

# TIMSS 2015

## 20 Years of Trends

### Progress Report

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Boston College

54<sup>th</sup> IEA General Assembly

October 2013, Lisbon

**TIMSS**  
**2015**



**TIMSS & PIRLS**  
International Study Center  
Lynch School of Education, Boston College

# Progress Since Last General Assembly...

- Assessment Frameworks Completed
  - TIMSS 2015 and TIMSS Advanced 2015
  - TIMSS Numeracy – **New** for fourth grade!
- Developed 1250 mathematics and science field test items – help from ACER
- Updated questionnaires for TIMSS and TIMSS Advanced
  - School, Teacher, Student
- **New** – Home Questionnaire for fourth grade
- Sampling and operations under way

# Countries Participating in TIMSS 2015

Armenia 4, 8  
Australia 4, 8  
Austria 4  
Bahrain 4, 8  
Belgium(Flemish) 4  
Botswana 6, 9  
Bulgaria 4  
Canada 4, 8  
Chile 4, 8  
Chinese Taipei 4, 8  
Croatia 4, Numeracy  
Cyprus 4  
Czech Republic 4  
Denmark 4  
Egypt 8  
England 4, 8  
Finland 4  
France 4, A  
Georgia 4, 8, A  
Germany 4, A  
Hong Kong SAR 4, 8  
Hungary 4, 8  
Iran, Islamic Rep. of 4, 8, A  
Ireland 4,8  
Israel 8  
Italy 4, 8, A

Japan 4, 8  
Jordan 8  
Kazakhstan 4, 8  
Korea, Rep. of 4, 8  
Kuwait 4, 8  
Lebanon 8, A  
Lithuania 4, 8  
Macedonia 8  
Malaysia 8  
Malta 4  
Morocco 4, 8  
The Netherlands 4  
New Zealand 4, 8  
Norway 4/5, 8/9, A  
Oman 4, 8  
Palestinian Nat'l Auth. Num, 8  
Poland 4  
Portugal 4, A  
Qatar 4, 8  
Russian Federation 4, 8, A  
Saudi Arabia 4, 8  
Singapore 4, 8  
Slovak Republic 4  
Slovenia 4, 8, A  
South Africa 9  
Spain 4

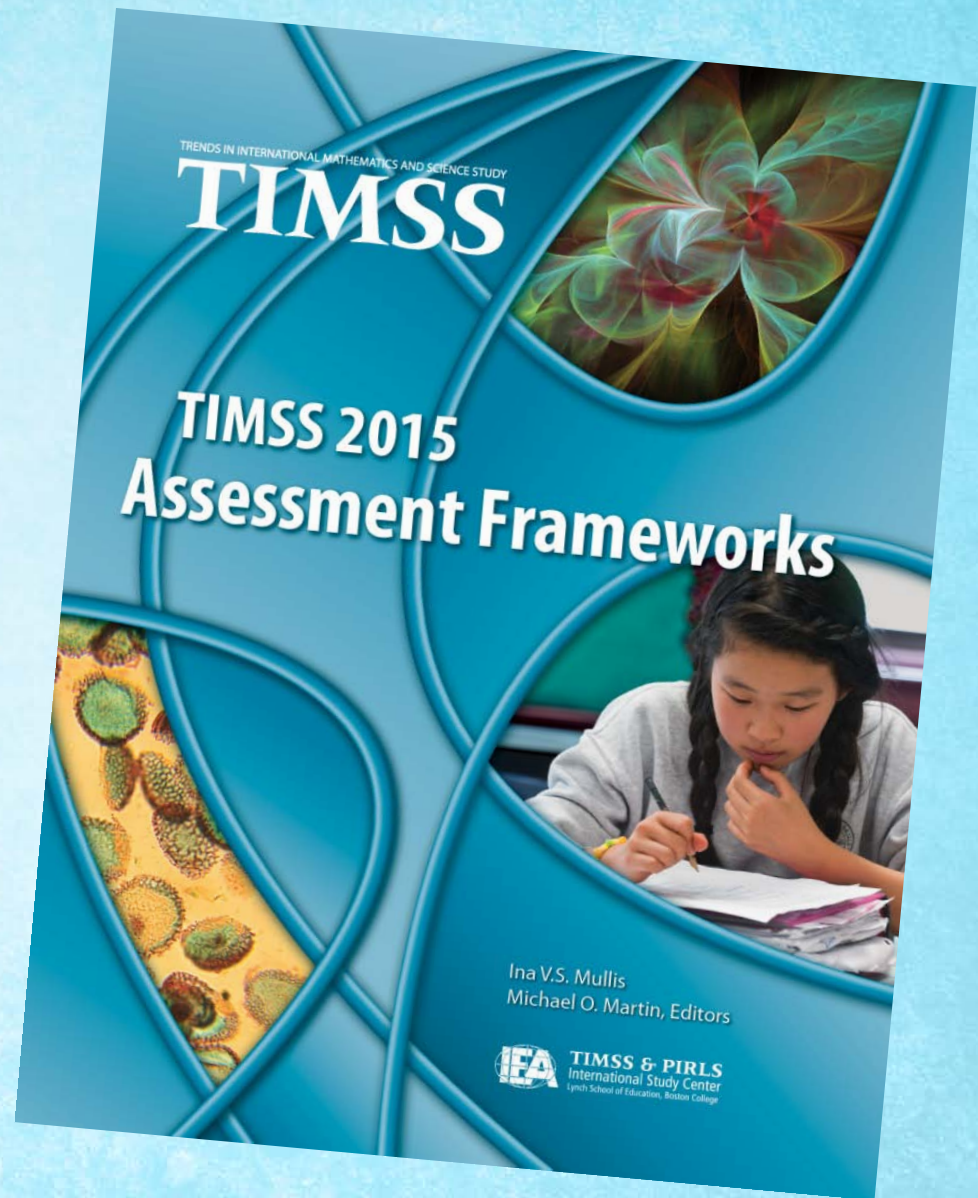
Sweden 4, 8, A  
Thailand 8  
Turkey 4, 8  
United Arab Emirates 4, 8  
United States 4, 8, A

## **Benchmarking Participants**

Buenos Aires, Argentina 4  
Ontario, Canada 4, 8  
Quebec, Canada 4, 8  
Abu Dhabi, UAE 4, 8  
Dubai, UAE 4, 8

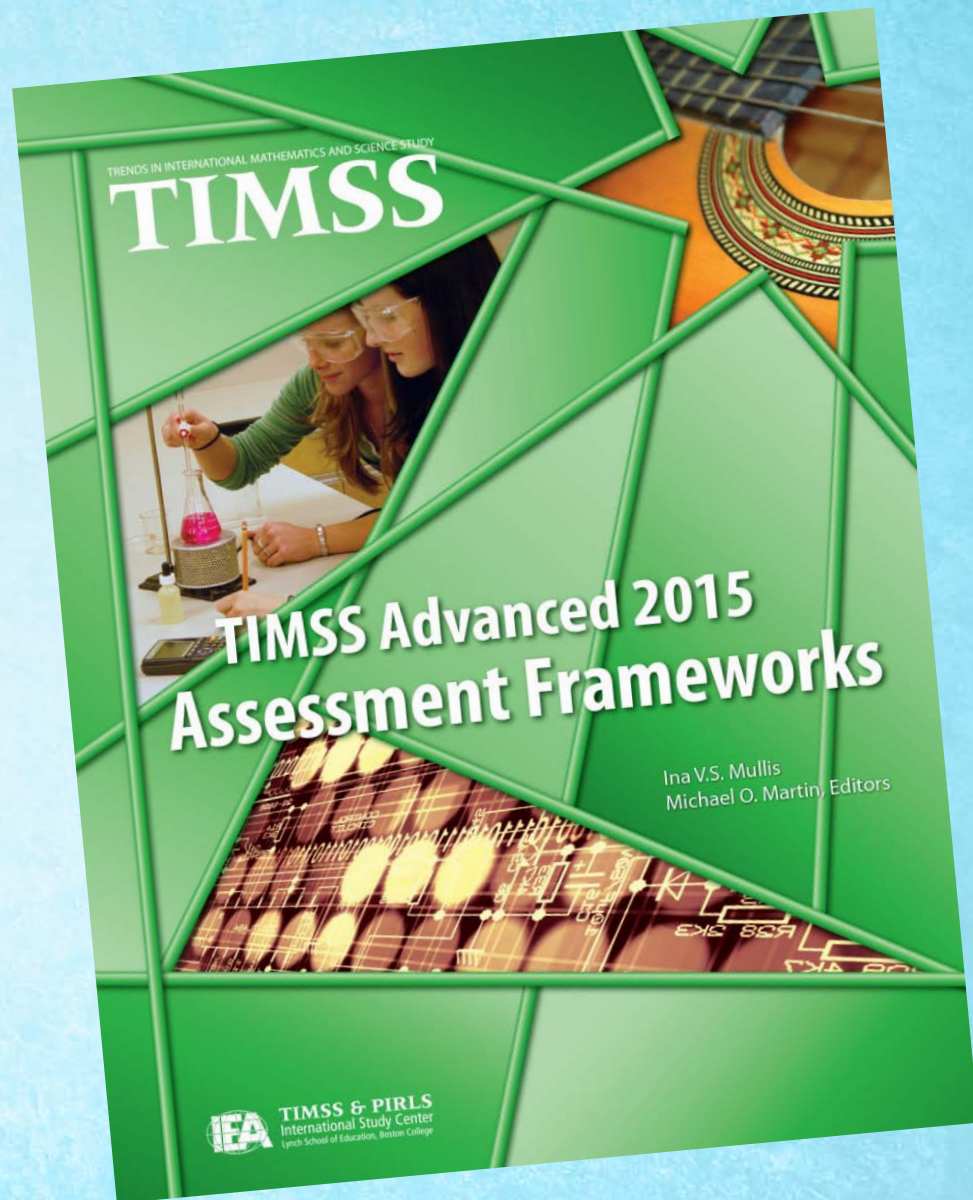
# TIMSS 2015 Assessment Frameworks

- Mathematics
  - Fourth grade
  - Eighth grade
- Science
  - Fourth grade
  - Eighth grade
- Context  
Questionnaires
- Assessment Design
- Posted on web
  - Sept 30



# TIMSS Advanced 2015 Assessment Frameworks

- Advanced Mathematics
- Physics
- Context Questionnaires
- Assessment Design
- Posting date  
- Nov 30



# Updating the TIMSS 2011 Assessment Frameworks for TIMSS 2015

## Goals

- Align the content with current curricula as described in the TIMSS 2011 Encyclopedia
- Improve the Frameworks' utility as blueprints for developing the TIMSS 2015 assessments
- Work towards coherence among related topics across grades

# Began the Updating Process

August – September 2012

- Topic-by-topic analysis of curriculum sections of Encyclopedia chapters
- Review of curricula from high-achieving countries

October – December 2012

- Task force meetings to propose updates

# Activities at 1<sup>st</sup> NRC Meeting Hamburg, Feb 2013

- Reviewed the draft TIMSS 2015 Assessment Frameworks
- Discussed updates to TIMSS Advanced
- Reviewed the TIMSS 2011 Questionnaires and Context Scales
- Began thinking about national plans for sampling and data collection
- Considered new initiatives and improvements
  - TIMSS Numeracy
  - Computer-based TIMSS



# After 1<sup>st</sup> NRC Meeting – NRC Online Review of Frameworks

- Incorporated recommended changes to draft TIMSS and TIMSS Advanced assessment frameworks
- Posted online survey for updating frameworks
- NRCs completed by March 21
- Updated draft Frameworks for SMIRC review

# 1<sup>st</sup> TIMSS 2015 Meeting of Science and Mathematics Item Review Committee (SMIRC)

Apr 16-19 Oslo, Norway

- Refined TIMSS and TIMSS Advanced frameworks for final NRC review
- Reviewed *TIMSS 2015 Item Writing Guidelines*
- Developed prototype items for field test

# TIMSS 2015 SMIRC

## Mathematics Experts

Kiril Bankov, Bulgaria

Sean Close, Ireland

Khattab Mohammad Ahmad Abu Libdeh, Jordan

Sun Sook Noh, Korea

Torgeir Onstad, Norway

Mary Lindquist, United States

Liv Sissel Gronmo, Chief Mathematics Consultant

# TIMSS 2015 SMIRC

## Science Experts

Jouni Viiri, Finland

Alice Siu Ling Wong, Hong Kong SAR

Berenice Michels, Netherlands

Gabriela Noveanu, Romania

Galina Kovaleva, Russian Federation

Vitaly Gribov, Russian Federation

Wolfgang Dietrich, Sweden

Christopher Lazarro, United States

Gerry Wheeler, United States

Lee Jones, Chief Science Consultant

# Activities at 2<sup>nd</sup> NRC Meeting, Amsterdam, May 2013

- Finalized the *TIMSS 2015 Assessment Frameworks* for mathematics and science at 4<sup>th</sup> and 8<sup>th</sup> grades
- Finalized the *TIMSS Advanced 2015 Assessment Frameworks* for advanced mathematics and physics
- Reviewed the draft *TIMSS 2015 Context Questionnaire Framework*
- Previewed sampling and operations for the field test

## Activities at 2<sup>nd</sup> NRC Meeting, Amsterdam (cont.)

- Discussed *TIMSS 2015 Item Writing Guidelines*
- Formed teams, assigned objectives, and...

**Developed items and  
scoring guides!**

# Number of TIMSS 2015 Items Developed for Field Test

## Fourth grade

- Mathematics 160; science 160
- Numeracy 200

## Eighth grade

- Mathematics 200; science 270

## TIMSS Advanced

- Advanced mathematics 130; physics 130

Total – 1250 items!!

# 1<sup>st</sup> TIMSS 2015 QIRC Meeting

June 24-25 Singapore

- Joint meeting with PIRLS 2016 Questionnaire Development Group (QDG)
- Updated questionnaires for TIMSS 2015
- Reviewed properties of context questionnaire scales from 2011 and suggested improvements
- Considered new scales for 2015



# TIMSS 2015 Questionnaire Item Review Committee (QIRC)

Sue Thomson, Australia

Josef Basl, Czech Republic

Wilfried Bos, Germany

Martina Meelissen, Netherlands

Chew Leng Poon, Singapore

Peter Nystrom, Sweden

Stephen Provasnik, United States

# Task Force Meetings to Review Field Test Items, Boston, July

Extensive review and revision of draft items

- Fourth grade: mathematics, numeracy, science
- Eighth grade: mathematics, science
- TIMSS Advanced: advanced mathematics, physics

# Field Test Item Review Task Force Meetings, July

- Science Task Force
  - Lee Jones, Chief Science Consultant
  - Gerald Wheeler, SMIRC
  - Ron Martin, ACER
  - Victoria Centurino
- Mathematics Task Force
  - Liv Sissel Gronmo, Chief Mathematics Consultant
  - Mary Lindquist, SMIRC
  - Torgeir Onstad, SMIRC
  - Ray Philpot, ACER
  - Alka Arora, Ina Mullis

# Online Review of TIMSS 2015 Field Test Context Questionnaires

- August – draft questionnaires posted for NRC online review
- September/October – TIMSS & PIRLS International Study Center revises context questionnaires for NRC review at 3<sup>rd</sup> NRC meeting in Budapest, November

# 2<sup>nd</sup> TIMSS 2015 SMIRC Meeting

September 9-12 St. Petersburg

Extensive review and revision of draft items

- Fourth grade: mathematics, numeracy, science
- Eighth grade: mathematics, science
- TIMSS Advanced: advanced mathematics, physics

# Upcoming Schedule Highlights

## 2013

- Oct 28-31 IEA DPC conducts data entry training seminar for field test
- Oct 31 Post field test materials for review at 3<sup>rd</sup> NRC meeting

# Upcoming Schedule Highlights

## 2013

Nov 6-8

3<sup>rd</sup> TIMSS Advanced NRC meeting, Budapest

Review all field test items and questionnaires

Nov 10-15

3<sup>rd</sup> TIMSS NRC meeting, Budapest

Review all field test items and questionnaires

# Upcoming Schedule Highlights

## 2013

Dec 19                      Post field test achievement items and  
questionnaires for TIMSS and TIMSS  
Advanced

Translation and layout  
verification begin

March 1 – April 15

**\*\*\* Conduct TIMSS 2015 Field Test \*\*\***



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