

Connecticut Academic Performance Test (CAPT)

Second Generation

Science Handbook

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FOREWORD

The *Connecticut Academic Performance Test Second Generation Science Handbook* has been developed to provide teachers and other educators with important information about the science subtest on the new generation of the CAPT that will be launched in the spring of 2001.

The materials contained in this handbook answer many of the questions Connecticut's educators have asked about the changes being made in the test. Accordingly, one will find here:

- a summary of the changes being made in the content to be assessed and in test formats;
- sample items for each strand to be assessed;
- suggestions for instructional strategies in the science classroom; and
- the released 2000 performance tasks.

In addition, this handbook contains resources that teachers and administrators should find useful as they plan and prepare for the second generation of the Connecticut Academic Performance Test.

I urge you to review the materials in this handbook, and I hope that they will help you to continue the ongoing process of improving science programs in Connecticut.

Theodore S. Sergi
Commissioner of Education

PREFACE

This handbook is designed to help educators respond to the opportunities and the challenges presented by the Connecticut Academic Performance Test (CAPT). The handbook was developed to:

- support the curricular framework that provides the foundation upon which the CAPT was developed;
- delineate the changes between the first and second generation of the science portion of the CAPT;
- suggest pedagogical strategies and techniques that are part of a sound instructional program;
- provide sample assessment items and tasks that can be used as part of the instructional program; and
- present assessment and scoring information to help teachers integrate assessment with instruction.

While there is no one correct or best way to teach, this handbook provides practical suggestions for teachers that reflect research on effective science instruction. Many of the suggestions come from Connecticut teachers.

In using this handbook, Connecticut educators are reminded that the CAPT is designed to:

- establish high performance standards on a wide range of important skills and knowledge;
- ensure that students can apply their academic skills to realistic problems; and
- promote better instruction and curriculum by providing timely reports of student and program strengths and weaknesses.

Thus, the CAPT is a tool that can help school districts assess and enhance their curricular and instructional programs in several important ways:

Promote Teaching for Understanding: Because the CAPT focuses on the application of students' understandings in realistic, everyday contexts, student success on the test depends on both understanding of subject area content *and* on the ability to apply that content. Instructional programs that strike a balance between learning content and applying knowledge in a variety of problem-solving contexts best ensure understanding of what is taught.

Adopt High Expectations for Student Achievement: Knowing discrete facts and mastering narrow skills are not ends unto themselves. The 21st century demands individuals who are adept at accessing and evaluating information, and applying that information to solve problems and make decisions. To successfully analyze, synthesize, evaluate and apply information, students need a strong foundation of knowledge and skills in the content areas.

Draw Connections Among Disciplines: The lines separating the traditional disciplines are becoming increasingly blurred as new applications are discovered for the rapidly increasing volume of knowledge. Students who understand the connections among knowledge and skills from different areas will be prepared to make sense of and act on the range of information they will encounter in tomorrow's workplace and world.

Align Curriculum, Instruction and Assessment: Sound instruction is based on clear learning objectives and incorporates provisions for feedback on student understanding and progress. Assessment of student learning involves authentic tasks (tasks that model real-world problems or decisions) which are designed to measure understandings and skills that have been identified in the curriculum. Assessment tasks often are embedded within instructional units, so that teachers use the assessments as learning strategies, as well as to gauge student learning.

We hope that the resources provided in this handbook will help Connecticut educators meet the opportunities and challenges presented by the CAPT. We believe the handbook is a useful resource that will support ongoing efforts to improve instruction.

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