

APPENDIX A

Creating Mathematics and Science Scale Scores

Creating mathematics and science scale scores: U.S. TIMSS 2007

In TIMSS, scale scores were estimated for each student using an item response theory (IRT) model. With IRT the difficulty of each item is deduced using information about how likely it is for students to get some items correct versus other items. Once the difficulty of each item is determined, the ability of each student can be estimated even when different students have been administered different items. At this point in the estimation process achievement scores are expressed in a standardized logit scale which ranges from -4 to +4. In order to make the scores more meaningful and to facilitate their interpretation, the scores are transformed to a new scale with a mean of 500 and a standard deviation of 100.

The procedures TIMSS used for the analyses were developed to produce accurate results for groups of students while limiting the testing burden on individual students. Furthermore, these procedures provided data that could be readily used in secondary analyses. IRT scaling provides estimates of item parameters (e.g., difficulty, discrimination) that define the relationship between the item and the underlying variable measured by the test. Parameters of the IRT model are estimated for each test question, with an overall scale being established as well as scales for each content area and cognitive domain specified in the assessment framework. For example, the TIMSS 2007 eighth-grade assessment had four scales describing four mathematics content areas and four science content areas, as well as three cognitive domains in each of mathematics and science.

Providing for comparability across assessments

In order to allow for the calculation of trends in achievement, comparisons of scores were necessary across the four TIMSS assessments conducted in 1995, 1999, 2003 and 2007. IRT estimation procedures were used to place scores from the multiple administrations on the same scale (the scale of the 1995 administration). This is made possible by the inclusion of common test items in successive administrations. This allows comparison of item parameters (such as the relative difficulty of items compared with each other and how well individual items predict overall scores) across administrations. This comparison of item parameters is used to drop items whose item parameters change dramatically across administrations and to equate scales across years. It is important to note that the item parameters do not depend directly on the average ability level of the students tested, though they may depend on the range of abilities among students tested (for example, to determine which of two difficult items is more difficult, it is important to test students of sufficient ability to get at least one of the items correct). Therefore, even if the average ability levels of students in countries participating in TIMSS over time changes, the scales still can be equated across administrations.

In TIMSS, scales are equated across administrations by linking the data from each administration to the data from the administration that preceded it, as follows. Data for students in adjacent assessments are pooled together and scaled using IRT to determine the difficulty and discrimination of each item. This puts the scores from adjacent assessments on the same scale. The achievement scores estimated from the new item parameters are then put on the original 1995 TIMSS metric by a linear transformation. For example, in order to allow an examination of trends in eighth-grade achievement between 1995 and 1999, the TIMSS 1999 eighth-grade data were placed on the 1995 TIMSS scale by first scaling the 1995 and 1999 data for countries that participated in both years together to determine the item parameters. Ability estimates for all students (those assessed in 1995 and those assessed in 1999) based on the new item parameters were then estimated. In order to put these jointly calibrated 1995 and 1999 scores on the 1995 metric, a linear transformation is applied. This transformation is designed to give the jointly calibrated 1995 scores the same mean and standard deviation as the original 1995 scores that were reported in the 1995 assessment cycle. Once this linear transformation is established it is applied to the 1999 assessment scores for all countries participating in 1999. This puts the 1999 scores on the 1995 (longitudinal) metric while preserving any growth that has occurred between assessments.

Following this same procedure, TIMSS 2003 scores were jointly calibrated with the 1999 scores to place them on the same (1995) metric and, finally, TIMSS 2007 scores were jointly calibrated with the 2003 scores to place these on the same (1995) metric. By linking scores for each adjacent pair of assessments, all four sets of scores are placed on the same longitudinal scale. As a result, even if the makeup of the countries participating in TIMSS changes over time, achievement comparisons within and between countries are legitimate at a single point in time and across time. Information obtained from the bridge study described below was incorporated into this scaling to ensure strict comparability of scores across the four assessments. Details are provided in the *TIMSS 2007 Technical Report* (Olson, Martin, and Mullis 2008).

The 2003-07 Bridge Study.

As the name suggests, TIMSS places a great deal of emphasis on the measurement of trends in achievement within and between countries. TIMSS provides for the measurement of these trends across the four TIMSS assessment years (1995, 1999, 2003, and 2007) by placing the scores from each assessment on the same scale. However, the TIMSS assessment design changed a little in 2007, and it was considered prudent to devise a procedure to measure the effect of this change, if any, on the comparability of the 2007 assessment scores with those from previous years. Given an effect, the intent was to incorporate a correction into the scaling procedures which establish the comparability of the 2007 achievement scores with those from 1995, 1999, and 2003.

In order to evaluate the effect of the change in assessment design in TIMSS 2007, a bridge study was incorporated into the main survey to allow a comparison of the 2007 assessment with the 2003 assessment. Countries that participated in TIMSS 2003 were asked to include four additional booklets from 2003 in with the 14 booklets for TIMSS 2007 at each grade. As a result, sample sizes needed to be increased to ensure that the number of students taking each booklet was sufficient for the purposes of scaling. The findings from the bridge study indicated a small effect from the change in the assessment design. To accommodate this, a correction was introduced into the scaling procedures which placed the 2007 assessment scores on the same scale as the scores from the 1995, 1999 and 2003 assessments. A detailed description of the bridge study is provided in the *TIMSS 2007 Technical Report* (Olson, Martin, and Mullis 2008).

Plausible values

To keep student burden to a minimum, TIMSS administered a limited number of assessment items to each student—too few to produce accurate content-related scale scores for each student. To accommodate this situation, during the scaling process plausible values were estimated to characterize students participating in the assessment. Plausible values are imputed values and not test scores for individuals in the usual sense. In fact, they are biased estimates of the proficiencies of individual students. Plausible values do, however, provide unbiased estimates of population characteristics. Plausible values represent what the true performance of an individual might have been, had it been observed. They are estimated as random draws (usually five) from an empirically derived distribution of score values based on the student's observed responses to assessment items and on background variables. Each random draw from the distribution is considered a representative value from the distribution of potential scale scores for all students in the sample who have similar characteristics and identical patterns of item responses. Differences between the plausible values quantify the degree of precision (the width of the spread) in the underlying distribution of possible scale scores that could have caused the observed performances. An accessible treatment of the derivation and use of plausible values can be found in Beaton and González (1995). A more technical treatment can be found in the *TIMSS 2007 Technical Report* (Olson, Martin, and Mullis 2008).

International benchmarks

International benchmarks for achievement were developed in an attempt to provide a concrete interpretation of what the scores on the TIMSS mathematics and science achievement scales mean (for example, what it means to have a scale score of 513 or 426). To describe student

performance at various points along the TIMSS mathematics and science achievement scales, TIMSS used scale anchoring to summarize and describe student achievement at four points on the mathematics and science scales—Advanced International Benchmark (625), High International Benchmark (550), Intermediate International Benchmark (475), and Low International Benchmark (400). Scale anchoring involves selecting benchmarks (scale points) on the TIMSS achievement scales to be described in terms of student performance and then identifying items that students scoring at the anchor points can answer correctly. Subsequently, these items are grouped by content area within benchmarks and reviewed by mathematics and science experts. These experts focus on the content of each item and describe the kind of mathematics or science knowledge demonstrated by students answering the item correctly. The experts then provide a summary description of performance at each anchor point leading to a content-referenced interpretation of the achievement results. Detailed information on the creation of the benchmarks is provided in the international TIMSS reports (Mullis, Martin, and Foy 2008; Martin, Mullis, and Foy 2008).

APPENDIX B

School Recruiting Materials

Exhibit B-1. Letter to State Departments of Education



U.S. DEPARTMENT OF EDUCATION
INSTITUTE OF EDUCATION SCIENCES

NATIONAL CENTER FOR EDUCATION STATISTICS

April 10, 2006

Name
Title
Address

Dear:

I am writing to inform your state education agency about an important international study: the Trends in International Mathematics and Science Study (TIMSS) 2007. TIMSS 2007 is a study designed to collect internationally comparable information about the mathematics and science knowledge of fourth- and eighth-grade students. Schools and students in 63 countries, including the United States, will participate in the study. TIMSS has become an important component of national efforts to benchmark the performance of U.S. students to their peers in other countries. U.S. participation in this study is sponsored by the National Center for Education Statistics, U.S. Department of Education, and is being conducted by Windwalker Corporation and Westat, two research organizations based in the Washington D.C. area.

I ask your agency to support the participation of districts and schools in your state in TIMSS 2007. The main study for TIMSS will occur in the spring of 2007. One or more public schools in your state have been randomly sampled to participate in the study. The districts in which they are located are shown in the enclosed sample list. In the event that more schools are required as replacements, additional districts in your state may be asked to participate. More information about the study can be found in the enclosed materials.

In the next few weeks, sampled school districts and schools will be contacted to discuss conducting data collection for TIMSS 2007. In the meantime, if you have questions about plans for the study, please call the TIMSS Hotline at 1-888-677-1490, or send an email to TIMSS2007@westat.com. For more information about TIMSS, you can contact Dr. Patrick Gonzales at NCES at (415) 920-9229 or visit the TIMSS website at <http://nces.ed.gov/timss/>.

TIMSS 2007 has received the support of the Council of Chief State School Officers, the Education Commission of the States, and the National Association of State Boards of Education.

Thank you for your support of TIMSS 2007.

Sincerely,

A handwritten signature in cursive script that reads "Mark Schneider".

Mark Schneider
Commissioner

Exhibit B-1. Letter to State Departments of Education—Continued

Enclosures:

- Sampled School Districts
- TIMSS Brochure
- Key Information and Summary of Activities
- TIMSS Resource Kit (Information Sheet and CD)
- Publications Summary Sheet

cc: State Assessment Director
State Mathematics Curriculum Specialist
State Science Curriculum Specialist

Exhibit B-2. Letter to school districts



U.S. DEPARTMENT OF EDUCATION
INSTITUTE OF EDUCATION SCIENCES

NATIONAL CENTER FOR EDUCATION STATISTICS

April 19, 2006

[Title] [Name First] [Name Last]
[Title/Department]
[School District]
[Address 1]
[Address 2]
[City], [State] [Zip code]

Dear [Title] [Name Last]:

I am writing to seek your support of an important study being conducted by the National Center for Education Statistics (NCES) of the U.S. Department of Education to assess the knowledge of students in mathematics and science in 65 countries around the world, including the United States. The Trends in International Mathematics and Science Study (TIMSS) 2007 will provide U.S. policymakers and educators valuable information on the state of mathematics and science education of fourth- and eighth-graders in the U.S. and around the world.

Under contract to NCES, Windwalker Corporation and Westat, Inc. will conduct TIMSS in approximately 600 randomly selected schools throughout the country in the spring of 2007. The TIMSS data will be collected at the 4th and 8th grade levels. See the enclosed materials for more details about the study.

Within your district, the schools on the attached list have been selected to participate in TIMSS. With your permission, the TIMSS contractors will contact these schools to discuss study details and to invite them to join the study. In order to protect the confidentiality of these schools, please do not share this list publicly.

As part of the invitation to participate in TIMSS, schools will be provided with a Resource Kit on CD-ROM containing released items, scoring guides, and the curriculum framework from the previous rounds of TIMSS. A CD-ROM for your use at the district level is enclosed. Each participating school also will receive an all-in-one printer, scanner, and copier. Students will receive a small gift to thank them for participating.

Exhibit B-2. Letter to school districts—Continued

The following organizations support U.S. participation in TIMSS 2007:

- Council of Chief State School Officers;
- Education Commission of the States;
- National Association of State Boards of Education;
- National Association of Elementary School Principals;
- National Association of Secondary School Principals;
- National Council of Teachers of Mathematics; and
- National Science Teachers Association.

I would appreciate your support of this landmark study. Representatives from Windwalker and Westat will contact you shortly to discuss it. If you have any questions, please feel free to call the TIMSS response hotline at 1-888-677-1490, or send an email to TIMSS2007@westat.com.

Sincerely,



Mark Schneider
Commissioner

Enclosures:

Sampled Schools
TIMSS Brochure
Key Information and Summary of Activities
TIMSS Resource Kit (Information Kit and CD)
Publications Summary Sheet

cc: [District assessment coordinator]
[District math coordinator]
[District science coordinator]

Exhibit B-3. Provisional permission letter to school districts



U.S. DEPARTMENT OF EDUCATION
INSTITUTE OF EDUCATION SCIENCES

NATIONAL CENTER FOR EDUCATION STATISTICS

Date:

Name:

Title:

Address:

Dear:

The National Center for Education Statistics (NCES), U.S. Department of Education, seeks your support for TIMSS 2007, the Trends in International Mathematics and Science Study. TIMSS is conducted in the United States and in more than 60 other countries. The findings provide U.S. policymakers and educators with valuable information on the mathematics and science education of fourth- and eighth-graders in the United States and around the world. In the spring of 2007, Windwalker Corporation and Westat, Inc. will conduct TIMSS in the United States, under contract to NCES. (See the enclosed materials for more details about the study.)

At this time we are seeking your permission to invite a number of randomly selected schools in your district to participate in TIMSS. The schools in question are listed in the attachment to this letter. It may turn out that not all schools on this list will actually be invited. The list of schools invited to participate will be finalized early in the 2006-07 school year. At that time, we will inform you of the schools selected from the attached list. We ask your permission in advance of this selection so that we can move quickly to contact the invited schools in the fall and, in this way, provide them with some seven months or more of advance notice. The final decision about participation will, of course, rest with the school itself. (In order to protect the confidentiality of these schools, please do not share the school list publicly.)

All of the schools on the list will be provided with a Resource Kit on CD-ROM containing released items, scoring guides, and the curriculum framework from the previous rounds of TIMSS. A copy of this CD-ROM is enclosed and is described on one of the enclosed information sheets. In addition, each participating school will receive an all-in-one printer, scanner, and copier. Participating students will receive a small gift.

The following organizations support U.S. participation in TIMSS 2007: Council of Chief State School Officers; Education Commission of the States; National Association of State Boards of Education; National Association of Elementary School Principals; National Association of Secondary School Principals; National Council of Teachers of Mathematics; and, National Science Teachers Association.

I would appreciate your support of this landmark study. Representatives from Windwalker and Westat will contact you shortly to discuss it. If you have any questions, please feel free to call the TIMSS response hotline at 1-888-677-1490, or send an email to TIMSS2007@westat.com.

Exhibit B-3. Provisional permission letter to school districts—Continued

Sincerely,

A handwritten signature in cursive script that reads "Mark Schneider".

Mark Schneider
Commissioner

Enclosures: Sampled Schools; TIMSS Brochure; Key Information and Summary of Activities;
TIMSS Resource Kit (Information Kit and CD); Publications Summary Sheet

Exhibit B-4. Letter to schools



U.S. DEPARTMENT OF EDUCATION
INSTITUTE OF EDUCATION SCIENCES

NATIONAL CENTER FOR EDUCATION STATISTICS

June 13, 2006

Name
Principal
Address

Dear:

I am writing to seek your support for the Trends in International Mathematics and Science Study (TIMSS) 2007 being conducted by the National Center for Education Statistics (NCES) of the U.S. Department of Education. Your school has been randomly selected to participate in this important international study.

Every four years, the United States joins with other countries to assess the mathematics and science knowledge and skills of its student population. In April-May 2007, data will be collected from fourth- and eighth-grade students in some 600 randomly selected schools across the United States. TIMSS 2007 complements national assessments by identifying the strengths and weaknesses of U.S. students in math and science relative to their peers throughout the world. This critical information informs national discussions of ways to ensure improved learning and the continued success of the United States as we compete economically on a global scale.

Windwalker Corporation and Westat, Inc. are the survey operations companies contracted by NCES to administer TIMSS in the United States. A representative will call you in the next few days to answer any questions you may have, and to discuss your school's participation. The enclosed materials provide more details about the study.

As part of the invitation to participate, a TIMSS Resource Kit on CD-ROM is enclosed for your school's use. The kit contains the TIMSS curriculum framework and released items and scoring guides from the previous rounds of the study. Each participating school also will receive an all-in-one printer, scanner, and copier to assist in using the materials. Students will receive a small gift to thank them for participating.

Exhibit B-4. Letter to schools—Continued

The following organizations support U.S. participation in TIMSS 2007:

- Council of Chief State School Officers;
- Education Commission of the States;
- National Association of State Boards of Education;
- National Association of Elementary School Principals;
- National Association of Secondary School Principals;
- National Council of Teachers of Mathematics; and
- National Science Teachers Association.

I would appreciate your support of this important study. Representatives from Windwalker and Westat will contact you shortly to discuss your participation. If you have any questions, please feel free to call the TIMSS hotline at 1-888-677-1490, or send an email to TIMSS2007@westat.com.

Sincerely,



Mark Schneider
Commissioner

Enclosures:

- TIMSS Brochure
- Key Information and Summary of Activities
- TIMSS Resource Kit (Information Sheet and CD)
- Publications Summary Sheet

Exhibit B-5. "Active consent" parent permission letter

SCHOOL LETTERHEAD

Dear Parent or Guardian,

Our school has accepted an invitation from the National Center for Education Statistics, US Department of Education, to participate in an important international study of student learning. This study is called TIMSS for short; the full name is Trends in International Mathematics and Science Study. TIMSS looks at student learning in mathematics and science in schools around the world and, every four years since 1995, documents world-wide trends in student knowledge of mathematics and science.

The enclosed summary sheet provides some background to TIMSS, explains what is involved for each student selected to participate in the study, and gives a contact phone number and email address where you can find answers to any questions you might have.

Two of our 4th-grade classes will take part. One of these is your child's class. These two classes, and some 500 other classes of 4th graders nationwide, will contribute to this picture of what U.S. 4th graders know about mathematics and science, and how they compare with 4th graders worldwide.

It is important that each student selected take part in the study. I urge you to support this effort by encouraging your child to take part. Previous experience suggests that students actually enjoy taking part. Each of the participating students will receive a small gift which we think they will like.

All of the information collected is kept completely confidential, as required by law. So, students and schools are never identified in any reports and, actually, cannot be identified even if someone wanted to. All reported statistics refer to the United States as a whole.

Before we can allow your child to join in the TIMSS activities we must have your written consent. You can let us know by completing the attached form ('Being Part of TIMSS') and returning it to the school.

Thank you for taking the time to think about this. We wish you all the best.

Sincerely,

Enclosures:

Facts About TIMSS for Parents
Being Part of TIMSS

PT8/E



Facts About TIMSS for Parents

In April and May of this year, your child's school will join some 300 other schools across the U.S. taking part in TIMSS, the Trends in International Mathematics and Science Study. The schools were selected randomly to represent the nation's schools and, within each school, 4th-grade students were selected randomly to represent the nation's 4th graders. Your child is among the 4th graders selected from this school to take part in TIMSS.

What is TIMSS?

TIMSS is an international assessment that measures student learning in mathematics and science. Periodically (1995, 1999, 2003, and now 2007) TIMSS documents world-wide trends in the knowledge of 4th graders. The National Center for Education Statistics within the U.S. Department of Education sponsors U.S. participation in TIMSS. Along with more than 60 other nations, we will take part in the 2007 cycle just as we did in 1995, 1999, and 2003.

What is involved?

From April through May 2007, TIMSS staff will visit the school and administer an assessment that contains mathematics and science items. The assessment runs for 70 minutes with breaks between sections. Students will also receive a background questionnaire, which takes 20 to 30 minutes to complete.

What are the benefits?

The nation as a whole benefits from the contribution your child's school makes to the national picture of what our 4th graders know about mathematics and science, and how they compare with 4th graders worldwide. Schools benefit too since we provide each school with a TIMSS Resource Kit to assist in mathematics and science instruction, and a printer-scanner-copier-fax to assist with the work of the school. Last, and certainly not least, students receive a small gift that we are sure they will like.

Where can I find out more about TIMSS?

There is a lot of information available through the TIMSS website at <http://nces.ed.gov/timss/> or <http://timss.bc.edu/>. Or, if you would like to contact a TIMSS staff member directly, please feel free to call the TIMSS hotline at 1 (888) 677-1490 or email us at timss2007@westat.com.



International Association for the
Evaluation of Educational
Achievement



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



Exhibit B-5. "Active consent" parent permission letter—Continued

SCHOOL LETTERHEAD

Estimado(a) Padre, Madre o Guardián:

Nuestra escuela ha aceptado una invitación del Centro Nacional para Estadísticas de Educación del Departamento de Educación de Estados Unidos para participar en un importante estudio internacional del aprendizaje de los estudiantes. Este estudio se llama TIMSS para abreviar; el nombre completo es Estudio Internacional de Tendencias en Matemáticas y Ciencias. TIMSS observa el aprendizaje de los estudiantes en matemáticas y ciencias en escuelas alrededor del mundo y, cada cuatro años desde 1995, documenta las tendencias mundiales del conocimiento de los estudiantes en matemáticas y ciencias.

La hoja de resumen que se adjunta proporciona información general acerca de TIMSS, explica lo que el estudio supone para cada estudiante seleccionado para participar, y da un número de teléfono para comunicarse y una dirección de correo electrónico donde usted puede encontrar respuesta a las preguntas que pueda tener.

Dos de nuestras clases de 4º grado participarán. Una de estas es la clase de su niño(a). Estas dos clases, y otras 500 clases de 4º grado nacionalmente, contribuirán a esta representación de lo que los estudiantes de 4º grado saben acerca de matemáticas y ciencias y cómo se comparan con los estudiantes de 4º grado del resto del mundo.

Es importante que cada estudiante seleccionado participe en el estudio. Le ruego que apoye este esfuerzo animando a su niño(a) para que participe. Nuestra experiencia anterior indica que los estudiantes en realidad disfrutan participando. Cada uno de los estudiantes que participe recibirá un pequeño regalo que creemos que les gustará.

Toda la información recolectada se mantiene completamente confidencial, como lo exige la ley. Por lo tanto, los estudiantes y las escuelas nunca son identificados en ningún informe y, en realidad, no pueden ser identificados aún si alguien quisiera hacerlo. Toda la información estadística reportada se refiere a Estados Unidos en conjunto.

Antes que le podamos permitir a su niño(a) unirse a las actividades de TIMSS, debemos tener su consentimiento escrito. Usted nos lo puede comunicar completando el formulario que se adjunta ("Participar en TIMSS") y devolviéndolo a la escuela.

Agradeciéndole su tiempo al considerar este estudio, le enviamos un cordial saludo.

Atentamente,

Documentos adjuntos:

- Información para los padres acerca de TIMSS
- Participar en TIMSS

PT4/E



Información para los padres acerca de TIMSS

En abril y mayo de este año, la escuela de su niño(a) se unirá con alrededor de otras 300 escuelas de todo Estados Unidos para participar en TIMSS (siglas en inglés), el Estudio Internacional de Tendencias en Matemáticas y Ciencias. Las escuelas fueron seleccionadas al azar para representar a las escuelas de la nación y, en cada escuela, estudiantes de 4^o grado fueron seleccionados al azar para representar a los estudiantes de 4^o grado de la nación. Su niño(a) está entre los estudiantes de 4^o grado seleccionados de esta escuela para participar en TIMSS.

¿Qué es TIMSS?

TIMSS es una evaluación internacional que mide el aprendizaje de los estudiantes en matemáticas y ciencias. Periódicamente (1995, 1999, 2003 y ahora el 2007) TIMSS documenta las tendencias a nivel mundial en el conocimiento de los estudiantes de 4^o grado. El Centro Nacional para Estadísticas de Educación dentro del Departamento de Educación de Estados Unidos auspicia la participación de Estados Unidos en TIMSS. Junto con más de 60 naciones, participaremos en el ciclo del 2007, tal como lo hicimos en 1995, 1999 y el 2003.

¿Qué implica?

Desde abril hasta mayo del 2007, el personal de TIMSS visitará las escuelas y administrará una evaluación que contiene preguntas de matemáticas y ciencias. La evaluación dura 70 minutos con recesos entre las secciones. Los estudiantes también recibirán un cuestionario de antecedentes, el cual toma de 20 a 30 minutos para completar.

¿Cuál es el beneficio?

La nación entera se beneficia de la contribución que la escuela de su niño(a) hace a la representación nacional de lo que saben nuestros estudiantes de 4^o grado acerca de matemáticas y ciencias y cómo se comparan con los estudiantes de 4^o grado del resto del mundo. Las escuelas también se benefician ya que le proporcionamos a cada escuela un Equipo de Materiales de TIMSS para ayudar en la enseñanza de matemáticas y ciencias y una impresora-escáner-copiadora-fax para ayudar en el trabajo de la escuela. Por último, pero no menos importante, los estudiantes recibirán un pequeño regalo que estamos seguros les gustará.

¿Dónde puedo encontrar más información acerca de TIMSS?

Hay una gran cantidad de información disponible en el espacio Web de TIMSS: <http://nces.ed.gov/timss/> o <http://timss.bc.edu/>. O, si usted desea comunicarse directamente con un miembro del personal de TIMSS, por favor llámenos gratis a la línea directa 1-888-677-1490, o mándenos un E-Mail a: timss2007@westat.com.



International Association for the Evaluation of Educational Achievement



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





Participar en TIMSS

Necesitamos su consentimiento.

Nos gustaría mucho que su niño(a) participara en el proyecto TIMSS junto con sus compañeros de clase. La participación de los estudiantes en TIMSS es crítica para el éxito del estudio y, en último lugar, para los intereses de la nación en mejorar la educación en matemáticas y ciencias.

Por favor marque a continuación el encasillado "Sí" si usted da su consentimiento. O, marque el encasillado "No" si eso es lo que usted desea.

Sea cual sea su elección, por favor firme el formulario y mándelo de vuelta a la escuela.

- Sí, quiero que mi niño(a) participe en TIMSS.
- No, no quiero que mi niño(a) participe en el estudio.

Nombre del niño(a): _____
Nombre Segundo Nombre Apellido

Firma del padre / madre / guardián Fecha

Gracias por tomarse el tiempo de pensar en este importante proyecto.

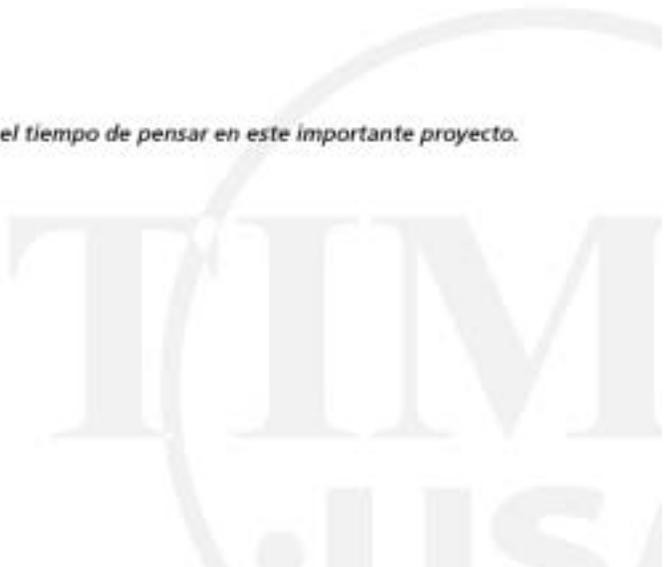


Exhibit B-6. "Passive consent" parent permission letter

SCHOOL LETTERHEAD

Dear Parent or Guardian,

Our school has accepted an invitation from the National Center for Education Statistics, US Department of Education, to participate in an important international study of student learning. This study is called TIMSS for short; the full name is Trends in International Mathematics and Science Study. TIMSS looks at student learning in mathematics and science in schools around the world and, every four years since 1995, documents world-wide trends in student knowledge of mathematics and science.

The enclosed summary sheet provides some background to TIMSS, explains what is involved for each student selected to participate in the study, and gives a contact phone number and email address where you can find answers to any questions you might have.

Two of our 4th-grade classes will take part. One of these is your child's class. These two classes, and some 500 other classes of 4th graders nationwide, will contribute to this picture of what U.S. 4th graders know about mathematics and science, and how they compare with 4th graders worldwide.

It is important that each student selected take part in the study. I urge you to support this effort by encouraging your child to take part. Previous experience suggests that students actually enjoy taking part. Each of the participating students will receive a small gift which we think they will like.

All of the information collected is kept completely confidential, as required by law. So, students and schools are never identified in any reports and, actually, cannot be identified even if someone wanted to. All reported statistics refer to the United States as a whole.

If you have any objection to your child joining in the TIMSS activities please let us know by completing the attached form ('Being Part of TIMSS') and returning it to the school.

Thank you for taking the time to think about this. We wish you all the best.

Sincerely,

Enclosures:

Facts About TIMSS for Parents
Being Part of TIMSS

PT8/E



Facts About TIMSS for Parents

In April and May of this year, your child's school will join some 300 other schools across the U.S. taking part in TIMSS, the Trends in International Mathematics and Science Study. The schools were selected randomly to represent the nation's schools and, within each school, 4th-grade students were selected randomly to represent the nation's 4th graders. Your child is among the 4th graders selected from this school to take part in TIMSS.

What is TIMSS?

TIMSS is an international assessment that measures student learning in mathematics and science. Periodically (1995, 1999, 2003, and now 2007) TIMSS documents world-wide trends in the knowledge of 4th graders. The National Center for Education Statistics within the U.S. Department of Education sponsors U.S. participation in TIMSS. Along with more than 60 other nations, we will take part in the 2007 cycle just as we did in 1995, 1999, and 2003.

What is involved?

From April through May 2007, TIMSS staff will visit the school and administer an assessment that contains mathematics and science items. The assessment runs for 70 minutes with breaks between sections. Students will also receive a background questionnaire, which takes 20 to 30 minutes to complete.

What are the benefits?

The nation as a whole benefits from the contribution your child's school makes to the national picture of what our 4th graders know about mathematics and science, and how they compare with 4th graders worldwide. Schools benefit too since we provide each school with a TIMSS Resource Kit to assist in mathematics and science instruction, and a printer-scanner-copier-fax to assist with the work of the school. Last, and certainly not least, students receive a small gift that we are sure they will like.

Where can I find out more about TIMSS?

There is a lot of information available through the TIMSS website at <http://nces.ed.gov/timss/> or <http://timss.bc.edu/>. Or, if you would like to contact a TIMSS staff member directly, please feel free to call the TIMSS hotline at 1 (888) 677-1490 or email us at timss2007@westat.com.



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Exhibit B-6. "Passive consent" parent permission letter—Continued

SCHOOL LETTERHEAD

Estimado(a) Padre, Madre o Guardián:

Nuestra escuela ha aceptado una invitación del Centro Nacional para Estadísticas de Educación del Departamento de Educación de Estados Unidos para participar en un importante estudio internacional del aprendizaje de los estudiantes. Este estudio se llama TIMSS para abreviar; el nombre completo es Estudio Internacional de Tendencias en Matemáticas y Ciencias. TIMSS observa el aprendizaje de los estudiantes en matemáticas y ciencias en escuelas alrededor del mundo y, cada cuatro años desde 1995, documenta las tendencias mundiales del conocimiento de los estudiantes en matemáticas y ciencias.

La hoja de resumen que se adjunta proporciona información general acerca de TIMSS, explica lo que el estudio supone para cada estudiante seleccionado para participar, y da un número de teléfono para comunicarse y una dirección de correo electrónico donde usted puede encontrar respuesta a las preguntas que pueda tener.

Dos de nuestras clases de 4º grado participarán. Una de estas es la clase de su niño(a). Estas dos clases, y otras 500 clases de 4º grado nacionalmente, contribuirán a esta representación de lo que los estudiantes de 4º grado saben acerca de matemáticas y ciencias y cómo se comparan con los estudiantes de 4º grado del resto del mundo.

Es importante que cada estudiante seleccionado participe en el estudio. Le ruego que apoye este esfuerzo animando a su niño(a) para que participe. Nuestra experiencia anterior indica que los estudiantes en realidad disfrutan participando. Cada uno de los estudiantes que participe recibirá un pequeño regalo que creemos que les gustará.

Toda la información recolectada se mantiene completamente confidencial, como lo exige la ley. Por lo tanto, los estudiantes y las escuelas nunca son identificados en ningún informe y, en realidad, no pueden ser identificados aún si alguien quisiera hacerlo. Toda la información estadística reportada se refiere a Estados Unidos en conjunto.

Si usted tiene alguna objeción a que su niño(a) se una a las actividades de TIMSS, por favor déjenos saberlo completando el formulario que se adjunta ("Participar en TIMSS") y devolviéndolo a la escuela.

Agradeciéndole su tiempo al considerar este estudio, le enviamos un cordial saludo.

Atentamente,

Documentos adjuntos:

Información para los padres acerca de TIMSS

Participar en TIMSS

PT4/E



Información para los padres acerca de TIMSS

En abril y mayo de este año, la escuela de su niño(a) se unirá con alrededor de otras 300 escuelas de todo Estados Unidos para participar en TIMSS (siglas en inglés), el Estudio Internacional de Tendencias en Matemáticas y Ciencias. Las escuelas fueron seleccionadas al azar para representar a las escuelas de la nación y, en cada escuela, estudiantes de 4^o grado fueron seleccionados al azar para representar a los estudiantes de 4^o grado de la nación. Su niño(a) está entre los estudiantes de 4^o grado seleccionados de esta escuela para participar en TIMSS.

¿Qué es TIMSS?

TIMSS es una evaluación internacional que mide el aprendizaje de los estudiantes en matemáticas y ciencias. Periódicamente (1995, 1999, 2003 y ahora el 2007) TIMSS documenta las tendencias a nivel mundial en el conocimiento de los estudiantes de 4^o grado. El Centro Nacional para Estadísticas de Educación dentro del Departamento de Educación de Estados Unidos auspicia la participación de Estados Unidos en TIMSS. Junto con más de 60 naciones, participaremos en el ciclo del 2007, tal como lo hicimos en 1995, 1999 y el 2003.

¿Qué implica?

Desde abril hasta mayo del 2007, el personal de TIMSS visitará las escuelas y administrará una evaluación que contiene preguntas de matemáticas y ciencias. La evaluación dura 70 minutos con recesos entre las secciones. Los estudiantes también recibirán un cuestionario de antecedentes, el cual toma de 20 a 30 minutos para completar.

¿Cuál es el beneficio?

La nación entera se beneficia de la contribución que la escuela de su niño(a) hace a la representación nacional de lo que saben nuestros estudiantes de 4^o grado acerca de matemáticas y ciencias y cómo se comparan con los estudiantes de 4^o grado del resto del mundo. Las escuelas también se benefician ya que le proporcionamos a cada escuela un Equipo de Materiales de TIMSS para ayudar en la enseñanza de matemáticas y ciencias y una impresora-escáner-copiadora-fax para ayudar en el trabajo de la escuela. Por último, pero no menos importante, los estudiantes recibirán un pequeño regalo que estamos seguros les gustará.

¿Dónde puedo encontrar más información acerca de TIMSS?

Hay una gran cantidad de información disponible en el espacio Web de TIMSS: <http://nces.ed.gov/timss/> o <http://timss.bc.edu/>. O, si usted desea comunicarse directamente con un miembro del personal de TIMSS, por favor llámenos gratis a la línea directa 1-888-677-1490, o mándenos un E-Mail a: timss2007@westat.com.



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Participar en TIMSS

Nos gustaría mucho que su niño(a) participara en el proyecto TIMSS junto con sus compañeros de clase. La participación de los estudiantes en TIMSS es crítica para el éxito del estudio y, en último lugar, para los intereses de la nación en mejorar la educación en matemáticas y ciencias. Su niño(a) participará en TIMSS, salvo que usted indique lo contrario.

Si usted no quiere que su niño(a) participe en TIMSS, por favor marque a continuación el encasillado "No", firme el formulario y mándelo de vuelta a la escuela. La escuela hará los arreglos para que su niño(a) haga otras actividades durante el tiempo que los otros estudiantes estén participando en TIMSS.

No, no quiero que mi niño(a) participe en el estudio.

Nombre del niño(a): _____
Nombre Segundo Nombre Apellido

Firma del padre/madre/guardián

Fecha

Gracias por tomarse el tiempo de pensar en este importante proyecto.



Exhibit B-7. "Notification" parent permission letter

SCHOOL LETTERHEAD

Dear Parent or Guardian,

Our school has accepted an invitation from the National Center for Education Statistics, US Department of Education, to participate in an important international study of student learning. This study is called TIMSS for short; the full name is Trends in International Mathematics and Science Study. TIMSS looks at student learning in mathematics and science in schools around the world and, every four years since 1995, documents world-wide trends in student knowledge of mathematics and science.

The enclosed summary sheet provides some background to TIMSS, explains what is involved for each student selected to participate in the study, and gives a contact phone number and email address where you can find answers to any questions you might have.

Two of our 4th-grade classes will take part. One of these is your child's class. These two classes, and some 500 other classes of 4th graders nationwide, will contribute to this picture of what U.S. 4th graders know about mathematics and science, and how they compare with 4th graders worldwide.

It is important that each student selected take part in the study. I urge you to support this effort by encouraging your child to take part. Previous experience suggests that students actually enjoy taking part. Each of the participating students will receive a small gift which we think they will like.

All of the information collected is kept completely confidential, as required by law. So, students and schools are never identified in any reports and, actually, cannot be identified even if someone wanted to. All reported statistics refer to the United States as a whole.

Thank you for taking the time to think about this. We wish you all the best.

Sincerely,

Enclosures:
Facts About TIMSS for Parents

PT8/E



Facts About TIMSS for Parents

In April and May of this year, your child's school will join some 300 other schools across the U.S. taking part in TIMSS, the Trends in International Mathematics and Science Study. The schools were selected randomly to represent the nation's schools and, within each school, 4th-grade students were selected randomly to represent the nation's 4th graders. Your child is among the 4th graders selected from this school to take part in TIMSS.

What is TIMSS?

TIMSS is an international assessment that measures student learning in mathematics and science. Periodically (1995, 1999, 2003, and now 2007) TIMSS documents world-wide trends in the knowledge of 4th graders. The National Center for Education Statistics within the U.S. Department of Education sponsors U.S. participation in TIMSS. Along with more than 60 other nations, we will take part in the 2007 cycle just as we did in 1995, 1999, and 2003.

What is involved?

From April through May 2007, TIMSS staff will visit the school and administer an assessment that contains mathematics and science items. The assessment runs for 70 minutes with breaks between sections. Students will also receive a background questionnaire, which takes 20 to 30 minutes to complete.

What are the benefits?

The nation as a whole benefits from the contribution your child's school makes to the national picture of what our 4th graders know about mathematics and science, and how they compare with 4th graders worldwide. Schools benefit too since we provide each school with a TIMSS Resource Kit to assist in mathematics and science instruction, and a printer-scanner-copier-fax to assist with the work of the school. Last, and certainly not least, students receive a small gift that we are sure they will like.

Where can I find out more about TIMSS?

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Exhibit B-7. "Notification" parent permission letter—Continued

SCHOOL LETTERHEAD

Estimado(a) Padre, Madre o Guardián:

Nuestra escuela ha aceptado una invitación del Centro Nacional para Estadísticas de Educación del Departamento de Educación de Estados Unidos para participar en un importante estudio internacional del aprendizaje de los estudiantes. Este estudio se llama TIMSS para abreviar; el nombre completo es Estudio Internacional de Tendencias en Matemáticas y Ciencias. TIMSS observa el aprendizaje de los estudiantes en matemáticas y ciencias en escuelas alrededor del mundo y, cada cuatro años desde 1995, documenta las tendencias mundiales del conocimiento de los estudiantes en matemáticas y ciencias.

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Agradeciéndole su tiempo al considerar este estudio, le enviamos un cordial saludo.

Atentamente,

Documento adjunto:

Información para los padres acerca de TIMSS

PT4/E



Información para los padres acerca de TIMSS

En abril y mayo de este año, la escuela de su niño(a) se unirá con alrededor de otras 300 escuelas de todo Estados Unidos para participar en TIMSS (siglas en inglés), el Estudio Internacional de Tendencias en Matemáticas y Ciencias. Las escuelas fueron seleccionadas al azar para representar a las escuelas de la nación y, en cada escuela, estudiantes de 4^o grado fueron seleccionados al azar para representar a los estudiantes de 4^o grado de la nación. Su niño(a) está entre los estudiantes de 4^o grado seleccionados de esta escuela para participar en TIMSS.

¿Qué es TIMSS?

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APPENDIX C

Informational Materials

Exhibit C-1. Brochure

Does TIMSS collect other information as well?

TIMSS is more than an assessment of student knowledge in mathematics and science. TIMSS also considers the context in which learning occurs. Students, teachers and schools are asked about a variety of aspects of the environments in which content is taught, learned, practical and applied. In this way TIMSS provides each country with a rich source of information on the factors influencing mathematics and science achievement.

What is new for TIMSS 2007?

Development of the TIMSS 2007 assessment represents an extensive collaborative effort involving individuals and expert groups from more than 60 countries around the world.

The TIMSS content frameworks for 2007 rely heavily on the extensive efforts expended to update the frameworks for 2003, when specific assessment objectives were developed for Grades 4 and 8. For 2007 there was a further effort to consolidate the major content domains and present them separately for the two grades.

Both the mathematics and science assessment frameworks also have a cognitive dimension—Knowing, Applying, and Reasoning. To enable reporting by cognitive domains, these also were revised for TIMSS 2007 to sharpen the distinction among categories.

Which countries are participating in TIMSS 2007?

Algeria	Hong Kong	Qatar
Armenia	Hungary	Romania
Australia	Indonesia	Russia
Austria	Iran	Saudi Arabia
Bahrain	Ireland	Scotland
Belize and	Italy	Serbia
Herzegovina	Japan	Singapore
Bolivia	Jordan	Slovak Republic
Bulgaria	Korea, Republic of	Slovenia
Canada	Kuwait	Sri Lanka
Chinese Taipei	Latvia	South Africa
Colombia	Lebanon	Sweden
Cyprus	Lithuania	Sri Lanka
Czech Republic	Malaysia	Sri Lanka
Denmark	Malta	Thailand
Egypt	Mongolia	Tanzania
El Salvador	Mexico	Turkey
England	Netherlands	Ukraine
Georgia	New Zealand	United States
Germany	Norway	Uzbekistan
Ghana	Oman	Vietnam
Hong Kong	Pakistan	
	National Authority	

For questions about TIMSS 2007, contact the TIMSS Information Hotline at 1-888-677-8900 or email to TIMSS2007@westat.com



Trends in International Mathematics and Science Study (TIMSS 2007)



What is TIMSS?

TIMSS is short for Trends in International Mathematics and Science Study. In 2007 TIMSS will measure the mathematics and science knowledge of fourth and eighth grade students in more than 60 countries, including the United States.

TIMSS is an international assessment conducted every four years. TIMSS first collected data in 1995 and then again from eighth graders in 1999. With the 2003 data collection, TIMSS offered the first international trend comparisons in mathematics and science at grades four and eight. To contrast data collection TIMSS will again be conducted in 2007. All the TIMSS studies together will allow us to track the mathematics and science achievements of students in more than 60 countries over a 12-year period.

TIMSS provides valuable benchmark information on how US students compare to students around the world, allows us to examine other educational systems for exemplary practices that could have application to the United States and contributes to ongoing discussions of ways to improve the quality of education for all students.

What kind of assessments will be used?

TIMSS mathematics and science assessments are developed through an international consensus-building process involving input from international experts in mathematics, science and measurement.

In a final step, the assessments are endorsed as suitable by all participating countries. The assessments contain a mix of questions, some require students to select appropriate responses, while others require that students solve problems and provide written answers. Examples of mathematics and science assessment items are given below. More examples are available on the TIMSS website (<http://timss.all.gownet.us>).



Examples of actual eighth grade mathematics and science items used in TIMSS 2003

When they left for school, the temperature was minus 3 degrees.



At noon, the temperature was 5 degrees.



How many degrees did the temperature rise?

- A 2 degrees?
- B 3 degrees?
- C 5 degrees?
- D 8 degrees?

Animals hibernate to survive cold weather and poor food supplies. Which of the following occurs in animals when they hibernate?

- A Their blood stops circulating.
- B Their body temperatures increase.
- C Their body fat remains constant.
- D Their rate of metabolism decreases.

Inside the 2003 TIMSS Math & Science Reports

177 What Are the Requirements for Being a Mathematics Teacher?

226 What Approaches and Processes Do Countries Emphasize in Their Intended Mathematics Curriculum?

254 How Ready Do Teachers Think They Are to Teach Mathematics?

274 What Activities Do Students Do in Their Mathematics Lessons?

110 How Does Achievement Differ Across Science Content Areas?

158 How Confident Are Students in Their Ability to Learn Science?

195 What Approaches and Processes Do Countries Emphasize in Their Intended Science Curriculum?

252 What Preparation Do Teachers Have for Teaching Science?

Trends in International Mathematics and Science Study 2007



Key Information and Summary of Activities

Q: What is TIMSS?

A: TIMSS is an international study that measures trends in students' mathematics and science achievement. Every four years since 1995, TIMSS has collected data to assess the knowledge and skills of fourth- and eighth-graders. The U.S. Department of Education's National Center for Education Statistics sponsors U.S. participation in TIMSS. The next cycle of data collection is scheduled for spring 2007 when more than 60 nations will participate.

Q: What are the benefits of participating?

A: The United States benefits by obtaining a national picture of what our fourth- and eighth-graders know about mathematics and science and how our students compare to the rest of the world. Each participating school contributes an important piece to this national picture.

The schools that take part in TIMSS benefit as well. TIMSS extracts an international mathematics and science curriculum out of the curricula of participating countries. Assessment items are then developed that are linked to this curriculum. Each school is provided with a CD-ROM containing a TIMSS Resource Kit that includes the international curriculum and items from previous assessment cycles in a ready-to-use format for math and science teachers. In addition, each participating school will receive a PC/Mac-compatible printer/scanner/copier to assist teachers in creating assessments of their own from the kit. Students will receive a small gift in recognition of their participation.

Q: When will data collection take place?

A: TIMSS staff members will work with schools to establish a convenient date between April and May of 2007.

Q: Who participates in the assessment?

A: The assessment will be administered to two fourth-grade classes and two eighth-grade mathematics classes at each participating school.

Q: Who conducts the assessment?

A: Trained TIMSS staff will administer the assessment and provide all the required materials. Teachers will not need to set aside time to administer the assessment.

Q: What is involved for school staff and students?

- Schools will be asked to designate a school contact to assist TIMSS staff members with in-school arrangements.
- The school principal will be asked to complete a school questionnaire that asks about aspects of the school and its environment.
- Selected mathematics and science teachers will be asked to complete a teacher questionnaire that asks about curricula and instructional practices.
- A block of approximately 3 hours needs to be scheduled for students to complete the assessment and student questionnaire.

Exhibit C-3. Key Information and Summary of Activities brochure—Continued

Q: What is involved for the school contact?

A: During fall 2006 and winter 2007, the school contact will be asked to do the following:

- Schedule the assessment. A TIMSS staff member will work with the school contact to schedule a convenient date between April and May.
- Review parent notification procedures. TIMSS staff will provide any assistance necessary.
- Provide a list of eligible fourth-grade classes and eighth-grade mathematics classes. TIMSS staff will randomly select two classes from each grade to participate.
- Provide student lists for the selected classes. Students will be assigned ID numbers to be used from this point on. Students' names will be held in the strictest confidence.

During the spring of 2007, the school contact will be asked to do the following:

- Identify any students with special needs that preclude them from participating.

- With the assistance of TIMSS staff, notify parents, teachers, and students about the study and its purpose.
- Distribute the school and teacher questionnaires to the school principal and to the selected mathematics and science teachers.
- Confirm the assessment schedule with TIMSS staff about two weeks before the assessment.

On assessment day, the school contact will be asked to do the following:

- Introduce TIMSS staff to school personnel.
- Ensure student participation. It is very important that attendance rates be as high as possible to avoid the need for a makeup session.
- Collect the school and teacher questionnaires and deliver them to TIMSS staff.

Please feel free to contact TIMSS with any questions via e-mail at TIMSS2007@westat.com or by calling the TIMSS hotline at 1-888-677-1490.





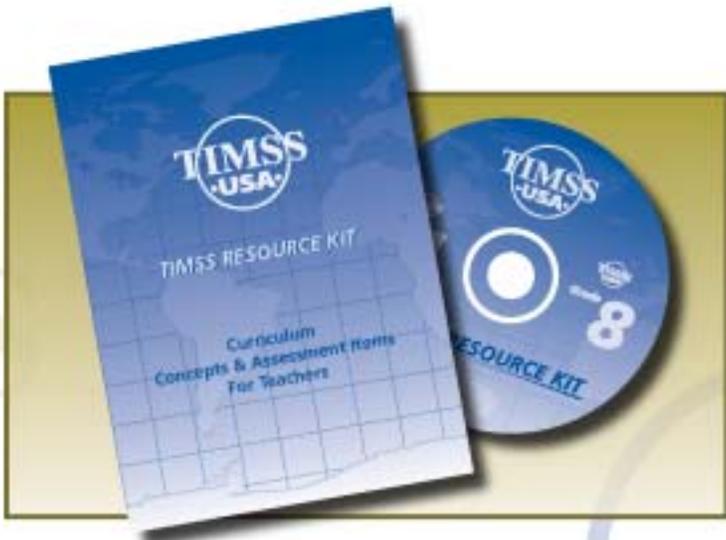
CURRICULUM CONCEPTS & ASSESSMENT ITEMS FOR TEACHERS

THE TIMSS RESOURCE KIT

Over the past decade the United States, along with as many as 60 other nations, has participated in TIMSS, the Trends in International Mathematics and Science Study.

The curriculum-related thinking that goes into the design of TIMSS, and into the development of the assessment items, represents the pooled knowledge of experts around the world. We believe that U.S. schools and teachers will find this international perspective useful to them as they go about the curriculum planning and teaching of mathematics and science. To make the information readily accessible, we have developed the TIMSS Resource Kit for schools—the TIMSS kit actually contains two sections, one for eighth-grade mathematics and science, and the other for fourth-grade mathematics and science. In each case the Resource Kit provides schools with ready-to-use curriculum-related materials and assessment items in mathematics and science.

The TIMSS Resource Kit is provided on a CD-ROM and can be freely copied and installed on as many computers as a school wishes.



The image shows a blue CD-ROM and a matching brochure. The CD-ROM is labeled 'TIMSS USA' and 'RESOURCE KIT'. The brochure is titled 'TIMSS RESOURCE KIT' and 'Curriculum Concepts & Assessment Items For Teachers'.

Exhibit C-4. Resource Kit and Gifts brochure—Continued



Who will receive a copy of the kit?

Resource Kits will be offered at no charge, to schools invited to participate in the TIMSS 2017 assessment, as invited for April-May 2017.

More about TIMSS

Timss assessment and mathematics and science study

TIMSS:

- Measures the mathematics and science learning of fourth and eighth graders.
- Measures the learning of fourth and eighth graders.
- Compares the mathematics and science knowledge of students across various 40 nations.
- Operates on a four-year cycle: 1995, 1999, 2004, 2007, etc.
- Emphasizes the measurement of mathematics and science learning in each cycle, not
- Is completed by the measurement of problem solving in a kit in its own right.

What's in the kit?

Each Resource Kit contains four books of materials relating to the teaching of fourth grade and eighth grade mathematics and science:

- A collection of background material describing the nature of TIMSS and the linkage to state
- International curriculum framework documents that spell out the conceptual dimension of mathematics performance skills.
- "Books" that link these mathematics and science concepts to assessment items and indicate how well students in the United States and other nations performed, and
- "Books" that provide the assessment items in a form that teachers can replicate for their own purposes.

How can teachers use the kit?

Teachers can approach the kit in a variety of ways. They could, for example, do any or all of the following:

- Read more about TIMSS, U.S. involvement in TIMSS over the past decade, and the performance of U.S. students on each of the various assessment items.
- Check out the web sites listed to learn more about TIMSS, the assessment, and student performance in other 40 nations.
- Select the conceptual framework publications and learn how countries around the world think about mathematics-related issues in mathematics and science.



- Select one of the Concepts and Issues sections and use related concepts in mathematics and science are being assessed by what kinds of items, and use
- Design informal assessments by identifying concepts of formative, formative and reporting the assessment items provided in the kit.

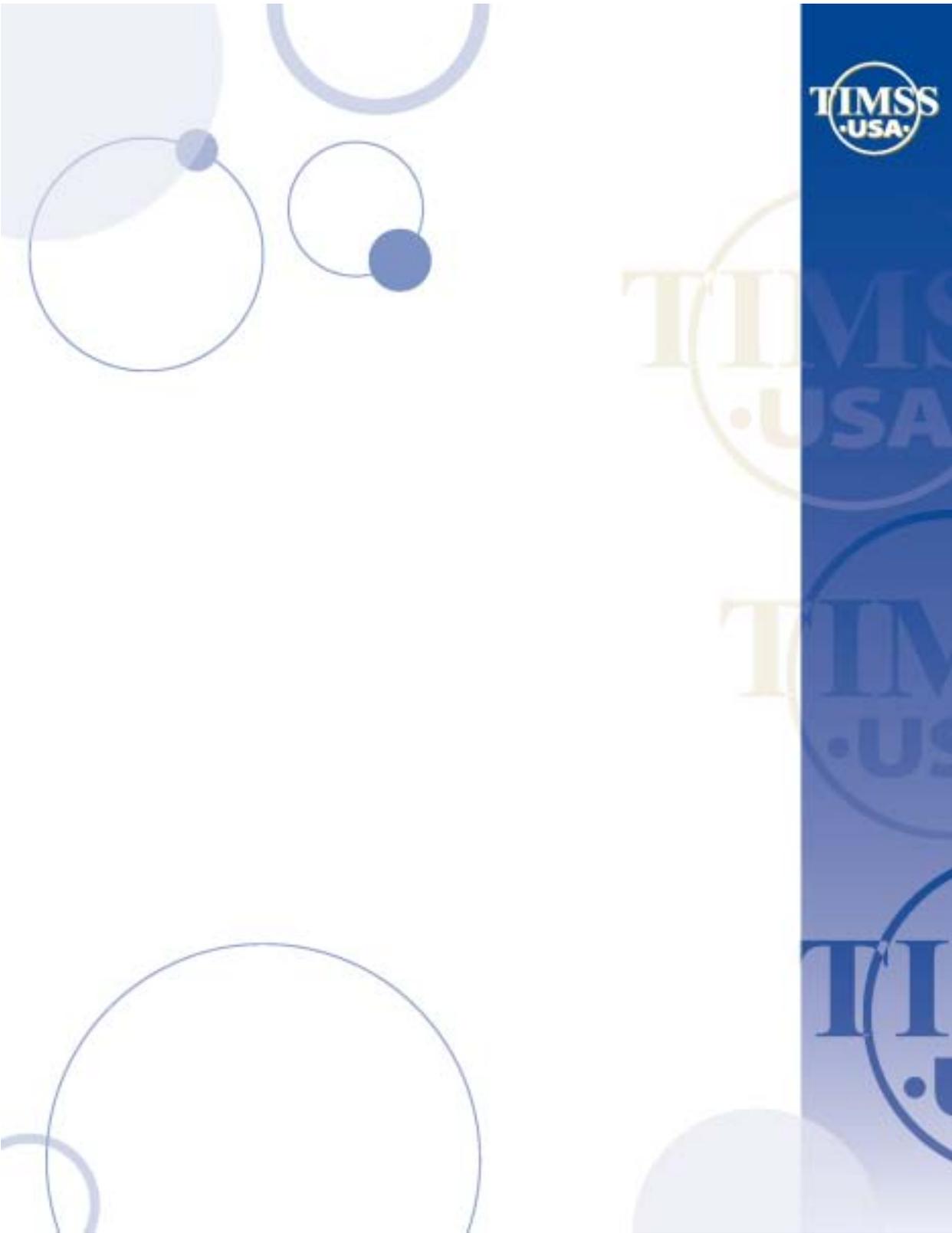
How can schools use the kit?

Schools can use the kit to:

- Inform their own discussions about curriculum-related issues in mathematics and science.
- Explore the links between concepts they teach and ways to assess student understanding.
- Design their own formative and diagnostic assessments according to their needs, and
- Reflect the performance of their own students against international benchmarks, including the U.S. average.

For the printing in schools we will also provide a printer to assess computer files. We see this as a helpful component to the Resource Kit since it facilitates the construction of informal assessments by providing for the printing of selected assessment items in a student use form. Schools are not able to find many other uses for these machines.





Trends in International Mathematics and Science Study 2007



Responsibilities of the TIMSS School Coordinator

Thank you for agreeing to be the School Coordinator for TIMSS, the Trends in International Mathematics and Science Study.

As you probably know already, the primary purpose of TIMSS 2007 is to measure students' knowledge and abilities in mathematics and science subjects. The United States is one of more than 60 nations participating in TIMSS. There are several components of the study: a mathematics and science test; a student questionnaire for each student assessed; questionnaires for the mathematics and science teachers of the selected students; and a school questionnaire to be completed by the school principal. While professional test administrators will handle the actual test administration, we would appreciate your assistance with the following critical tasks:

November-December 2006

- work with us to schedule the day and time of the assessment sessions — we will call you to work out a convenient date for the assessment;
- establish the kind of parent permission procedures, if any, required — we can assist with letters to parents and consent forms;
- tell us about any special security requirements that you may have for the TIMSS assessment staff.

January-February 2007

- provide us with a list of eligible mathematics classes so that we can randomly sample two of them — we will provide you with a special form to assist with this;
- provide us with student lists for these classes and the name(s) of the teacher(s); there are special

procedures to ensure confidentiality — we will provide you with special forms to assist with this;

- identify students who should not participate because of their special needs.

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- distribute parental letters just prior to the assessment date, if that is required;
- distribute the teacher and school questionnaires, and return the completed questionnaires to us;
- confirm the assessment arrangements with us about two weeks before the assessment;
- arrange, if necessary, for rooms to accommodate the students during the assessment;
- work with the teachers of the TIMSS classes to ensure that all selected classes attend the assessment session and that all students are present;
- meet the test administrator on assessment day and introduce him/her to the class;
- coordinate visits of quality control monitors if your school is selected as one to be monitored.

Please feel free to contact TIMSS with any questions via e-mail at TIMSS2007@westat.com or by calling the TIMSS hotline at 1-888-677-1490.

