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**NEW YORK STATE
GRADE 4
ELEMENTARY-LEVEL
SCIENCE TEST**

**Manual for
Administrators and Teachers**

**2004 Written Test
Performance Test, Form A**



The University of the State of New York
THE STATE EDUCATION DEPARTMENT
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General Features of the Grade 4 Elementary-Level Science Test

The Regulations of the Commissioner of Education provide that an Elementary-Level Science Test is to be administered in Grade 4 to serve as a basis for determining students' need for academic intervention services in science. The Grade 4 Elementary-Level Science Test is designed to measure the content and skills contained in the *Elementary-Level Science Core Curriculum, Grades K–4*. The core curriculum is based on the *New York State Learning Standards for Mathematics, Science, and Technology (Elementary Level)*.

The Grade 4 Elementary-Level Science Test consists of two required components: a Written Test and a Performance Test. The Written Test consists of multiple-choice and open-ended questions and requires about one hour to administer. The Performance Test (Form A) consists of hands-on tasks set up at three stations and requires about 75 minutes to administer.

The Department establishes a State-designated level of performance to help schools identify students who must receive *academic intervention services*. All students who earn a final score on this test in levels 1 or 2 must be provided such services, which must commence in the semester immediately following the administration of the test (see page 7).

The first section of this manual contains information of special interest to administrators. Subsequent sections contain directions for administering and scoring the Written and Performance Tests.

Information for School Administrators

General Information

All persons in charge of the administration of the Grade 4 Elementary-Level Science Test should be familiar with the information in this manual. Additional information concerning this test may be found on the Department's web site at: <http://www.emsc.nysed.gov/osa/elintsci.html>. Schools may submit questions concerning the administration of the Grade 4 Elementary-Level Science Test via e-mail to the Office of State Assessment at emscassessinfo@mail.nysed.gov.

Test Forms

Written Test: The Written Test has two parts. Part I contains multiple-choice questions, and Part II contains open-ended questions. The test is not timed. Most students will complete the Written Test in approximately 45–60 minutes of working time. In addition, the test administrator will need approximately 15 minutes to give directions to students. The Department will provide a new form of the Written Test each year. The Department also provides a machine-scorable answer sheet for Part I. It is hand scorable and machine scorable on NCS equipment. Schools may also use a locally developed answer sheet. Answers to Part II of the test are to be written in the test booklet.

Performance Test, Form A: The Performance Test consists of tasks at three stations. Each station requires 15 minutes of testing time, for a total testing time of 45 minutes, plus the time needed to provide instructions to students and for students to move between stations. Allot at least 75 minutes for administration of the Performance Test. The Performance Test is hand scorable only. Answers to the Performance Test are to be written in the test booklet.

Administration Schedule

The Grade 4 Elementary-Level Science Test must be administered during the month of May. Specific dates when the test is administered are a local decision. The Written Test and Performance Test should be administered on separate days. Students who are absent on the administration dates must be tested when they return to school during May. Results for all students must be included on the reports submitted to the Department (see page 8).

Students To Be Tested

The Grade 4 Elementary-Level Science Test must be administered to all public school students. This test is part of the State's accountability system under the No Child Left Behind Act (NCLB). The failure of a public school to administer this test and/or to report the test results to the Department can have an impact on the school's accountability status. Nonpublic schools are strongly encouraged to administer State assessments. The rules specified on the next two pages apply to students in public and participating nonpublic schools.

General Education Students

The Grade 4 Elementary-Level Science Test must be administered to all students enrolled in grade 4 in all public schools and in all participating nonpublic schools. Students who are repeating Grade 4 are required to take the test again.

Limited-English-Proficient (LEP) Students

All LEP students are required to participate in the Grade 4 Elementary-Level Science Test. LEP students may take the test either in an alternative language or in English, whichever would be better for the student. LEP students may also use both an English and an alternative language edition of the test simultaneously. Alternative language editions of the test are provided in Chinese, Haitian Creole, and Spanish. Information about administering these translated editions is included on page 9 under Test Materials. The test may be translated orally into other languages for those LEP students whose first language is one for which a written translation is not available from the Department. Schools are permitted to offer LEP students specific testing accommodations when taking this test (see page 4–5).

Students with Disabilities

The Committee on Special Education (CSE) must decide for each student with a disability on a case-by-case basis, and document on the student's Individualized Education Program (IEP), whether the student will be participating in the Grade 4 Elementary-Level Science Test or will not be participating in this assessment because the student will be participating in the New York State Alternate Assessment (NYSAA) for students with severe disabilities or in a locally selected assessment. The criteria that the CSE must use to determine a student's eligibility to participate in NYSAA are available at the web site: <http://unix33.nysed.gov:9280/specialed/alterassessment/identnysaa.htm>.

Information on the eligibility criteria for students with disabilities to participate in a locally selected assessment is available in the memorandum entitled *Supplemental Guidelines for Participation of Students with Disabilities in State Assessments: Locally Selected Assessments*. This memorandum is available at the web site: <http://unix32.nysed.gov:9280/specialed/publications/policy/participate.htm>.

When determining which students will be participating in this test, be sure to consider those students with disabilities who attend programs operated by the Board of Cooperative Educational Services (BOCES) as well as any other programs located outside the school.

Testing Accommodations

Students Who Incur Disabilities Shortly Before Test Administration

Principals may modify testing procedures for general education students who incur an injury (e.g., a broken arm) or experience the onset of a short- or long-term disability (e.g., epilepsy) acquired or diagnosed within 30 days prior to the administration of State assessments. In such cases, when sufficient time is not available for the development of an IEP or a Section 504 Accommodation Plan (504 Plan), principals may authorize certain accommodations that will not significantly change the skills being tested. These accommodations are limited to:

- extending the time limit for a test
- administering the test in a special location
- recording the student's answers in any manner
- reading the test to a student (only for a student whose vision is impaired)

Eligibility for such accommodations is based on the principal's professional discretion, but the principal may confer with members of the Committee on Special Education (CSE) or with other school personnel in making such a determination. Pursuant to Section 100.3 of the Regulations of the Commissioner of Education, building principals are responsible for administering State assessments and for maintaining the integrity of test content and programs in accordance with directions and procedures established by the Commissioner of Education.

Prior permission need not be obtained from the Department to authorize testing accommodations for general education students. However, a full report concerning each authorization must be sent to the Office of State Assessment. Further, if the student is expected to continue to need testing accommodations, the principal must immediately make the appropriate referral for the development of an IEP or Section 504 Accommodation Plan.

Students with Disabilities

All students with disabilities must be provided full access to the Grade 4 Elementary-Level Science Test to the extent that such testing is consistent with their individual needs. Students identified by the Committee on Special Education (CSE) of the district as having a disability should be allowed to use the testing accommodations specified in their IEP. Students who have been declassified may continue to be provided testing accommodations if recommended by the local CSE at the time of declassification and in the student's declassification IEP.

Plan all necessary arrangements for implementing testing accommodations well in advance of the test date. The principal is responsible for insuring that students are provided with the testing accommodations specified in their IEP or 504 Accommodation Plan.

The Department's Office of Vocational and Educational Services for Individuals with Disabilities (VESID) provides more information on testing accommodations for students with disabilities on its web site: <ftp://unix2.nysed.gov/pub/education.dept.pubs/vesid/oses/-test.access.mod/testacce.txt>. You may contact that office via e-mail to vesidspe@mail.nysed.gov if you have questions on this topic for which you are unable to find answers on the web site.

Limited-English-Proficient (LEP) Students

Schools may provide the following testing accommodations to limited-English-proficient students:

- ***Time Extension:*** Schools may extend the test time for LEP students. Principals may use any reasonable extensions, such as "time and a half" (the required testing time plus one-half of that amount of time), in accordance with their best judgment about the needs of the LEP students. Principals should consult with each student's classroom teacher in making these determinations.
- ***Separate Location:*** Schools are encouraged to provide optimum testing environment and facilities for LEP students. They may administer State tests to LEP students individually or in small groups in a separate location.
- ***Bilingual Dictionaries and Glossaries:*** LEP students may use bilingual dictionaries and glossaries when taking this examination. The bilingual dictionaries and glossaries may provide ***only*** direct translations of words. Bilingual dictionaries or glossaries that provide definitions or explanations are ***not*** permitted.

- ***Simultaneous Use of English and Alternative Language Editions:*** For this examination, LEP students may use both an English and an alternative language edition of the test simultaneously. However, they should be carefully instructed to record all of their responses in only one of the two editions. The alternative language edition used by the student should be so indicated on the student's answer document.
- ***Oral Translation for Lower Incidence Languages:*** Schools may provide LEP students with an oral translation of this examination when there is no translated edition provided by the Department. All translations must be oral, direct translations of the English editions; written translations are not allowed. No clarifications or explanations may be provided. Translators should receive copies of the English edition of the tests one-hour prior to administration. The Department's Office of Bilingual Education and the Bilingual Education Technical Assistance Centers (BETACs) can assist schools in locating suitable translators.
- ***Writing Responses in the Native Language:*** LEP students making use of alternative language editions or of oral translations of this examination may write their responses to the open-ended questions in their native language. Scoring the tests is the responsibility of the school. However, the Department's Office of Bilingual Education and the BETACs can assist schools in locating persons who can translate the students' responses into English to facilitate scoring of the answer papers.

Security of the Tests

All Written Test booklets, both used and unused, all scoring keys and rating guides, and all student answer sheets must be held secure from the date the school receives its shipment of examination materials through the end of May. While schools may score the student answer papers before the end of this period, caution raters not to discuss the test content and scoring rubrics except during scoring sessions. Once the May test administration period has ended, the **Written Test** materials are no longer considered secure.

All Performance Test materials must be held secure except during the actual administration and scoring of the Performance Test. The same Performance Test (Form A) will be administered for several years. All Performance Test materials *except* student answer booklets are to be returned to the Department.

Return of Tests and Scoring Materials to the Department

Written Test: Since the Department will provide a new form of the Written Test each year, schools do **not** have to return Written Test materials to the Department. After the May test administration period has ended and the test has been scored, schools may use the Written Test as part of the instructional program. Public schools must keep student answer papers for the Written Test on file in the school for one year. Copies of this manual and the Rating Guide for the Written Test should be kept on file at the school with the students' answer papers for reference. Nonpublic schools are encouraged to make photocopies of the completed student answer sheets, as they must send the original answer sheets to the Department's Office of Information and Reporting Services. (*See Appendix VII for the full mailing address and further instructions for nonpublic schools.*)

Performance Test: Principals are required to ensure that the school returns to the Department Performance Test materials as indicated in the chart on the next page.

Return to the State Education Department's Test Distribution Unit	Retain in the School Do <u>NOT</u> return to the Department
<p>All <u>unused</u> Performance Test answer booklets, including regular, large-type, Braille, and alternative language editions</p> <p>All used and unused Performance Test Rating Guides</p>	<p>Performance Test answer booklets used by students</p> <p>Copies of this test administration manual</p> <p>Completed Deputy and Proctor Certificate</p> <p>Completed Examination Storage Certificate</p>

Use the return label enclosed with the shipment of test materials to return the Performance Test materials by the end of June to:

Test Distribution Unit
New York State Education Department
Cultural Education Center, Room 167
Empire State Plaza
Albany, New York 12230

Note: New York City public schools should follow the procedures for the return of Performance Test materials provided to them by the New York City Department of Education.

Examination Certificates: Deputy and Proctor Certificates and Examination Storage Certificates must be completed and signed by all of the appropriate parties following the administration and scoring of the Performance Test and again following the administration and scoring of the Written Test. Both sets of signed certificates should be retained in the school's files for one year. Copies of these certificates can be found in Appendix VI.

Administration of the Tests

If the Grade 4 Elementary-Level Science Test is to provide an accurate measure of student achievement, both students and teachers should be properly prepared for its administration. This manual provides recommendations for preparing students to take the tests. School personnel who administer the Written and Performance Tests must be familiar with the test materials and the directions for administration provided in this manual.

Scoring the Tests

It is the school's responsibility to make the necessary arrangements for the scoring of all test materials. The answer sheet provided by the Department for Part I of the Written Test may be either hand scored or machine scored. The Department provides a scoring key for hand scoring the answer sheet. Schools may also use a locally developed answer sheet. Many schools receive answer sheets developed by their regional information center. When hand scoring answer sheets provided to the school by a source other than the Department, check to be sure that the squares on the scoring key overlay denoting the correct answers for the multiple-choice questions are completely aligned with the circles on the answer sheet for those choices. If there is not complete alignment, hand scoring must be done using only the list of correct answers printed on the scoring key overlay. Only equipment that can score NCS test materials can be used to machine score the answer sheet provided

by the Department. The answer sheet contains fields for recording scores for the questions in Part II of the Written Test and in the Performance Test. Part II of the Written Test must be hand scored. Detailed scoring directions are provided in the Rating Guide for the Written Test. Suggestions for organizing the rating process for the Written Test are provided on pages 16 and 17.

The test booklets for the Performance Test can be hand scored only. All teachers who score the student responses should be thoroughly familiar with the scoring procedures. Detailed directions for scoring the Performance Test are provided in the Rating Guide for the Performance Test. Suggestions for organizing the rating process for the Performance Test are provided on page 32.

Note: Because all Performance Test rating guides must be returned to the Department by the end of June, all rating must be completed by that time.

The Rating Guide for the Written Test provides a conversion chart for determining each student's final score, based on the raw scores on the Written and Performance Tests. This final score will fall into one of several performance levels.

Note: The final score corresponding to the raw scores in the conversion chart will change with each year's form of the test. For this reason, it is crucial that for each test year, teachers use only the conversion chart provided in the rating guide for that year to determine the student's final score. Copies of the written test rating guides should be kept on file at the school for reference.

A Class Record Sheet is provided in Appendix V. Schools that compile their students' scores by hand may use this form to record the scores of each class on the Written Test and the Performance Test. These data can then be developed into a score distribution for local use. A form for that purpose is also provided in Appendix V.

Determining the Need for Academic Intervention Services

Section 100.2(ee)(i) of the Regulations of the Commissioner of Education requires schools to provide academic intervention services to students who score below the State-designated performance level on the Grade 4 Elementary-Level Science Test. All students who achieve a final score below 65 (levels 1 or 2) must receive academic intervention services. These services must commence in the semester immediately following the administration of the test. Additional information concerning academic intervention services may be found on the Department's web site at: <http://www.emsc.nysed.gov/docs/AISQAweb.pdf>.

Recording Test Scores and Storing Student Answer Papers

The Department does not keep records of individual student scores on the tests. Therefore, the school must maintain complete and accurate records. A student's score and the date of administration must be entered on the student's permanent record.

All schools must keep their students' Performance Test answer booklets on file in the school for at least one year. Since the Performance Test booklets remain secure, they must be stored in a secure location. In addition, public schools must keep their students' Written Test answer sheets on file for the same period.

Nonpublic schools must send their students' original, scannable, Written Test answer sheets to the Department along with the Class Record Sheet in Appendix V. Nonpublic schools are advised to make copies of their students' Written Test answer sheets before sending them to the

Department. This provides a record of the students' Written Test answers for the school's use and protects the student data should a package get lost in the mail. Nonpublic schools should refer to Appendix VII for additional information.

Review of Answer Papers by Students and Parents

Students and parents/guardians of students who have taken the Grade 4 Elementary-Level Science Test have the right to review student answer papers after the scores have been recorded as described in the preceding paragraph. Answer papers should be reviewed in the presence of the principal, or the principal's designee, to ensure that no changes are made on the answer papers as they are being reviewed.

Reporting Student Scores to the Department

Public school data must be reported through LEAP. For more information about reporting results, public school administrators should review the LEAP manual found at www.emsc.nysed.gov/irts or contact their LEAP coordinator, their local Regional Information Center (RIC), or Large City School District Scanning Center.

Nonpublic schools report scores directly to the Department. For more information, nonpublic school administrators should refer to Appendix VII in this manual or contact the Office of Information and Reporting Services at 518-474-7965.

Department Contacts

Different Department staff are responsible for various aspects of the test. Direct questions to one of the persons or offices listed below:

Content/Curriculum/Scoring:	Ann Crotty, Office of Curriculum, Instruction, and Instructional Technology 518-474-5922 acrotty@mail.nysed.gov
Administration:	David Moore, Test Administration Unit 518-474-5099 dmoore@mail.nysed.gov
Test Development:	Judy Pinonnault, Test Development Unit 518-474-5900 jpinonn@mail.nysed.gov
Reporting Results to SED:	Dawn Thompson, Information and Reporting Services 518-474-7965 dthomps@mail.nysed.gov
Accommodations for Students with Disabilities:	Special Education Policy Unit vesidspe@mail.nysed.gov
Academic Intervention Services	Office of School Improvement 518-474-5923 mflanaga@mail.nysed.gov

General Test Administration Procedures

Test Materials

The test materials provided by the Department for administering the Grade 4 Elementary-Level Science Test include:

For the Written Test:

- test booklets
- separate answer sheets for Part I (hand scorable and machine scorable on NCS scoring equipment)
- scoring key for the separate answer sheet (printed on translucent paper)
- directions for administering and scoring the Written Test (pages 12–17 of this manual)
- Rating Guide for the Written Test, Part II

For the Performance Test (Form A):

- test booklets
- Station Diagrams (10 copies of each Station Diagram and one Test Administrator’s Record Sheet)
- directions for administering and rating the Performance Test (pages 18–32 of this manual)
- Test Administrator’s Record Sheet (Appendix III of this manual)
- Rating Guide for the Performance Test (Form A)

The Written Test booklet and the test booklet and Station Diagrams for the Performance Test (Form A) are available in large-type and Braille editions. Alternative language editions of both the Written Test and the Performance Test are available in Chinese, Haitian Creole, and Spanish. These are direct translations of the English editions. The directions to students on the alternative language test materials are the same as those on the English editions. The Department does not provide separate directions for administering the alternative language editions of the tests. Teachers who speak the language should be able to administer the alternative language editions by using a copy of the test materials in the appropriate language and the directions provided in this manual. If a teacher who does not speak the language administers the tests, the directions on the test materials should enable students to complete the tests by themselves.

The test materials to be provided by the school include pencils for both the Written and Performance Tests and the station materials for the Performance Test.

For machine processing of the separate answer sheets for the Written Test, the answer sheet includes several grids containing spaces for recording special codes. The school must develop uniform written instructions about the completion of these grids and provide them to everyone who will be administering the test. Such instructions should be based on careful consideration of the types of student and score information the school needs, as well as on the processing requirements of the scoring center that the school is using.

Special Considerations for Assuring Optimal Student Performance

The person in charge of administering the Grade 4 Elementary-Level Science Test should review and become thoroughly familiar with the directions for administering both components. (See “Orientation of Test Administrators” on page 11.)

Students should not be given help in interpreting the test questions and statements. They should be advised to answer the questions according to their best judgment. However, the test administrator should give students all the assistance required in the mechanics of taking the test, such as filling out the headings of the answer sheets, filling out the test booklet covers, and recording the answers. The test administrator should also replace or repair any faulty equipment during the administration of the Performance Test.

Test Administration Time

Written Test: The written test is not timed. Students should be given as much time as they need to complete it. As a general rule, students will need 45–60 minutes of working time to complete the Written Test. Some students will need more time and provision should be made to accommodate these students. In addition, the test administrator will need approximately 15 minutes to give directions to students.

Performance Test, Form A: The Performance Test will take approximately 75 minutes to administer. Fieldtesting has determined that almost all students will complete the tasks at the three stations in this amount of time.

Note: The Written and Performance Tests should be administered on different days.

Preparations for Testing

Arrangements for administering the tests should interfere as little as possible with the normal school routine. The Written Test may be administered in the students' regular classroom, or classes may be merged into larger groups, at the convenience of the school. The Performance Test need only be set up in one location. For buildings with more than one class of grade 4 students, classes should cycle through the testing area one at a time.

- 1. Security of Test Materials.** The sealed packages of secure test booklets may *not* be opened until the test administration date, and then just early enough to permit the distribution of booklets prior to the scheduled starting time.
- 2. Selecting the Testing Room(s).** Suggestions for selecting an appropriate testing site for the Performance Test are in the section of this manual entitled "Administering and Rating the Performance Test," on pages 18–19 and in Appendix II.
- 3. Orientation of Students.** Inform the students about the tests a few days before the administration date. Emphasize the fact that no special preparation or study is necessary on their part. Make the announcements in such a way as to increase the students' interest in the tests and at the same time not cause them to become overly anxious and tense. Help students become familiar with the general types of questions on the tests and the procedures they should follow in recording their answers.
- 4. Notification of Parents.** Inform parents/guardians of the dates of testing and the purpose of the tests. Ask them to encourage students to do their best and to ensure that students are well rested on the dates of testing.

5. **Students Absent on the Test Day.** Plan to administer the test at a later date in May to all students who were absent when the test was initially given. Do not involve these students in any classroom discussions about the test prior to the time they take it.
6. **Orientation of Test Administrators.** Everyone who will be administering the tests should become familiar with the detailed directions for administering the tests, which are provided in this manual. Schedule an orientation *prior* to the testing dates to enable test administrators to become adequately prepared. The orientation should include direct hands-on experience with the Performance Test if the test administrators have not had previous experience with that component. Your regional BOCES or large-city central office may provide assistance for conducting such orientation sessions.

Note regarding test security: Allow access to the Performance Test materials **only** to those who are scheduled to administer the Performance Test, conduct the orientation, or rate the test. **These materials must remain under strict security conditions at all times.**

7. **Assembling the Test Materials.** Assemble all test materials at least one day before the test administration, except for the test booklets for the Written Test and the Performance Test, the scoring keys, and the Rating Guides.

Administering and Scoring the Written Test

Detailed Directions for Administering the Written Test

Make sure that sufficient quantities of all test materials are on hand. The following materials are needed for each student:

- test booklet
- answer sheet
- No. 2 pencil

For the test administrator:

- detailed directions for administering the Written Test (pages 12–14 of this manual)
 - test booklet (for demonstration purposes)
 - answer sheet (for demonstration purposes)
 - extra answer sheets and No. 2 pencils
 - instructions for completing the special codes grids on the separate answer sheet
- Note:** The school must provide these instructions if the answer sheets are to be machine scored.

After the desks have been cleared of books and papers and when the students are ready to begin, say:

Today you are going to take a test in science. I will now give each of you a test booklet face up on your desk. Do not open the booklet until I tell you to do so.

Distribute one test booklet, face up, to each student. Then say:

I will now give out the answer sheets. Please do not write on the answer sheet until I tell you what to do.

After the answer sheets have been distributed, give directions for completing the heading of the answer sheet. If the answer sheets are to be machine scored, provide directions for marking any machine-readable name or number grids. **Note:** The school must develop these directions.

If students do not understand how to mark the answer sheet, explain the appropriate directions until everyone knows what to do. Then say:

Look at the cover of your test booklet. Be sure it says “Grade 4 Elementary-Level Science Test, Written Test, May 2004.” If you do not have the correct booklet, raise your hand.

Read the directions on the cover silently to yourself while I read them aloud.

“Print your name and the name of your school on the lines above. (Pause)

This test has two parts. Parts I and II are in this test booklet.

Part I contains 30 multiple-choice questions. Record your answers to these questions on the separate answer sheet. Use only a No. 2 pencil on your answer sheet.

Part II consists of 11 open-ended questions. Write your answers to Part II in this test booklet.

You will have as much time as you need to answer the questions.”

Now turn to page 2. Read the directions on page 2 silently to yourself while I read them aloud.

“DIRECTIONS

There are 30 questions on Part I of this test. Each question is followed by four choices labeled A–D. Read each question carefully. Decide which choice is the best answer. On the separate answer sheet, mark your answer in the row of circles for each question by filling in the circle that has the same letter as the answer you have chosen. Use a No. 2 pencil to mark the answer sheet.

Read Sample Question **S-1** below.

S-1 Frozen water is called

- A fog
- B ice
- C steam
- D vapor

The correct answer is **ice**, which is next to letter **B**. On your answer sheet, look at the box showing the row of answer circles for Sample Question **S-1**. See how the circle for letter **B** has been filled in.

Now do Sample Question **S-2**. Mark your answer on the answer sheet in the box showing the row of answer circles for Sample Question **S-2**.”

Allow students time to mark the answer to Sample Question S-2 on their answer sheets. If necessary, demonstrate on the chalkboard the correct way of marking answers on the answer sheet. Then continue:

“S-2 Which animal has wings?

- A bird
- B frog
- C mouse
- D rabbit

The correct answer is **bird**, which is next to letter **A**. On your answer sheet, you should have filled in circle **A**.

Answer all 30 questions on Part I of this test. Fill in only one circle for each question. Be sure to erase completely any answer you want to change. You may not know the answers to some questions, but do the best you can on each one.

When you finish Part I, go on to Part II. Answer all of the questions in Part II in the space provided for each question.”

If students do not understand the sample questions or the marking of the answer sheet, the appropriate directions may be explained until everyone knows what to do. After all questions have been answered, say:

When I tell you to, turn to question 1 and begin work. When you are finished, close your test booklet and place it on top of your answer sheet.

Now turn the page and begin work.

Walk around the room and make sure that all students understand the directions and are marking their answer sheets correctly. Explain again the test-taking procedures to any student who appears to be having difficulty.

No one, under any circumstances, may interpret or explain test questions to students, nor may anyone review or comment on the answer paper of a student while a test is in progress. In response to inquiries by students concerning the meaning or interpretation of test questions, students should be advised to use their own best judgment.

Students should remain quietly at their desks when they finish the test. The teacher may collect the test materials either as students complete the test or when most of the students have finished.

If the test is administered in a large-group situation, school administrators may prefer to allow students to hand in their test materials as they finish and then leave the room. If so, take care that students leave the room as quietly as possible so as not to disturb the students who are still working on the test.

Note: No one, *under any circumstances*, including the student, may alter the student’s responses on the test once the student has handed in his or her test materials. Teachers and administrators who engage in inappropriate conduct with respect to administering and scoring State examinations may be subject to disciplinary actions in accordance with Sections 3018 and 3020 of Education Law.

Scoring the Written Test

The student’s raw score is determined as follows:

Part I—one credit for each multiple-choice question that the student answered correctly. There is no penalty for wrong answers. The scoring overlay provides a list of correct answers to the multiple-choice questions.

Part II—assign credits as indicated in the Rating Guide for the Written Test, Part II. A list of criteria for rating the open-ended questions on Part II is provided in the rating guide.

The separate answer sheets the Department provides for the Written Test may be either machine scored or hand scored.

- a. **Machine Scoring.** The separate answer sheets the Department provides can be machine scored only on NCS scoring equipment. For the convenience of scoring centers, the scoring key provides a list of correct answers. Schools should be sure to check with their scoring center concerning the procedure to be followed in preparing the answer sheets for machine scoring.

The separate answer sheet containing the multiple-choice answer grids also provides grids for recording a student's Part II and Performance Test scores. When filled in, these grids enable scoring centers to produce student records that include final student scores. Record the Performance Test scores in these grids **after** the Written Test is administered but before the answer sheets are machine scored.

- b. **Hand scoring.** For hand scoring the separate answer sheets, the Department provides a scoring key printed on translucent paper. Boxes printed on the scoring key indicate the correct answers. When the scoring key is aligned properly with the answer sheet provided by the Department, each correct answer will be visible in a box. When hand scoring answer sheets provided to the school by a source other than the Department, check to be sure that the boxes on the scoring key denoting the correct answers for the multiple-choice questions are completely aligned with the circles on the answer sheet for those choices. If there is not complete alignment, hand scoring must be done using only the list of correct answers printed on the scoring key overlay. To hand score the answer sheets, use the following procedures:

1. Scan each answer sheet to make certain that the student has marked only one answer for each question. If two or more answers have been marked, draw a horizontal line with colored pencil through all of the answer circles, so that no credit will be allowed for that question in scoring.
2. Place the scoring key on the answer sheet so that the box indicating the correct answer for each question corresponds to the row of answer circles for that question.
3. To obtain the raw score for the multiple choice questions, count the number of correct answers. Record the student's raw score in the appropriate box on the answer sheet.
4. The student's raw score for Part II may be recorded in the appropriate boxes on the answer sheet after the Part II rating has been completed.
5. Add the raw score for Part II to the raw score for Part I to determine the student's total raw score for the Written Test.
6. The student's raw scores for the Performance Test may also be recorded in the appropriate boxes on the student's answer sheet.
7. Use the conversion chart to convert these two total raw scores to a final score for the student.

c. Determining the Student's Final Test Score

The Rating Guide for the Written Test, Part II provides a chart for converting the student's written test raw score and performance test raw score to a final score.

Note: The final score corresponding to the raw scores in the conversion chart will change with each year's form of the test. For this reason, it is crucial that for each test year, teachers use only the conversion chart provided in the rating guide for that year to determine the student's final score. Copies of the written test rating guides should be kept on file at the school for reference.

Rating the Written Test, Part II

Approximately one-third of the Written Test will be open-ended questions that will require rating by elementary-level teachers. It is estimated that two teachers working as a team should be able to rate all of the open-ended responses for about 30 students in approximately one hour.

The Rating Guide for Written Test, Part II gives detailed directions for rating the open-ended section of the Written Test and specific criteria for rating each question. It is printed on yellow paper and was included in the shipment of test materials from the Department. In rating the students' test booklets, each rater should follow the procedures detailed in the Rating Guide. The rating should be completed as soon as possible after the test administration and by the end of June.

Organizing the Rating Process

The following is a suggested procedure for managing the mechanics of the rating process.

1. Designate one person as the coordinator of the rating process. The coordinator may be appointed at either the building or the district level. He or she will be responsible for training and supervising raters and may also rate some of the questions in the student test booklets.
2. Set aside one room as a central rating room for collecting, sorting, circulating, and storing test booklets and for preparing and maintaining records.
3. Provide adequate time for rating during the school day.
4. Make sure each rater receives approximately the same number of student booklets.
5. At least two teachers should participate in rating the open-ended questions in Part II. Each should be responsible for rating a selected number of the open-ended questions in each test booklet. No one teacher is to score all the open-ended questions in a student's test booklet.

6. Prior to the rating of students' answers to the open-ended questions in Part II, allow time to provide training for all raters (even if they have received prior training). If possible, select at random 10–15 student test booklets and duplicate them for use as a “warm-up” exercise with the raters for discussion of the questions, the criteria, and the rating of each item. During the training exercise, after three or four complete student test booklets have been rated, ask the raters to indicate, by a show of hands, how many credits they gave each answer. If there is some disagreement about the number of credits to be awarded an answer, ask raters who gave different credits to an answer to explain their rating by citing specific criteria from the Rating Guide.

Administering and Rating the Performance Test

Preparation

Well in Advance of the Test Date:

1. Notify teachers and other staff of this test and the role that they may need to play.
2. Assemble and prepare all equipment according to the directions (pages 21–27) in this manual. The materials listed specify what is needed for a single station. Several commercial and public suppliers have constructed kits that provide the specific equipment for each station. Appendix VIII provides a list of these suppliers. Although kits ordered from suppliers should generally be the same, some kits may not be ready for immediate use, and additional time may be needed for preparation. The school will need to provide some miscellaneous materials such as marking pens, tape, or labels.
3. Contact the supplier for a replacement if a piece of equipment or material is missing or arrives broken. For this reason, it is imperative to check the materials well in advance of the test date.
4. Check to be sure that the equipment and materials are adequate for the number of students to be tested. Appendix I provides a complete list of materials needed for each station. A supplier's kit of materials usually provides for a maximum of 30 students. Each group of stations will accommodate three students, and students will move to each station within the group. If 30 students are to participate in the Performance Test, you will need 10 groups and equipment for 10 complete setups of each station. Each student will need one test booklet and a sharpened pencil. Check that enough booklets will be available for the number of students to be tested. Test administrators should have a supply of extra sharpened pencils on hand.
5. Select and reserve a testing room. Appendix II provides a comparison of possible Performance Test sites. Once all the equipment has been prepared, it should take three to four person-hours to set up the room, 75 minutes to administer the test (for a class of 30 students), and one hour to disassemble the setup. For larger schools and schools where the test will be given early in the school day, station setup can be done the day before and secured overnight. Do *not* leave test booklets out overnight.
6. **Plan the layout of the room and prepare a diagram of the room layout of the stations. This is an essential step in the process of Performance Testing.** The testing room must have flat top student work spaces (student tables, lab tables, library tables, or cafeteria tables) in sufficient numbers for the number of students to be tested. An individual student desk may be too small to accommodate all the equipment for a station plus provide room for the student to write. It may be possible to place two smaller individual desks together to make a larger work area for one station. Determine how many tables will be needed and how they will be arranged in groups of three stations each (see page 20). The room will need to be large enough to accommodate 8–10 groups (24–30 students) comfortably. Students will need to move (either sideways or front-to-back) among stations within their group with as little confusion as possible.

One station, the “Ball and Ramp,” needs more space than is available comfortably on a single student desktop for the ball and ramp place mat. If you use single desks, the “Ball

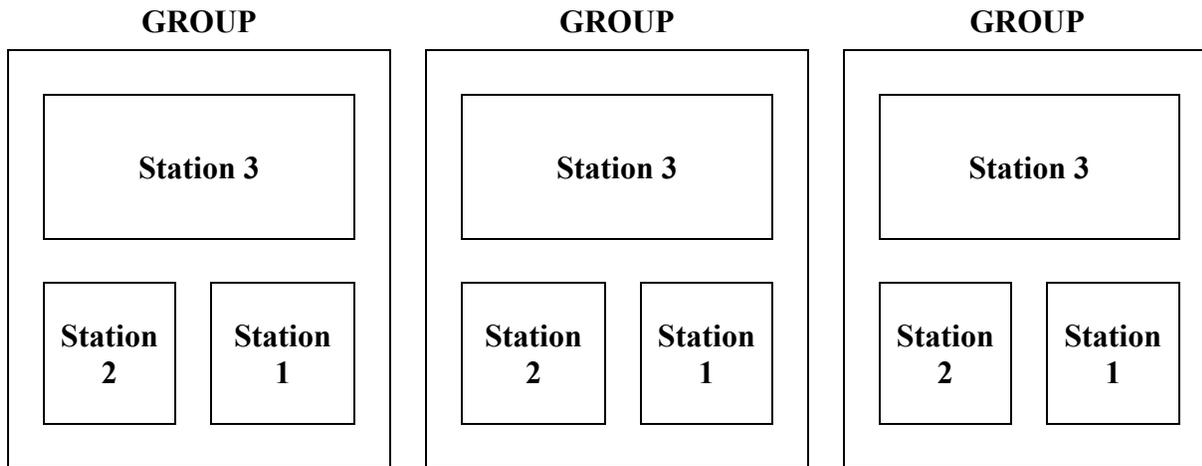
and Ramp” station will require two student desks abutted side-by-side. (See diagram on page 27.) Figure out how many desks (tables) will be needed and how they will be arranged in groups so that students will be able to rotate easily from one station to the next with a minimum amount of confusion. Give special attention to the placement of the “Ball and Ramp” station, especially if two student desks are abutted. Make a diagram of your testing room setup for reference.

7. Check that all print materials from the Department are ready. These include the student Performance Test booklets; directions for setting up the stations; detailed directions for administering the test; Station Diagrams for Stations 1, 2, and 3; and a Test Administrator’s Record Sheet.
8. Check that at least two adult test administrators (two professionals, or one professional and one paraprofessional) have been trained and are totally familiar with the test protocols and the equipment. These adults will administer the test, direct student movement, and resolve any problems with the equipment. In addition, teachers or aides may be present to provide testing accommodations, pursuant to their IEPs, to students with disabilities. To minimize possible distractions during the testing, other adults should *not* be invited to attend.

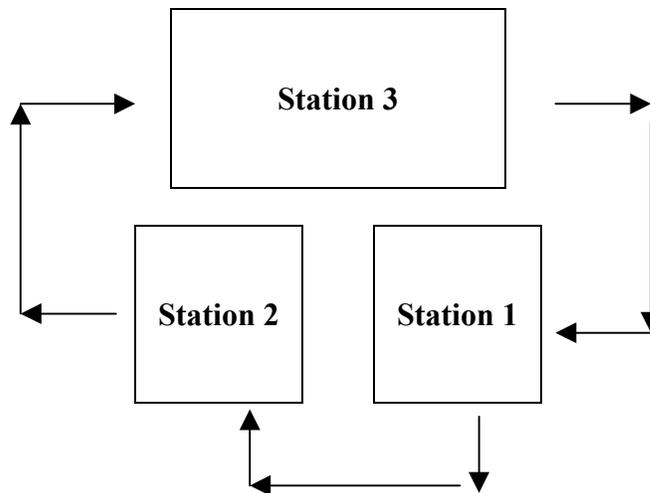
One Day Prior to the Test or Early Morning on the Test Date:

1. Arrange the tables into groups of three stations each. Set up each station according to the directions provided in the section of this manual entitled “Preparing Each Station,” on pages 21–27. The materials listed specify what is needed at each station for each group that is being tested. Arrange the equipment exactly as it is shown on the Station Diagram.
2. Place the Station Diagram at the bottom left of each station.
3. **Safety:** The performance test is to be administered under the supervision of trained test administrators. Staff should exercise the same safety precautions that apply when students engage in performance tasks in a science classroom. Monitor the students closely for safe use of equipment and materials at all times.
4. **Suggestion:** Have a mop or sponge handy for spills at Station 1.
5. Complete the Test Administrator’s Record Sheet. **This information is very important.** It will be used to determine the range of correct answers when rating the students’ tests. Copies are provided in Appendix III of this manual and in the packet of Station Diagrams.

Diagram of Typical Classroom Setup



Student Rotation within Groups



Preparing Each Station

Detailed directions for setting up each station follow. A list of the materials needed for one station is provided, along with specific directions for preparing the materials and setting up the station. Refer to the diagram of the setup for your testing room to determine how many individual station setups you will need. For example, if you plan to have 10 groups (30 students), then you will need 10 setups for each station.

Station 1 — Measuring Objects and Liquids

Materials Needed for *One* Station:

- 1 equal-arm balance
- 1 set of gram masses (mixture of two 20-g, three 10-g, four 5-g, and 10 1-g for a total of 100 g)
- 3 clear plastic jars, approximately 125-mL capacity
- 2 screw tops to fit jars
- 1 large plastic cup, approximately 300-mL capacity containing about 150 mL of water
- 1 measuring container (beaker), 100-mL capacity with clearly marked gradations
- 1 rough-cut rock (about 1" cube) that will fit easily into the beaker and sink completely in the water without causing the water to overflow
- 1 resealable plastic bag, large enough to hold the set of gram masses
- 1 ruler with units for metric (30cm) and for standard (12 inches) measurement, neither with indented zero points
- 2–3 paper towels
- Station Diagram for Station 1 (see next page)

Teacher Materials:

- 1 black, permanent, fine-line marker
- supply of water for 10 Station 1 setups
- medicine cup or other tool to measure 25 mL of water as accurately as possible

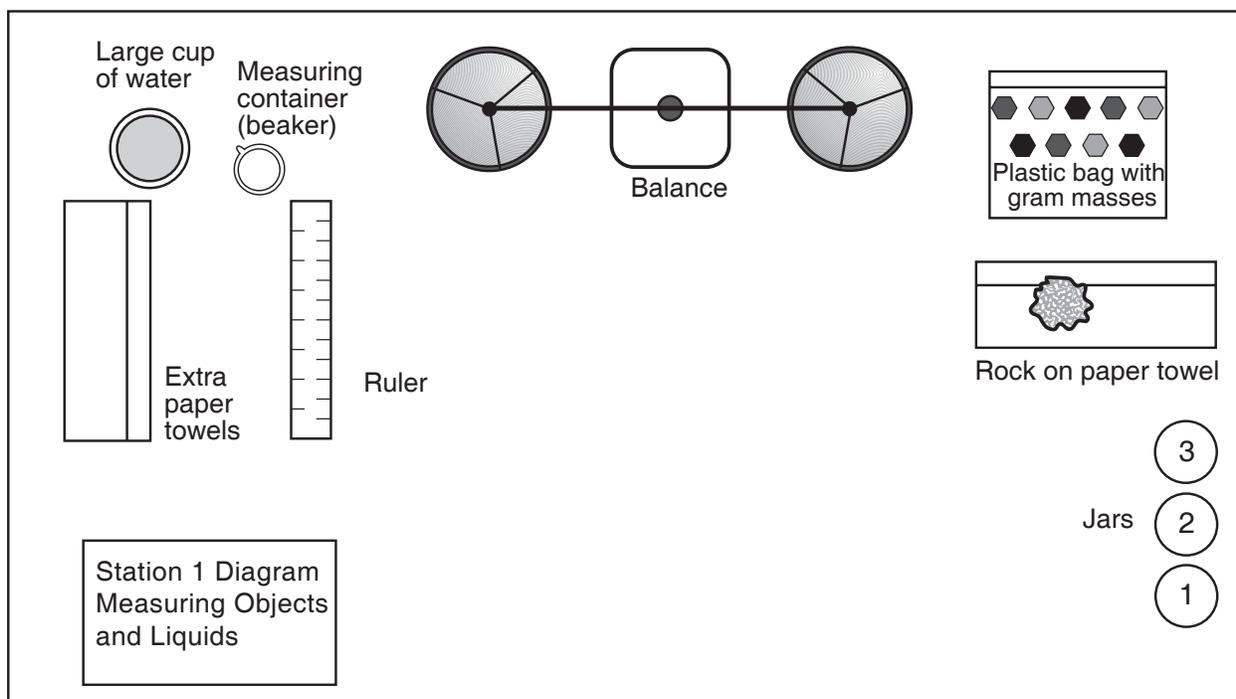
Preparation:

1. On Jar 1, draw a thin line all the way around the outside surface with a permanent black marker so the inside volume to the line is 65 mL. On opposite sides of the jar, affix a label or print “1.” (This jar will *not* have a screw top.)
2. Use the medicine cup to measure exactly 25 mL of water. Pour this water into Jar 2 and secure it with a screw top. On opposite sides of the jar, affix a label or print “2” and “DO NOT OPEN.”
Note: This measurement must be very precise. Do not use the student beaker for this measurement. Make sure that each Jar 2 contains exactly 25 mL of water.
3. Secure Jar 3 with a screw top. On opposite sides of the jar, affix a label or print “3” and “DO NOT OPEN.”
4. On the plastic bag, affix a label or print “GRAM MASSES” with black permanent marker on one side. Place the set of gram masses inside the bag.
5. Set up the equal-arm balance as shown in the Station Diagram for Station 1 on the next page.

6. On the plastic cup, affix a label or print “WATER” on opposite sides. Add approximately 150 mL of water to the plastic cup.
7. Complete the table for Station 1 on the Test Administrator’s Record Sheet for Station 1 (see Appendix III).
8. Tape the Station Diagram for Station 1 at the bottom left corner of the station.
9. Place all the materials at the station as shown in the Station Diagram for Station 1.
10. On the ruler for Station 1, be sure that both scales, metric and standard units, are not taped over but are available for student use.

Note: For Station 3, the ruler will not have standard units visible. Therefore, these two sets of rulers can not be used interchangeably once prepared for use.

Station Diagram Station 1 — Measuring Objects and Liquids



Station 2 – Electrical and Magnetic Testing

Materials Needed for *One* Station:

- electrical tester:
 - 1.5-volt “D” cell battery
 - 1.5-volt bulb and bulb holder
 - battery holder (plastic or metal recommended)
 - 3 insulated wires with clips
- bar magnet (approximately 1.5 cm x 7 cm)
- resealable plastic bag containing eight objects and labeled “Test Objects”
 - penny
 - Note:** Penny must be new and shiny. Oxidized pennies will not conduct.
 - rubber band (at least 1/4 inch wide)
 - paper clip (all metal)
 - plastic spoon (small)
 - nickel (United States five cents)
 - wooden stick (like Popsicle stick or tongue depressor)
 - aluminum foil (heavy duty, about 5-cm square)
 - colored ceramic disk (magnetic)
 - Note:** Ceramic materials are nonmetallic, even if they are magnetic.
- Station Diagram for Station 2 (see next page)

Teacher Materials:

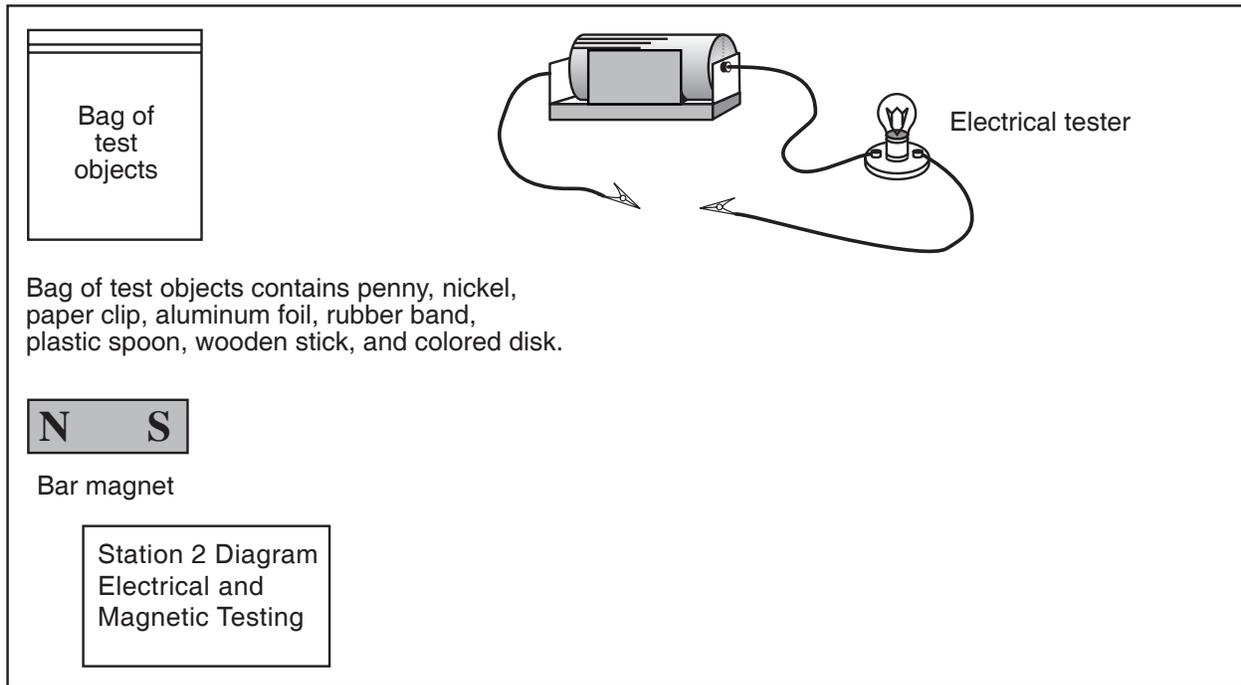
- 1 black, permanent, fine-line marker
- extra batteries and bulbs for the electrical testers

Preparation:

1. Make the electrical tester using the equipment listed above for the “electrical tester.”
Check to be sure that it will work.
2. Affix a label or print “Test Objects” on the resealable plastic bag with a permanent black marker.
3. Place the eight objects in the bag labeled “Test Objects.”
4. Tape the Station Diagram for Station 2 at the bottom left corner of the station.
5. Place all the materials at the station as shown in the Station Diagram for Station 2.

Safety: Be sure the students do not leave the electrical tester hooked up when it is not in use. When storing the tester, make sure that the batteries are separated from the conductors, so that they cannot come in contact and cause a short circuit. Monitor carefully the use of equipment by the students. Students should not put any of the objects in their mouths.

Station Diagram Station 2—Electrical and Magnetic Testing



Station 3 – Ball and Ramp

Materials Needed for *One* Station:

- Wood block (preferably a cube) to serve as the ramp support (total height: 5–6 cm)
- 1 ruler, 30-cm plastic without an indented zero mark and with a grooved center that can accommodate a golf ball
- 1 transparent, round, plastic deli container about 12cm diameter, 1 pint in volume, and approximately 15 grams in mass
- 1 golf ball in a resealable, clear plastic bag labeled “Golf Ball”
- 1 Ping-Pong ball in a resealable, clear plastic bag labeled “Ping-Pong Ball” (Do *not* put the Ping-Pong ball at the station.)
- 1 Place Mat (see Appendix IV for template if needed)
- 1 Station Diagram for Station 3 (see page 27)

Teacher Materials:

- 1 black, permanent, fine-line marker
- 1 scissors or craft knife
- 1 roll double-sided carpet tape or duct tape
- 1 set of self-adhesive colored dots for top of the containers (one dot for each container)
- 1 roll of masking tape

Preparation:

1. Cut a hole (about 6 cm x 6 cm) on one side of the plastic cup to allow enough room for either ball to roll inside. (See the diagrams below.)
2. Place a colored dot sticker on the top center of the cup. You may also make the dot with a colored permanent marker:



3. The grooved plastic ruler serves as the ramp for rolling the balls. On the ruler, allow only the metric units to show. Cover the standard units (inches) with black permanent marker, masking tape, or electrical tape. Be sure the tape does not get into the groove of the ruler, as it may interfere with the roll of the balls. If necessary, place tape on the backside of the ruler to ensure that the metric units are legible.
4. Reproduce enough Place Mats for the number of stations you will need. They must be 8½” x 11,” preferably laminated. Appendix IV provides a master copy that can be reproduced and laminated. (Most suppliers will include these in their kits.)
5. Obtain enough blocks of wood to act as the ramp support for each of the ten stations.

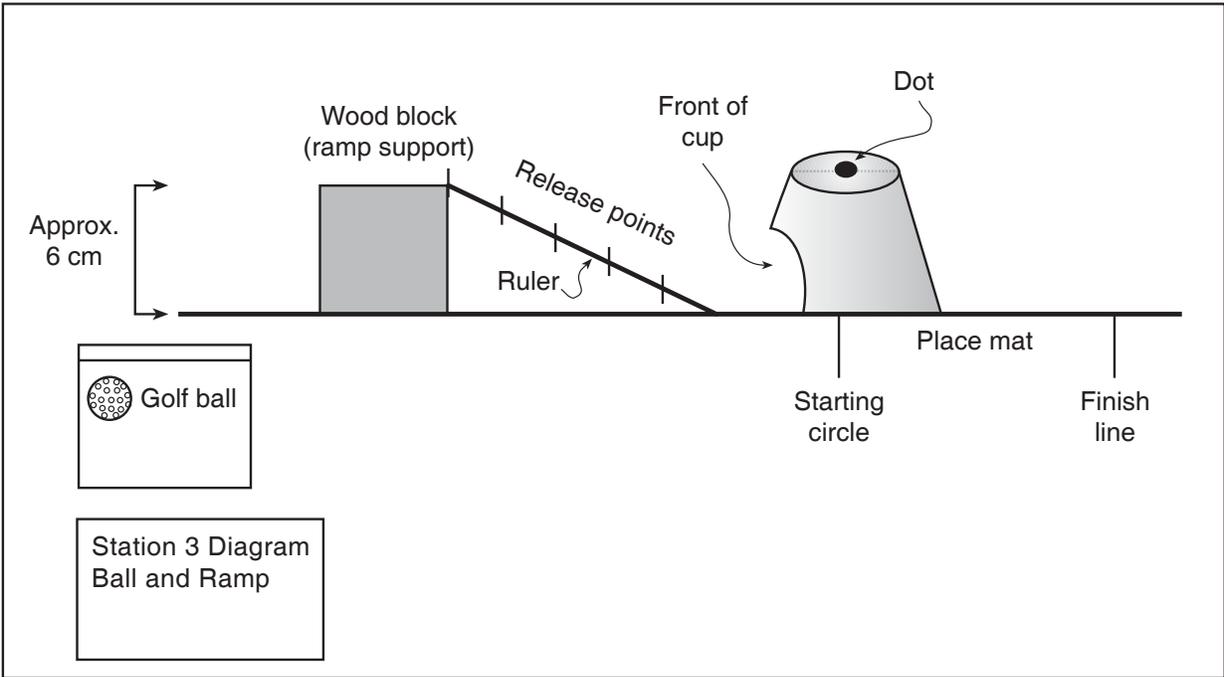
Station Setup Sequence:

1. The student materials for this station can be set up in one of several places:
 - on a large table
 - on two single student desks pushed together so that the ramp crosses over the gap between the two desks

**DO NOT TAPE DOWN ANY EQUIPMENT UNTIL
EVERYTHING HAS BEEN PUT IN PLACE AND TESTED.**

2. Place the ramp support to the back and far left of the desk/table so that the ruler will slope down from left to right. Place the ramp back far enough on the desktop so that the student has plenty of room to write in the test booklet. The ruler's numbers must be closest to the student's side of the desk (even if the numbers are upside down). If the numbers are not closer to the student's side, reverse the ramp position to the right of the desk.
3. Place the ruler's 29-cm mark at the edge of the ramp support and the ruler's zero mark on the table. Slip the place mat under the ruler so that it is aligned with the "End of Ruler Placement" mark (about 1 cm inside the edge of the mat).
4. When the golf ball is released from the top of the ramp, it must be able to push the cup significantly farther than the Finish Line on the place mat. Try one setup first to be sure that the cup is not too heavy.
5. Place the cup on the place mat's Starting Circle (1 cm away from the end of the ruler, with the cup's opening toward the ruler). Try rolling the golf ball from the 20-cm and the 15-cm marks. The ball must push the dot on the cup past the Finish Line each time. Try again from the 5cm. The dot must **not** reach the Finish Line. From the 10-cm mark, the golf ball may either push the dot on the cup either too far or not far enough, but the dot must **not** stop on the Finish Line from the 10-cm release point. From any of the release points, 20, 15, 10, or 5cm, the dot should not stop on the Finish Line. If any of these cause the dot to stop on the Finish Line, slightly adjust the slope of the ramp so that it would be necessary to have a release point someplace between the 15-cm and 10-cm point or between 10-cm and 5-cm point to have the dot stop on the Finish Line. Do not get the ramp too steep as it will become more difficult to keep the ball in the groove of the ruler, or the ball will bounce at the bottom of the ramp giving inconsistent results. (As a laminated place mat is used more, you may note distances the cup will travel could change as the laminate becomes smoother and has less friction causing the distances to change slightly.)
6. Once you have determined the correct height of the ramp, tape down the ramp support with double-sided carpet tape or duct tape. Tape the ruler to the place mat. Roll duct tape back on itself so that there are two sticky sides. Place duct tape or masking tape **under** each end of the ruler to fasten it securely to the block and the place mat. Place masking tape across the ruler above the 29-cm mark and tape it down to the supports. Tape down the place mat.
7. Tape the Station Diagram for Station 3 to the bottom left corner of the station.
8. Place all materials at the station as shown in the Station Diagram for Station 3.

Station Diagram
Station 3 — Ball and Ramp



Detailed Directions for Administering the Performance Test

Make sure that sufficient quantities of all test materials are on hand. The following materials are needed:

For each student:

- test booklet (Form A)
- pencil

The appropriate test booklet should be placed at each station.

For the test administrator:

- detailed directions for administering the performance test (See pages 28–31)
- Test Administrator’s Record Sheet (Appendix III)

Several groups with three different stations are set up in the testing room. Each of the three stations contains different tasks. The stations are numbered from 1 to 3. Each student will rotate through all three of these stations. Students will have 15 minutes to complete the tasks at each station. Check each station before the students are admitted to the testing room to determine that each station has the required materials and that they are properly arranged (see diagram on page 20).

Place a blank test booklet and a sharpened pencil at each station *before* each new class enters the room. Recheck each station *before* each new class enters the testing room to assure that *all* materials are available and are in order.

Before the test session begins, write a sample heading on the chalkboard. The information should include the student name, school name, city, teacher’s name, and today’s date.

Complete the Test Administrator’s Record Sheet (Appendix III). This information is *very important*. It will be used to determine the range of correct answers when rating the test.

You must use an accurate timing device, such as a stopwatch or a clock with a sweep-second hand, to accurately provide time splits of 10, 13, and 15 minutes. Note the start time and intervals on a piece of paper, the chalkboard, or in this administration manual. The table below provides a sample of the information that will be needed for *each session*. A blank table is provided on page 30.

	ACTUAL TIME		
	First Station	Second Station	Third Station
Start	9:00	9:25	9:50
+10 minutes	9:10	9:35	10:00
+13 minutes	9:13	9:38	10:03
+ 15 minutes	9:15	9:40	10:05

Students should have an opportunity to visit the rest rooms and wash their hands just before the testing period.

Students should be assigned to the stations as they enter the room, filling the seats in an orderly fashion so all stations in a group are full. Have the first three students take seats at the group of stations farthest from the door, the next three students at the next group, etc.

Instruct the students **not** to open the test booklet or touch the equipment until they are told to do so.

When students are at their first station and ready to work, read the following information to them. This direction-reading stage is **not** to be counted as part of the 15 minutes for completing the first station. Say:

Good morning [afternoon]. Today, you will be taking a science skills test. I think you will enjoy it because you will get to use science equipment to help you answer the questions on the test. Please listen carefully, follow directions closely, and do your best work.

You should have a test booklet and a pencil at your station. If you don't, raise your hand. *(Pause.)*

Now, on your test booklet, print your first and last name. *(Pause.)* Print the name of your school, your city, your teacher's name, and today's date. I have put that information on the chalkboard. *(Pause for students to finish.)*

Keep this test booklet with you throughout the test. It will be collected at the end of the test. Read the directions on the cover silently to yourself while I read them aloud.

“Your booklet contains three science performance tasks. At each station you will have 15 minutes to finish your work. Continue working at each station until you see the word **STOP!** at the bottom of the page or until the time is up. Please wait quietly and patiently if you finish before the time is up. **Please leave the station the way you found it.**

Do **not** help other students or ask others to help you. There must be no talking between students during this test.

Read the directions for each station carefully. All of your answers must be written in this test booklet. You will be given directions on how and when to move to the other stations. Please listen carefully to all of the directions.

Do **not** go on to the next page until you are told to do so.”

Do not try to explain at this time how the students will be moving from station to station. Leave that information until after the completion of the first task.

The directions that follow will be repeated three times during the testing session.

Say:

At the bottom left edge of your table, there is a Station Diagram with the name and station number where you will be working. Open your test booklet and find that station number.

Look around to be sure that everyone has found his or her place. Say:

Now, read the directions for that station number in the box at the top of the page in your test booklet. *(Pause for 15 seconds.)* Then check that all of the materials are at your station. Use the Station Diagram to make sure that your equipment is set up correctly. Be sure that you have all the equipment. *(Pause for about 1 minute.)* If anyone is missing equipment, raise your hand. *(Pause.)* At Station 2, check to be sure that the electrical tester works. If the electrical tester does not work, raise your hand. *(Pause.)*

Once all of the students complete their equipment check, say:

You may begin work.

Begin timing the 15 minutes now. **Complete the table below for each session.** You will need to make additional copies if you are testing students in more than one session.

	ACTUAL TIME		
Time	First Station	Second Station	Third Station
Start			
+10 minutes			
+13 minutes			
+15 minutes			

Most student questions should be answered with “read it again,” “sound out the word,” or “do your best.” If students are not sure about the names of specific objects or equipment, you may refer them to the Station Diagram. All materials are labeled and clearly identified on these diagrams.

Do **not** give students assistance on how to do the procedure. You should **not** acknowledge that the student is doing the correct or an incorrect process. No one, under any circumstances, may interpret or explain test questions to students, nor may anyone review or comment on the answer paper of a student while this test is in progress. Exceptions to this would be safety concerns (short circuiting the electrical tester, a student putting an object in his or her mouth, etc.), lost or broken equipment, or specific provisions in a student’s IEP for allowable testing accommodations.

Station 3 – Ball and Ramp: While at this station, the students will raise their hand to get a Ping-Pong ball from the test administrator.

After 10 minutes, say:

You have 5 minutes left. Continue working until you see the word **STOP!**

After 13 minutes, say:

You have 2 minutes left. Continue working until you see the word **STOP!**

After 15 minutes, say:

Stop work. Please put everything back the way it is shown on the Station Diagram.

At Station 1, pour the water from the beaker back into the large cup and place the rock on the paper towel.

At Station 2, make sure all the objects are placed back in the bag and the bar magnet is left outside of the bag.

At Station 3, raise your hand to return the Ping-Pong ball.

Collect all the Ping-Pong balls from the students at Station 3. Before the students rotate within groups, make sure that the equipment at all stations is placed correctly so that it corresponds with the station diagrams.

Then say:

You are now going to move to the next station. I will show you how it is done. ***Be sure to take your test booklet and pencil with you.***

Because stations have been arranged in groups, student movement can be kept to a minimum. It is recommended that the test administrator take one group and demonstrate for the whole class how students will move to the next station. Then let each group rotate one at a time and provide help when necessary.

When rotation is complete, repeat the directions beginning at the bottom of page 29 until the testing session is complete. When the students have completed all three stations, say:

The science skills test is over. Thank you for being so attentive and cooperative during the test. Please wait quietly until you are dismissed.

Be sure to collect a test booklet and pencil from each student before the students leave the testing room.

Rating the Performance Test

The entire Performance Test will require rating by elementary-level teachers. It is estimated that a team of three teachers should be able to rate the responses to all three stations for about 30 students in one hour. This scoring can be most quickly accomplished if one teacher rates all students' responses to Station 1 while another rates all students' responses to Station 2 and a third rates all students' responses to Station 3.

The Rating Guide for the Performance Test, Form A, gives detailed directions for rating the Performance Test and specific criteria for rating each item. It is printed on yellow paper and was included in the shipment of test materials from the Department. In rating the students' test booklets, each rater should follow the procedures in the Rating Guide. The rating should be completed as soon as possible after the test administration and by the end of June.

Organizing the Rating Process

The following is a suggested procedure for managing the mechanics of the rating process.

1. Designate one person as the coordinator of the rating process. The coordinator may be appointed at either the building or the district level. He or she will be responsible for training and supervising raters and may rate some of the students' responses.
2. Set aside one room as a central rating room for collecting, sorting, circulating, and storing test booklets and for preparing and maintaining records.
3. Provide adequate time for rating during the school day.
4. Make sure each rater receives approximately the same number of student booklets.
5. Provide a copy of the completed Test Administrator's Record Sheet to each rater.
6. At least two teachers and preferably three should participate in rating the questions on the Performance Test. Each should be responsible for rating all of the questions for one station. No one teacher is to score all the open-ended questions in a student's answer booklet.
7. Prior to the rating of the students' answers to the Performance Test, allow time to provide training for all raters (even if they have received prior training). If possible, select at random 10–15 student test booklets and duplicate them for use as a “warm-up” exercise with the raters for discussion of the questions, the criteria, and the rating of each item. During the training exercise, after three or four complete student test booklets have been rated, ask the raters to indicate, by a show of hands, how many credits they gave each answer. If there is some disagreement about the number of credits to be awarded an answer, ask raters who gave different credits to an answer to explain their rating by citing specific criteria from the Rating Guide.
8. Raters should have a set of stations available to check the accuracy of questionable student answers by actually performing the task for which the answer was given.

Appendix I

Materials Needed to Administer the Performance Test, Form A

The Department will provide the test booklets, rating guides, and other printed administration materials. Schools are responsible for obtaining the materials needed for the performance tasks. Schools can either prepare these materials or purchase the materials in a complete kit from one of several suppliers. A list of approved suppliers is provided in Appendix VIII. A list of materials that will be needed for *one* setup for each of the three stations appears below.

Materials Needed for *One* Station 1 — Measuring Objects and Liquids:

- 1 equal-arm balance
- 1 set of gram masses (mixture of two 20-g, three 10-g, four 5-g and 10 1-g for a total of 100 g)
- 3 clear plastic jars, approximately 125-mL capacity
- 2 screw tops to fit jars
- 1 large plastic cup, approximately 300-mL capacity containing about 150 mL of water
- 1 measuring container (beaker), 100-mL capacity with clearly marked gradations
- 1 rough-cut rock (about 1" cube) that will fit easily into the beaker and sink completely in the water without causing the water to overflow
- 1 resealable plastic bag, large enough to hold the set of gram masses
- 1 ruler with units for metric (30cm) and for standard (12 inches) measurement, neither with indented zero points
- 2 – 3 paper towels
- Station Diagram for Station 1

Teacher Materials:

- 1 black, permanent, fine-line marker
- supply of water for 10 Station 1 setups
- medicine cup or other tool to measure 25 mL of water as accurately as possible

Materials Needed for *One* Station 2 – Electrical and Magnetic Testing:

- electrical tester:
 - 1.5-volt “D” cell battery
 - 15-volt bulb and bulb holder
 - battery holder (plastic or metal recommended)
 - 3 insulated wires with clips
- bar magnet (approximately 1.5 cm x 7 cm)
- resealable plastic bag containing eight objects and labeled “Test Objects”
 - penny
Note: Penny must be new and shiny. Oxidized pennies will not conduct.
 - rubber band (at least 1/4 inch wide)
 - paper clip (all metal)
 - colored ceramic disk (magnetic)
 - plastic spoon (small)
 - wooden stick (like Popsicle stick or tongue depressor)

Station 2 (continued)

- nickel (U.S. five cents)
- aluminum foil (heavy duty, about 5-cm square)

Note: Ceramic materials are nonmetallic, even if they are magnetic.

- Station Diagram for Station 2

Teacher Materials:

- 1 black, permanent, fine-line marker
- extra batteries and bulbs for the electrical testers

Materials Needed for *One* Station 3 - Ball and Ramp:

- Wood block (preferably a cube) to serve as the ramp support (total height: 5-6 cm)
- 1 ruler, 30-cm plastic without an indented zero mark and with a grooved center that can accommodate a golf ball
- 1 transparent, round, plastic deli container about 12 cm diameter, 1 pint in volume, and approximately 15 grams in mass
- 1 golf ball in a resealable clear-plastic bag labeled “Golf Ball”
- 1 Ping-Pong ball in a resealable clear plastic bag labeled “Ping-Pong Ball” (Do *not* put the Ping-Pong ball at the station.)
- 1 place mat (see Appendix IV for template)
- 1 Station Diagram for Station 3

Teacher Materials:

- 1 black, permanent, fine-line marker
- 1 scissors or craft knife
- 1 roll double-sided carpet tape or duct tape
- 1 set of self-adhesive colored dots for top of the containers (one dot for each container)
- 1 roll of masking tape

Appendix II

Comparison of Possible Performance Test Sites

SITE: CLASSROOM	
<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> ▪ Ease of station preparation ▪ Furniture already at site ▪ Good station-to-station movement ▪ Only classroom teacher and students will be disrupted ▪ Secure location 	<ul style="list-style-type: none"> ▪ The teacher and students whose room is being used need to be relocated for the duration of the testing. ▪ Individual student desks may be too narrow for the ball and ramp station unless they are at least 36 inches wide.
SITE: LIBRARY	
<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> ▪ Large space ▪ Tables and chairs at site ▪ Secure location 	<ul style="list-style-type: none"> ▪ May disrupt more teachers and students than classroom site ▪ Library unavailable for other uses during testing
SITE: CAFETERIA	
<ul style="list-style-type: none"> ▪ Large space ▪ Tables and chairs at site 	<ul style="list-style-type: none"> ▪ May disrupt a large number of teachers and students ▪ Unavailable for other uses during testing ▪ Poor security ▪ Testing may have to be interrupted by the breakfast/lunch program ▪ Poor acoustics and high noise levels ▪ Stations may have to be disassembled and reassembled before and after lunch
SITE: SCIENCE ROOM	
<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> ▪ Large space ▪ Tables and chairs at site ▪ Secure location ▪ Science materials on site 	<ul style="list-style-type: none"> ▪ May disrupt more teachers and students than classroom site
SITE: GYMNASIUM	
<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> ▪ Large space 	<ul style="list-style-type: none"> ▪ May disrupt large numbers of teachers and students ▪ Tables or desks and chairs must be moved into space ▪ Poor security ▪ Poor acoustics ▪ Not a familiar testing site for students ▪ Stations may have to be disassembled and reassembled to accommodate physical education classes

Appendix III

Grade 4 Elementary-Level Science Performance Test, Form A Test Administrator's Record Sheet

This record sheet should be completed by the person(s) administering the Performance Test. At the conclusion of the test administration, return this completed record sheet and the student answer sheets to the person in charge of the testing program for the school. This record sheet is very important because it will be used to determine the range of correct answers when rating the test.

Test Administrator(s) _____ Date _____

School Name _____ School District _____

Station 1 — Measuring Objects and Liquids

Complete the measurements and calculate acceptable ranges in the table below according to the directions for each item to be measured. There will be up to ten Station 1 setups in the testing room. Check that all jars are approximately the same width, height, and mass so that the acceptable range is correct for all of them. When measuring the water into Jar 2, be as precise as possible, so that the ranges established for question 4 will be accurate for all of them.

Location in Student Booklet	Item to be Measured	Measure	Directions for Calculating Acceptable Range	Acceptable Range
1a	Jar 1 inside width	_____ cm	± 0.3 cm (± 3 mm) For example, the acceptable range for a measurement of 5.4 cm is 5.1–5.7 cm.	_____ to _____ cm
1b	Jar 1 inside height	_____ inches	$\pm \frac{1}{4}$ in For example, the acceptable range for a measurement $2\frac{5}{8}$ inches is $2\frac{3}{8}$ – $2\frac{7}{8}$ in.	_____ to _____ inches
2	Volume of water to line on Jar 1	_____ mL	The acceptable range is the 10-mL interval on the beaker in which the actual measurement falls. For example, the acceptable range for a measurement 63 mL is 60–70 mL. Note: Do <i>not</i> use ± 5 mL as the acceptable range. The gradations on the beaker do not allow this much precision.	_____ to _____ mL
4a	Mass of Jar 2 with cover and water	_____ g	± 3 g	_____ to _____ g
4b	Mass of Jar 3 with cover (empty jar)	_____ g	± 3 g	_____ to _____ g

(over)

Grade 4 Elementary-Level Science Performance Test, Form A
Test Administrator's Record Sheet (page 2)

Note: If any materials used during the test administration were different from those specified in Appendix I or if the administration directions were not followed exactly as written, note these differences below. Be specific. These variations can be important when scoring the students' test booklets.

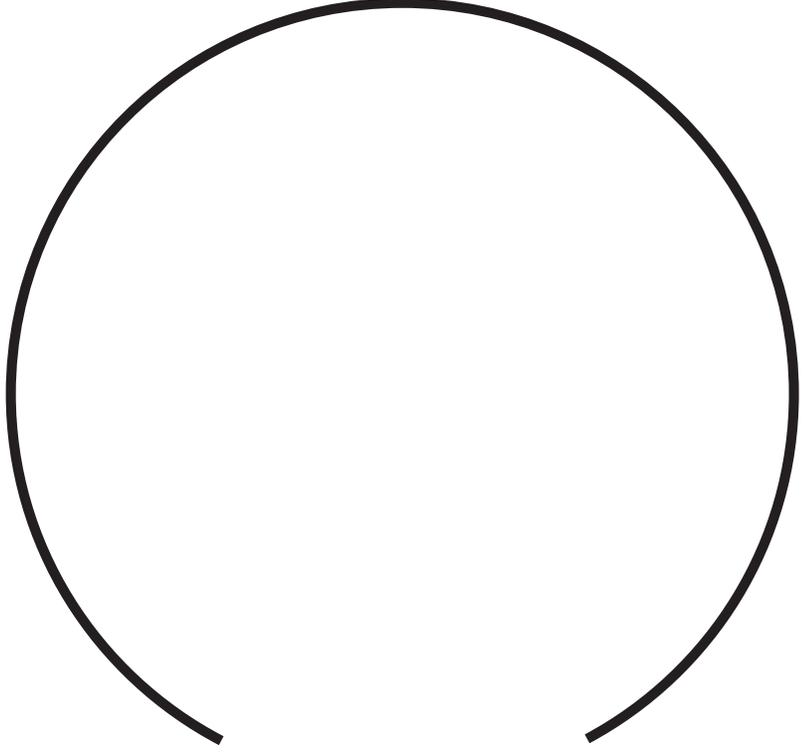
Appendix IV

Station 3—Ball and Ramp Place Mat

The place mat on the next page should be reproduced on 8" × 11" paper and laminated. In most cases, these place mats will be supplied in the performance test kits.

Place Mat

End of Ruler Placement



Starting Circle



Finish Line

Appendix V
Class Record Sheet
Distribution of Final Test Scores

Class Record Sheet

Schools that compile student scores by hand can use the Class Record Sheet to record scores of each class on the Written Test and the Performance Test. Make one copy of the sheet for each class.

Nonpublic schools *must* complete this Class Record Sheet and return it to the address below, along with the students' original, scored, scannable answer sheets. The Department will not return these materials, so schools should make photocopies for their records. (Nonpublic schools should refer to Appendix VII for more information.)

Dawn Thompson
New York State Education Department
Information and Reporting Services, Room 868 EBA
89 Washington Avenue
Albany, NY 12234

Distribution of Final Scores

These data can be developed into a distribution of final test scores for local use. Complete the steps below.

1. Using the Class Record Sheet, tally the number of students who achieved each final test score value.
2. Count the tallies and write the number in the frequency column (F).
3. Complete the cumulative frequency column (CF) beginning with the final test score of 0. For each final test score, add the frequency to the CF for the previous final test score to get the next CF value.

Once completed, the CF column can be used to determine how many students scored at or below a given final test score. For example, a school might be interested in knowing the number of students whose scores were below 65 because those students will require academic intervention services.

**New York State Grade 4 Elementary-Level Science Test
Distribution of Final Test Scores**

School Name: _____ Date: _____

Final Score	Tally	F	CF	Final Score	Tally	F	CF	Final Score	Tally	F	CF
0				34				68			
1				35				69			
2				36				70			
3				37				71			
4				38				72			
5				39				73			
6				40				74			
7				41				75			
8				42				76			
9				43				77			
10				44				78			
11				45				79			
12				46				80			
13				47				81			
14				48				82			
15				49				83			
16				50				84			
17				51				85			
18				52				86			
19				53				87			
20				54				88			
21				55				89			
22				56				90			
23				57				91			
24				58				92			
25				59				93			
26				60				94			
27				61				95			
28				62				96			
29				63				97			
30				64				98			
31				65				99			
32				66				100			
33				67							

Key	
F	— Frequency
CF	— Cumulative Frequency

Appendix VI
Deputy and Proctor Certificate
Examination and Storage Certificate

DEPUTY AND PROCTOR CERTIFICATE
Grade 4 Elementary-Level Science Test

School Name _____

City or Town _____

Examination Date _____
(Month/Year)

We, the undersigned deputies and proctors who assisted in the administration of the Grade 4 Elementary-Level Science Test, hereby declare our belief in the correctness of the following statement:

The rules and regulations for administering the test were fully and faithfully observed, and in particular:

1. The rules for administering the test were read to or read by each person who assisted in administering the test.
2. The test was held within the prescribed dates.
3. The tests were kept in the sealed packages until the administration date.
4. The students were given appropriate instructions and orientation before beginning the test.
5. The students were so seated as to prevent collusion.
6. Adequate supervision was maintained throughout the administration of the test.
7. The answer papers were collected from the students immediately at the close of the test.
8. All test booklets and scoring keys for the test were collected and returned to the principal.

- | | |
|-----------|-----------|
| 1. _____ | 11. _____ |
| 2. _____ | 12. _____ |
| 3. _____ | 13. _____ |
| 4. _____ | 14. _____ |
| 5. _____ | 15. _____ |
| 6. _____ | 16. _____ |
| 7. _____ | 17. _____ |
| 8. _____ | 18. _____ |
| 9. _____ | 19. _____ |
| 10. _____ | 20. _____ |

(Attach additional sheets when necessary.)

After completion, retain in school files for one year.

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Office of State Assessment
Albany, New York 12234

EXAMINATION STORAGE CERTIFICATE

Grade 4 Elementary-Level Science Test

School Name _____

City or Town _____

Examination Date _____
(Month/Year)

I, the undersigned principal of the school named above, do hereby declare that each of the security procedures listed below was fully and faithfully observed for the current administration of the Grade 4 Elementary-Level Science Test.

1. The sealed packages of secure test materials were stored in a secure place at the location indicated on the Examination Storage Plan submitted for the above examination period.
2. The secure place was maintained under strict security conditions.
3. An inventory of the test materials was conducted as soon after delivery as was practical. The State Education Department was notified if any of the packages of secure test materials were not properly sealed when received. The sealed packages of secure test materials were replaced inside the secure location immediately after the inventory was completed.
4. The sealed packages of secure materials for the test were not removed from the secure location, except for the inventory of test materials shipped to the school, until the day on which the test was scheduled to be administered.
5. The sealed packages of secure materials for the test were not opened until the day on which the test was scheduled to be administered.

Name of Principal (print or type) _____

Signature of Principal _____ Date ____ / ____ / ____

After completion, retain in school files for one year.

Appendix VII

Instructions for Nonpublic Schools

Completing the Class Record Sheet

School staff must complete a Class Record Sheet (see Appendix V). List on the Class Record Sheet every 4th grade student in the school. After the Performance Test is administered and scored, staff should record on this sheet student scores for Stations 1 through 3 and the total performance score. After the Written Test is administered and scored, staff should record student ID numbers and student scores for Parts I and II of the Written Test, the total Written Test score, the final test score, and the level. The final test score and level are determined by using information provided in the Rating Guide for the Written Test, Part II. The student ID number is the six-digit number at the bottom of page 2 of the machine-scorable answer sheet, which is sent to schools with the Written Test materials.

Staff should indicate with a check mark in the appropriate column those students for whom scores were not recorded because they are students with disabilities eligible to take the New York State Alternate Assessment (NYSAA) or a locally selected assessment or because they were absent for the Written and/or Performance Test.

Completing the Answer Sheets

Nonpublic schools must use the machine-scorable answer sheets the Department provides to schools with the Written Test materials to record and report student demographic information and student test scores for the Grade 4 Elementary-Level Science Test. An answer sheet must be completed for each 4th grade student, including each age-equivalent student with disabilities and each limited-English-proficient (LEP) student. Students will complete the left side of page 1 of the answer sheet during the administration of the Written Test. Teachers will complete the right side of page 1 after the Written Test administration.

Record “Alternate Assessment” in box 7 for any student with severe disabilities whom the student’s home school district’s Committee on Special Education (CSE) has identified as eligible for the NYSAA instead of the Grade 4 Elementary-Level Science Test. Record “Alternate Assessment” for these students even if they are not taking the NYSAA during the 2003–04 school year. Record “Locally Selected Assessment” in box 7 for any student with disabilities who will be taking a locally selected assessment instead of the Grade 4 Elementary-Level Science Test.

If the student did not complete the entire test because of absence, indicate the student’s absence for the Written and/or Performance Tests in box 7 of the answer sheet.

If your school does not have a sufficient number of answer sheets, contact the Office of State Assessment via fax to 518-474-2021 to obtain additional copies.

Scoring the Test

Make sure that all student information is properly recorded on the answer sheet prior to scoring. On each student’s answer sheet, complete all information that is to be provided by the teacher. Record the student’s scores for the Part I, Part II, Total Written Test, and Performance Test and the student’s Final Test Score obtained by using the conversion chart provided in the Rating Guide for the Written Test, Part II. Keep a record of the students’ scores at the school. (Your school should make photocopies of student answer sheets for its records.) The Department will *not* be mailing student score reports to schools.

If your school is sending papers to be scored at another scoring site, the scoring site *must* return the scored student papers to your school. On each student's answer sheet, make sure the information to be provided by teachers is completed. The student's score for the Part I, Part II, Total Written Test, and Performance Test must be recorded at the scoring site. The school must determine the Final Test Score using the conversion chart provided in the Rating Guide for the Written Test, Part II. Keep a record of the students' scores at the school.

DO NOT MAKE ANY EXTRANEIOUS MARKS ON THE ANSWER SHEETS. Stray pencil or pen marks of any color or liquid correction fluid on the answer sheet may interfere with the scanning of the sheets and result in inaccurate data being recorded for the student.

After the Scoring

Complete the Class Record Sheet by recording each student's Written Test Score and Final Test Score. Make sure that the information on the Class Record Sheet agrees with that on the student answer sheets. Make a photocopy of the Class Record Sheet for your records.

It is the principal's responsibility to submit the complete, scored answer sheets to the Department for scanning. Submission of these answer sheets will satisfy the reporting requirements for nonpublic schools for the Grade 4 Elementary-Level Science Test. Nonpublic schools are *not* required to report aggregate results for this test to the Department. Send the Class Record Sheets to the Department with the scored answer sheets. *Do not include test booklets when submitting answer sheets to the Department.* Keep **used** student Performance Test booklets in secure storage at your school for at least one year. (Unused Performance Test booklets and rating guides must be returned to the Department according to the instructions on page 6.)

Mail the student answer sheets and the Class Record Sheets using a delivery service that includes a package tracking service (e.g. UPS, FedEx) **by June 30, 2004, to:**

Dawn Thompson
New York State Education Department
Information and Reporting Services, Room 868 EBA
89 Washington Avenue
Albany, NY 12234

The Department will scan the answer sheets to calculate school summary data. The Department uses secure procedures to protect the confidentiality of student records. The Department does *not* retain student names in its files.

Special Instructions for Reporting the Scores of Students with Disabilities

Public school districts are responsible for reporting assessment results for each student with disabilities placed outside the district by the CSE. Schools with enrollments that include students with disabilities placed in the school by the student's home school district CSE must contact the home school district to obtain the appropriate public school answer sheets. Answer sheets for these students should *not* be sent to the State Education Department for scoring. The answer sheets and test booklets for each of these students should be returned to the home school district immediately after test administration so that they can be scored.

For further information on reporting scores for this test, contact the Office of Information and Reporting Services at 518-474-7965.

Appendix VIII

Approved Suppliers of Kits for the Grade 4 Elementary-Level Science Performance Test, Form A

Form A of the performance test will be used for several years. The Department will provide schools with all of the print materials needed to administer the test. As has been the case in the past, schools are required to provide the specific equipment needed to administer the test. Schools may purchase the required materials in kits that will be available from commercial suppliers and some BOCES.

Each of the suppliers listed below has submitted a prototype kit that has been reviewed by the Department and found to be suitable for use with this test. Schools should contact the suppliers directly for information about costs and procedures for purchasing kits.

Mr. Jim Crawford, Cyntech Products
2040 Four Mile Road, P.O. Box 309
Allegany, NY 14706
Phone: 716-372-2243
Fax: 716-373-7374

Mr. Doug Brucker, Monroe2-Orleans BOCES
Elementary Science Program
38 Turner Drive
Spencerport, NY 14559
Phone: 585-352-1140 or 800-832-8011

Mr. Grant Gardner Jr., Delta Education
P.O. Box 3000
Nashua, NH 03063
Phone: 800-258-1302

Mr. George Nassis, Neo/SCI Corporation
P.O. Box 22729
Rochester, NY 14692
Phone: 800-526-6689
Fax: 800-657-7523
Web: www.neosci.com

Ms. Gale Smith, Frey Scientific
100 Paragon Parkway
Mansfield, OH 44903
Phone: 800-225-3739
www.freyscientific.com

Mr. Armin Heravi
Science Kit & Boreal Laboratories
777 East Park Drive, P.O. Box 5003
Tonawanda, NY 14151
Phone: 1-800-828-7777
heravi@sciencekit.com
<http://www.sciencekit.com>

Mr. Dan Fitch
SCT BOCES, Science Resources Center
2501 Corning Road
Elmira, NY 14903
Phone: 607-795-5322

