Method

Formative & Summative – NAGB - NAEP - STATE



United States			
A	90-100	A+	98-100
		A	93-97
		A-	90-92
B	80-89	B+	87-89
		B	83-86
		B-	80-82
C	70-79	C+	77-79
		C	73-76
		C-	70-72
D	60-69	D+	67-69
		D	60-66
F	0-59	F	0-59

FIGURE 2

State Composite: Mathematics topics intended at each grade by at least two-thirds of 21 U.S. states.

Note that topics are introduced and sustained in a way that produces no visible structure.

TOPIC	GRADE:	1	2	3	4	5	6	7	8
Whole Number Meaning		■	■	■	■	■	□		
Whole Number Operations		■	■	■	■	■	□		
Measurement Units		■	■	■	■	■	■	■	■
Common Fractions		□	■	■	■	■	■	□	□
Equations & Formulas		□	□	■	■	■	■	■	■
Data Representation & Analysis		■	■	■	■	■	■	■	■
2-D Geometry: Basics		■	■	■	■	■	■	■	■
Polygons & Circles		■	■	■	■	■	■	■	■
Perimeter, Area & Volume			□	□	□	■	■	■	■
Rounding & Significant Figures									
Estimating Computations		□	□	■	■	■	■	■	■
Properties of Whole Number Operations		□	□	□	□				
Estimating Quantity & Size				□					
Decimal Fractions				□	■	■	■	□	□
Relationship of Common & Decimal Fractions					□	□	□		
Properties of Common & Decimal Fractions									
Percentages						□	■	■	□
Proportionality Concepts							■	□	
Proportionality Problems							■	■	■
2-D Coordinate Geometry				□	■	□	□	□	■
Geometry: Transformations		■	■	■	■	■	■	■	■
Negative Numbers, Integers & Their Properties							□	■	□
Number Theory						■	□	□	□
Exponents, Roots & Radicals							□	□	■
Exponents & Orders of Magnitude								□	□
Measurement Estimation & Errors		□	□	■	□	■	■	■	□
Constructions w/ Straightedge & Compass									
3-D Geometry		■	■	■	■	■	■	■	■
Congruence & Similarity						□	■	■	□
Rational Numbers & Their Properties							■	■	□
Patterns, Relations & Functions		■	■	■	■	■	■	■	■
Slope & Trigonometry									
Number of topics covered by at least 67% of the states		14	15	18	18	20	25	23	22
Number of additional topics intended by states to complete a typical curriculum at each grade level		8	8	7	8	8	5	6	6
□ – intended by 67% of the states		■ – intended by 83% of the states		■ – intended by 100% of the states					



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MATHEMATICS CURRICULUM IN CHINA

Primary: 280,184
Secondary: 87,665

Capital:
Beijing

Area:
9,596,961 km

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Western style
democracy

President: Xi -
Jinping

agriculture: 29.5%,
industry: 29.9%,
services: 40.6%
(2014)

Population:
1,376,049,000

World largest economy by
purchasing power parity

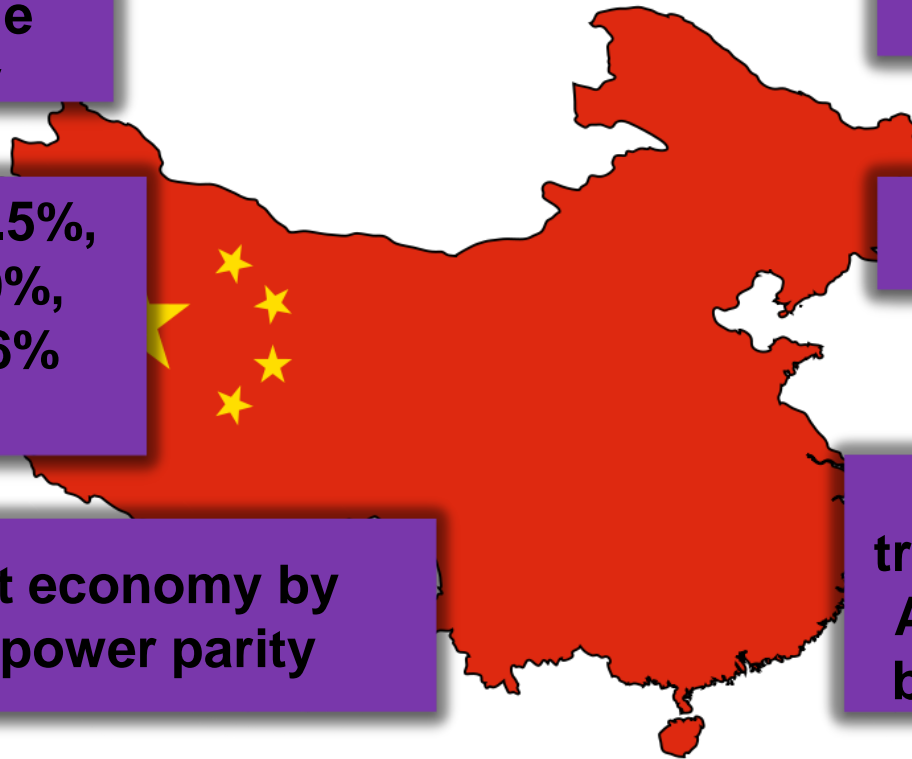
Metro, Maglev
train, Tibet, Subways,
Aeroplane, electric
bicycle, trolley-bus

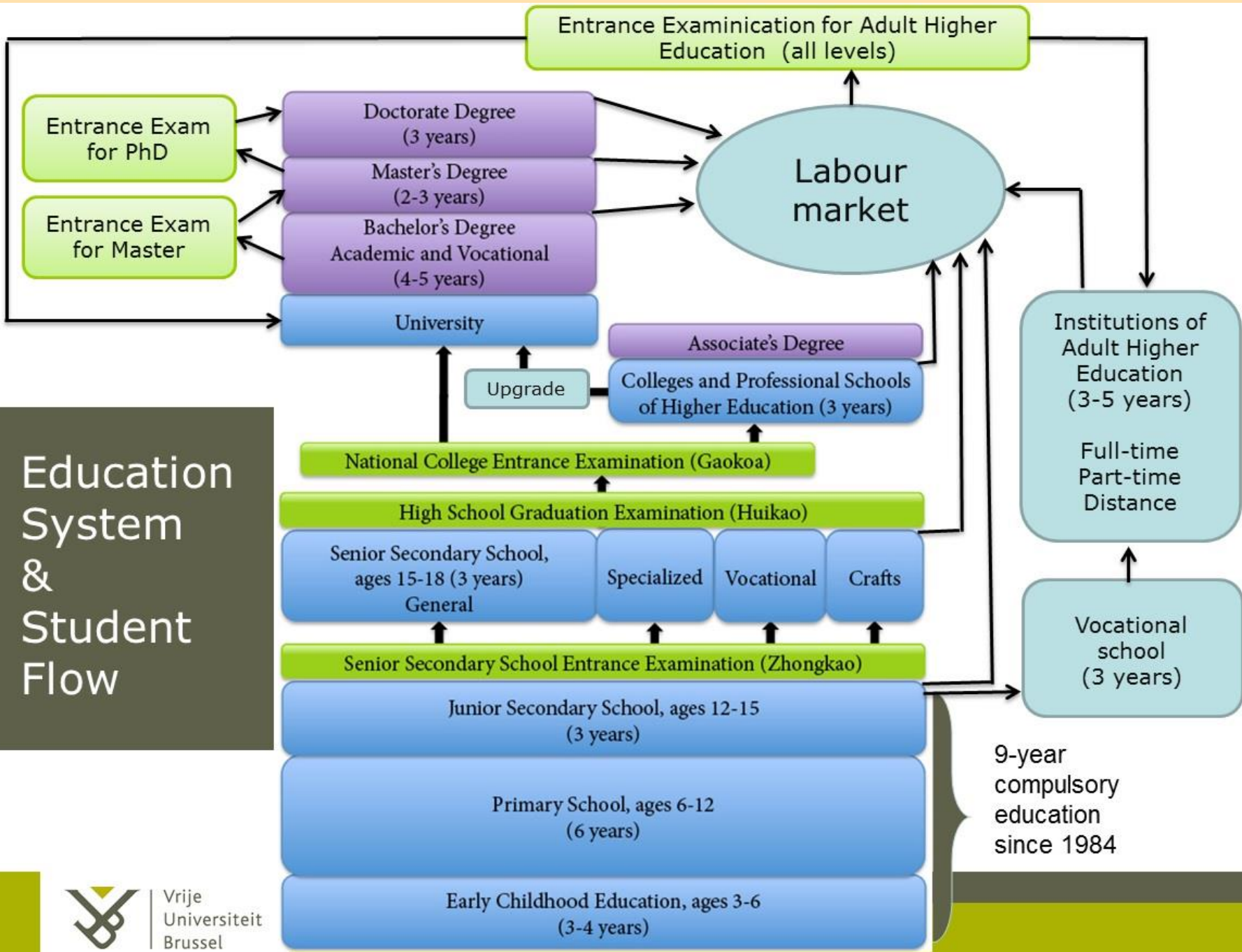
Plum blossom

Mandarin

"The Chinese people have
stood up!"

Panda







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Target for educational development

	2009	2015	2020
Preschool education			
Kindergarten enrolment (in millions)	27	34	40
Gross enrolment rate at three years prior to compulsory education (%)	51 %	60%	70%
Gross enrolment rate at one year prior to compulsory education (%)	74 %	85%	95%
Nine-year compulsory education (i.e. primary and junior secondary education)			
Enrolment (in millions)	158	161	165
Graduation rate (%)	91 %	93%	95%
Senior secondary education			
Enrolment (in millions)	46	45	47
Gross enrolment rate (%)	79 %	87%	90%
Vocational education			
Junior secondary vocational enrolment (in millions)	22	23	24
Senior secondary vocational enrolment (in millions)	13	14	15
Higher education			
Total number of people studying in higher education (in millions)	30	34	36
Enrolment (in millions)	28	31	33
Master's degree students within the enrolment (in millions)	1.4	1.7	2.0
Gross enrolment rate (%)	24 %	36%	40%
Continuing education			
Continuing education received by working people (in million times)	17	29	35



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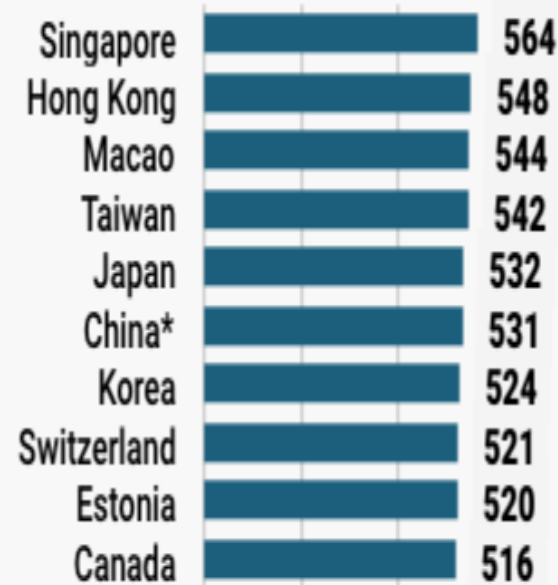
PISA 2012 resul

Math

Ranking	Mean	Country
1	613	Shanghai-China
2	573	Singapur
3	561	Hong Kong-China
4	560	Chinese Taipei
5	554	Korea
6	538	Macao-China
7	536	Japan
8	535	Liechtenstein
9	531	Switzerland
10	523	Netherlands

2015 PISA

Math





Aim

- to Build A Country with Rich Human Resources

Objective

- Nine year compulsory education.
- Chinese education will be the development of the moral and ethical character of the nation's workforce.
- must serve the construction of the socialist modernization, be combined with production and labor, and foster builders and successors with all round development of morality, intelligence and physique for the socialist cause.



Primary

38 weeks of teaching and 13 weeks of holidays

Moral Education, Chinese Language, Mathematics, Social Studies, Natural Science, Physical Education, Music Arts, and Labour Services,

Secondary

Politics, Chinese Language, Mathematics, Foreign Language, History, Geography, Physics, Chemistry, Biology, Physical Education, Music, Art, and Household Skills.



Compulsory module(secondary)

- Mathematics 1: Set, concept of function, and basic elementary function I (exponential function, logarithmic function, power function).
- Mathematics 2: Preliminary solid geometry, preliminary plane analytic geometry.
- Mathematics 3: Preliminary algorithms, statistics, probability.
- Mathematics 4: Basic elementary function II (trigonometric function), vectors on a plane, trigonometric identity transformation.
- Mathematics 5: Solution of a triangle, sequence, inequality



Assessment method & grading

- Formative
- Year-end
- Term-end

(Maths and Chinese compulsory exam)

Most Common Grading Scales for Secondary Schools in China

GRADE	WES EQUIVALENT
85-100	A
75-84	B
60-64	C
0-59	F

Most Common Grading Scales for Secondary Schools in China

GRADE	WES EQUIVALENT
127-150	A
112-126	B
90-111	C
0-89	F



Teaching approaches/methods

- “chalk and talk” approach
- teacher-directed method of learning, where the teacher spends more time standing at the front of the class, directing learning and controlling classroom activities.



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**THANK
YOU**