



MIDDLE SCHOOL AND SCIENCE SEPTEMBER 2004

Changes to the graduation plans, the new demands of the Middle Schools Science TAKS given at Grade 8 and the Exit-Level Grade 11 Science TAKS make the counselor's role in guiding students critical. Please keep the following in mind when advising students:

Middle School Counseling is Critical for Student Success.

Decisions middle school students make have an impact on course selection at the high school level. Students should understand that:

- Middle school students who take IPC may be at a disadvantage, since there will be a three year gap before their exit level assessment at Grade 11 and the Middle School TAKS, which is given at Grade 8, includes objectives from life and Earth sciences.
- Students who take separate Chemistry and Physics courses will be equally or better prepared to be successful on this assessment.
- Students who take separate Chemistry and Physics courses will be better prepared for ACT and SAT assessments.

All students should be encouraged to graduate under at least the Recommended High School Plan (RHSP).

RHSP is the default graduation plan for all students entering Grade 9 in 2004 or later.

In the RHSP and DAP, students must have three science credits: One credit must be a biology credit (Biology, AP Biology, or IB Biology). Students must choose the remaining two credits from the following areas (not more than one credit may be chosen from each of the areas to satisfy this requirement):

- Integrated Physics and Chemistry (IPC)
- Chemistry, AP Chemistry, or IB Chemistry
- Physics, AP Physics, IB Physics, or Principles of Technology I.

Students are encouraged to take courses in biology, chemistry, and physics.

Middle School Science TAKS Requires Knowledge in Life, Earth, and Physical Sciences.

The Middle School Science TAKS, given at Grade 8, is scheduled to begin in the spring of 2006. Field testing of items is anticipated to take place in late spring of 2005. Objectives and specific TEKS tested on the Middle School Science TAKS given at Grade 8 can be found at: <http://www.tea.state.tx.us/student.assessment/index.html>

Middle School Science is a Foundation Subject.

Mathematics, English Language Arts (ELA), Social Studies and Science are foundation subjects. The Federal law called No Child Left Behind (NCLB) specifies that all states must assess students in ELA, Mathematics, and Science. Therefore, professional development for teachers in science is critical in assuring that they teach to the depth and complexity of the TEKS. On-going professional development in science safety procedures is recommended to assure the safety of students.

Scheduling is a local district decision, however IPC at Grade 8 is no longer recommended.

Students who take IPC at grade 8 have a 3-year gap until they are tested on these concepts in the Exit Level Science TAKS at Grade 11. Also, NCLB requires a science test in the middle grades. Legislation has been introduced in Texas House to place a new middle school science assessment at Grade 8. This test may be cumulative. Therefore, all students should receive a rich science program at the middle school grades. Science TEKS in Grades 6, 7, and 8 should not be abbreviated to accommodate an IPC course.

Struggling students particularly need multiple opportunities to learn science concepts in different contexts.

Science concepts are cumulative, and students who miss crucial concepts may struggle in high school courses. Science teachers in some districts report that students needing special assistance are often scheduled to receive that help during their science period. Students who need remedial help in other subjects should not be regularly scheduled out of science classes.

Schools should consider the relationship between class size and safety in science.

Middle School Counselors should work with the Principal and Assistant Principals on scheduling and staffing to assure that middle school science classes are not overcrowded. Statistics on class size and safety in Texas secondary schools are available at <http://bluebonnet.bio.swt.edu/Safety/Safety%20TxST%20Rev%203-25b.htm>

All Middle School teachers need access to Science TEKS and TAKS Information Booklets.

Science equipment for laboratory and field investigations is necessary at the middle school level. Technology also plays a key role in middle school science. The science equipment and supplies listed in TEKS 4(A) at all middle school grades are required for student success. To access the Science TEKS, go to <http://www.tea.state.tx.us/teks/index.html>. To access the TAKS Information Booklets, go to <http://www.tea.state.tx.us/student.assessment/taks/booklets/index.html>. A proposed middle school science TAKS Information Booklet for grades 6-8 will be available in 2006.

Laboratory and field Experiences are critical at the Middle School Level

Middle School students must retain knowledge and skills for the Exit-level assessments in Science given at Grade 11. Hands-on experiences help assure student retention of critical knowledge & skills.

Enrollment in Honors and Pre-AP Science programs should reflect the diversity of the school population.

Students selected to participate in Honors and Pre-AP programs often choose more rigorous programs at the high school level. Self-selection into these prestigious programs may provide an advantage to certain populations.

Middle School students should plan to take at least 3 years of High School Science—enrollment at the 11th Grade level is particularly important.

House Bill 1144, 77th Texas Legislature in 2001, calls for all incoming freshman in 2004-2005 to begin under the Recommended High School Program (RHSP) or the Distinguished Achievement Program (DAP) which requires 3 credits of science. In addition, beginning in spring of 2004, students must pass the Exit Level Science TAKS in order to graduate. The SBOE encourages all students on RHSP to take courses in biology, chemistry and physics to complete the science requirements.

Middle School students may be successful in High School Science without a prerequisite of advanced mathematics.

Educators should keep in mind the new “conceptual” textbooks for the courses Chemistry and Physics that emphasize major concepts of science rather than mathematical computation. The amount of mathematics needed for these courses is at the level of Algebra I.

For further information, contact Chris Castillo Comer, Director of Science (chris.comer@tea.state.tx.us), or Irene Pickhardt, Assistant Director of Science (irene.pickhardt@tea.state.tx.us), by email at TEA or by phone at 512/463-9581.