PISA 2003 MAIN STUDY NATIONAL PROJECT MANAGER'S MANUAL

NPM Manual Part 1 with Chapter 6 and Chapter 7 added.

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Project Consortium:

Australian Council For Educational Research (ACER)

Netherlands National Institute for Educational Measurement (CITO group)

Educational Testing Service (ETS, USA)

National Institute for Educational Policy Research (NIER, Japan)

Westat (USA)

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1. INTRODUCTION

1.1. The National Project Manager's Manual

1. As the National Project Manager (NPM) for your country, you are responsible for PISA project activities within your country.

2. To assist you with these activities, a series of manuals and other documents are provided by the Consortium. These materials are:

- NPM Manual
- Test Administrator's Manual
- School Coordinator's Manual
- School Sampling Preparation Manual
- Marker training materials
- Key Quest Manual
- Data Entry Manual

1.2. The Organisation of Assessment Activities

3. It is assumed that PISA assessment activities will follow a model that was used in the PISA 2002 Field Test. This model has three components: the NPM and National Project Centre (NPC) at the national level; a School Co-ordinator (SC) responsible for all project-related activities within a particular school; and Test Administrators (TAs) responsible for administering the test fairly, impartially and uniformly in accordance with international standards.

4. It is recognised that countries may differ in the way they organise these tasks. Depending on a particular country's organisation, the activities assigned to one person in the chart below (Exhibit 1-1) may, in fact, be carried out by another person. The intent of the chart is to identify all the activities required to conduct PISA successfully and to provide one suggested model for how activities might be allocated. The chart is not intended to specify who must carry out each activity.

5. The responsibilities of the NPM are described in this manual. The activities of the SC and TA are described in their respective manuals.

NATIONAL PROJECT MANAGER (NPM)

Responsible for implementation of the project within the country.

- Prepare sampling forms and the school sampling frame and submit to Westat.
- Obtain school co-operation.
- Establish date and time for assessment in co-ordination with SC.
- Hire and train TAs.
- Prepare the Main Study assessment instruments, manuals, and other materials.
- Send the sampled schools instructions for preparing lists of eligible students.
- Receive the lists of students back from the school and select student sample.
- Send Student Tracking Forms (STFs) (lists of sampled students) to selected schools and TAs.
- Oversee printing of assessment booklets and questionnaires.
- Co-ordinate activities of TAs
- Oversee packing and shipping of materials.
- Oversee marking, and data entry after testing.
- Submit database to ACER
- Organise for a data analyst to be available after the submission of the database to respond to queries from ACER.
- Submit Main Study Review survey to ACER

SCHOOL CO-ORDINATOR (SC)

Responsible for co-ordinating all PISA-related activities in the school.

- Establish date and time for assessment in co-ordination with NPM.
- Review SC manual.
- Prepare a Student or Class Listing Form (complete list of all students or classes eligible for testing); send to NPM.
- Receive STF (list of sampled students) from NPM; update.
- Receive, distribute, and collect the School Questionnaire; deliver to TA.
- Inform school staff, students, and parents; secure parental permission, if required.
- Inform NPM and TA of assessment date or time changes.
- Identify students who cannot participate in PISA.
- Assist TA with room arrangements on assessment day.
- Ensure that students attend assessment session.
- Arrange for follow-up session, if needed.
- Ensure that students attend follow-up session.

TEST ADMINISTRATOR (TA)

Responsible for conducting PISA assessment in one or more sampled schools.

- Receive training.
- Review TA Manual and scripts.
- Receive assessment materials from NPM
- Ensure security of assessment materials.
- Co-operate fully with SC.
- Call SC 1 to 2 weeks before assessment day to confirm plans.
- Complete final arrangements on assessment day.
- Conduct assessment sessions, adhering strictly to PISA procedures.
- Conduct a follow-up session, if needed.
- Complete STF.
- Complete Session Report Form.
- Receive School Questionnaire from SC; send with assessment materials.
- Prepare materials for shipping; send to NPM.

2. ROLE OF THE NPM AND THE NATIONAL PROJECT CENTRE

****NOTE TO NPMs****
Do not hesitate to contact ACER if you have any questions about how to apply the procedures described in this manual in your country.

6. The NPM has overall responsibility for the implementation of PISA within a country following international standards and procedures. As such, the NPM has a wide range of responsibilities, including but not limited to the field operations activities described in this manual. It is assumed that you will have staff at the National Project Centre (NPC) to assist with these responsibilities. This chapter provides an overview of NPM responsibilities.

2.1. Prepare school sampling forms and school sampling frame

7. The main study school sample for each country will be selected by the PISA Consortium. The School Sampling Preparation Manuals provides detailed information and instructions regarding this process, including the forms that must be completed.

2.2. Prepare the Main Study Test Instruments and Survey Material

NPMs should arrange for the preparation of the Main Study assessment booklets, questionnaires and manuals. NPMs coordinate the work with the consortium on the approval of adaptations and the verification of the national materials. Chapter 4 of this manual describes the process NPMs should follow in preparing their materials.

2.3. Obtain School Co-operation

8. Procedures for securing school co-operation will vary from country to country. In some countries, participation is not a problem. All selected schools are expected to participate and do so. In other countries, it is very difficult to get schools to participate. Reasons for these difficulties vary from concerns about too much testing and loss of instructional time, to the burden on students, teachers, and school staff.

9. The following suggestions may help to assure school co-operation:

- **Develop informational materials.** These materials should address the particular concerns of the educational system within the country. Although international materials provide useful information and examples, each NPC needs to develop a strategy for addressing the special needs and concerns of its own system.
- **Develop a strategy to notify appropriate authorities.** In many systems, there is an established hierarchy of authority that should be contacted in a defined order. Letters, informational materials,

telephone calls and personal visits are all useful ways for contacting the appropriate authorities. Some of these approaches may be more effective than others with different levels of authority. It is important to develop a plan or strategy that defines how contacts will be made and what information will be provided to each of the different levels.

- **Secure permission.** In some systems, it is not enough to notify the appropriate authorities; permission must be obtained. This would include permission from one governmental level to contact another as well as permission from a governing board to contact individual schools. Obtaining permission can be time-consuming. It is important to begin the process of securing co-operation early enough so that all necessary permissions may be obtained.
- **Decide whether to use incentives.** In other studies and in PISA 2000 countries have tried a variety of incentives, including the following: cash payments, instructional materials, study reports, certificates of appreciation, posters and banners. NPMs should decide whether incentives can or should be used in their countries.
- **Identify a School Co-ordinator (SC).** An important part of securing the co-operation of the selected school is to identify someone within the school who will act as the SC. The SC acts as the liaison between the school and the project. This person is very important to the success of the project. In some studies the SC are paid a small honorarium in appreciation for their time and effort.
- **Share approaches that work.** Sharing information about approaches that work is an important part of participating in PISA. You are encouraged to submit information to the web site or to Consortium staff. Example letters, informational materials, and general descriptions of successful approaches will be of interest to Consortium staff and other NPMs as plans for the main study are developed.

2.4. Send the Instructions for Preparing a List of Eligible Students to Schools

10. It is very important that the student sample represent current enrolments. Students should be selected from lists that are accurate and complete. This means that the list should not be prepared too far in advance of the assessment and that all eligible students should be listed.

11. Chapter 5 of this manual contains the instructions for preparing the list of eligible students.

12. The instructions for preparing the lists should be sent to the SC about 8 weeks before testing is to begin in the country. The individuals who prepare the lists should also be instructed to send the lists to you at least 6 weeks before testing is to begin. This will permit you to select the student samples and send the lists of the selected students back to the schools at least 2 weeks prior to the assessment date. Late lists may be exceptions to this schedule. This schedule may be affected by school vacations and holidays. You should be aware of the impact of these events and modify the schedule accordingly.

13. It is not important that the lists of students contain names. If names are excluded, the lists must then contain a unique student identifier. A student identification number, for example, is an acceptable way to identify the student.

14. It is important that all students be listed, including students who will be excluded from the assessment because of a disability or limited proficiency in the language(s) in which the assessment is being offered. **It is very important that exclusions be minimal and that all students be given the opportunity to take part in PISA unless they are incapable of doing so**.

2.5. Select Student Samples and Send Student Tracking Forms to Schools

15. Once you have received the lists of eligible students, the student sample must be selected using the PISA student sampling software prepared by the Consortium, KeyQuest. Chapter 5 of this manual provides information and instructions for the selection of the student sample using KeyQuest.

16. KeyQuest is used to produce a Student Tracking Form (STF) for each school once the sample has been drawn. The STF is the central administration document for the study. It is the complete list of the student sample. Once booklets have been assigned to students, the STF becomes the link between the students, the Assessment Booklets and Student Questionnaires that they receive. After the assessment, the results of the session are entered on the STF and summarised. The STF is sent back to the NPC with the assessment instruments and is used to make sure that all materials are accounted for correctly.

17. Chapter 5 of this manual contains information and instructions regarding some of the columns on the Student Tracking Form. This information will be used in the preparation of the SC and TA Manuals.

2.6. Oversee Assembly and Printing of Assessment Booklets and Questionnaires

18. The approved translated documents should be assembled according to the instructions that will be provided at a later date. After all test materials have been printed, NPMs should send pdf files of all test materials to both ACER and cApStAn for archive.

2.7. Hire and Train Test Administrators

19. PISA has established the following criteria for Test Administrators (TAs):

- It is required that the TA **not** be the reading, mathematics or science instructor of any students in the sessions he/she will administer.
- It is recommended that the TA **not** be a member of the staff of any school where he/she will administer PISA.
- It is preferred that the TA **not** be a member of the staff of any school in the PISA sample.

20. These criteria were established for a variety of reasons including the following:

- To minimise burden on the participating schools;
- To establish the credibility of PISA as valid and unbiased; and
- To encourage uniformity in the administration of assessment sessions.

21. It is preferable that the TA not be a staff member of any schools in the PISA sample. Even so, it is recognised that this is not always possible. For example, it is permissible for a staff member from one school to be the TA in another school. It is recommended that TAs not belong to the staff of any school where they will administer PISA. Again, it is recognised that this is not always possible. Therefore, it is permissible for a staff member from within the school to be the TA as long as this person is not a reading, science or mathematics instructor of the sampled students.

22. In the case where the TA comes from within the school, the roles and responsibilities of the TA and SC could be combined. If the roles are combined, then the manuals describing their activities could also be combined.

23. PISA does not require that TAs meet specific academic or professional requirements. Yet, they should be familiar with schools and how they operate. They should also be familiar with standardised testing procedures. In some countries TAs will have to be fully qualified teachers.

24. Before the beginning of PISA testing in each country, NPCs should hold a training session for the TAs. TA training should occur after the February 2003 NPM training meeting in Madrid when consortium staff will train NPC staff on main survey field procedures, including the training of TAs.

2.8. Oversee Packing and Shipping of All Materials

25. NPCs will package and ship assessment materials. In order to protect assessment security, it is strongly recommended that the Assessment Booklets and Student Questionnaires be sent to the TAs rather than to the schools. If these materials are sent to the participating schools, the NPM must ensure that assessment security is not compromised.

2.9. Receive Materials

26. All assessment materials should be accounted for and kept secure. Therefore, it is very important that strict receipt-control procedures be followed.

2.10. Oversee Marking and Data Entry After Testing

27. Coding and data entry will be among the topics at a training session to be held for NPMs. Manuals will be provided in advance of this training. The staff of the NPC responsible for these tasks should attend this part of the training session.

2.11. Submit database to ACER

28. The database must be submitted in KeyQuest within 12 weeks of the end of the testing period. An analyst needs to be available in the weeks after submitting the database to respond to queries from ACER about the data.

2.12. Complete and submit the Main Study Review survey.

29. You are asked to complete a Main Study Review, summarising your experiences with the PISA 2003 main study. ACER is particularly interested in what worked well and what did not. These comments will be used to make changes in subsequent cycles of PISA.

2.13. Checklist of NPM Activities

30. Exhibit 2-1 is an activity checklist that may be modified to reflect each country's schedule of activities. You may wish to use this checklist to assist in monitoring study progress within your country.

31. You will note that some activities will need to be done in a particular order and some activities can occur concurrently. The actual scheduling of these activities in a country will depend on resource availability and the dates for the assessment. As a guide, activities related to translation, adaptation, assembly, and printing of assessment materials can occur at the same time as activities related to obtaining school co-operation and identifying the student sample. Hiring and training TAs may also occur at the same time as other activities.

Exhibit 2-1. Activity Checklist

****NOTE TO NPMs****
The symbol 🖃 is used as a reminder that certain materials are to be submitted to the consortium.

		Activity
	☐	Prepare school sampling forms and sampling frame
🖃	☐	Submit School Sampling Forms to Westat
	☐	Obtain School Co-operation
	☐	*Identify SC*
	☐	*Establish Assessment Date*
	☐	Prepare Assessment Instruments and Manuals
	☐	*Revise Manuals to Reflect National Plan*
🖃	☐	*Submit Manual adaptations to ACER for approval*
🖃	☐	*Submit Questionnaire Adaptations to ACER for approval*
	☐	*Organise the revision of national material against the new source versions*
	☐	*Provide Technical and Administrative Support During Translation-Verification*
	☐	*Comply with Translation Guidelines*
🖃	☐	*Submit test materials and approved adaptation forms to verification coordinator*
🖃	☐	*Construct booklets and questionnaires, incorporating verification feedback and submit for final optical check (FOC)*
	☐	*Make final revisions based on feedback from FOC*

Exhibit 2-1. Activity Checklist (continued)

		Activity
	☐	Select Student Samples
	☐	*Send Instructions for Preparing a List of Eligible Students to Schools*
	☐	*Receive Lists back from schools*
	☐	*Use KeyQuest to select student sample and generate Student Tracking Form*
	☐	*Send Student Tracking Form to schools*
	☐	Hire and Train TAs
	☐	Co-ordinate Activities of TAs
	☐	Oversee Assembly and Printing of Assessment Booklets and Questionnaires
	☐	*Assemble Booklets and Questionnaires*
	☐	*Print PISA Materials*
	☐	*Send pdf files of all assessment materials to ACER and cApStAn for archive*
	☐	Oversee Packing and Shipping of All Materials
	☐	Oversee Receipt of Materials From Schools
	☐	Oversee Marking and Data Entry
	☐	*Recruit Markers*
	☐	*Organise Marking*
	☐	*Process Booklets*
	☐	*Code Questionnaires*
	☐	*Install Data Entry Software*
	☐	Submit KeyQuest database to ACER
	☐	Complete Main Study Review and submit to ACER

3. MILESTONES DATABASE

3.1. Introduction

32. An innovation for the PISA 2003 is the establishment of a milestones database as part of the Quality Monitoring procedures for this cycle. It will help documenting achievement of key operational milestones of NPCs in preparation for and subsequent to the data collection stages within the cycle.

33. Apart from the broader aims of the Quality Assurance procedures in place for PISA, the aims of the milestones database are to:

- Provide support to NPCs in the form of a timeline of operational tasks, and email reminders of these tasks throughout the operational cycle;
- Forestall operational problems experienced by NPCs on a more timely basis;
- Identify NPCs at risk of not successfully completing essential operational activities so that resources can be targeted to these centres for extra support; and,
- Inform the management team at ACER, as well as the OECD secretariat about the progress of NPCs on a regular basis.

34. Only milestones associated with activities directly between NPMs and members of the consortium are tracked by the database. Other tasks subject to the internal arrangements of NPCs, such as contacting schools or organising the marking operation, while of course still subject to the specifications outlined in the operations manuals, are not monitored via the database.

35. The interface to the database for NPCs and consortium members is a web page, one for each country and consortium member.

36. The need to minimise the burden on NPMs was a key element in the design of the database. In the completion of each milestone, the only extra task required of you will be to check off the milestone on the web page timeline provided.

3.2. The Relationship Between National Project Centres, Consortium Members, and PISA Management

37. The most important point to be made about the milestone database is that for each milestone the relationship between NPCs, the consortium member responsible for the milestone, and the PISA management team at ACER is essentially unchanged from the process used in the PISA 2000 cycle. That is, for each milestone, you will communicate directly with the relevant consortium member. The consortium member will send reminders about what is required and when, and will notify NPCs where there are any concerns about the completion of a milestone. Where there is a major concern about the completion of a milestone, the PISA management team at ACER might also communicate with the NPC. Such communications will be done in conjunction with the relevant consortium member.

38. Where a change is negotiated between a NPC and the consortium member regarding a milestone, the consortium member will notify the manager of the

database at ACER so that the database can be updated. For example, if revised documentation is required, this could be established as a new milestone, along with the due date negotiated between the NPC and the consortium member.

3.3. Milestones in Relation to the PISA 2003 Main Study

39. Exhibit 3-1 is the current list of milestones identified, related to The PISA 2003 Main Study. Next to each milestone is the name of the consortium member that manages the milestone, and when the milestone is due to be completed. Note that as the cycle progresses, modifications might be made to the name of the consortium member responsible for the milestone and/or the due date. Also, further milestones may be added to this list. For example, once the translation verification schedule has been submitted, the dates for the submission of translation materials will be added to the database. NPCs will be informed of any additions or alterations to the list, and the updated information will appear on the web pages.

Exhibit 3-1. Milestones for Main Study, PISA 2003

Milestone	PISA-wide date	Weeks relative to MS[1]	Consortium member
Submission of School sampling forms 1,2,3		-26	Sheila Krawchuk (Westat)
Submission of School Sampling Forms 4,5,7,11		-21	Sheila Krawchuk (Westat)
Submission of Manuals Adaptation Form	30 November 2002		Martin Murphy (ACER)
Submission of finalised TA and SC manuals and approved Manuals Adaptation Form	20 December 2002		Verification coordinator[2]
Submission of Questionnaire Adaptation Spreadsheet[3]		-12	Wolfram Schulz (ACER)
Submission of Cognitive Units and Cognitive Test Revision Spreadsheet[3]		-12	Verification coordinator[2]
Submission of finalised Questionnaires and approved Questionnaire Adaptation Spreadsheet[3]		-9	Verification coordinator[2]
Submission of booklets and questionnaires for Final Optical Check[3]		-6	Verification coordinator[2]
Submission of final printed versions of all test materials in .pdf format for archive		-4	Marten Koomen (ACER) Steve Dept (Capstan)
Completed Sampling Form 12		+ 4	Sheila Krawchuk (Westat)
Submission of Main Study Database in KeyQuest		+12	Alla Berezner (ACER)
Submission of Main Study Review survey		+16	Martin Murphy (ACER)

[1] Dates listed in weeks before the start of the assessment period, or weeks after the end of the assessment period

[2] Verification coordinator for English language materials is ACER, and cApStAn for non-English language materials. Refer to Chapter 4 for contact names.

[3] Dates for these milestones to be negotiated via Preferred Verification Schedule, refer to chapter 4

3.4. Milestones Pages Web Site

40. The address for the milestones pages web-site is http://pisaweb.acer.edu.au/milestones. (This is the same address as for the PISA Consortium web-site, with the addition of "/milestones".) You will access your web pages via a log-in page. The same user names and passwords as used for the PISA Consortium web site apply for access to the milestone pages. Authority to access the milestones pages is restricted to consortium members, NPMs and NPC staff specifically authorised by NPMs.

41. Once you have logged in, a page with a list of milestones and dates specific to your country is loaded. The information on the page is as follows:

- Name of the milestone;
- Due date;
- Name of the consortium member responsible for the milestone;
- Reference to one of the operational manuals, where appropriate; and
- Checkbox to indicate that the milestone has been completed.

3.5. Milestone Dates

42. As is clear from the list of milestones above, some due dates are 'PISA-wide.' That is, those dates not linked to the assessment period of a country. Other dates are linked to the assessment dates of the country. These latter dates are consistent for all countries in terms of the amount of time before or after the assessment when the milestone is due. Until the assessment dates for a country have been submitted to the Consortium, only the PISA-wide dates are in date format. The dates relative to the assessment are listed as "x weeks before the start of the assessment period" or "x weeks after the assessment period." Until the assessment dates have been submitted, PISA-wide milestones will appear first on the web page, in order by date, followed by the milestones relative to the assessment dates. Once the assessment period is submitted to the Consortium, the relative dates will be converted into date format, and these dates will appear jointly with the PISA-wide dates in order by date.

3.6. Procedures in the Use of the Milestones Database

Indicating the completion of a milestone

43. Once a milestone has been completed and sent to the member of the consortium responsible, you will indicate completion by logging onto the database web page, clicking the completion box for that milestone and then clicking 'submit'. A confirmation page will acknowledge that the new information has been submitted. When the page is reloaded, the date that the box was checked will appear next to the checkbox. If a completion box is accidentally checked, simply click the box again to un-check the completion box.

Delays in the completion of milestones

44. It is a reality of such a complex exercise as the implementation of an international testing program that delays can and do occur. This is understood and appreciated by all members of the Consortium. If you anticipate a delay in the completion of a milestone, be sure to inform the consortium member responsible for the milestone.

This is important so that the consortium member can re-organise his or her plans for subsequent activities associated with the milestone.

45. Where there is only a minor delay, the consortium member will acknowledge receipt of your communication and no further action will be necessary. If the delay is for a longer period, it may be appropriate to negotiate a new due date for the milestone, in which case, the consortium member will notify the manager of the database and update the record to reflect this new date. The new date will then appear on the web page.

46. Where the consortium member is concerned about the lateness of a milestone, he or she will communicate these concerns to you, and seek to negotiate a mutually agreeable arrangement. The consortium member may also notify the PISA management team at ACER of any delays which s/he feels may put the project implementation at risk. In this case, the management team, in conjunction with the consortium member, will discuss the delay in the milestone with you, and work with you to find a method of resolving the matter. Where this involves extensions to due dates, this information will be passed on to the manager of the database for updating of the milestone record.

New milestones or revisions to already completed milestones

47. It may be the case that during the course of the testing program cycle, new milestones are added to the database. Also, it may sometimes occur that a milestone that has been previously submitted and approved may need to be re-submitted. For example one of the sampling forms may need to be revised due to a change in the sampling design. In these cases, the consortium member responsible will negotiate a due date for the milestone with you, and the new milestone will be added to the database.

3.7. Reports to the PISA Management Team

48. Reports on the completion of milestones are generated from the database. These are used in the reporting the progress of NPCs to the PISA management team at ACER, as well as to the OECD Secretariat.

4. PREPARATION OF NATIONAL VERSION(S) OF MAIN STUDY TEST INSTRUMENTS AND SURVEY MATERIAL

This chapter describes the steps to be taken in the preparation of the assessment materials for the Main Study. These steps are summarised in Table 1 below:

Table 1 Main steps in the development of the Source Versions and National Versions of the Instruments for the PISA 2003 Main Study

September 29 to October 5
The PISA Reading, Mathematics, Science and Problem Solving Expert groups meet in Melbourne to review the results of the FT item analyses together with the test developers; they propose a list of items to be retained for the Main Study.

October 21 to 25
NPM Meeting in Melbourne. Discussion of the material selected for use in the Main Study, and of the Main Study procedures. The NPMs provide a draft *Preferred Verification Schedule* to inform the consortium of their testing dates, the language(s) that will be used in their national assessment, and the timeline they foresee for the revision and verification of their national version(s) of the survey instruments.The NPMs receive:

i. the list of selected items, together with the (still unrevised) English source version of these items, as used in the FT, and
ii. the Main Study ENG and FRE source versions of the School Coordinator and Test Administrator Manuals.

End of October to December 20
The NPMs start preparing their national material, i.e.:

i. Prepare the national version(s) of the Link units, using the ENG and FRE source versions already available in the PISA website, and retrieving your corresponding PISA 2000 national material from your PISA 2000 Main Study booklets and Marking Guides.
ii. Retrieve the latest FT national version of the PISA 2003 items that were selected for the Main Study and of their scoring instructions, from your PISA 2003 FT booklets and marking guides. When receiving your National Report on the PISA 2003 FT analyses, check all retained items that appeared to have flaws in your national item analysis, in order to identify possible remaining translation or adaptation errors.
iii. Revise your national SC and TA Manuals according to the source versions received at the NPM Meeting, and send your Manuals Adaptations Form to ACER for approval. Allow up to 2 weeks for discussion with ACER prior to approval of the adaptations, to be completed by December 20.

December 20
The consortium provides the NPMs with both the English and French revised source versions of the assessment material to be used in the Main Study.

The NPMs send their revised TA and SC Manuals together with the approved *Manuals Adaptation Form* to their verification team (ACER for the English-speaking countries; cApStAn for all other countries).

National Centres start implementing all revisions made by the consortium (and

possible other corrections or new adaptations) in their national versions of Main Study items (in unit format).

Early January 2003
Training session for the international verification team in Pisa (Italy). As part of the training session, the verifiers perform the verification of the TA and SC manuals.

January-February

i. The NPMs submit to ACER their *Questionnaire Adaptation Spreadsheets* for approval. Once approval of the questionnaire adaptations has been obtained, the NPMs submit the Questionnaires and approved *Questionnaire Adaptation Spreadsheets* to their verification team. These processes are completed according to the *Preferred Verification Schedule*.

ii. After implementing all changes and revisions needed in their national versions of the cognitive items, they submit their material in unit format to the verification team, together with *Cognitive Tests Revision Spreadsheets*[4]. Once the material has been verified, item clusters should be formed and perfected, and then test booklets should be formed from the clusters. The booklets are then submitted again to the verification team for Final Optical Check. These processes are completed according to the *Preferred Verification Schedule*.

February 17 to 21
NPM Training Session in Madrid.

February 28
The NPMs receive (if needed) the list of last minute changes implemented in the Marking Guides as a result of the discussions in the Madrid meeting. They finalize their national version of the Marking Guides, and submit them for FOC to their verification team. This process will be completed according to the Preferred Verification Schedule.

March
Beginning of the Main Study in some of the participating countries.

The paragraphs below describe the materials to be revised, and give more details on each of the steps listed in the table.

4.1. Materials to be revised.

The MS material to be revised will include:

49. Main Study versions of the School Co-ordinator and Test Administrator Manuals, together with Manuals Adaptation Spreadsheets.

All changes made by the Consortium in the MS version of the Manuals (compared to the FT version) will appear in 'track changes' mode in both the English and French sources.

[4] The *Cognitive Tests Revision Spreadsheets* correspond to the *'National Adaptation Spreadsheets'* used in the Field Trial.

Please indicate in the *Manuals Adaptation Spreadsheet* all national adaptations that you intend to implement in these manuals, particularly highlighting any new adaptations made since the FT. For national adaptations that were already approved by the Consortium in your FT version, just indicate 'Approved in the FT'. You will be asked in the *Manuals Adaptation Form* to indicate where required parts of the SC and TA source manuals are located in your national manuals. This will assist in the verification process.

Verification of the Manuals can only be performed when the verifier receives both your revised versions and your approved *Manuals Adaptation Form*.

50. Main Study versions of the School and Student Context Questionnaires, and S-RL & ICT optional instruments, together with Questionnaire Adaptation Spreadsheets.

Note that no rotation will be used in the Main Study for the *Student questionnaire*, which will have only one form, instead of forms A and B as used in the FT.

All changes made by ACER in the MS version of the Questionnaires (compared to the FT version) will be described in the notes included in both the English and French sources.

Please indicate in the *Questionnaire Adaptation Spreadsheets* all national adaptations that you intend to implement in each Questionnaire, particularly highlighting any new adaptations made since the FT. For national adaptations that were already approved by ACER in your FT version, indicate 'Approved in the FT' next to the adaptation.

Verification of the Questionnaires can only be performed when the verifier receives both your revised versions and your approved *Questionnaires Adaptation Spreadsheet*.

If adaptations to the Questionnaires require changes to *KeyQuest*, for example the addition of new variables, these changes should be recorded in the appropriate columns of the adaptation forms.

51. Main Study versions of the cognitive tests materials, i.e. the *PISA 2003 Mathematics, Problem Solving* and *Science* items that will be selected from the FT material, and the *PISA 2000 Reading, Mathematics* and *Science Link items* retained from the PISA 2000 Main Study material, together with *Cognitive Tests Revision Spreadsheets*.

The link items retained from PISA 2000 are currently available in the PISA Web site. No changes (or extremely limited changes) will be made in the link material by the test developers. However, some reformatting will be needed to align this material with the 2003 material.

The cognitive material will be provided in three formats :

i. "unit" format (i.e. as separate units, containing stimulus, questions and response coding instructions). This version of the material will include track changes to expose all alterations made to items since the final dispatch of the Field Trial items;

ii. "cluster" format (i.e. as groups of items from which booklets will be formed using the rotation design of the study);

iii. "booklet format" (i.e. as master copies of the final test booklets).

All changes made by ACER in the MS version of the PISA 2003 cognitive material and scoring instructions (compared to the FT version) will appear in 'track changes' mode in both the English and French sources of the *separate units*. Please use these source units as the reference version when preparing your national version of the revised cognitive test material.

Your material should be submitted for verification in unit format, together with the related *Revision Spreadsheets*. Note that, unlike the *Manuals Adaptation Form* and the *Questionnaire Adaptation Spreadsheets*, the *Cognitive Tests Revision Spreadsheets* should be sent directly to the verification team, and do not require prior approval by ACER. Please document in the *Revision Spreadsheets* all changes that you intend to implement in each test unit. Changes that merely reflect amendments made by the test developers in the source versions do not need to be mentioned. Also indicate in the spreadsheet any possible 'new' adaptations. For national adaptations that were already approved in your FT version, just indicate 'Approved in the FT' next to the adaptation.

TA and SC Manuals: Submit *Manuals Adaptations Form* to ACER for approval first. After approval, submit national versions of Manuals, with the approved *Manuals Adaptations Form* to your verification team by 20 December 2002.

Questionnaire Instruments: Submit *Questionnaire Adaptations Spreadsheets* to ACER for approval first. After approval, submit national versions of Questionnaires, with the approved *Questionnaire Adaptations Spreadsheets* to your verification team.

Cognitive Material: Submit cognitive material in unit format, along with the *Cognitive Tests Revision Spreadsheets,* directly to your verification team. It is encouraged to send cognitive material in more than one batch.

4.2. Planning the revision of your national version and submitting a *Preferred Verification Schedule*

52. A *Preferred Verification Schedule* form *(PVS)* is included in Exihibit 1. It is **required** that a provisional copy of this schedule be filled in and submitted to the Consortium at the Melbourne meeting in October. In case you are still uncertain as regards your national testing window or other aspects of your national timelines, please indicate the most probable dates. The PVS is a starting point, intended to enable the verification team to give their staff some idea of the periods when they are likely to receive your material for verification. It can be re-negotiated in case you need to change your timelines, but it is essential both for your work and the work of your verifier that a provisional schedule be submitted as early as possible.

53. The information to be provided in the Preferred Verification Schedule includes:

Contact information.
Please indicate the person(s) who will be in charge of the revision of your national version(s) of the material and to whom the verifiers will have to return the verified material. If versions in more than one national language are to be developed, and different teams are in charge, please provide the contact information of the persons in charge of each national version.

Language(s) information.
Please indicate whether you intend to use national versions in more than one national language, and if so, which languages will be used in your assessment.

Note that a general principle in PISA is that students should be tested in the language of instruction used by the school that they attend. Therefore, the NPM should develop as many versions of the test instruments as there are languages of

instruction used in the schools included in his/her national sample. Any exclusion of schools using minority languages should be discussed with the PISA sampling referee.

If, in your country, the school sample for the Main Study includes schools that use a language of instruction for which no national version was developed for the Field Trial, you will need to produce one for the Main Study. This may be achieved by implementing national adaptations in one of the existing PISA versions (English, French, or one of the 27 other languages used by countries that participated in the PISA 2003 FT, that is Arabic, Bahasa Indonesian, Basque, Bokmål, Catalan, Chinese, Czech, Danish, Dutch, Finnish, German, Greek, Hungarian, Icelandic, Italian, Japanese, Korean, Latvian, Polish, Portuguese, Russian, Serb, Slovak, Spanish, Swedish, Thai, Turkish).

If no previous PISA version is available, the NPM will have to produce a national version in the new target language. In doing this, s/he will follow the *Instructions for the Translation of the PISA Materials* included in Chapter 4 of the *PISA 2003 NPM Field Trial Manual*.

Please contact the consortium for any special cases (e.g. school systems with bilingual schools).

It is important to note that all national versions used in schools attended by more than 5% of your national target population should be submitted to the Consortium for verification. We expect that national versions used in schools attended by only 5% or less of the sampled students will be verified by the National Centre. However, these versions will also require international verification in case your country intends to have separate results published in the Appendices of the International PISA report for particular linguistic subsamples which fall under the 5% limit.

Timeline information.
When filling in the *Preferred Verification Schedule*, please consider (i) the time available between the moment when the source versions of the MS materials will be circulated and the moment when your assessment instruments should be ready for use in your schools; (ii) the time needed by your national team to revise your national version of the instruments and to implement all changes needed; (iii) the time needed to seek approval from ACER for all of the adaptations included in your Questionnaires and Manuals, as well as for possible adaptations in the cognitive materials that may be more "substantive" than purely linguistic adaptations, and therefore would require approval from the test developers; and (iv) the time needed by the international verification team to check the equivalence of your national version against the source versions.

As discussed earlier, the verification exercise for the TA and SC manuals should be completed by early January. Based on previous experience, the verification exercise for the Questionnaires and Cognitive material should usually start about 12 weeks before the beginning of your testing period, that is:

- The verifier will need about four weeks to verify your material in unit format;
- You will need about two weeks to implement the verifier's edits and to assemble the material into clusters, then into booklets;
- The verifier will need about one week to receive hard copies or .pdf files of your final booklets and Questionnaires, perform a Final Optical

Check (FOC) and return to the National Centre a FOC report detailing possible residual errors in booklets and questionnaires that must be corrected before the materials go to press.

- You will need about 5 or 6 weeks to implement the edits from the FOC, to have your material printed and to dispatch it to the schools.

The process will be smoother if you send the materials for verification in two or three batches; if you do not forget to join the related *National Adaptation* or *Revision Spreadsheets*; and if you take an early start with the revision of Questionnaires (which require that the NAS are approved by the Consortium prior to the verification).

4.3. Starting the preparation of your material before December 20

54. You do not need to wait until the ENG and FRE source version of the Main Study materials is circulated on December 20. Part of your material can be prepared in advance of this date:

Preparing the Link items

The ENG and FRE source versions of the PISA 2000 Reading, Mathematics and Science Link items are already available on the Pisa website. These units will not undergo further modifications, or only very slight changes (mainly minor format changes needed to harmonise this material with the PISA 2003 material).

Countries that participated in PISA 2000 or PISA+ (and therefore did not include these items in their PISA 2003 FT) can start preparing these units for use in the Main study. We strongly recommend that you do NOT use the old files in your archives that contain your national version in unit format (i.e. stimulus, items and scoring instructions), unless you are entirely sure that they were comprehensively updated after completing the PISA 2000 Main Study. That is, your national version of the Link items should be based *on the stimuli and items as they were used in your PISA 2000 booklets, and on the scoring instructions as they were included in the Marking Guides used by your PISA 2000 markers.* This means that the safest procedure will be to prepare "fresh" national versions of the Link units by cutting and pasting from your PISA 2000 Main Study booklets and Marking Guides, then check them accurately against the source version of the Link units for possible last edits and overlooked discrepancies. Please do NOT introduce any change in the Link material other than those strictly necessary – otherwise the use of these items as anchoring material with the PISA 2000 results may be jeopardised.

Similarly, it is recommended that the "new" PISA countries, which used Booklets 11 and 12 (containing the link material) in the PISA 2003 Field Trial, re-construct a national version of the link units by cutting and pasting from their FT booklets and related Marking guides, then check them against the ENG and FRE source versions. In addition, they will need to review the results from their FT link item analyses in order to identify and correct possible translation flaws that went undetected during the translation process. Since in these countries no anchoring with the PISA 2000 data will be needed, the NPMs will have somewhat more freedom to improve their version – though still taking in account the general principle that "*if it ain't broken, do not fix it*" (i.e., unnecessary changes made in items that worked well in the FT may result in unexpected new bugs rather than in improvements).

Prepare your SC and TA Manuals

Both these manuals require a number of important national adaptations, that must be approved by the Consortium BEFORE the manuals are sent for verification. This two-steps process may take some time: in a few cases the NPM had to exchange several messages with ACER during two or more weeks before their adaptations were approved in the FT.

Therefore the Consortium will provide a separate *Manuals Adaptation Form* for the Main Study so as to facilitate the communication, and circulate the ENG and FRE source manuals at an earlier date than the remainder of the material, in order to enable the NPMs to complete the preparation of the Manuals before they start the revision of the core cognitive materials.

After revising the Manuals and getting back your approved *Manuals Adaptation Form*, please submit these documents for linguistic verification, together with the approved adaptation Form. We would strongly appreciate that this material is submitted in advance of the verifiers' training session that will be held on January 4-5, so that it can be verified during a training workshop under the supervision of Consortium staff, and returned to the countries no later than January 15.

Retrieve your FT version of the items selected for the Main Study and use your FT statistics to identify items that may need revision

The revisions made by the test developers in the test material retained for the Main Study (compared with the source version used in the FT) will be listed in a *Changes* document, and will appear in "track changes" mode in the ENG and FRE source versions of the test *units* circulated by December 20. No track change mode will appear in the source versions of clusters, booklets and separate Marking Guides.

For this reason (and also because the test units are the only place where the modifications made in both the items and scoring instructions will appear side-by-side, thus reducing the risk that the changes made in your national version of the items be not properly echoed in the scoring instructions), it is important that all revision work is conducted using a national version in *unit* format rather than trying to work directly in cluster or booklets format.

It is strongly recommended that you :

i. re-construct national files of the selected units by cutting and pasting from the most complete available source. In most cases, the best source will be the Field Trial booklets, and the Field Trial Marking Guides, since it is likely that the 'old' unit files from your archives may not have been updated with all edits and corrections that were implemented in the cluster and/or booklet versions;

ii. use your statistics from the FT to identify possible remaining bugs in this national version of the retained units and list the corrections that may be needed;

iii. after receiving the ENG and FRE source versions of retained units on December 20, enter in your units all changes made by the Consortium's test developers, and correct any other bug identified through your FT statistics;

iv. similarly, check your FT Questionnaires statistics to identify possible errors in your national versions of the School and Student Questionnaires; revise your Questionnaires against the new source versions; and submit to ACER your *Questionnaire Adaptations Spreadsheets* for approval;

v. submit for verification your revised version of cognitive materials in unit format, as well as your revised Questionnaires;

vi. upon return of the materials, edit them according to the comments received from the verifier; check that any possible last minute errata list circulated by the Consortium did not go unnoticed; have your revised material proof-read by independent eyes to spot typos or spelling errors that may have been introduced while entering the corrections;

vii. assemble the items into clusters according to the source master copies of clusters provided by the Consortium;

viii. assemble the clusters into booklets according to the source master copies of booklets provided by the Consortium;

ix. submit to the verification team, for Final Optical Check, hard copies or .pdf copies of your booklets and Questionnaires, and implement possible last edits suggested by the verifier *before* sending your materials to print;

x. assemble your national version of Marking Guides, including in them all possible last edits circulated by the test developers after the February meeting; and

xi. submit to the verification team, for Final Optical Check, hard copies or .pdf copies of your Marking Guides, and implement possible last edits suggested by the verifier *before* printing them and using them in your national markers' training sessions.

Steps (iii) to (ix) can only be implemented after you receive the materials circulated by December 20. Steps (x) and (xi) can only be implemented after the February meeting. However, steps (i) and (ii) can take place prior to those dates, allowing you to save time.

Particular attention should be paid to the review of your national statistics for the retained cognitive items. Make sure that all items that appeared to have some flaw in your FT national version (such as a significant DIF, a too high fit, a too low discrimination index, a negative point biserial coefficient for the correct answer(s) or a positive point biserial coefficient for incorrect answers, or unordered ability indexes for the various response categories in extended open response items) are identified and thoroughly explored by domain experts familiar with test development and psychometric analyses, in order to detect possible remaining errors in the translation of stimulus, item, or coding instructions.

List the cases where corrections may be needed, but wait until you receive the new ENG and FRE source versions in order to enter them together with the changes made by the Consortium's test developers, to avoid possible discrepancies between your and their edits.

Revising, documenting revisions and submitting materials for verification

Revising

The ultimate aim of the revision and verification process is to make sure that your national version(s) are as fully equivalent as possible to the ENG and FRE source versions. The ultimate aim of the adaptation approval process is to make sure that when deviations from the source materials are needed to adjust for cultural or other

national specificities, they do not jeopardise the overall international equivalence of the assessment instruments.

The source versions should therefore be considered as the reference for any change or correction introduced in the materials: changes will only be beneficial if they contribute to *increase the equivalence of your national version(s) with the source versions.* Thus, refrain from over-revisions just aimed at finding more 'elegant' or 'literary' or 'efficient' words and syntactical structures. Such modifications might affect the item difficulty in unexpected ways, perhaps introducing flaws in items that had no problem in the FT.

Documenting revisions

It is important to note that all corrections made to the MS national version of the cognitive test materials should be documented in the *Cognitive Test Revision Spreadsheets* (except for those changes that merely reflect amendments made by the test developers in the source versions). Failure to include the *Cognitive Test Revision Spreadsheets* with the cognitive materials sent for verification (or including incomplete spreadsheets) may cause delays in the return of verified materials.

Note also that the source versions of the Questionnaires are likely to undergo substantial changes compared to the FT versions. Part of the items may be entirely new, and therefore will need to be double-translated and reconciled into your national language(s). National adaptations may be needed for the new items, or changes in the national adaptations made in retained items may be suggested when reviewing your FT statistics -- all of which will require approval from ACER.

For this reason we suggest that the review of your Questionnaire statistics and the revision of your Questionnaires only starts when the new source versions become available, but is given some priority at that moment, in order to provide sufficient time for the adaptations approval process. Approved *Questionnaire Adaptation Spreadsheets* must be sent together with the questionnaires sent for verification. Failure to include them may cause delays in the return of verified material.

Submitting materials

The verification of the materials will be done at ACER, for the English-speaking countries (Australia, Canada (English), Ireland, United Kingdom, New Zealand, and USA):

PISA Administration
Australian Council for Educational Research
19, Prospect Hill Road, Private bag 55,
Camberwell, Victoria 3124, AUSTRALIA
Fax: ++ 61 3 9277 5500
E-mail: pisa@acer.edu.au

For all other countries, the verification will be done at cApStAn:

cApStAn
Parc scientifique Einstein
7 rue du Bosquet
B-1348 Louvain-la-Neuve, BELGIUM
Tel.: ++32 10 486 480
Fax: ++32 10 453 660
E-mail: **pisa.verif@capstan.be**

Please do not forget to let your verification co-ordinator know where you want the verified material sent back. Make sure that all your shipments mention the name and address of the person who will be the recipient of the verifier's feedback.

Table 2 indicates the contact persons who will deal with specific aspects of the verification exercise, both at ACER and at cApStAn.

Table 2. Contact Persons at ACER and at cApStAn

Contact persons for English Speaking Countries

Item	Contact Person	Organisation
Preferred Verification Schedule	Marten Koomen	ACER
Manuals Adaptation Form, National versions of TA and SC Manuals	Martin Murphy	ACER
Questionnaire Adaptation Spreadsheets, National versions of questionnaires	Wolfram Schulz	ACER
Cognitive Tests Revision Spreadsheets, Cognitive Test Material	Ross Turner	ACER
FOC of hard or .pdf copies of Booklets, Questionnaires & Marking Guides	Ross Turner	ACER

Contact persons for all other countries

Item	Contact Person	Organisation
Preferred Verification Schedule	Steve Dept	cApStAn
Manuals Adaptation Form	Martin Murphy	ACER
National Versions of TA and SC Manuals, and approved Manuals Adaptation Form	Steve Dept Andrea Ferrari	cApStAn
Questionnaire Adaptation Spreadsheets	Wolfram Schulz	ACER
National Versions of Questionnaires, and approved Questionnaires Adaptation Spreadsheets	Steve Dept Andrea Ferrari	cApStAn
Cognitive Tests Revision Spreadsheets, Cognitive Test Material	Steve Dept Andrea Ferrari	cApStAn
FOC of hard or .pdf copies of Booklets, Questionnaires & Marking Guides	Steve Dept Andrea Ferrari	cApStAn

Additional Contact Information

Item	Contact Person	Organisation
Changes in the Preferred Verification Schedule (should be first negotiated with your verification team)	Martin Murphy	ACER
Queries related to languages of instruction and general problems in the development of national versions	Aletta Grisay	agrisay@attglobal.net
Queries related to access to the materials in the PISA website, to graphics, styles, formatting of the materials, etc.	Marten Koomen	ACER

Providing copies of your final national version(s) to ACER and cApStAn

Please make sure that when your national version(s) of the material are finalised, .pdf files of all test booklets, questionnaires, marking guides and manuals are sent to both ACER and cApStAn to be recorded in the PISA archives of each organisation.

EXHIBIT 4.1. Preferred Verification Schedule – PISA2003 Main Study

Please complete this form and return before October 20 to your Verification co-ordinator:

English-Speaking Countries:

Fax: ++ 61 3 92 77 55 00
e-mail: pisa@acer.edu.au

All other countries:

cApStAn: Fax: ++32 10 453 660
e-mail: pisa.verif@capstan.be

1. Contact information

Country: _____

Language: _____

NPM: _____

The person in charge for translation and revision of the material in our country is/will be:

Name: _____

Telephone (*): _____

Fax (*): _____

e-mail address:_____

(*) Please include country code

2. Language(s) information

Do you intend to develop for the Main Study any *additional* national version(s) of the PISA assessment materials (that is, in languages that were not used in your PISA 2003 Field Trial)?

☐ No, the national version(s) needed was (were) already developed for the Field Trial.

☐ Yes, we intend to include in our Main Study a minority language that was not included in our Field Trial (please specify):

_____

If Yes, please indicate the procedure you will use for the development of the new version(s) (e.g., by adapting an existing version borrowed from another PISA country using the same language as your national minority):

_____

_____

_____

3. Deadlines information (backward countdown)

<table>
<tr><td colspan="2">We plan to hold our National Marker training sessions on:
..... 2003
(Indicate your training dates)</td></tr>
<tr><td colspan="2">Our Marking Guides should go to press on:
[Allow time from when the Marking guides are needed for the training sessions]
..... 2003</td></tr>
<tr><td colspan="2">We need verifier's feedback on the Final Optical Check of Marking Guides on:
[Allow time to implement corrections from the FOC]
..... 2003</td></tr>
<tr><td colspan="2">We'll send assembled Marking Guides to our Verification Team for the Final Optical Check on:
[Allow 1 week for the verification team to perform FOC]
..... 2003</td></tr>
<tr><td colspan="2">OUR MAIN STUDY STARTS ON:

..... 2003
(Indicate your MS date)</td></tr>
<tr><td colspan="2">Our Booklets & Questionnaires should go to press on:
[Allow time from when materials need to be dispatched to schools]
..... 2003
(MS date minus about 5 weeks)</td></tr>
<tr><td colspan="2">We need verifier's feedback on the Final Optical Check of Booklets and Questionnaires on:
[Allow time to implement corrections from the FOC]
..... 2003
(MS date minus about 5.5 weeks)</td></tr>
<tr><td colspan="2">We'll send assembled Booklets and Questionnaires to our Verification Co-ordinator for the Final Optical Check on:
[Allow 1 week for the verification team to perform FOC]
..... 2003
(MS date minus about 6 weeks)</td></tr>
<tr><td colspan="2">We need verifier's feedback on Cognitive Units and Questionnaires on:
[Allow time to implement corrections from verification and assemble Booklets and Questionnaires]
..... 2003
(MS date minus about 8 weeks)</td></tr>
<tr><td>We'll send the last batch of Cognitive Units to our Verification Co-ordinator on:
[Focus on balance between 1st and last batches]
..... 2003</td><td>We'll send finalized Questionnaires and approved QQ NAS to our Verification Co-ordinator on:
[Allow 10 days for cApStan to verify Questionnaires]
..... 2003
(MS date minus about 9 weeks)</td></tr>
<tr><td rowspan="2">We send the first batch of Cognitive Units to our Verification Co-ordinator on:
[Allow 1 month from when you need verification feedback]
..... 2003
(MS date minus about 12 weeks)</td><td>We need ACER's approval of our Questionnaire NAS on:
[Allow time to finalize Questionnaires]
..... 2003
(MS date minus about 10 weeks)</td></tr>
<tr><td>We send Questionnaire NAS to ACER on:
[Allow 2 weeks for NAS approval process]
..... 2003
(MS date minus about 12 weeks)</td></tr>
</table>

5. SELECTION OF STUDENT SAMPLE AND PREPARATION OF MATERIALS FOR SCHOOLS

5.1. Introduction

55. Once the school sample has been drawn by the consortium and sent back to the NPC, NPMs contact the sampled schools and obtain a list of eligible students so that a sample of students can be selected from each school. This chapter provides instructions for obtaining the list of eligible students from the sampled schools.

56. When the list of eligible students is returned by the school to the NPC, the student sample is selected using KeyQuest. Instructions for the drawing of the student sample are provided in this chapter.

57. This chapter also provides information and instructions regarding a number of columns on the Student Tracking Form (STF). This information will be used in the preparation of your national versions of the TA and SC manuals.

5.2. Send Schools Instructions for Preparing a List of Eligible Students

58. Exhibit 5-1 is an example "Student Listing Form" with instructions to schools about how to prepare their list of eligible students. NPMs may use this form or develop their own instructions. Please note the following:

- Eligible students are defined as all students born in 1987 (or the appropriate 12-month age span agreed upon for your country) <and in the __ grade>.
- The list should include **all** age <grade>-eligible students, even those who might not be tested due to a disability or limited language proficiency.
- In countries where the study programme varies among the eligible students, the study programme should also be included on the list. Refer to section 5.4 for details about providing the Study Programme information.
- *If you are selecting an additional grade based sample* as a national option the age eligible students should be listed first, followed by the students enrolled in the target grade who are *not* 15 years old.
- Any exclusion from the assessment of students who cannot be tested must be done **after** the student sample is selected.
- It is recommended that schools be asked to retain a copy of the list in case the NPM must call the school with questions.
- If an electronic list is prepared, it should be up-to-date at the time of sampling rather than a list prepared at the beginning of the school year.

59. While it is assumed that the lists of students will contain names, these are not critical to the sampling process as long as the lists contain a unique student identifier. A

student identification number, for example, is an acceptable way to identify each student.

Exhibit 5-1. Example of Student Listing Form

STUDENT LISTING FORM

School ID: _____ Country Name: _____

School Name: _____ List Prepared By: _____

Address: _____ Telephone #: _____

_____ Date List Prepared: _____

_____ Total # Students Listed: _____

DIRECTIONS: PLEASE COMPLETE COLUMNS A, B, C, D AND E FOR EVERY STUDENT <BORN IN 1987>.
Include students who may be excluded from other testing programs, such as some students with disabilities or limited language proficiency. Detailed instructions and information about providing computer-generated lists are on the other side of this page.

For Sampling Only		(A) Student's Name	(B)	(C)	(D)	(E)
Selected Student (Enter "S")	Line #	(First Middle Initial Last)	Grade	Sex (M / F)	Birth Date (mm/yy)	Study Programme

Exhibit 5-1. Example of Student Listing Form (continued)

PISA 2003 MAIN STUDY

A. Instructions for Preparing a List of Eligible Students

1. Please prepare a list of ALL students <born in 1987. . . (and in __ grade) NPM must insert eligibility criteria> using the most current enrolment records available.
2. Include on the list students who typically may be excluded from other testing programs (such as some students with disabilities or limited language proficiency).
3. Write the name for each eligible student. Please also specify current grade, sex, and birth date for each student.
4. Enter the Study Programme code for each eligible student
5. If confidentiality is a concern in listing student names, then a unique student identifier may be substituted. Because some students may have the same or similar names, it is important to include a birth date for each student.
6. The list may be computer-generated or prepared manually using the PISA Student Listing Form. A Student Listing Form is on the reverse side of these instructions. You may copy this form or request copies from your National Project Manager.
7. If you use the Student Listing Form on the reverse side of this page, do **not** write in the "For Sampling Only" columns.
8. Send the list to the National Project Manager (NPM) to arrive no later than **<NPM insert DATE>**. Please address to the NPM as follows: **<NPM insert name and mailing address>**

B. Suggestions for Preparing Computer-generated Lists

- Write the school name and address on list.
- Number the students.
- Double-space the list.
- Allow left-hand margin of at least two inches.
- Include the date the printout was prepared.
- Define any special codes used.
- Include preparer's name and telephone number.

C. Suggestions for Sending Data Files

<NPM to insert instructions, if appropriate>

5.3. Select Student Sample

60. **The student sample must be selected using KeyQuest**. The procedure for this is outlined below and explained fully in the KeyQuest manual. NPMs **must** receive approval from the consortium, specifically from Keith Rust, if they want to select students using other software.

61. The student sample may be drawn once you have entered the following details in the **List of Schools** in KeyQuest*:*

- Study Programme code (Refer to Section 5.4 of this manual)
- Sample size of 15 year olds (Usually 35). ("15 year olds" refers to the appropriate 12-month age span agreed upon for your country)
- Total number of 15 year olds in the school
- *If you are selecting an additional grade based sample* as a national option you also need to know the **total** number of students eligible for sampling. That is, the number of 15 year olds at the school PLUS the number of students enrolled in the target grade who are *not* 15 years old.

62. It is important that these details are accurate and correctly entered into KeyQuest because any errors will mean that the sample will have to be redrawn.

63. There are two ways of drawing the sample of students for a school in KeyQuest.

- With the first method, the sample is drawn before any individual student details are entered into KeyQuest. If this method is used, the information of the sampled students collected from the list of all eligible students that was returned by the school coordinator must be manually entered into the Student Tracking Form after the sample has been drawn.
- If the National Project Centre receives lists of students from schools in an electronic format, then it is worth importing these data into the **List of Students** instrument in KeyQuest. If this method is used, the data from the List of Students will be pasted into the Student Tracking Form when the sample is drawn.

64. You can choose either method for each participating school. Note that **both methods require the complete information for the participating school to be entered into the List of Schools.** The following paragraphs describe the different steps to draw the student sample according to the two methods outlined.

Method 1: Drawing the student sample without first entering individual student details into KeyQuest.

Once the list of all eligible students is received from the school, enter the required information (refer to paragraph 61) into the **List of Schools** form in KeyQuest. Draw the sample using the KeyQuest sampling function (described fully in the KeyQuest manual).

The **Student Tracking Form** (Exhibit 5-2) can be generated after student sampling but will show only **line numbers** indicating the students that have been sampled from the list of students obtained from the school. For example, if the first line number is 3, then the third student on the list from that school has been sampled, and the first and second students on the list have not been sampled.

The information of the sampled students, collected from the list of all eligible students that was returned by the school coordinator, must now be directly entered into the **Student Tracking Form data entry form** in KeyQuest.

Method 2: Importing the list of all eligible students into KeyQuest and then drawing the student sample.

Once the list of all eligible students is received from the school, enter the required information (refer to paragraph 61) into the **List of Schools** form in KeyQuest.

Now import the details of the eligible students from the school into the **List of Students** form in KeyQuest. Ensure that the number of students listed on the List of Students for a school matches with the total number of students entered on the List of Schools for that school.

Draw the sample using the KeyQuest sampling function (described fully in the KeyQuest manual).

You can now generate the Student Tracking Form in KeyQuest (see the KeyQuest manual for details). As you have entered student details into the List of Students before drawing the sample, these details will automatically be pasted onto the Student Tracking Form. Note that this transfer of details happens **only** at the time the sample is drawn (so any subsequent changes made to the List of Students in KeyQuest are not carried through to the Student Tracking Form).

Any student details missing from the Student Tracking Form after sampling (e.g. because the List of Students in KeyQuest was not used or the details entered were incomplete) must be added using the **Student Tracking Form data entry form** in KeyQuest. Note that it is not compulsory to enter the name of the student onto this form, but countries are welcome to do so if that is more convenient for them. All other fields on the Student Tracking Form must be completed for the sampled students.

Exhibit 5-2. PISA STUDENT TRACKING FORM

Country Name: _____ **Stratum ID:** _____

School Name: _____ **School ID:** _____

SAMPLING INFORMATION					
(A) # Students Age 15 _____	(B) # Students Listed for Sampling _____	(C) Sample Size _____	(D) Random Number 0._____	(E) Sampling Interval _____	(F) First Line # Selected [(Box D X Box E) + 1] _____

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Participation Status			
										(11) Original Session		(12) Follow-up Session	
ID #	Line # (Sample)	Student Name	Grade	Gender F=1; M=2	Birth Date (MM-YY)	Study Programme	SEN Code	Inclusion Code	Booklet Number	Booklet	SQ	Booklet	SQ
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													

STUDY PROGRAMME CODES (Col 7)

1 = <Programme 1>
2 = <Programme 2>
3 = <Programme 3>
(etc.)

SPECIAL EDUCATION NEEDS CODES (SEN) (Col 8)

0 = No special education needs
1 = Functionally disability
2 = Intellectual disability
3 = Limited test language proficiency
4 = Defined by NPM

INCLUSION CODES (Col 9)

0 = Included; to be assessed
1 = Not included; functional disability
2 = Not included; intellectual disability
3 = Not included; limited test language proficiency
4 = Not included; defined by NPM
5 = Not included; transferred out of school
6 = Not included; no longer in school, but not a known transfer
7 = Not included; does not meet age definition

PARTICIPATION CODES (Cols 11 &12)

0 = Absent
1 = Present for entire session (incl. total absences ≤ 10 min.)
2 = Present for part of session (incl. total absences >10 min.)
3 = Student or parent refusal
8 = Not included in assessment (defined by codes 1-7 in Col 9)

5.4. Study programmes: Column 7 of the Student Tracking Form

65. Exhibit 5-2 is the **Student Tracking Form** (STF). Keyquest is used to generate a STF for each sampled school after the student sample has been drawn.

66. In addition to grade, gender, and birth date, the Student Tracking Form (STF) contains one column used to gather information about the study programme in which students included in the sample are enrolled.

67. Column 7 of the STF is used to provide information about the study programmes of students. This information will no longer be collected through the student questionnaire. The categories used in this column need to be adapted to national study programmes. It is important to use national programme names that will be understood by the school coordinator and can be retrieved from school records. The national categories used must allow an international recoding into the International Standard Classification of Education (ISCED) levels, and into types of programme orientation (modular[5], general, pre-vocational, vocational).

68. Based on the information collected during the Field Trial the consortium will draft a national **Study Programme Table**, reflecting the consortium's current understanding of the study programme structure of the national centre. The Study Programme Table is a list of national study programmes and their respective codes to be used in the STF together with information on first and last grade, as well as their mapping to ISCED level, designation and orientation. The draft Study Programme Table will be provided as an attachment to the *Manuals Adaptation Form*. NPMs should review this list of programmes and discuss any need for modifications with the consortium. Once the Study Programme Table has been agreed upon between NPMs and ACER, the list of programmes will be extracted from this table and added to the School Coordinator's Manual by the NPM.

69. The list of programmes, and its inclusion in the SC manual will be verified by the consortium as part of the process of verifying the TA and SC manuals.

70. The Study Programme Table template is shown below as Exhibit 5-3. Column (1) contains a sequential number, Column (2) gives the code for the study programme as it will appear in STF and the database. Column (3) contains the programme name in the country's language, Column (4) a description of this programme translated into English or French.

71. The first grade of the study programme is recorded in Column (5), the last grade in Column (6). Grade 1 is defined as the first year in ISCED 1 (Primary or Elementary Education). In countries where these grades vary the typical range of grades in this country should be given. Ungraded programmes are coded with 0 in both columns (5) and (6).

72. The ISCED level (1, 2, 3) is recorded in Column(7). In column (8) ISCED designation (A, B, C, M) is recorded, and in column (9) the programme orientation is recorded.

73. The following summarises the ISCED coding information to be recorded in columns (7) to (9):

[5] In some countries study programmes are modular, i.e. students have the choice between courses with different orientations and it is not possible to determine the orientation of the study programme.

- ISCED Level
    - 1 – Primary Education
    - 2 – Lower Secondary Education
    - 3 – Upper Secondary Education
- ISCED designation
    - 'A' at level 3 – Programmes at level 3 designed to provide direct access to ISCED5A
    - 'B' at level 3 - Programmes at level 3 level designed to provide direct access to ISCED5B
    - 'C' at level 3 - Programmes designed to provide direct access to labour market, although they also provide access to ISCED4 programmes or other ISCED3 programmes
    - 'A' at level 2 – Programmes at level 2 designed to provide direct access to ISCED3A or ISCED3B programmes
    - 'B' at level 2 - Programmes at level 2 designed to provide direct access to ISCED3C
    - 'C' at level 2 - Programmes designed to provide direct access to labour market
    - 'M' – Modular programmes, i.e. educational and labour market access is determined by course and credit selection rather than a formal programme selection.
- Orientation
    - 0 – Modular
    - 1 – General
    - 2 – Pre-vocational
    - 3 – Vocational

74. Example No. 1 (Exhibit 5-4) shows how the *Study Programme Table* would be completed for a country with different study programmes per school.

75. If lower and upper secondary education are combined in the same study programme, only one code should be used for each programme as in Example No. 2 (Exhibit 5-5). This will enable the consortium to use programme and grade information to code the lower and upper secondary students into different ISCED levels.

76. Example 3 (Exhibit 5-6) shows a completed Study Programme Table for a country where study programme is defined by school type.

77. After the adaptation of national programmes is confirmed, the information from the Study Programme Table should be entered into KeyQuest into the **Study Programme** instrument (new for PISA 2003 MS). This will enable the student programmes to be mapped to ISCED in the database.

78. In schools where all students have the same study programme, the study programme code must also be entered into the **List of Schools** instrument in KeyQuest prior to the selection of the student sample. This will enable the pre-coding of the study programme column onto the Student Tracking Form.

79. In schools where the study programme varies among the students, a 'not applicable' code must be entered into the **List of Schools** for the study programme. The study programmes of each student can be imported into the **List of Students** instrument in KeyQuest, (along with the demographic and class details of the student) prior to the selection of the student sample. Alternatively, this student data can be entered onto the Student Tracking Form in KeyQuest after the sample has been selected. These two methods are explained more fully in section 5.3 of this manual. Both of these methods allow for the study programme column of the Student Tracking Form to be completed prior to returning the form to the School Coordinator.

80. Particular instructions of how to use KeyQuest for entering Study Programme information will be provided in the Data Entry Manual and explained at the NPM Meeting.

Exhibit 5-3 Study Programme Table Template

Study Programme Table

Country:
NPM:
Date:

1 **Programme No.**	2 **Programme Code in STF**	3 **National name of programme**	4 **English/French programme description**	5 **First Grade**	6 **Last Grade**	7 **ISCED level**	8 **ISCED designation**	9 **Orientation**	10 **Comments**

Comments:

Exhibit 5-4 Example 1 of Study Programme Table

Country: **Zland**
NPM: **<name>**
Date: **<date>**

1	2	3	4	5	6	7	8	9	10
Programme No.	**Programme Code in STF**	**National name of programme**	**English/French programme description**	**First Grade**	**Last Grade**	**ISCED level**	**ISCED designation**	**Orientation**	**Comments**
1	1	<Programme 1>	Basic education	5	9	2	A	General	
2	2	<Programme 2>	Technical secondary school	10	12	3	C	Vocational	
3	3	<Programme 3>	Gymnasium	10	13	3	A	General	

Comments: More than one programme per school.

Exhibit 5-5 Example 2 of Study Programme Table

Country: **Yland**
NPM: **<name>**
Date: **<date>**

1 **Programme No.**	2 **Programme Code in STF**	3 **National name of programme**	4 **English/French programme description**	5 **First Grade**	6 **Last Grade**	7 **ISCED level**	8 **ISCED designation**	9 **Orientation**	10 **Comments**
1	1	<Programme 1>	General Secondary education (lower)	7	9	2	A	General	
2	1	<Programme 1>	General Secondary education (upper)	10	12	3	A	General	same study programme for upper secondary
3	2	<Programme 2>	Vocational studies (lower)	7	9	2	C	Vocational	
4	2	<Programme 2>	Vocational studies (upper)	10	12	3	C	Vocational	same study programme for upper secondary

Comments: Study programmes contain more than one ISCED level.

Exhibit 5-6 Example 3 of Study Programme Table

Country: **Zland**
NPM: **<name>**
Date: **<date>**

1	2	3	4	5	6	7	8	9	10
Programme No.	**Programme Code in STF**	**National name of programme**	**English/French programme description**	**First Grade**	**Last Grade**	**ISCED level**	**ISCED designation**	**Orientation**	**Comments**
1	1	<Programme 1>	Basic education	5	9	2	A	General	
2	2	<Programme 2>	Technical secondary school	10	12	3	C	Vocational	
3	3	<Programme 3>	Gymnasium	10	13	3	A	General	

Comments: Only one programme per school.

5.5. Prepare Instructions for Identifying Students with Special Education Needs

81. The STF also contains: (in column 8) a code meaning that a student has or does not have special education needs; and (in column 9) a code meaning that the student can or cannot be included in the assessment.

82. Information about the special education needs of students is recorded in column 8 of the STF. Information about the inclusion of students in the assessment is recorded in column 9 of the STF. The codes used to identify students who have special education needs must be defined by NPMs.

83. You should use the general categories below to develop instructions for your country. It is important to provide precise instructions in the SC and TA manuals. Both manuals indicate where these instructions should be placed for SCs and TAs.

84. The national operational definitions should be submitted to ACER for review as part of the translation verification process. The "other" category is provided for special situations in a country. It must be defined by the NPM and reviewed before it is used.

STUDENTS WITH SPECIAL EDUCATION NEEDS

The numbers to the left are codes to be entered in column 8 of the STF to identify the special education needs of the sampled students.

0 = No special education needs

1 = Functional disability – student has a moderate to severe permanent physical disability.

2 = Intellectual disability – student has a mental or emotional disability and has either been tested as cognitively delayed or is considered in the professional opinion of qualified staff to be cognitively delayed.

3 = Limited assessment language proficiency – student is not a native speaker of any of the languages of the assessment in the country and has limited proficiency in these languages.

4 = Other; DEFINED BY NPM, REVIEWED BY CONSORTIUM.

5.6. Prepare Instructions for Identifying Students Who Cannot Be Assessed

85. Column 9 of the STF is used to identify those students who can be included in the assessment and those who cannot.

86. NPMs will define the codes to be used for students with special education needs and modify the SC and TA manuals to include these definitions.

STUDENTS WITH SPECIAL EDUCATION NEEDS WHO CANNOT BE ASSESSED

PISA is a timed assessment administered to groups of students in the instructional language(s) of each country. The intent of the study is to be as **inclusive** as possible. However, some students with limited proficiency in the language(s) of the assessment or those who have a severe physical, mental, or emotional disability may not be able to participate under these conditions. Therefore, PISA has developed instructions for all schools to use when there is doubt about whether a selected student should be assessed.

These guidelines need to be carefully implemented within the context of each educational system. The numbers to the left are codes to be entered in column 9 of the STF to identify students with special education needs who will not be included in PISA because of these special education needs.

0 = Included

1 = Not included; functional disability. Student has a moderate to severe permanent physical disability **such that he/she cannot perform in the PISA testing situation**. Functionally disabled students who can respond to the assessment should be included.

2 = Not included; intellectual disability. Student has a mental or emotional disability and is cognitively **delayed such that he/she cannot perform in the PISA testing situation**. This includes students who are emotionally or mentally unable to follow even the general instructions of the assessment. Students should NOT be excluded solely because of poor academic performance or disciplinary problems.

3 = Not included; limited assessment language proficiency. The student is unable to read or speak any of the languages of the assessment in the country and **would be unable to overcome the language barrier in the testing situation**. Typically a student who has received less than one year of instruction in the languages of the assessment may be excluded.

4 = Other; DEFINED BY NPM, REVIEWED BY CONSORTIUM.

It is important that these criteria be followed strictly for the study to be comparable within and across countries. WHEN IN DOUBT, INCLUDE THE STUDENT.

87. Other sampled students cannot be included in the assessment because they are no longer attending the school, or they are not age 15 as that age is defined by PISA. This information will be recorded in column 9 as well.

88. The following codes should be recorded in column 9 for these students:

Code	Meaning
5	Student transferred out of this school to another school
6	Student no longer in school, but it is not know if he or she is attending school elsewhere
7	Student is not age 15 as defined by PISA

89. The steps for recording information in column 9 are:

- **Step 1.** If a student with special needs or limited assessment language ability is to be excluded from the assessment, copy the same code recorded in column 8 for this student into column 9. Note that many of these students will be able to be **included** in the assessment and should receive a code of "0" in column 9.
- **Step 2.** The next step is to identify any students who are no longer at the school or are not age 15 as defined by PISA. Codes 5-7 are used for these students.
- **Step 3.** The final step is to record a "0" in column 9 for all other students, meaning that they will be assessed in the PISA session. Only Students with a "0" in column 9 will be included in the PISA assessment.

5.7. Send Student Tracking Form to the School Co-ordinator and Test Administrator

90. The SC needs to know which students have been sampled so he/she can notify the students, teachers, (and parents). The SC also will need to update the information on the STF and identify students who cannot be assessed. Therefore, the STF should be sent to the SC about 2 weeks before the assessment session.

91. Before sending the STF to the SC, it is recommended that a copy be made and kept at the NPC. It is also recommended that you send a copy of the STF to the TA with the assessment booklets and questionnaires. This is in case the school's copy is misplaced on assessment day. The TA and SC manuals assume that each will have a copy.

6. ASSEMBLE, PACKAGE, AND SHIP ASSESSMENT MATERIALS

92. All of the test items and questionnaire instruments for the PISA 2003 Main Study have been sent to National Project Centres by e-mail, and are also available from the secure pages of the PISA web site. The site contains English and French master versions of the test and questionnaire items and also English master versions of the instrument booklets. A CD-ROM of all materials will also be sent to each National Project Centre.

6.1. Allocate Test Items to Booklets

93. The master instrument copies show how the final booklets should be formatted. In this section we describe how the items, units and clusters are allocated to the test and questionnaire instruments.

94. Each of the units in the item pool has been allocated to one test cluster. There are 7 Mathematics clusters (M_1 – M_7), 2 Science clusters (S_1 – S_2), 2 Problem Solving clusters (P_1 - P_2) and 2 Reading Clusters (R_1 – R_2).

95. The clusters are allocated in a rotated design to thirteen test booklets, as shown in Exhibit 6-1. In the table, M_1 refers to Mathematics cluster 1, and so on. Each cluster contains approximately 30 minutes of test material.

Exhibit 6-~~1~~ 11 Test Booklet Design* for the PISA 2003 Main Study

Booklet	Cluster 1 30 mins	Cluster 2 30 mins	Cluster 3 30 mins	Cluster 4 30 mins
1	M1	M2	M4	R1
2	M2	M3	M5	R2
3	M3	M4	M6	PS1
4	M4	M5	M7	PS2
5	M5	M6	S1	M1
6	M6	M7	S2	M2
7	M7	S1	R1	M3
8	S1	S2	R2	M4
9	S2	R1	PS1	M5
10	R1	R2	PS2	M6
11	R2	PS1	M1	M7
12	PS1	PS2	M2	S1
13	PS2	M1	M3	S2

* The design shows the allocation of clusters to booklets;
M_1 indicates Mathematics cluster 1, and so on.

The allocation of the items and units to clusters and booklets is as shown on the following pages (Exhibit 6-2).

Exhibit 6- 22 Allocation of Items to Clusters and Booklets

CLUSTER	BOOKLETS	UNIT NAME	UNIT ID	ITEM ID	NUMBER IN BOOKLET	SEQUENCE IN CLUSTER
M1	1,5,11,13	P2000 A View Room	M033	M033Q01	(B1-1, B5-43, B11-25, B13-10)	1
M1	1,5,11,13	Coloured Candies	M467	M467Q01	(B1-2, B5-44, B11-26, B13-11)	2
M1	1,5,11,13	Bicycles	M810	M810Q01	(B1-3, B5-45, B11-27, B13-12)	3
M1	1,5,11,13	Bicycles	M810	M810Q02	(B1-4, B5-46, B11-28, B13-13)	4
M1	1,5,11,13	Bicycles	M810	M810Q03	(B1-5, B5-47, B11-29, B13-14)	5
M1	1,5,11,13	Seeing the tower	M833	M833Q01	(B1-6, B5-48, B11-30, B13-15)	6
M1	1,5,11,13	Internet Relay Chat	M402	M402Q01	(B1-7, B5-49, B11-31, B13-16)	7
M1	1,5,11,13	Internet Relay Chat	M402	M402Q02	(B1-8, B5-50, B11-32, B13-17)	8
M1	1,5,11,13	P2000 Robberies	M179	M179Q01	(B1-9, B5-51, B11-33, B13-18)	9
M1	1,5,11,13	The Fence	M464	M464Q01	(B1-10, B5-52, B11-34, B13-19)	10
M1	1,5,11,13	Chair Lift	M564	M564Q01	(B1-11, B5-53, B11-35, B13-20)	11
M1	1,5,11,13	Chair Lift	M564	M564Q02	(B1-12, B5-54, B11-36, B13-21)	12
M2	1,2,6,12	P2000 Cubes	M145	M145Q01	(B1-13, B2-1, B6-43, B12-20)	1
M2	1,2,6,12	Lotteries	M408	M408Q01	(B1-14, B2-2, B6-44, B12-21)	2
M2	1,2,6,12	Skateboard	M520	M520Q01	(B1-15, B2-3, B6-45, B12-22)	3
M2	1,2,6,12	Skateboard	M520	M520Q02	(B1-16, B2-4, B6-46, B12-23)	4
M2	1,2,6,12	Skateboard	M520	M520Q03	(B1-17, B2-5, B6-47, B12-24)	5
M2	1,2,6,12	Thermometer Cricket	M446	M446Q01	(B1-18, B2-6, B6-48, B12-25)	6

Exhibit 6- 2 Allocation of Items to Clusters and Booklets (continued)

CLUSTER	BOOKLETS	UNIT NAME	UNIT ID	ITEM ID	NUMBER IN BOOKLET	SEQUENCE IN CLUSTER
M2	1,2,6,12	Thermometer Cricket	M446	M446Q02	(B1-19, B2-7, B6-49, B12-26)	7
M2	1,2,6,12	P2000 Containers	M192	M192Q01	(B1-20, B2-8, B6-50, B12-27)	8
M2	1,2,6,12	Support For President	M702	M702Q01	(B1-21, B2-9, B6-51, B12-28)	9
M2	1,2,6,12	P2000 Bricks	M034	M034Q01	(B1-22, B2-10, B6-52, B12-29)	10
M2	1,2,6,12	Tossing Coins	M423	M423Q01	(B1-23, B2-11, B6-53, B12-30)	11
M2	1,2,6,12	Number Cubes	M555	M555Q02	(B1-24, B2-12, B6-54, B12-31)	12
M3	2,3,7,13	Map	M305	M305Q01	(B2-13, B3-1, B7-34, B13-22)	1
M3	2,3,7,13	Choices	M510	M510Q01	(B2-14, B3-2, B7-35, B13-23)	2
M3	2,3,7,13	Running Time	M474	M474Q01	(B2-15, B3-3, B7-36, B13-24)	3
M3	2,3,7,13	P2000 Walking	M124	M124Q01	(B2-16, B3-4, B7-37, B13-25)	4
M3	2,3,7,13	P2000 Walking	M124	M124Q03	(B2-17, B3-5, B7-38, B13-26)	5
M3	2,3,7,13	Room Numbers	M434	M434Q01	(B2-18, B3-6, B7-39, B13-27)	6
M3	2,3,7,13	Litter	M505	M505Q01	(B2-19, B3-7, B7-40, B13-28)	7
M3	2,3,7,13	Third Side	M462	M462Q01	(B2-20, B3-8, B7-41, B13-29)	8
M3	2,3,7,13	Exports	M438	M438Q01	(B2-21, B3-9, B7-42, B13-30)	9
M3	2,3,7,13	Exports	M438	M438Q02	(B2-22, B3-10, B7-43, B13-31)	10
M3	2,3,7,13	Staircase	M547	M547Q01	(B2-23, B3-11, B7-44, B13-32)	11
M3	2,3,7,13	Step Pattern	M806	M806Q01	(B2-24, B3-12, B7-45, B13-33)	12
M4	1,3,4,8	Computer Game	M800	M800Q01	(B1-25, B3-13, B4-1, B8-51)	1
M4	1,3,4,8	Height	M421	M421Q01	(B1-26, B3-14, B4-2, B8-52)	2

Exhibit 6- 2 Allocation of Items to Clusters and Booklets (continued)

CLUSTER	BOOKLETS	UNIT NAME	UNIT ID	ITEM ID	NUMBER IN BOOKLET	SEQUENCE IN CLUSTER
M4	1,3,4,8	Height	M421	M421Q03	(B1-27, B3-15, B4-3, B8-53)	3
M4	1,3,4,8	Height	M421	M421Q02	(B1-27, B3-15, B4-3, B8-53)	3
M4	1,3,4,8	The Best Car	M704	M704Q01	(B1-29, B3-17, B4-5, B8-55)	5
M4	1,3,4,8	The Best Car	M704	M704Q02	(B1-30, B3-18, B4-6, B8-56)	6
M4	1,3,4,8	Stop The Car	M571	M571Q01	(B1-31, B3-19, B4-7, B8-57)	7
M4	1,3,4,8	Telephone Rates	M559	M559Q01	(B1-32, B3-20, B4-8, B8-58)	8
M4	1,3,4,8	P2000 Cube Painting	M144	M144Q01	(B1-33, B3-21, B4-9, B8-59)	9
M4	1,3,4,8	P2000 Cube Painting	M144	M144Q02	(B1-34, B3-22, B4-10, B8-60)	10
M4	1,3,4,8	P2000 Cube Painting	M144	M144Q03	(B1-35, B3-23, B4-11, B8-61)	11
M4	1,3,4,8	P2000 Cube Painting	M144	M144Q04	(B1-36, B3-24, B4-12, B8-62)	12
M5	2,4,5,9	Exchange Rate	M413	M413Q01	(B2-25, B4-13, B5-1, B9-41)	1
M5	2,4,5,9	Exchange Rate	M413	M413Q02	(B2-26, B4-14, B5-2, B9-42)	2
M5	2,4,5,9	Exchange Rate	M413	M413Q03	(B2-27, B4-15, B5-3, B9-43)	3
M5	2,4,5,9	Running Tracks	M406	M406Q01	(B2-28, B4-16, B5-4, B9-44)	4
M5	2,4,5,9	Running Tracks	M406	M406Q02	(B2-29, B4-17, B5-5, B9-45)	5
M5	2,4,5,9	Running Tracks	M406	M406Q03	(B2-30, B4-18, B5-6, B9-46)	6
M5	2,4,5,9	P2000 Growing Up	M150	M150Q01	(B2-31, B4-19, B5-7, B9-47)	7
M5	2,4,5,9	P2000 Growing Up	M150	M150Q03	(B2-32, B4-20, B5-8, B9-48)	8
M5	2,4,5,9	P2000 Growing Up	M150	M150Q02	(B2-33, B4-21, B5-9, B9-49)	9
M5	2,4,5,9	Making A Booklet	M598	M598Q01	(B2-34, B4-22, B5-10, B9-50)	10

Exhibit 6- 2 Allocation of Items to Clusters and Booklets (continued)

CLUSTER	BOOKLETS	UNIT NAME	UNIT ID	ITEM ID	NUMBER IN BOOKLET	SEQUENCE IN CLUSTER
M5	2,4,5,9	Forecast of Rain	M710	M710Q01	(B2-35, B4-23, B5-11, B9-51)	11
M5	2,4,5,9	Diving	M411	M411Q01	(B2-36, B4-24, B5-12, B9-52)	12
M5	2,4,5,9	Diving	M411	M411Q02	(B2-37, B4-25, B5-13, B9-53)	13
M6	3,5,6,10	Cash Withdrawal	M496	M496Q01	(B3-25, B5-14, B6-1, B10-38)	1
M6	3,5,6,10	Cash Withdrawal	M496	M496Q02	(B3-26, B5-15, B6-2, B10-39)	2
M6	3,5,6,10	Bookshelves	M484	M484Q01	(B3-27, B5-16, B6-3, B10-40)	3
M6	3,5,6,10	P2000 Population Pyramids	M155	M155Q02	(B3-28, B5-17, B6-4, B10-41)	4
M6	3,5,6,10	P2000 Population Pyramids	M155	M155Q01	(B3-29, B5-18, B6-5, B10-42)	5
M6	3,5,6,10	P2000 Population Pyramids	M155	M155Q03	(B3-30, B5-19, B6-6, B10-43)	6
M6	3,5,6,10	P2000 Population Pyramids	M155	M155Q04	(B3-31, B5-20, B6-7, B10-44)	7
M6	3,5,6,10	Braille	M442	M442Q02	(B3-32, B5-21, B6-8, B10-45)	8
M6	3,5,6,10	Earthquake	M509	M509Q01	(B3-33, B5-22, B6-9, B10-46)	9
M6	3,5,6,10	Transport	M420	M420Q01	(B3-34, B5-23, B6-10, B10-47)	10
M6	3,5,6,10	Science Tests	M468	M468Q01	(B3-35, B5-24, B6-11, B10-48)	11
M6	3,5,6,10	Tile Arrangement	M447	M447Q01	(B3-36, B5-25, B6-12, B10-49)	12
M7	4,6,7,11	Car Drive	M302	M302Q01	(B4-26, B6-13, B7-1, B11-38)	1
M7	4,6,7,11	Car Drive	M302	M302Q02	(B4-27, B6-14, B7-2, B11-39)	2
M7	4,6,7,11	Car Drive	M302	M302Q03	(B4-28, B6-15, B7-3, B11-40)	3
M7	4,6,7,11	Number Check	M603	M603Q01	(B4-29, B6-16, B7-4, B11-41)	4
M7	4,6,7,11	Number Check	M603	M603Q02	(B4-30, B6-17, B7-5, B11-42)	5

Exhibit 6- 2 Allocation of Items to Clusters and Booklets (continued)

CLUSTER	BOOKLETS	UNIT NAME	UNIT ID	ITEM ID	NUMBER IN BOOKLET	SEQUENCE IN CLUSTER
M7	4,6,7,11	P2000 Carpenter	M266	M266Q01	(B4-31, B6-18, B7-6, B11-43)	6
M7	4,6,7,11	Test Scores	M513	M513Q01	(B4-32, B6-19, B7-7, B11-44)	7
M7	4,6,7,11	Carbon Dioxide	M828	M828Q01	(B4-33, B6-20, B7-8, B11-45)	8
M7	4,6,7,11	Carbon Dioxide	M828	M828Q02	(B4-34, B6-21, B7-9, B11-46)	9
M7	4,6,7,11	Carbon Dioxide	M828	M828Q03	(B4-35, B6-22, B7-10, B11-47)	10
M7	4,6,7,11	Labels	M803	M803Q01	(B4-36, B6-23, B7-11, B11-48)	11
M7	4,6,7,11	P2000 Pipelines	M273	M273Q01	(B4-37, B6-24, B7-12, B11-49)	12
PS1	3,9,11,12	Energy Needs	X430	X430Q01	(B3-37, B9-32, B11-16, B12-1)	1
PS1	3,9,11,12	Energy Needs	X430	X430Q02	(B3-38, B9-33, B11-17, B12-2)	2
PS1	3,9,11,12	Children's Camp	X417	X417Q01	(B3-39, B9-34, B11-18, B12-3)	3
PS1	3,9,11,12	Design by Numbers	X412	X412Q01	(B3-40, B9-35, B11-19, B12-4)	4
PS1	3,9,11,12	Design by Numbers	X412	X412Q02	(B3-41, B9-36, B11-20, B12-5)	5
PS1	3,9,11,12	Design by Numbers	X412	X412Q03	(B3-42, B9-37, B11-21, B12-6)	6
PS1	3,9,11,12	Freezer	X423	X423Q01	(B3-43, B9-38, B11-22, B12-7)	7
PS1	3,9,11,12	Freezer	X423	X423Q02	(B3-44, B9-39, B11-23, B12-8)	8
PS1	3,9,11,12	Cinema Outing	X601	X601Q01	(B3-45, B9-40, B11-24, B12-9)	9
PS1	3,9,11,12	Cinema Outing	X601	X601Q02	(B3-46, B9-41, B11-25, B12-10)	10
PS2	4,10,12,13	Transit System	X415	X415Q01	(B4-38, B10-29, B12-11, B13-1)	1
PS2	4,10,12,13	Course Design	X414	X414Q01	(B4-39, B10-30, B12-12, B13-2)	2
PS2	4,10,12,13	Library System	X402	X402Q01	(B4-40, B10-31, B12-13, B13-3)	3

Exhibit 6- 2 Allocation of Items to Clusters and Booklets (continued)

CLUSTER	BOOKLETS	UNIT NAME	UNIT ID	ITEM ID	NUMBER IN BOOKLET	SEQUENCE IN CLUSTER
PS2	4,10,12,13	Library System	X402	X402Q02	(B4-41, B10-32, B12-14, B13-4)	4
PS2	4,10,12,13	Holiday	X602	X602Q01	(B4-42, B10-33, B12-15, B13-5)	5
PS2	4,10,12,13	Holiday	X602	X602Q02	(B4-43, B10-34, B12-16, B13-6)	6
PS2	4,10,12,13	Irrigation	X603	X603Q01	(B4-44, B10-35, B12-17, B13-7)	7
PS2	4,10,12,13	Irrigation	X603	X603Q02	(B4-45, B10-36, B12-18, B13-8)	8
PS2	4,10,12,13	Irrigation	X603	X603Q03	(B4-46, B10-37, B12-19, B13-9)	9
R1	1,7,9,10	Employment	R219	R219Q01	(B1-37, B7-30, B9-19, B10-1)	1
R1	1,7,9,10	Employment	R219	R219Q02	(B1-38, B7-31, B9-20, B10-2)	2
R1	1,7,9,10	Aesop	R067	R067Q01	(B1-39, B7-32, B9-21, B10-3)	3
R1	1,7,9,10	Aesop	R067	R067Q04	(B1-40, B7-33, B9-22, B10-4)	4
R1	1,7,9,10	Aesop	R067	R067Q05	(B1-41, B7-34, B9-23, B10-5)	5
R1	1,7,9,10	Shirts	R102	R102Q04A	(B1-42, B7-35, B9-24, B10-6)	6
R1	1,7,9,10	Shirts	R102	R102Q05	(B1-43, B7-36, B9-25, B10-7)	7
R1	1,7,9,10	Shirts	R102	R102Q07	(B1-44, B7-37, B9-26, B10-8)	8
R1	1,7,9,10	South Pole	R220	R220Q01	(B1-45, B7-38, B9-27, B10-9)	9
R1	1,7,9,10	South Pole	R220	R220Q02B	(B1-46, B7-39, B9-28, B10-10)	10
R1	1,7,9,10	South Pole	R220	R220Q04	(B1-47, B7-40, B9-29, B10-11)	11
R1	1,7,9,10	South Pole	R220	R220Q05	(B1-48, B7-41, B9-30, B10-12)	12
R1	1,7,9,10	South Pole	R220	R220Q06	(B1-49, B7-42, B9-31, B10-13)	13
R2	2,8,10,11	Optician	R227	R227Q01	(B2-38, B8-36, B10-14, B11-1)	1

Exhibit 6- 2 Allocation of Items to Clusters and Booklets (continued)

CLUSTER	BOOKLETS	UNIT NAME	UNIT ID	ITEM ID	NUMBER IN BOOKLET	SEQUENCE IN CLUSTER
R2	2,8,10,11	Optician	R227	R227Q02	(B2-39, B8-37, B10-15, B11-2)	2
R2	2,8,10,11	Optician	R227	R227Q03	(B2-40, B8-38, B10-16, B11-3)	3
R2	2,8,10,11	Optician	R227	R227Q06	(B2-41, B8-39, B10-17, B11-4)	4
R2	2,8,10,11	Exchange	R111	R111Q01	(B2-42, B8-40, B10-18, B11-5)	5
R2	2,8,10,11	Exchange	R111	R111Q02B	(B2-43, B8-41, B10-19, B11-6)	6
R2	2,8,10,11	Exchange	R111	R111Q06A	(B2-44, B8-42, B10-20, B11-7)	7
R2	2,8,10,11	Exchange	R111	R111Q06B	(B2-45, B8-43, B10-21, B11-8)	8
R2	2,8,10,11	Drugged Spiders	R055	R055Q01	(B2-46, B8-44, B10-22, B11-9)	9
R2	2,8,10,11	Drugged Spiders	R055	R055Q02	(B2-47, B8-45, B10-23, B11-10)	10
R2	2,8,10,11	Drugged Spiders	R055	R055Q03	(B2-48, B8-46, B10-24, B11-11)	11
R2	2,8,10,11	Drugged Spiders	R055	R055Q05	(B2-49, B8-47, B10-25, B11-12)	12
R2	2,8,10,11	Telephone	R104	R104Q01	(B2-50, B8-48, B10-26, B11-13)	13
R2	2,8,10,11	Telephone	R104	R104Q02	(B2-51, B8-49, B10-27, B11-14)	14
R2	2,8,10,11	Telephone	R104	R104Q05	(B2-52, B8-50, B10-28, B11-15)	15
S1	5,7,8,12	P2000 South Rainea	S252	S252Q01	(B5-26, B7-13, B8-1, B12-32)	1
S1	5,7,8,12	P2000 South Rainea	S252	S252Q02	(B5-27, B7-14, B8-2, B12-33)	2
S1	5,7,8,12	P2000 South Rainea	S252	S252Q03	(B5-28, B7-15, B8-3, B12-34)	3
S1	5,7,8,12	Tidal Energy	S327	S327Q01	(B5-29, B7-16, B8-4, B12-35)	4
S1	5,7,8,12	Tidal Energy	S327	S327Q02	(B5-30, B7-17, B8-5, B12-36)	5
S1	5,7,8,12	Milk	S326	S326Q01	(B5-31, B7-18, B8-6, B12-37)	6

Exhibit 6- 2 Allocation of Items to Clusters and Booklets (continued)

CLUSTER	BOOKLETS	UNIT NAME	UNIT ID	ITEM ID	NUMBER IN BOOKLET	SEQUENCE IN CLUSTER
S1	5,7,8,12	Milk	S326	S326Q02	(B5-32, B7-19, B8-7, B12-38)	7
S1	5,7,8,12	Milk	S326	S326Q03	(B5-33, B7-20, B8-8, B12-39)	8
S1	5,7,8,12	Milk	S326	S326Q04	(B5-34, B7-21, B8-9, B12-40)	9
S1	5,7,8,12	P2000 Research	S133	S133Q01	(B5-35, B7-22, B8-10, B12-41)	10
S1	5,7,8,12	P2000 Research	S133	S133Q03	(B5-36, B7-23, B8-11, B12-42)	11
S1	5,7,8,12	P2000 Research	S133	S133Q04	(B5-37, B7-24, B8-12, B12-43)	12
S1	5,7,8,12	P2000 Greenhouse	S114	S114Q03	(B5-38, B7-25, B8-13, B12-44)	13
S1	5,7,8,12	P2000 Greenhouse	S114	S114Q04	(B5-39, B7-26, B8-14, B12-45)	14
S1	5,7,8,12	P2000 Greenhouse	S114	S114Q05	(B5-40, B7-27, B8-15, B12-46)	15
S1	5,7,8,12	P2000 Clothes	S213	S213Q01	(B5-41, B7-28, B8-16, B12-47)	16
S1	5,7,8,12	P2000 Clothes	S213	S213Q02	(B5-42, B7-29, B8-17, B12-48)	17
S2	6,8,9,13	P2000 Daylight	S129	S129Q01	(B6-25, B8-18, B9-1, B13-34)	1
S2	6,8,9,13	P2000 Daylight	S129	S129Q02	(B6-26, B8-19, B9-2, B13-35)	2
S2	6,8,9,13	P2000 Cloning	S128	S128Q01	(B6-27, B8-20, B9-3, B13-36)	3
S2	6,8,9,13	P2000 Cloning	S128	S128Q02	(B6-28, B8-21, B9-4, B13-37)	4
S2	6,8,9,13	P2000 Cloning	S128	S128Q03	(B6-29, B8-22, B9-5, B13-38)	5
S2	6,8,9,13	P2000 Good Vibrations	S131	S131Q02	(B6-30, B8-23, B9-6, B13-39)	6
S2	6,8,9,13	P2000 Good Vibrations	S131	S131Q04	(B6-31, B8-24, B9-7, B13-40)	7
S2	6,8,9,13	P2000 Spoons	S256	S256Q01	(B6-32, B8-25, B9-8, B13-41)	8
S2	6,8,9,13	Water	S304	S304Q01	(B6-33, B8-26, B9-9, B13-42)	9

Exhibit 6- 2 Allocation of Items to Clusters and Booklets (continued)

CLUSTER	BOOKLETS	UNIT NAME	UNIT ID	ITEM ID	NUMBER IN BOOKLET	SEQUENCE IN CLUSTER
S2	6,8,9,13	Water	S304	S304Q02	(B6-34, B8-27, B9-10, B13-43)	10
S2	6,8,9,13	Water	S304	S304Q03a	(B6-35, B8-28, B9-11, B13-44)	11
S2	6,8,9,13	Water	S304	S304Q03b	(B6-36, B8-29, B9-12, B13-45)	12
S2	6,8,9,13	P2000 Earth's Temperature	S269	S269Q01	(B6-37, B8-30, B9-13, B13-46)	13
S2	6,8,9,13	P2000 Earth's Temperature	S269	S269Q03	(B6-38, B8-31, B9-14, B13-47)	14
S2	6,8,9,13	P2000 Earth's Temperature	S269	S269Q04	(B6-39, B8-32, B9-15, B13-48)	15
S2	6,8,9,13	P2000 Algae	S268	S268Q01	(B6-40, B8-33, B9-16, B13-49)	16
S2	6,8,9,13	P2000 Algae	S268	S268Q02	(B6-41, B8-34, B9-17, B13-50)	17
S2	6,8,9,13	P2000 Algae	S268	S268Q06	(B6-42, B8-35, B9-18, B13-51)	18

6.2. Booklet for Students with Special Educational Needs (Booklet UH)

96. Booklet UH is an optional instrument, and is designed for use in schools where all students have special education needs or are all primary school students, such that the regular booklets would be considered inappropriate.

97. The booklet is composed of the PISA items deemed most suitable for students with special needs, and the test is designed to be only one hour in length. It is not permitted to mix the regular PISA booklets and Booklet UH within the same school.

98. A separate Test Administrator's Manual for Booklet UH will be sent to all countries using this booklet on 17 January.

99. Countries that wish to use the Booklet UH must seek prior approval from ACER.

100. The allocation of the items to the Booklet UH is as shown in Exhibit 6-3 below.

Exhibit 6- 33 Allocation of items to the UH Booklet

CLUSTER	BOOKLETS	UNIT NAME	UNIT ID	ITEM ID	NUMBER IN BOOKLET	SEQUENCE IN CLUSTER
UHPS	UH	Cinema Outing	X601	X601Q01	(BUH-1)	1
UHPS	UH	Cinema Outing	X601	X601Q02	(BUH-2)	2
UHPS	UH	Energy Needs	X430	X430Q01	(BUH-3)	3
UHPS	UH	Energy Needs	X430	X430Q02	(BUH-4)	4
UHPS	UH	Transit System	X415	X415Q01	(BUH-5)	5
UHR	UH	Employment Application	R219	R219Q01	(BUH-6)	1
UHR	UH	Employment Application	R219	R219Q02	(BUH-7)	2
UHR	UH	Drugged Spiders	R055	R055Q01	(BUH-8)	3
UHR	UH	Drugged Spiders	R055	R055Q02	(BUH-9)	4
UHR	UH	Drugged Spiders	R055	R055Q03	(BUH-10)	5
UHR	UH	Drugged Spiders	R055	R055Q05	(BUH-11)	6
UHM	UH	Computer Game	M800	M800Q01	(BUH-12)	1
UHM	UH	The Third Side	M462	M462Q01	(BUH-13)	2
UHM	UH	Chair Lift	M564	M564Q01	(BUH-14)	3
UHM	UH	Chair Lift	M564	M564Q02	(BUH-15)	4
UHM	UH	Exchange Rate	M413	M413Q01	(BUH-16)	5
UHM	UH	Exchange Rate	M413	M413Q02	(BUH-17)	6
UHM	UH	Exchange Rate	M413	M413Q03	(BUH-18)	7
UHS	UH	P2000 South Rainea	S252	S252Q01	(BUH-19)	1
UHS	UH	P2000 South Rainea	S252	S252Q02	(BUH-20)	2

Exhibit 6- 3 Allocation of items to the UH Booklet (continued)

CLUSTER	BOOKLETS	UNIT NAME	UNIT ID	ITEM ID	NUMBER IN BOOKLET	SEQUENCE IN CLUSTER
UHS	UH	P2000 South Rainea	S252	S252Q03	(BUH-21)	3
UHS	UH	P2000 Research	S133	S133Q01	(BUH-22)	4
UHS	UH	P2000 Research	S133	S133Q03	(BUH-23)	5
UHS	UH	P2000 Research	S133	S133Q04	(BUH-24)	6
UHS	UH	P2000 Earth's Temperature	S269	S269Q01	(BUH-25)	7
UHS	UH	P2000 Spoons	S256	S256Q01	(BUH-26)	8

6.3. Formatting of Test Booklets

101. In formatting translated or adapted test booklets, it is essential for countries to follow as far as possible the layout in the English master instrument copies, including allocation of items to pages. The consortium recognises that it often happens that a translated document is longer than the original, and this has been allowed for as far as possible in the pagination of the master instruments. Changes must be avoided in the page set-up of the test booklets — which would oblige the student, for example, to turn a page to read the questions, whereas in the source version text and questions appear side by side. If necessary, use a slightly smaller or bigger font than the one in the original, if this enables you to keep the same page set-up as that of the source version.

6.4. The Questionnaire Instruments

102. The Questionnaire instruments include the School Questionnaire and the Student Questionnaire (StQ) as well as two international options: the Educational Career Questionnaire (EC) and the Information Communication Technology Questionnaire (ICT). For the Main Study there is only one form of each instrument. If a country chooses an international option it should be administered to ALL students and not rotated.

103. Unless approval has been given by ACER to do otherwise, all items on the School and Student Questionnaires should be included. If a country chooses the ICT questionnaire as an international option, ALL items should be included. However, NPMs may select those questions from the EC questionnaire that are suitable for their national context.

6.4.1 International and national Options

104. Generally, international options may be placed in the same booklet as the Student Questionnaire. However, countries having additional national options, should consider administering two separate booklets, one with StQ and another one for international and national options. The reason for this is that limitations on the size of the ACCESS database make it difficult to include international AND national options in the same data entry form in KeyQuest as the Student Questionnaire. Having them in a separate booklet will save in the double handling of booklets during data entry.

6.4.2 Assembly of Questionnaire Material

105. Generally, the StQ module should *always* appear first in the booklet. The EC questions should be placed after the StQ, and the ICT module should follow the EC module. Where more than one instrument appears in the same booklet (e.g. Student Questionnaire, EC and ICT), the instrument should be divided into corresponding sections. The items may be numbered sequentially *within* the booklet but the numbers need to be recorded in the Questionnaire Adaptation Spreadsheet (column 7) and the variable names in KeyQuest should be left **unchanged**. National options should generally be placed at the end of the questionnaire, i.e. countries with national items would typically have a second booklet with national options placed *after* the international options. **Any deviations of this order need to be approved by the consortium**

106. The EC and ICT modules may be assembled as separate booklets if this is more suitable for the administration procedures in your country. If you do this, please adjust the administration instructions in the TA Manual accordingly, and ensure that the main Student Questionnaire is administered *before* the EC and ICT modules. The format of the questionnaire and the EC and ICT modules should follow as far as possible the formatting of the source versions with which you have been provided.

6.4.3 Obtaining Approval

107. All modifications to the questionnaires, including proposed national options, must be documented in the Questionnaire Adaptation Spreadsheet (QAS) provided

separately and must be submitted for approval to ACER at pisa@acer.edu.au. The timelines for submission and approval need to be included in the Preferred Verification Schedule (PVS). Additional instructions about how to complete and submit adaptations will be provided with the QAS.

108. After you have obtained approval of your national adaptations and formatted the questionnaires, they must be sent to your verification co-ordinator (*see Chapter 4: Preparation of National Version(s) of Main Study Test Instruments and Survey Material).*

6.5. Print, Package and Ship PISA Materials

6.5.1 Overview

109. There are two primary concerns to be considered by NPMs in making plans for printing, packaging and shipping PISA materials. These two concerns are:

- That the test items be secure at all times, and
- That the test booklet and questionnaire assigned to a particular student are the ones that the student uses in the testing session.

110. There is no one way that materials should be printed and prepared for shipment and distribution. In this section, we suggest several different ways to prepare materials, recognising that each has advantages and disadvantages with regard to cost, burden, and efficiency. NPMs should choose the way that works best in their own countries, considering how they intend to implement PISA within their own educational systems.

111. In making this determination, NPMs will want to consider the following:

- Where will the assignment of materials to individual students take place?
- From where will the materials be shipped and how secure is this place?
- To where will the materials be shipped and how secure is this place?
- Will test administrators be National Centre staff or staff of the selected schools?
- Will the Student Questionnaire usually be administered in the same session as the test items or in a separate session?
- Which is the greater concern: the cost of materials or personnel costs to assemble and label the printed materials?
- Are there any constraints arising from the marking or data processing procedures that need to be considered?

112. The master-instrument copies show that each of the thirteen test booklets contains four clusters, which are administered in two one-hour sessions. During each 1-hour session, students proceed through the test booklet at their own pace. There is no restriction on which part of the booklet students may work during each session.

6.5.2 Printing PISA Materials

113. It is strongly recommended that the cognitive material and questionnaires be printed in separate booklets. This will avoid double handling of booklets, and subsequent delays during data entry (as the questionnaires can be data-entered while the cognitive material is being marked). If test material and questionnaires are printed together, the possibility of students returning to the test material during the questionnaire session exists. To avoid this possibility, a mechanism for sealing the cognitive section of the booklet at the end of the cognitive testing session should be considered. If this is not possible, then as a minimum a specific instruction should be added to your TA manual that the TA should monitor that students are not returning to the cognitive section of the booklet during the questionnaire session.

114. If the cognitive material and questionnaires are printed separately, then care should be taken to make sure that the students receive the correctly identified booklets so that these can be matched without error for data entry.

115. If it is expected that the questionnaire will often be administered in a separate session, then the test booklets and questionnaire should be printed separately to help protect the security of the test items.

6.5.3 Packaging and Shipping PISA Materials

116. Another decision that NPMs will need to make is how to package the assessment materials in order to protect the security of the test items.

117. To further protect item security, the test booklets for a school could be packaged in a secure bundle – either sealed in plastic or some other form of packaging. If the packaging is transparent and has not been wrapped too tightly, TAs will be able to check easily in advance if the correct number of booklets is in the package, without opening it. Similarly, the booklets could be sealed in envelopes, one for each student in the assessment. The "best" approach for a country will depend on the factors cited above.

118. When the student sample is selected in KeyQuest, booklet numbers will automatically be assigned to students as KeyQuest generates the Student Tracking Form. Refer to Section 5.3 of this manual, and to the Data Entry Manual for further details about the selection of the student sample using KeyQuest.

119. Three scenarios are described below as illustrative of acceptable approaches to packaging and shipping the assessment materials. Any questions should be directed to ACER.

120. Country A plans to ship all assessment materials to the schools and to use school staff (not teachers of the students in the assessment) to conduct the testing sessions. The National Centre will print the test booklets and Student Questionnaire separately. The National Centre plans to assign materials to students before packaging for shipment to the schools. They will assign each student listed on the Student Tracking Form a test booklet and a Student Questionnaire, label these materials and then seal them in envelopes also labelled with the students' names and identification numbers.

121. Country B also plans to ship materials directly to the schools but will use test administrators who are employed by the National Centre. Because of concerns about when the administration of the questionnaires will take place, Country B intends to print and package the test booklets and questionnaires in separately bound bundles. The order of the booklets in each bundle will be pre-recorded on the Student Tracking Form. To protect student confidentiality after the assessment has been completed, Country B will provide envelopes labelled with the students' names and identification numbers for students to put their assessment booklets into and seal once the assessment is over.

122. Country C plans to use test administrators employed by the National Centre and will ship the materials to these test administrators. Since the Student Questionnaire will be administered during the same session as the test items, Country C will print everything in one booklet. Bundles of 35 booklets will be sealed in plastic, so that the number of booklets can be checked without opening the packages (the plastic sealing will not be tight shrink-wrapping, to make counting easier). The test administrators will open the bundle assigned to a school immediately prior to the session and will label the booklets with the students' names and ID numbers from the Student Tracking Form, according to the assignment of booklets pre-recorded on the Tracking Form by National Centre staff.

123. NOTE: If a school's package of assessment materials is being sent directly to the school, you will need to inform the School Co-ordinator of this arrangement and stress to him/her that the package must be kept secure at all times and must not be opened until the test administrator arrives at the school on the day of the assessment. A fax form for the School Co-ordinator to send back to you to confirm that the package has arrived should be provided with the School Co-ordinator Manual.

124. Regardless of the approach to be used for packaging and shipping, for each session to be conducted the following materials should be sent either to the test administrator or to the school:

- Test booklets and student questionnaires for the number of students expected to be assessed
- Student Tracking Form
- 2 copies of the Session Report Form
- Packing Form
- Return shipment materials
- Additional materials, e.g. rulers and calculators, as decided for local circumstances
- Additional School and Student Questionnaires. A bundle of extra booklets (one of each of the booklet types)

6.6. Receipt of Materials back at the National Centre

125. NPMs will need to develop procedures for logging in completed test materials returned either by TAs or direct from schools, or both. These procedures should be developed before the testing begins, so that the Centre is well prepared to handle returned materials as soon as they begin to arrive.

126. Procedures are expected to vary from country to country, but at a minimum it is recommended that a database of schools be prepared and updated regularly to monitor shipping and receipt of materials to and from schools, and the progress of materials through the various processing steps at the National Centre. The information required for Sampling Form 12 would be a starting point for the database.

127. Steps to follow in preparing the booklets for marking are given in Chapter 7. It is recommended that the database of schools at the National Centre be used to keep a record of actual tallies of booklets received from each school, to show the numbers of tests and questionnaires completed and the numbers of booklets and questionnaires received that were not used. If any test booklet cannot be accounted for, every effort must be made to recover it.

7. MARKING, DATA ENTRY AND SUBMISSION OF MATERIALS

128. This section of the manual provides details on the PISA marking procedures, including multiple marking and an overview of the data entry and questionnaire coding. Complete information on coding Mathematics, Science, Problem Solving and Reading is provided in the Marking Guides. Complete details on data entry and management are included in the Data Entry Manual.

7.1. Overview of Marking[6] Requirements

129. The marking process includes different steps, which need to be implemented as described below. NPMs need to:

a) Recruit markers (see section 7.2);

b) Process booklets as they are returned from schools and prepare for marking (see section 7.3);

c) Conduct training of markers and table leaders (see section 7.4); and

d) Single and Multiple mark booklets according to the international design (see sections 7.5 – 7.8).

7.2. Recruit Markers

130. NPMs will need to recruit people to carry out the marking and multiple marking of the test booklets. In some countries pools of experienced markers from other projects may be able to be called on. In others, suitable people will need to be found. It will be an advantage if markers from the Field Trial, or from the previous cycle of PISA can be used for the marking. All people who will mark the test booklets must undergo the specific PISA training, regardless of whether they have had related experience on other projects.

131. In recruiting markers, it will be important to obtain people who can commit their time to the project for the duration of the marking.

Numbers of Markers Required

132. This chapter describes a marking design involving twenty four markers, made up of sixteen markers across the three domains of Mathematics, Science and Problem Solving and eight Reading markers. As explained in the chapter, this design could be easily adapted for separate markers for some domains. However, it should be noted that **at least four markers are required in any single domain**. Because the marking will take place over an estimated period of at least 6 weeks, it is recommended that at least four back-up markers be trained and included in at least some of the marking sessions.

[6] Note to NPMs: Please substitute the appropriate term for 'mark' (meaning 'to evaluate student work and assign a "mark" for it') if this term is not used in this way in your country.

Marker Qualifications

133. Markers do not need high-level academic qualifications, but they must have a good understanding of mid-secondary level mathematics, science or <language of the test>. They must also understand secondary level students and ways that students at this level express themselves. Teachers on leave, recently retired teachers and senior teacher trainees would all be potentially suitable markers. NPMs who are uncertain about the suitability of people they may be able to recruit for marking should discuss their situation with ACER.

Hours of marking per day

134. Marking responses to open-ended items is mentally demanding, requiring concentration for long periods of time. It is recommended that markers work for no more than 6 hours per day on actual marking. If the day is organised in two three-hour sessions, at least one short break should be taken during each session, with a minimum of 30 minutes for lunch. Preferably, the lunch break will be a little longer, to allow for some walking around.

Need for Table Leaders/Senior Markers

135. NPMs will need to designate persons with subject matter expertise, familiarity with the tests and preferably also experience in marking student responses to open-ended items, to act as 'table leaders' during the marking. Table leaders assist with the overall organisation of the marking, field and resolve queries about the Marking Guide and particular responses in relation to the Guide, and have an important role to play in monitoring the quality of the marking. Table leaders should also work as members of the marker pool – they are part of, not in addition to, the specified number of markers. It is recommended to recruit four table leaders for the marking exercise.

Marker Recruitment Kits

136. To assist NPMs with the process of selecting markers, the consortium will provide materials that may be used to screen applicants for marking positions. These Marker Recruitment Kits are similar in nature to the Marking Guides, but are much briefer. They are designed so that applicants who are considered to be potentially suitable can be given a brief training session, after which they will mark some student responses. Guidelines for assessing the results of this screening exercise will be provided with the Marker Recruitment Kits.

Confidentiality Forms

137. The Marker Recruitment Kits contain examples from actual PISA assessments. Before seeing or receiving any copies of PISA test materials, prospective markers are required to sign a confidentiality form, obligating them not to disclose the content of the PISA tests beyond the groups of markers and trainers with whom they are working. A sample confidentiality form is provided in Appendix One of this manual. NPMs should keep the signed confidentiality forms on file at their centre.

Marker ID Numbers

138. NPMs must assign a 3-digit ID number to each marker. The first digit of the assigned ID indicates the domains that the marker is eligible to mark. The assignment of digits to domains is as follows:

a. Mathematics, first digit = 1

b. Reading, first digit = 2

c. Science, first digit = 3

d. Maths/Science, first digit = 4

e. Problem Solving, first digit = 5

f. Maths/Problem Solving, first digit = 6

g. Maths/Science/Problem Solving, first digit = 7

h. Science/Problem Solving, first digit = 8

139. Within each of these eight categories, the remaining two digits will usually begin at 01 and continue in sequence to reach the number of persons who will be undertaking the marking. Thus, if 16 markers are used that mark the items from all of the Mathematics, Science and Problem Solving domains, their ID numbers would go from 701 to 716.

140. **The marker ID must be recorded for the multiple marked booklets**. Marker IDs are not a requirement for the single marking, but it is strongly recommended that these be recorded by booklet on the batch header sheets, to help keep track of booklets during the single marking.

7.3. Processing booklets and preparing for marking

Process Booklets

141. Booklets should be logged in rigorously as they are returned by the Test Administrators or as they arrive directly from schools. All booklets and questionnaires should be accounted for against the Student Tracking Form, and all codes for present/absent should be checked for validity against the booklet returns. If any test booklet is missing from a school's returned package, it is essential that every effort be made to retrieve it immediately.

142. Check that all returned booklets and questionnaires are adequately identified. (If they are not, you will need to call on the Test Administrator to go back to the school to work with the School Co-ordinator to ascertain the ID numbers of the respondents.) The School Questionnaire and the Student Questionnaires if these are not printed in the same booklets as the tests, should then be set aside for separate handling.

143. File the Student Tracking Forms carefully in School ID order in one or more ring binders especially for that purpose. If ID numbers have not been assigned with schools in alphabetical order by name, prepare an index of school name against school ID to keep with the binders. These binders will need to be kept handy for easy consultation.

144. Sort booklets by booklet number, maintaining School ID order in the sets of Booklet 1, Booklet 2, and so on.

Setting aside Booklets for Multiple Marking

145. Countries are required to set aside 100 of each booklet type for multiple marking. NPMs should endeavour to select a representative sample of schools in the selection of booklets for multiple marking.

146. The main principle in setting aside the booklets for multiple marking is that the selection needs to ensure a wide spread of schools and students. Ideally, all schools will have returned the completed booklets before the selection takes place. In practice, it will probably be preferable to begin the marking before all completed booklets have reached the National Centre. It is suggested that no marking begin until at least half of the booklets have been returned.

147. Most countries will be expecting around 400 of each booklet for marking (5250 / 13 booklets ≈ 400 students per booklet). This means that about one in four of booklets 1-6, 8, 10 and 12 should be set aside for multiple marking.[7] If more than 5250 booklets are expected, divide the expected sample size by 13 to obtain the expected number of each booklet to determine what proportion should be set aside.

148. Under this scenario, with each booklet in order by school ID, simply remove every fourth booklet and set it aside for multiple marking. If this process ends up with a few less than 100 booklets, randomly select some more booklets from the main pile to make up to100. If you end up with a few more than 100, randomly remove the excess number of booklets from the pile set aside for multiple marking and return to the main booklet pile. This should ensure that the booklets for multiple marking cover the range of school IDs in your sample.

149. If the marking is being undertaken at your centre in two main sequences – for example, after half of the schools have returned their booklets and then after all booklets have been received – please remember that booklets for multiple marking must be selected from the full range of schools. The ratio used for selecting the booklets from the schools included in the first main marking sequence must be based on the total number of booklets you expect to receive. Once you know the actual number of booklets received, the ratio used for selecting the booklets from the schools included in the second main marking sequence can be adjusted so that overall you set aside the correct numbers of booklets.

150. The range of school IDs of the booklets set aside for multiple marking will be reported as one of the quality checks when analysing the marker reliability data.

[7] Multiple marking this subset of booklets will ensure that all items are included in the reliability study.

Facilitate Tracking of Booklets

151. Have a supply of batch headers[8] readily available. These batch headers should be pre-printed with spaces for the following to be recorded: Booklet number (e.g. Booklet 4); School Subset number (refer to Section 7.6); the number of booklets and the school IDs represented in the pile, and spaces for each maker to write his or her name, ID number and the date and time marked. If the information has not already been entered, the first marker who takes a pile of booklets should fill in the number of booklets and the school IDs represented in the pile on the header sheet. The completed header sheet should be kept with the pile of booklets throughout the marking. When the booklets in the pile have all been marked, the marker should initial the header sheet to indicate this, and record the date when finished.

152. The batch header sheets will also be used to keep a record of the quality monitoring activities undertaken.

7.4. Training of markers and table leaders

Training and marking sequence

153. The recommended sequence of tasks for both training of markers and marking of student responses is outlined in this section. **Within each domain, it is a requirement that all recruited markers mark every cluster.** With this scheme, training can be undertaken one booklet or cluster at a time within a domain. Generally, because markers will work at different rates but will need to be trained together, it will be more efficient to train at the booklet or cluster level, not by unit. The activities of training followed by marking alternate continuously (booklet-by-booklet, cluster-by-cluster or a combination of the two) throughout the marking operation.

154. **The student responses must be marked item by item.** That is, Item X is marked in all booklets in the pile provided to each marker before the next item requiring marking is considered. For this purpose, items that have closely related parts may have all parts marked per student in the same 'pass' through the booklets.

Prior Preparation

155. In preparation for the marking, it is recommended that all persons who are to be trained as markers be asked to respond to all the test items in the domain(s) they will be marking. This helps them to become familiar with the content of the stimulus materials as well as the items themselves. It also helps them to appreciate problems that students might have in responding to some of the items.

156. Prior to the training sessions, the appointed markers should be provided with the Marking Guides and requested to read through these in advance of the sessions. Given that the training and marking will proceed by booklet, this advance reading can be done in stages.

[8] A batch header is simply a cover sheet with space for markers to record the details listed.

157. The Workshop materials should be used by NPMs as the basis for training the markers in their own country. **These materials should be supplemented by local examples of actual student responses, as described below.**

Selection of local examples for training

158. NPMs will need to select some examples of responses from their own country to use as part of the marker training and quality monitoring. Please select up to 25 examples of each item, to illustrate a range of types of responses according to the Marking Guide. Try to have one or two examples of responses for each code in the Marking Guide for that item. However, there is no need to search for a long time for responses that occur rarely. For very straightforward items, fewer examples will suffice.

159. The examples should then be placed into cluster sets, that is, all of Cluster 1 examples together, and so on, and sufficient copies made for each marker to have his or her own sets. These sets are to be used as practice material following the training with the materials provided by the consortium in the workshop booklets.

Beginning the Training Session

160. To begin the training session, it is recommended that NPMs provide an overview of the PISA project, the approach to assessment taken in the PISA frameworks and the extent of the sample in their country. It will also be useful to summarise the amount and nature of the test content, especially since the markers will have themselves recently completed the tests.

161. Trainee markers should be informed of the expectation that they will be able to apply the Marking Guides with a high level of reliability. The role of table leaders should be explained, and it should be made clear to the trainees that reliability checks will be made as part of the marking process.

162. During training, markers will be provided with several sample responses for each item requiring marking. Using the Marking Guides, trainees will mark the sample responses and the trainers will then review the marks assigned in an open discussion with the whole group of trainees. Trainees may ask questions during this process, the aim of which will be to achieve consensus on the mark that should be assigned to each response.

Training for Table Leaders

163. Table leaders will need to be thoroughly familiar with both the test items and the Marking Guide ahead of the main training. Table leaders will undertake the full marker training as trainees and will take part in the marking along with other members of their marker group (those who are assigned to their table). However, they will spend some of their time in checking marks assigned by members of their group, and in clarifying queries, documenting these if necessary for referral to the consortium.

164. The table leaders will need to undergo additional training in the procedures required of them for reliability monitoring. They will need to be familiar with the additional practice materials and understand the pre-assigned marks for these exercises.

Monitoring marker consistency during marking

165. It is important for NPMs to know that markers are using the Marking Guides consistently at all stages of the marking. The steps described in this section represent the minimum level of monitoring activities required. Countries wishing to implement more extensive monitoring procedures during the single marking are encouraged to do so.

Quality Monitoring as part of single marking

166. Table leaders have a key role to play in the quality monitoring of the single marking. Steps they will need to undertake are:

a) Supervision and assessment of additional practice before each booklet is marked, with all markers for a domain using the same examples; and

b) Regular 'spot' checking, with follow-up.

Additional practice with local examples

167. Immediately following training, markers should undertake additional practice with the standard sets of locally assembled materials. Each of these practice sessions should be run as a formal exercise.

168. During this exercise the markers should work without asking questions or consulting other markers. They should write their Marker ID on the front of their practice set and should show the marks they assign by circling the code alongside each item, as they would do if marking the items in actual student booklets.

169. When the markers have completed this additional practice exercise, the trainers should review the marks assigned and conduct further discussion as necessary to ensure that the markers understand the rationale for the correct marks (those agreed by the trainers and table leaders). However, markers should not at this stage change the marks they actually assigned. The review can be done by item or by unit. This step must be completed before actual marking of the Main Study booklets is begun.

Monitoring the practice marking

170. The NPM, assisted by table leaders, should collect the practice papers after each of the practice sessions and, as soon as possible, tabulate the marks assigned. The marks assigned by each marker should then be compared with the pre-agreed marks, with each matching mark regarded as a 'hit' and each discrepant mark regarded as a 'miss'. To reflect an adequate standard of reliability, the percentage of a marker's 'hits' to the total of 'hits plus misses' for an exercise should be at least 85%, and preferably rather higher than that. In the case of Mathematics, Problem Solving and Science, questions where two-digit codes are prescribed, this reliability should be assessed on the first digit.

171. If results from this additional practice exercise indicate that the markers as a group are not yet achieving this level of reliability, then additional practice will need to be undertaken before the actual marking proceeds. Any actual marking that may have

been done before the results of the practice become available will need to be reviewed.

172. If results from the additional practice exercise indicate that one or two markers are having trouble in some areas, the trainers or table leaders will need to spend time with them to identify where the problems lie and to help them achieve a better understanding of the Marking Guide.

173. If results from the additional practice exercises show that the same one or two markers are consistently unable to use the Marking Guide with sufficient reliability, then these markers should not be used for further marking. Any marking of actual booklets that they have already done will need to be reviewed.

Checking by table leaders of actual marking

174. During the actual marking of booklets, it will be preferable for markers to work quietly, referring queries to their table leader rather than to their neighbours. Table leaders should be prepared to advise markers in their group as the need arises, either individually or as a group if a particular query justifies this.

175. In addition, table leaders should spend some time during each session and at the end of each day 'spot' checking a sample of booklets or items that have already been marked, to identify problems for discussion with individual markers or with the wider group, as appropriate. All booklets that have not been set aside for multiple marking are candidates for this spot-checking. If there were indications from the practice session(s) that a particular marker might be experiencing problems in using the Marking Guide consistently, then more of that marker's booklets should be included in the checking.

176. At the beginning of the next day's marking, table leaders should review the results of the spot checking with the markers. This activity should primarily be seen as a mentoring activity, but NPMs should keep in contact with table leaders to be aware of markers who are consistently not meeting criteria of adequate reliability. It will not be in the best interests of PISA as a whole or of the individual country's results if such markers are allowed to remain in the marker pool.

When to Consult Table Leaders

177. After the initial training, practice and review—when coding issues are expected to be discussed openly until consensus is reached—it will be preferable for markers to work quietly, referring queries to their table leader rather than to their neighbours. The table leader may wish to share a particular query with the rest of the group.

178. Markers should not consult other markers or the table leaders during either the additional practice exercises or the multiple marking.

Marker query service

179. A marker query service is available for the situation where questions arise about marking particular items that cannot be resolved by the table leader. Table leaders should refer any such enquiries to the NPM, who should then direct the query to pisa@acer.edu.au.

Record keeping

180. Table leaders should initial and date the header sheet of each batch of booklets for which they have carried out spot-checking. Some items/booklets from each batch *must* be checked. Table leaders should keep a logbook of how many items of each marker's work they have checked, and the extent of hits and misses they have located in the marks assigned. NPMs should review this record regularly with the table leaders.

7.5. Single and Multiple marking of booklets

181. In the Main Study tests there are five types of items, which are shown in Exhibit 7-1 with their marking requirements for the study.

Exhibit 7-1. PISA Item Types and Marking Requirements

Item type	Nature of item	Marking needed
multiple choice	Standard 'choose one' from a set of given answers	None (response entered directly into computer)
complex multiple choice	Series of true/false or yes/no choices—one answer to be chosen for each element in the series	None (responses entered directly into computer)
closed constructed response	Short verbal or numerical response, correct answer clear-cut	None for some items (responses directly entered into computer); One marker for some items (to assign a right/ wrong code for data entry)
short response	Short verbal or numerical response, but a variety of possible correct answers	One marker, to assign codes with reference to the Marking Guide. A sub-sample of booklets multiple marked.
open constructed (extended) response	Longer verbal response, (e.g. 'explain your answer') or requirement to show work in solving mathematics, problem solving or science problem	One marker, to assign codes with reference to the Marking Guide A sub-sample of booklets multiple marked.

182. Multiple markers will be used for the short response and open constructed response items in a sub-sample of the booklets in each country. Multiple marking (which means being marked independently by four separate markers) of short response and open constructed response items will be undertaken in the first two clusters of a sample of 100 of each the booklets one to six, eight, ten and twelve.

- Every country will be required to set aside a sample of 900 booklets for multiple marking (100 of each of Booklets 1 to 6, 8, 10 and 12), regardless of the country's total sample size;
- Multiple marking of the optional UH Booklet (if used) is not required. (Refer to Chapter 6 for information about this booklet);

- The multiple marking will be done at the end of the marking period, after markers have had the chance to become familiar with and confident in using the Marking Guides.

How marks are assigned during single and multiple marking

183. On the right hand side of each test item that requires coding by a marker, there is a string of small code numbers. For single marking, the mark assigned should be indicated directly in the booklet by circling the appropriate code number alongside the item. If a mark has to be changed, the first mark should be fully erased or clearly indicated as no longer applying. Note that the "*Not Applicable*" code is not included in the string of small code numbers.

184. The multiple marking differs significantly from the single marking in that **the marks assigned by the first three markers should not be shown in the booklets themselves**. These markers will need to use the special purpose marking record sheets provided in Appendix Two of this manual.

185. The multiple marking record sheets are designed so that all the marks per student per booklet will be recorded on the same sheet. Markers will show the marks they assign by circling a pre-printed code number for each item.

186. Separate multiple marking record sheets are provided to cater both for the situation where markers mark in a single domain only, as well as for the situation where markers mark across different domains. Use the record sheet appropriate to your marking arrangement.

187. It is essential that the ID of the student whose booklet is being marked be written onto the student's multiple marking record sheet, together with the marker's ID number and the marks (codes) assigned.

Multiple marking – general principles

188. In the multiple marking process, each booklet is marked by four separate markers, according to the design described in Section 7.7.

189. Countries will be required to set aside 100 each of booklets one to six, eight, ten and twelve for multiple marking. NPMs should endeavour to select a representative sample of schools in the selection of booklets for multiple marking, although a formal random sampling procedure is not required. A suggested selection procedure is given in paragraphs 18-23 of this chapter.

190. The multiple marking should be carried out after the single marking of all the booklets not selected for multiple marking has been completed. Markers should be thoroughly familiar with the Marking Guides by this time. They will have marked items from every cluster in the design. However, they may have most recently marked different clusters to those allocated to them for multiple marking. For this reason, markers should re-read the relevant Marking Guide for the clusters they will be multiple marking before beginning the marking. It is recommended that time be provided for markers to refresh their familiarity with the Guides and to look again at the additional practice material before proceeding with the multiple marking. This time will be spent

to best advantage if the clusters in the booklet to be marked next are reviewed as a set, then those in the next booklet to be marked, and so on.

191. **The multiple marking is to be done independently of other markers or the table leader. Markers should not consult each other about the Marking Guides during the multiple marking exercise.**

192. The fourth marker in the multiple marking process first 'fourth-marks' the short response and open constructed response items from the first two clusters of the booklet (as per the first 3 markers, except that the fourth marks are recorded in the booklet, not on separate sheets.) Then the same marker single marks any 'short constructed response' items from the first two clusters. (These are items that require a marker to assign a right/wrong code, but do not require any marker judgement, and therefore do not require multiple marking). Following this, the same marker single marks all of the items requiring marking from the third and fourth clusters from the booklet. These steps are described in more detail below. All of these marks from the fourth marker are recorded in the booklet.

193. The fourth marker must also record his or her marker ID on the front cover of the booklet. This should be indicated in the 'Office use only' boxes below the student details box on the cover page. A box is provided for each domain. In the case where a marker marks across more than one domain, the marker should record his or her ID in the box of each domain marked.

Multiple marking in countries with more than one language

194. If multiple languages are used in a country then NPMs will be required to include booklets from each language in the multiple marking study. NPMs from such countries should contact the consortium to discuss the details of the booklet selection for their multiple marking.

7.6. Single Marking Design

Introduction

195. It is expected that countries will follow the marking design as described below. NPMs who need to implement another design should submit their proposal to the Consortium for approval.

196. The marking design described below involves two stages. The first stage involves the single marking of all of the clusters from the Booklets NOT selected for multiple marking.

197. The second stage involves the multiple marking of the first two clusters of the booklets selected for multiple marking. At the end of the multiple marking phase for each Booklet type, the fourth marker will then single mark the remainder of that Booklet.

Stage One: Single Marking of Booklets Not Selected for Multiple Marking

198. The preferred arrangement for the single marking is by cluster. This will necessitate more handling of piles of booklets than if the marking were done by booklet, but has

the advantage that several markers will mark individual students' responses, thus minimising effects of marker leniency or harshness for any particular student.

199. Marking of all items in a cluster should be completed before proceeding to the next cluster. Because each cluster occurs in four different booklets each of these four booklets will usually be handled before marking of the next cluster begins. By way of example, Mathematics Cluster 1 (M1) occurs in Booklets 1, 5, 11 and 13. This cluster in these four booklets will therefore be marked before any marking of items in Cluster 2 (M2) is undertaken. Further, since marking is to be done item by item, an item will be marked across four booklets before marking of the next item is begun.

200. Note, however, that it is permissible to undertake two main sequences of marking through the clusters, in order to begin the marking before all booklets have been returned to the National Centre.

201. As the booklets will be sorted by school and student ID, a marker of maths, science and problem solving will have to mark a cluster within a booklet from 8 or 9 schools ($150 \div 16 \cong 9$). Exhibit 7-2 shows how booklets should be assigned to markers for the single marking of maths, science and problem solving. A step-by-step explanation of the information in this table is presented below it.

202. Let us suppose that School ID ranges from 1 to 150. According to this design, Marker 1 (701 in Exhibit 7-2) will mark all of Cluster 1 in subset 1 (schools 1 to 9), Marker 2 (702 in Exhibit 7-2) will mark all of Cluster 1 in subset 2 (schools 10 to 18) and so on. For Cluster 2, Marker 701 will mark all from subset 2 (schools 10 to 18) and Marker 702 will mark all from subset 3 (schools 19 to 27). Subset 1 of Cluster 2 (schools 1 to 9) will be marked by Marker 716.

Exhibit 7-2. Allocation of the Booklets for Single Marking by Cluster

		School Subsets															
Cluster	Booklets	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
M1	1,5,11,13	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716
M2	1,2,6,12	716	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715
M3	2,3,7,13	715	716	701	702	703	704	705	706	707	708	709	710	711	712	713	714
M4	1,3,4,8	714	715	716	701	702	703	704	705	706	707	708	709	710	711	712	713
M5	2,4,5,9	713	714	715	716	701	702	703	704	705	706	707	708	709	710	711	712
M6	3,5,6,10	712	713	714	715	716	701	702	703	704	705	706	707	708	709	710	711
M7	4,6,7,11	711	712	713	714	715	716	701	702	703	704	705	706	707	708	709	710
S1	5,7,8,12	710	711	712	713	714	715	716	701	702	703	704	705	706	707	708	709
S2	6,8,9,13	709	710	711	712	713	714	715	716	701	702	703	704	705	706	707	708
PS1	3,9,11,12	708	709	710	711	712	713	714	715	716	701	702	703	704	705	706	707
PS2	4,10,12,13	707	708	709	710	711	712	713	714	715	716	701	702	703	704	705	706

203. Implementing this design involves the following steps (assuming an achieved sample of about 150 schools and 16 markers)[9]:

- After the booklets for multiple marking have been set aside, divide the remaining booklets into school subsets as above (subset 1: schools 1 to 9; subset 2: schools 10 to 18, and so on, to achieve 16 subsets of schools).
- Assuming the marking is beginning with M1:
  Marker 701 will take Booklets 1, 5, 11 and 13 for School Subset 1;
  Marker 702 will take Booklets 1, 5, 11 and 13 for School Subset 2; through to
  .
  .
  Marker 716 taking Booklets 1, 5,11 and 13 for School Subset 16.

- Markers then mark all of the first M1 item requiring marking in the booklets that they have, that is, in Booklet 1, then in Booklet 5, then in Booklet 11, then in Booklet 13.
- Next, the second M1 item is marked in all of the four booklet types, followed by the third M1 item, and so on until all of the M1 items have been marked.
- For M2, following the row of the table in Exhibit 7-2 corresponding to 'M2' in the left-most column, each marker will be allocated a different subset of schools than the subset he or she had for M1. Marker 716 will mark the booklets from School Subset 1, Marker 701 will mark the booklets from School Subset 2, and so on. Again, marking will proceed item by item within the cluster.

204. As a result of this procedure, nine different markers for mathematics, science and problem solving will process the booklets from each subset of schools, and another marker for reading and each student's booklet will be marked by four different markers.

[9] Countries with more or fewer than 150 schools or a different number of markers must adjust the size of the school subsets accordingly.

205. Assuming a total sample size of 5250 students, the expected number of each booklet type is about 400. Once the booklets for multiple marking are set aside, that will leave around 300 of each of Booklets 1-6, 8, 10 and 12, and 400 of each of Booklets 7,9,11 and 13 to single mark at this stage. Implementing the design in Exhibit 7-2 means that at each stage (each cell within the table) each marker will have about 90 books to mark. For example, Cluster M1 appears in Booklets 1,5,11 and 13. It is expected that there will be about 300 + 300 + 400 + 400 = 1400 of these booklets to single mark. These are divided into 16 subsets, with each marker receiving about 1400 / 16 ≈ 90 books.

206. Note that it is not necessary to mark each cluster in the row order shown in Exhibit 7-2. While it is desirable to mark the clusters from each domain together, (eg Maths, then Science, then Problem Solving), the order that the maths clusters for example are marked is arbitrary. Later in this chapter an order for marking is suggested to help minimise delays caused by the markers of different domains requiring the same booklets.

207. Countries using optional Booklet UH (refer to Chapter 6 for information about this booklet) will probably prefer to process this separately from the cycle(s) of the remaining booklets. There will be smaller numbers of students using this booklet than the other booklets, and only small numbers of items require marking. Further, the items are not arranged in clusters. Markers may need to be reminded that the marking criteria for the Booklet UH should be applied in the same way as they are for the main cycle marking.

Single Marking of Reading

208. Both the training and marking processes will be similar for reading to those described above for mathematics/science/problem solving.

209. With eight reading markers the booklets should be assigned to markers according to Exhibit 7-3. Here, the 16 subsets of schools created for the maths/science/problem solving marking, are put into 8 pairings because the schools will be shared among 8 markers, not 16. Assuming that the reading marking is occurring simultaneously with the maths/science/problem solving marking, each of the school subsets should be kept intact with its header sheets so that they each pairing of subsets can later be returned to a single subset.

Exhibit 7-3. Allocation of the Booklets for Single Marking of Reading

		School subsets							
Cluster	Booklets	1 - 2	3 - 4	5 - 6	7 - 8	9 -10	11 - 12	13 - 14	15 - 16
R1	1,7	201	202	203	204	205	206	207	208
R1	9,10	203	204	205	206	207	208	201	202
R2	2,8	205	206	207	208	201	202	203	204
R2	10,11	207	208	201	202	203	204	205	206

210. Note that the marking of each of the two reading clusters is done in two stages. This is done for a number of reasons:

- To make each pile of books more manageable for the marker. For example, cluster R1 appears in Booklets 1, 7, 9 and 10, with an expected total of about 300+300+300+400 = 1300 booklets to single mark. Dividing these among 8 markers means each marker having a pile of around 160 booklets at a time. Dividing the marking of R1 into two stages means that markers are handling about half that number, which is more manageable (and is similar in size to the number of booklets each maths/science/problem solving marker is marking at a time).
- So that markers mark across the range of school subsets.
- Most importantly, it will assist in minimising any delays in the scheduling of the marking due to maths/science/problem solving markers and reading markers wanting to mark the same booklet. A suggested schedule is provided later in the chapter (Exhibit 7-4) aimed at minimising such delays.

Scheduling the marking of different domains

211. Exhibit 7-4 below shows a suggested order of marking for the clusters of each domain, aimed at minimising delays caused by markers from different domains requiring the same booklet. Exhibit 7-4 is a combination of Exhibits 7-2 and 7-3 presented earlier. Some of the rows have changed order, but the information within each row (cluster, booklets, marker IDs) is exactly the same as shown in the previous exhibits.

212. While the number of booklets each marker has is about the same for reading as for maths/science/problem solving (around 80-90), the order below assumes that the marking of each stage of the reading cluster marking will take about the same time as it takes for two mathematics clusters to be marked. In practice this is likely to vary from cluster to cluster, and from country to country. The design aims to minimise periods of time where one group of markers is waiting for another group of markers to finish with particular booklets, but it should be expected that such periods will occur during the marking.

213. With this design, the maths/science/problem solving markers can be marking clusters M1 and M2 from Booklets 1,5,11,13, followed by 1,2,6 and 12, while the reading markers can be marking R1 from Booklets 9 and 10. At the next step, the reading markers can be continuing the marking of R1 now from Booklets 1 and 7, while the maths/science/problem solving markers are working with Booklets 2,4,5,9 followed by 3,5,6 and 10. The process is repeated for the remaining clusters to be marked.

Exhibit 7-4. Proposed schedule for marking Reading at the same time as Mathematics /Science /Problem Solving

MATHS, SCIENCE AND PROBLEM SOLVING CLUSTERS

		School Subsets															
Cluster	Booklets	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
M1	1,5,11,13	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716
M2	1,2,6,12	716	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715
M5	2,4,5,9	713	714	715	716	701	702	703	704	705	706	707	708	709	710	711	712
M6	3,5,6,10	712	713	714	715	716	701	702	703	704	705	706	707	708	709	710	711
M3	2,3,7,13	715	716	701	702	703	704	705	706	707	708	709	710	711	712	713	714
M4	1,3,4,8	714	715	716	701	702	703	704	705	706	707	708	709	710	711	712	713
M7	4,6,7,11	711	712	713	714	715	716	701	702	703	704	705	706	707	708	709	710
PS1	3,9,11,12	708	709	710	711	712	713	714	715	716	701	702	703	704	705	706	707
PS2	4,10,12,13	707	708	709	710	711	712	713	714	715	716	701	702	703	704	705	706
S1	5,7,8,12	710	711	712	713	714	715	716	701	702	703	704	705	706	707	708	709
S2	6,8,9,13	709	710	711	712	713	714	715	716	701	702	703	704	705	706	707	708

READING CLUSTERS

		School Subsets							
Cluster	Booklets	1 - 2	3 - 4	5 - 6	7 - 8	9 -10	11 - 12	13 - 14	15 - 16
R1	9,10	203	204	205	206	207	208	201	202
R1	1,7	201	202	203	204	205	206	207	208
R2	10,11	207	208	201	202	203	204	205	206
R2	2,8	205	206	207	208	201	202	203	204

Comment [A1]: Page: 15
Suggest marker Ids here eg 701, 702 etc. M1 used to mean ‘marker 1’ and ‘maths cluster 1’

7.7. Multiple marking of booklets set aside for Reliability Study

Mathematics, Science and Problem Solving

214. The multiple marking design specified here assumes 16 mathematics/science/problem solving markers, with ID numbers 701 to 716. It is important that the design be followed exactly as specified, as the design provides for balanced links between clusters and markers.

215. The design involves two main steps, with the booklets divided into two sets. Booklets 1 to 4 make up one set, and Booklets 5, 6, 8 and 12 are the second set. The four markings of each booklet should be carried out by the allocation of booklets to markers shown in Exhibit 7-5. A third step involves the single marking of the last two clusters from the 100 Book 10s that were set aside for the multiple marking of reading.

Exhibit 7-5. Allocation of Booklets to Markers for Multiple Marking of Mathematics, Science and Problem Solving

Step	Booklet	Marker IDs	Clusters for multiple marking	Clusters for single marking
1	1	701, 702, 703, 704	M1,M2	M4
	2	705, 706, 707, 708	M2,M3	M5
	3	709, 710, 711, 712	M3,M4	M6,PS1
	4	713, 714, 715, 716	M4,M5	M7,PS2
2	5	703, 704, 705, 706	M5,M6	S1,M1
	6	707, 708, 709, 710	M6,M7	S2,M2
	8	711, 712, 713, 714	S1,S2	M4
	12	715, 716, 701, 702	PS1,PS2	M2,S1
3	10	Unspecified		PS2, M6

216. In this scenario, with all 16 markers working, the Booklets 1 to 4 are marked at the same time, each by a combination of four markers. The 100 Booklet 1s, for example, should be divided into four bundles, and these bundles rotated among markers 701, 702, 703 and 704, so that each of these markers will eventually have marked all 100 of this booklet. Similarly, the Booklet 2s are distributed and marked by markers 705, 706, 707 and 708, and so on.

217. The marking of items during the multiple marking process proceeds **item-by-item**, in the same manner as described above for the single marking stage.

218. For the first three times a bundle of booklets is marked, the marks should be circled on the separate multiple marking sheets, provided in Appendix Two of this manual. For the fourth marker, the marks should be circled in the booklets as was done for the single marking. Also the fourth marker should mark any 'closed constructed

response' items (that did not require marker judgement, but did require a right/wrong coding by a marker) from the first two clusters at this stage.

219. After markers finish the fourth-marking of the first two clusters of a pile of booklets, they then **single** mark any remaining mathematics, science or problem solving clusters from each of the booklets in their pile.

220. For example, in step 1, each of the markers 701-704 receives a pile of 25 Booklet 1s. These are rotated between four markers, until all four markers have marked all 100 Booklet 1s. With the pile of booklets each marker has just finished fourth-marking, that same marker then:

- Single marks any remaining items needing marking from the first two clusters
- Single marks M4, the third cluster of Booklet 1.

221. All of the marks at this fourth rotation are made in the booklets. Finally, the fourth marker must write his or her marker ID on the front page of the booklet, below the student details box.

222. Markers 705-708 follow the same process in the marking of Booklet 2, 709-712 in marking Booklet 3 and 713-716 in marking Booklet 4.

223. After Booklet 4 has been put through the multiple marking, the markers should re-group into the combination specified in the table above and follow the same process in the marking of Booklets 5, 6, 8 and 12. That is, markers 703, 704, 705 and 706 mark Booklet 5, and markers 707, 708, 701 and 702 mark Booklet 6 and so on.

224. Finally, the last two clusters of the Booklet 10s that were set aside for the multiple marking of the two reading clusters that appear in the first half of this booklet, need to be single marked. Schedule this before or after the reading multiple marking, and use available markers as suits the circumstances. The marks should of course be recorded directly into the booklets.

225. As there are unequal numbers of items requiring multiple marking in the various booklets, and as some booklets have a reading cluster in addition to the clusters of maths, science and problem solving, it is likely that some marker groups will need to take longer breaks than others. It will be very important to have a person designated to supervise the flow of booklets through the multiple marking processes.

Reading

226. It is assumed that there will be four markers used for the multiple marking of reading. Assuming eight markers were employed for single marking, a random selection of four of these eight markers should be made to complete the multiple marking exercise. (This random selection can be made prior to the start of the single marking so that markers are aware of this extra commitment following the single marking.) The markers retained for the multiple marking activity should continue to use the same marker ID used during the single marking.

227. Booklet 10 contains all of the reading material that needs to be multiple marked. The 100 booklet 10's should be broken into four piles of approximately 25 and rotated around the four markers.

228. The multiple marking of the first two clusters of Booklet 10 proceeds in the same manner as described about for the multiple marking of the other domains. Following the multiple marking of the items requiring judgement, the fourth marker marks any 'non marker-judgement' remaining from these clusters. Once the reading clusters from all 100 booklets have been marked by all four markers, the second half of the booklet needs to be single marked by markers of the maths and problem solving domains. This is described as 'Step 3' of Exhibit 7-54.

7.8. Separate markers for individual domains

229. Countries that recruit separate markers for Mathematics, Science, and/or Problem Solving should follow the same principles as illustrated in the designs above. For advice on how to do this NPMs should contact ACER with details of the number of markers that they are using for each domain.

> REMINDER: NPMs who are unable to recruit or employ the recommended numbers of markers should consult ACER for advice on alternative designs for the single and multiple marking.

7.9. Booklets for Cross-National Marking

230. Cross-national comparability in the assignment of marks will be explored in the Main Study both through statistical methods and through the additional marking of subsets of booklets submitted for this purpose by countries. This marking will be carried out by the consortium after national data have been entered and cleaned. Specifications for the number of booklets to be submitted for this exercise will be provided to NPMs later in 2003.

7.10. Data entry

Code Questionnaires

231. In their national options, countries may need to pre-code some responses before data from the questionnaire are entered into the software.

232. The main coding required for the Student Questionnaire internationally is for mother's and father's occupation and student occupation expectation. In most countries there is more than one way that this can be achieved. NPMs may use a national coding scheme with more than one hundred occupational title categories, provided that this national classification can be recoded (see below), or they may use four-digit ISCO88 (International Standard Classification of Occupations, 1988 Edition) codes. It is preferred that a National Classification is used because it will then be possible to compare relationships between occupational status and achievement using both international and national measures of occupational status. Countries will need to provide precise information about their national scheme to the consortium.

233. If a national classification is not available, ISCO88 should be used.

234. A summary of ISCO codes and occupational titles will be provided with the Data Entry manual. This should not be difficult to translate into other languages because it is short and clear. It can then be used by countries that have neither a national occupational classification scheme nor access to ISCO.

235. For countries that wish to purchase the complete ISCO manual, it is available from the ILO website, http://www.ilo.org/public/english/support/publ/pindex.htm, in English, French and Spanish. Note that it is not practicable to attempt to translate ISCO itself into another language.

236. You may wish to contact your national government statistical agency for details on ISCO in relation to your country. Please check whether the agency has conversion files between ISCO and your national classification of occupational titles. Please inform the International Project Centre of any such conversion files.

237. There are several other questions in the Student Questionnaire where some simple pre-coding may need to be done before data entry.

238. Details of all coding required will be provided in the Data Entry Manual.

Install Data Entry Software

239. The consortium will provide data entry software to participating countries. The software will run under Windows 95 or higher, and Windows NT 4.0 or higher. The software contains the database structures for all the booklets and questionnaires used in Main Study. The user can modify these data base structures. For example, variables can be added or deleted. The data should be entered directly from the booklets. However, for the reliability study where items are marked by several markers, the data will be recorded on separate sheets and will be entered from those sheets into tailored files. The data entry software performs validation checks as data are entered. Importing facilities are also available if data have already been entered into text files. It is strongly recommended that data be entered directly into KeyQuest, in order to take advantage of its many PISA-specific features.

240. The separate Data Entry Manual provides full details of the functionality of the KeyQuest software.

7.11. Material to be submitted

.pdf files of instruments

241. NPMs must send .pdf files (preferred) or hard copies of the complete set of instruments to ACER. The 'complete set' consists of the thirteen test booklets as formatted for their country (or fourteen test booklets for countries using special education booklet UH), the School and Student Questionnaires, and any international and national option instruments.

242. The whole set of instruments should be submitted to the consortium as soon as the instruments are printed. Please note that the instruments need to correspond to the approved Questionnaire Adaptation Spreadsheets (QAS). Any later changes (e.g.

numbering of questions) should be documented and the updated QAS need to be submitted together with the final instruments.

Enter, Check and Submit Data

243. NPMs have **12 weeks from the end of the testing sessions in their country** to code items, undertake multiple marking (but not the cross-national marking), enter all data, check data and submit all the documentation and the data files to ACER. If you have a very unusual circumstance, which results in problems with meeting this deadline, please consult ACER immediately. Data files *must* be submitted in KeyQuest.

Check Data

244. Before submitting their data, NPMs are required to run the checking procedures that are described in details in the KeyQuest Data Entry Manual. NPMs are required to complete the Student Tracking Forms and the list of sampled schools before the data entry process begins. Information contained in these forms is necessary for running the data checking procedures.

245. When necessary, NPMs must correct any data errors detected by the checking procedures. Hard or electronic copies of the cleaning reports must be submitted with the data files.

Submit Files

246. The data files submitted must include:

- Data for the test booklets and context questionnaires;
- Data for the international option instrument(s);
- Data for the multiple marking study;
- List of sampled schools;
- Cleaning reports; and
- Student Tracking Forms.

247. Submission of data files via FTP access to ACER is preferred. Please contact ACER a day or two before you are ready to send the files for instructions on how to proceed.

7.12. After Submission of the Data

248. NPMs must designate a data manager who will work actively with ACER during the international data cleaning process. Responses to requests for information by ACER must be provided within three working days of the request.

249. Unresolved student identification problems will lead to deletion of that record. Other unsolved data errors will also lead to the deletion of data.

APPENDIX ONE: SAMPLE CONFIDENTIALITY AGREEMENT FOR MARKERS

CONFIDENTIALITY AGREEMENT

(OECD/PISA Markers)

Name

Address

I,

_____
_

agree in accepting employment as a Test Marker for the OECD/PISA project being managed by <National Centre>:

1. that I will assess objectively and impartially in accordance with the advice and procedures provided by <National Centre>;

2. that I will immediately inform <National Centre> if I am or may be closely related to or associated with any student whose work I might be asked to mark;

3. that I will observe confidentiality and will not disclose or divulge by any means or in any way to any person not authorised to receive them:

    a) any results obtained by candidates or schools;
    b) the content of any PISA test booklet;
    c) the content of any script from the test booklets or questionnaires;
    d) the content of any script from the School Questionnaire;
    e) the name of any student whose work I have marked; and
    f) details of the marking criteria used in the project.

Signature ..... Date .....

APPENDIX TWO: RECORD SHEETS FOR MULTIPLE MARKING

OECD PISA 2003 MAIN STUDY

RECORD SHEET FOR MULTIPLE MARKING <FIRST/SECOND/THIRD> MARKING

Booklet 1: Marker's name_____ Date_____/03

Marker ID

Student ID

StIDStr StIDSch StIDSt

*Please enter **and check** the full ID for the student, and keep this sheet with the booklet until you have marked all the designated items in the booklet.*
*You must mark **the same item** throughout all booklets assigned to you before moving to another item*
*Show a mark by **circling** the appropriate marking code.*

Question #	Domain	Item name	Item Label	Marking Codes									Missing	N/A
Q5	Mathematics	Bicycles Q3	M810Q03	00	11	12	21						99	97
Q7	Mathematics	Internet Q1	M402Q01	0	1								9	n
Q8	Mathematics	Internet Q2	M402Q02	0	1								9	n
Q9	Mathematics	Robberies Q1	M179Q01	01	02	03	04	11	12	21	22	23	99	97
Q19	Mathematics	Thermometer Cricket Q2	M446Q02	0	1								9	n
Q21	Mathematics	Support for President Q1	M702Q01	0	1	2							9	n

OECD PISA 2003 MAIN STUDY

RECORD SHEET FOR MULTIPLE MARKING <FIRST/SECOND/THIRD> MARKING

Booklet 2: Marker's name_____ Date_____/03

Marker ID

Student ID

StIDStr StIDSch StIDSt

*Please enter **and check** the full ID for the student, and keep this sheet with the booklet until you have marked all the designated items in the booklet.*
*You must mark **the same item** throughout all booklets assigned to you before moving to another item*
*Show a mark by **circling** the appropriate marking code.*

Question #	Domain	Item name	Item Label	Marking Codes							Missing	N/A
Q7	Mathematics	Thermometer Cricket Q2	M446Q02	0	1						9	N
Q9	Mathematics	Support for President Q1	M702Q01	0	1	2					9	N
Q16	Mathematics	Walking Q1	M124Q01	0	1	2					9	N
Q17	Mathematics	Walking Q3	M124Q03	00	11	21	22	23	24	31	99	97
Q19	Mathematics	Litter Q1	M505Q01	0	1						9	N
Q20	Mathematics	Third Side Q1	M462Q01	01	11	12	13	21			99	97

OECD PISA 2003 MAIN STUDY

RECORD SHEET FOR MULTIPLE MARKING <FIRST/SECOND/THIRD> MARKING

Booklet 3: Marker's name_____ Date_____/03

Marker ID

Student ID

StIDStr StIDSch StIDSt

*Please enter **and check** the full ID for the student, and keep this sheet with the booklet until you have marked all the designated items in the booklet.*
*You must mark **the same item** throughout all booklets assigned to you before moving to another item*
*Show a mark by **circling** the appropriate marking code.*

Question #	Domain	Item name	Item Label	Marking Codes							Missing	N/A
Q4	Mathematics	Walking Q1	M124Q01	0	1	2					9	N
Q5	Mathematics	Walking Q3	M124Q03	00	11	21	22	23	24	31	99	97
Q7	Mathematics	Litter Q1	M505Q01	0	1						9	N
Q8	Mathematics	Third Side Q1	M462Q01	01	11	12	13	21			99	97
Q14	Mathematics	Height Q1	M421Q01	0	1						9	N

OECD PISA 2003 MAIN STUDY

RECORD SHEET FOR MULTIPLE MARKING <FIRST/SECOND/THIRD> MARKING

Booklet 4: Marker's name_____ Date_____/03

Marker ID

Student ID

StIDStr StIDSch StIDSt

*Please enter **and check** the full ID for the student, and keep this sheet with the booklet until you have marked all the designated items in the booklet.*
*You must mark **the same item** throughout all booklets assigned to you before moving to another item*
*Show a mark by **circling** the appropriate marking code.*

Question #	Domain	Item name	Item Label	Marking Codes					Missing	N/A
Q2	Mathematics	Height Q1	M421Q01	0	1				9	N
Q15	Mathematics	Exchange Rate Q3	M413Q03	01	02	11			99	97
Q16	Mathematics	Running Tracks Q1	M406Q01	0	1				9	N
Q17	Mathematics	Running Tracks Q2	M406Q02	0	1				9	N
Q18	Mathematics	Running Tracks Q3	M406Q03	0	1				9	N
Q19	Mathematics	Growing Up Q1	M150Q01	0	1				9	N
Q20	Mathematics	Growing Up Q3	M150Q03	01	02	11	12	13	99	97
Q21	Mathematics	Growing Up Q2	M150Q02	00	11	21	22		99	97

OECD PISA 2003 MAIN STUDY

RECORD SHEET FOR MULTIPLE MARKING <FIRST/SECOND/THIRD> MARKING

Booklet 5: Marker's name_____ Date_____/03

Marker ID

Student ID

StIDStr StIDSch StIDSt

*Please enter **and check** the full ID for the student, and keep this sheet with the booklet until you have marked all the designated items in the booklet.*
*You must mark **the same item** throughout all booklets assigned to you before moving to another item*
*Show a mark by **circling** the appropriate marking code.*

Question #	Domain	Item name	Item Label	Marking Codes							Missing	N/A
Q3	Mathematics	Exchange Rate Q3	M413Q03	01	02	11					99	97
Q4	Mathematics	Running Tracks Q1	M406Q01	0	1						9	N
Q5	Mathematics	Running Tracks Q2	M406Q02	0	1						9	N
Q6	Mathematics	Running Tracks Q3	M406Q03	0	1						9	N
Q7	Mathematics	Growing Up Q1	M150Q01	0	1						9	N
Q8	Mathematics	Growing Up Q3	M150Q03	01	02	11	12	13			99	97
Q9	Mathematics	Growing Up Q2	M150Q02	00	11	21	22				99	97
Q17	Mathematics	Pop Pyramids Q2	M155Q02	00	11	12	13	21			99	97
Q18	Mathematics	Pop Pyramids Q1	M155Q01	0	1						9	N
Q19	Mathematics	Pop Pyramids Q3	M155Q03	00	11	12	13	21	22	23	99	97
Q21	Mathematics	Braille Q2	M442Q02	0	1						9	N

OECD PISA 2003 MAIN STUDY

RECORD SHEET FOR MULTIPLE MARKING <FIRST/SECOND/THIRD> MARKING

Booklet 6: Marker's name_____ Date_____/03

Marker ID

Student ID

StIDStr StIDSch StIDSt

*Please enter **and check** the full ID for the student, and keep this sheet with the booklet until you have marked all the designated items in the booklet.*
*You must mark **the same item** throughout all booklets assigned to you before moving to another item*
*Show a mark by **circling** the appropriate marking code.*

Question #	Domain	Item name	Item Label	Marking Codes							Missing	N/A
Q4	Mathematics	Pop Pyramids Q2	M155Q02	00	11	12	13	21			99	97
Q5	Mathematics	Pop Pyramids Q1	M155Q01	0	1						9	N
Q6	Mathematics	Pop Pyramids Q3	M155Q03	00	11	12	13	21	22	23	99	97
Q8	Mathematics	Braille Q2	M442Q02	0	1						9	N
Q14	Mathematics	Car Drive Q2	M302Q02	0	1						9	N
Q15	Mathematics	Car Drive Q3	M302Q03	0	1						9	N
Q19	Mathematics	Test Scores Q 1	M513Q01	0	1						9	N
Q20	Mathematics	Carbon Dioxide Q1	M828Q01	0	1						9	N
Q21	Mathematics	Carbon Dioxide Q2	M828Q02	0	1						9	N
Q22	Mathematics	Carbon Dioxide Q3	M828Q03	0	1						9	N

OECD PISA 2003 MAIN STUDY

RECORD SHEET FOR MULTIPLE MARKING <FIRST/SECOND/THIRD> MARKING

Booklet 8: Marker's name_____ Date_____/03

Marker ID

Student ID

StIDStr StIDSch StIDSt

*Please enter **and check** the full ID for the student, and keep this sheet with the booklet until you have marked all the designated items in the booklet.*
*You must mark **the same item** throughout all booklets assigned to you before moving to another item*
*Show a mark by **circling** the appropriate marking code.*

Question #	Domain	Item name	Item Label	Marking Codes									Missing	N/A
Q5	Science	Tidal Energy Q2	S327Q02	0	1								9	N
Q6	Science	Milk Q1	S326Q01	0	1								9	N
Q7	Science	Milk Q2	S326Q02	0	1								9	N
Q13	Science	Greenhouse Q3	S114Q03	01	02	11	12						99	97
Q14	Science	Greenhouse Q4	S114Q04	01	02	03	11	12	13	14	15	21	99	97
Q15	Science	Greenhouse Q5	S114Q05	01	02	03	11	12					99	97
Q19	Science	Daylight Q2	S129Q02	01	02	03	04	11	12	13	21		99	97
Q23	Science	Good Vibrations Q2	S131Q02	01	02	03	11	12					99	97
Q24	Science	Good Vibrations Q4	S131Q04	01	02	03	04	11					99	97
Q26	Science	Water Q1	S304Q01	0	1								9	N
Q28	Science	Water Q3a	S304Q03a	0	1								9	N
Q29	Science	Water Q3b	S304Q03b	0	1								9	N
Q30	Science	Earth Q1	S269Q01	0	1								9	N
Q31	Science	Earth Q3	S269Q03	01	02	11	12						99	97
Q34	Science	Algae Q2	S268Q02	01	02	03	11	12	13	14	15		99	97

OECD PISA 2003 MAIN STUDY

RECORD SHEET FOR MULTIPLE MARKING <FIRST/SECOND/THIRD> MARKING

Booklet 10: Marker's name_____ Date_____/03

Marker ID

Student ID

StIDStr StIDSch StIDSt

*Please enter **and check** the full ID for the student, and keep this sheet with the booklet until you have marked all the designated items in the booklet.*
*You must mark **the same item** throughout all booklets assigned to you before moving to another item*
*Show a mark by **circling** the appropriate marking code.*

Question #	Domain	Item name	Item Label	Marking Codes			Missing	N/A
Q1	Reading	Employment Q1E	R219Q01E	0	1		9	N
Q2	Reading	Employment Q2	R219Q02	0	1		9	N
Q4	Reading	Aesop Q4	R067Q04	0	1	2	9	N
Q5	Reading	Aesop Q5	R067Q05	0	1	2	9	N
Q6	Reading	Shirt Q4A	R102Q04A	0	1		9	N
Q9	Reading	South Pole Q1	R220Q01	0	1		9	N
Q16	Reading	Optician Q3	R227Q03	0	1		9	N
Q17	Reading	Optician Q6	R227Q06	0	1		9	N
Q19	Reading	Exchange Q2B	R111Q02B	0	1	2	9	N
Q21	Reading	Exchange Q6B	R111Q06B	0	1	2	9	N
Q23	Reading	Drugged Spiders Q2	R055Q02	0	1		9	N
Q24	Reading	Drugged Spiders Q3	R055Q03	0	1	2	9	N
Q25	Reading	Drugged Spiders Q5	R055Q05	0	1		9	N
Q28	Reading	Telephone Q5	R104Q05	0	1	2	9	N

OECD PISA 2003 MAIN STUDY

RECORD SHEET FOR MULTIPLE MARKING <FIRST/SECOND/THIRD> MARKING

Booklet 12: Marker's name_____ Date_____/03

Marker ID

Student ID

StIDStr StIDSch StIDSt

*Please enter **and check** the full ID for the student, and keep this sheet with the booklet until you have marked all the designated items in the booklet.*
*You must mark **the same item** throughout all booklets assigned to you before moving to another item*
*Show a mark by **circling** the appropriate marking code.*

Question #	Domain	Item name	Item Label	Marking Codes								Missing	N/A
Q2	Problem Solving	Energy Needs Q2	X430Q02	0	1	2						9	N
Q3	Problem Solving	Children's Campn Q1	X417Q01	0	1	2						9	N
Q6	Problem Solving	Design by Numbers Q3	X412Q03	0	1	2						9	N
Q11	Problem Solving	Transit System Q1	X415Q01	01	02	11	12	13	21	22		99	97
Q12	Problem Solving	Course Design Q1	X414Q01	0	1	2						9	N
Q14	Problem Solving	Library System Q2	X402Q02	01	02	11	12	21	22	23	31	99	97
Q16	Problem Solving	Holiday Q2	X602Q02	0	1	2						9	N
Q17	Problem Solving	Irrigation Q1	X603Q01	0	1							9	N
Q19	Problem Solving	Irrigation Q3	X603Q03	0	1							9	N