

COMPARISON OF MATHEMATICS CURRICULUM (MALAYSIA, IRELAND, RUSSIA)

Group Members:

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- Simple background
- Education system
- Age comparison
- Duration of mathematics in class
- Mathematics content
- Teaching approach
- Assessment

BACKGROUND OF
Malaysia Ireland Russia

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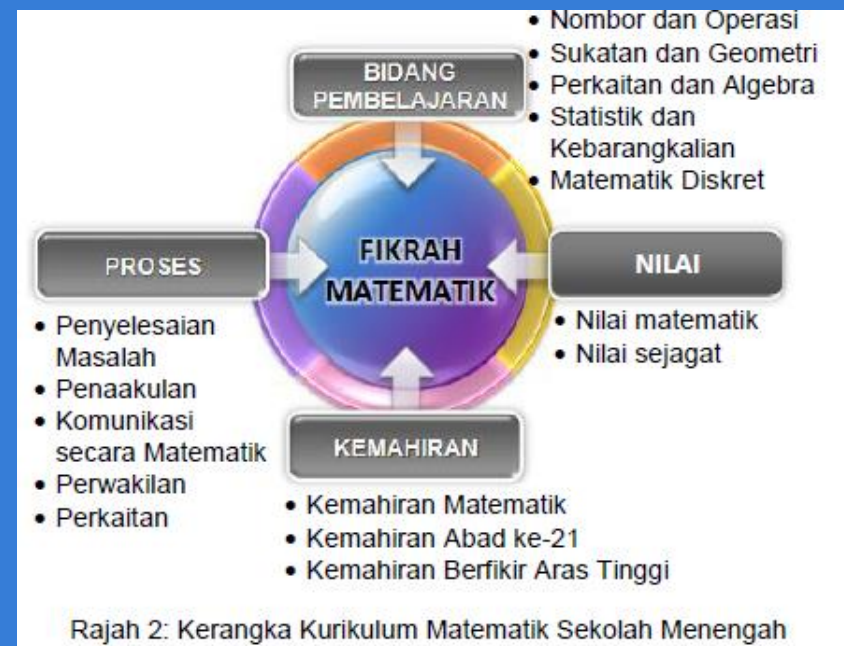
	Malaysia	Ireland	Russia
Area	329,960.22 km ² .	84,421 km ²	17,075,242 km ²
Capital city	Kuala Lumpur	Dublin	Moscow
Population	31.7 million	4.595 million	143 million
Government	Raja berperlembagaan	Constitutional Republic	Russian Federation (Persekutuan dan republik separa berpresiden)
Head of Education Department	 <p>YB Dato' Seri Mahdzir Bin Khalid</p>	 <p>Richard Bruton T.D</p>	 <p>Olga Vasilyeva</p>



Murid yang berfikrah matematik merupakan murid yang berkeupayaan melakukan matematik dan memahami idea matematik, serta mengaplikasikan secara bertanggungjawab pengetahuan dan kemahiran matematik dalam kehidupan harian berlandaskan sikap dan nilai.

Kandungan bagi KSSR Matematik adalah sebagaimana berikut:

<p>NOMBOR DAN OPERASI</p> <ul style="list-style-type: none"> • Nombor Bulat • Penambahan • Penolakan • Pendaraban • Pembahagian • Operasi Bergabung • Pecahan • Perpuluhan • Wang 	<p>SUKATAN DAN GEOMETRI</p> <ul style="list-style-type: none"> • Masa dan Waktu • Ukuran Panjang • Timbangan • Isipadu Cecair • Bentuk Tiga Dimensi • Bentuk Dua Dimensi
<p>PERKAITAN DAN ALGEBRA</p> <p>Bagi peringkat KSSR Matematik, tiada kandungan secara tajuk yang disenaraikan, ianya lebih berupa unsur secara tidak langsung.</p>	<p>STATISTIK DAN KEBARANGKALIAN</p> <ul style="list-style-type: none"> • Perwakilan Data • Purata • Peratus





PRIMARY
Years 1- 8

SECONDARY
Years 1-3 Junior Cycle
Year 4 Transition
Years 5-6 Senior Cycle

TERTIARY

TERTIARY			
<p><u>Universities</u> Primary Degrees Postgraduate Degrees Postgraduate Diplomas</p>	<p><u>Colleges of Technology</u> National Certificate National Diploma Primary Degree Postgraduate Degree</p>	<p><u>Colleges of Education</u> Primary Degree Postgraduate Degree</p>	<p><u>Independent Colleges</u> Diploma Primary Degree Postgraduate Degree Professional Qualifications</p>



Education System in Ireland

Education	School/Level	Grade From	Grade To	Age From	Age To	Years	Notes
Primary	Primary School	1	6	6	12	6	
Middle	Junior Secondary School			12	15	3	Certificate/diploma awarded: Junior Certificate (Teastas Sóisearach)
Secondary	Secondary School			15	17	2	School Leaving Certificate (Ardeistiméireacht)
Secondary	Vocational School			15	17	2	Leaving Certificate Vocational Programme (LCVP), Leaving Certificate (Ardeistiméireacht)
Vocational	Vocational Secondary School			16	18	2	Leaving Certificate Applied
Tertiary	Bachelor's Degree					4	Bachelor's Degree may be awarded as a General Degree, an Honours Degree and a BA (Special) Degree. In Veterinary Medicine, Architecture and Dentistry studies last for five years. Medicine takes six years.
Tertiary	Tertiary						
Tertiary	Master's Degree						
Tertiary	Doctorate					2	
Tertiary	Higher Doctorate					5	

- Free education for all students (11 years) except for higher education (university)
- Emphasis more on science and technology in education, medical research, mathematics, science and aerospace
- 1 September = Knowledge Day
- 40-45 minutes/class and 5-15 minutes recess
- Divided into primary (4 classes), basic (5/6 classes), and senior school (6/7 classes)

Objectives of learning mathematics

- mastering specific mathematics skills
- developing the students intellectual
- forming the view on mathematics as a
 - source of tools for describing and studying the real world
 - part of all-human culture

How to be a mathematics teacher?

- 5 years training in special Pedagogical Institutes
- plans of study must be approved by the federal Ministry of Educations
- trained in fundamental courses, pedagogy, psychology, methods of teaching, practical work
- exam/graduate paper



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Age comparison between Malaysia, Ireland, and russia



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JADUAL UMUR DAN SISTEM PENDIDIKAN DI MALAYSIA

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Junior
Infants (4)

Senior
Infants(5)

First
Class(6)

Second
class(7)

Third
Class(8)

Fourth
Class(9)

Fifth
Class(10)

Sixth
Class(11)

First
Year(12)

Second
Year(13)

Third
Year(14)

Transition
Year(15)

Fifth
Year(16)

Sixth
Year(17)

Starting age
6 or 7 years

Primary (Grades 1 – 4)
6/7 – 9/10 years

Basic (Grades 5 – 9)
10/11 – 14/15 years

EXAM

Senior (Grades 10 -11)
16/17 – 7/18 years

EXAM

Vocational



Country	Time
MALAYSIA	3.5 hour per week for primary 4.0 hour per week for secondary
IRELAND	3.25 hour per week - infant class
RUSSIA	2 + 3 hours per week – basic school 3 hours per week – senior school

MALAYSIA

Mathematical content covers five main areas of learning that are inter-related, namely:

- Number and operation
- Measurement and geometry
- Relationship and Algebra
- Statistics and Probability
- **Discrete Number**

IRELAND

The structure of the curriculum The curriculum comprises five strands:

- Number
- Algebra
- Shape and space
- Measures
- Data.

RUSSIA

- Numbers
- Geometry
- Algebra
- Measurement
- Probability and Statistics

- Quadratic equation
- Pythagorean theorem
- Similarity
- Word problems
- Percentages
- Identical transformation of algebraic expression



- Numbers and computations
- Expressions and transformation
- Equations
- Functions
- Geometric figures on the plane

MALAYSIA	IRELAND	RUSSIA
<ul style="list-style-type: none">• Inquiry-based learning, which includes investigation and exploration of mathematics;• Problem-based learning; and• The use of technology in concept building	<ul style="list-style-type: none">• Constructivism• guided-discovery methods	<ul style="list-style-type: none">• Inquiry-based learning• Problem-based learning

Malaysia melaksanakan Pentaksiran Berasaskan Sekolah (PBS).
PBS terdiri daripada 4 komponen yang terdiri :

1. Pentaksiran Sekolah
2. Pentaksiran pusat
3. Pentaksiran Aktiviti Jasmani, Sukan dan Kokurikulum (PAJSK)
4. Pentaksiran Psikometrik

	Formal	Informal
Formatif	Pentaksiran Sekolah	Pentaksiran Psikometrik
Sumatif	Pentaksiran pusat	PAJSK

In primary school,

- informal observation teacher-designed tests and tasks, project work and portfolios across the curriculum.
- Standardised tests

post-primary schools

- state examinations -
- Junior Certificate & Leaving Certificate examinations

- Grading System

Grade	Description
1	Bad
2	Unsatisfactory
3	Satisfactory
4	Good
5	Excellent

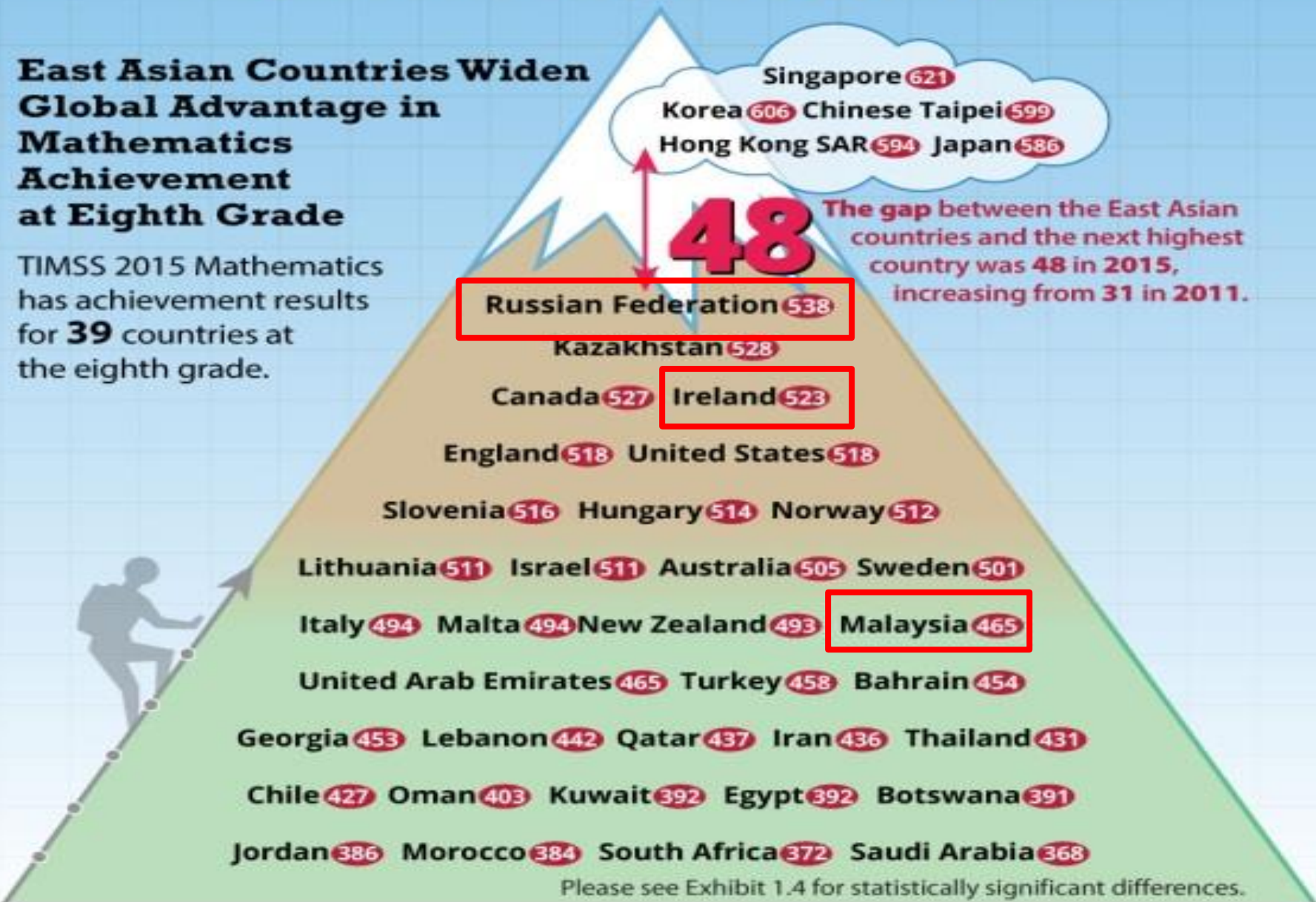
* Attitude and willingness to learn

- Exam after Grades 9 and Grades 11

International Mathematics Achievement

East Asian Countries Widen Global Advantage in Mathematics Achievement at Eighth Grade

TIMSS 2015 Mathematics has achievement results for **39** countries at the eighth grade.



The gap between the East Asian countries and the next highest country was **48** in 2015, increasing from **31** in 2011.

Please see Exhibit 1.4 for statistically significant differences.

Trends at Eighth Grade Show Increases in Mathematics Achievement Around the World

Trends 2011-2015: 34 Countries

18 Countries Higher Average Achievement



Bahrain, Chile, Georgia, Iran, Japan, Kazakhstan, Lithuania, Malaysia, Morocco, Norway, Oman, Qatar, Singapore, Slovenia, South Africa, Sweden, United Arab Emirates, the United States

13 Countries Same Average Achievement



Australia, Botswana, England, Hong Kong SAR, Hungary, Israel, Italy, Korea, Lebanon, New Zealand, Russian Federation, Thailand, Turkey

3 Countries Lower Average Achievement



Chinese Taipei, Jordan, Saudi Arabia

Trends 1995-2015: 16 Countries

9 Countries Higher Average Achievement



England, Hong Kong SAR, Iran, Korea, Lithuania, Russian Federation, Singapore, Slovenia, the United States

4 Countries Same Average Achievement



Australia, Ireland, Japan, New Zealand

3 Countries Lower Average Achievement



Hungary, Norway, Sweden