

# Texas Science Education Leadership Association

## *Position Statement Supporting Earth Science as a Core Science*

*Revised, April 26, 2004*

The Texas Science Education Leadership Association (TSELA) joins the Science Teachers Association of Texas (STAT) and the Texas Earth Science Teachers Association (TESTA) in urging the Texas Education Agency and the State Board of Education to work together to designate earth science based courses as one of the optional courses which will satisfy the third year of mandated science instruction for high school graduation. (See paragraph 4 for specifics.)

Under current standards, all high school earth science based science classes are designated with “elective” status only. With this designation, students are not allowed to enroll in any earth science based class to meet the graduation requirements of three years of science. Students who have successfully completed the Integrated Physics and Chemistry (IPC) and biology courses have already studied the required objectives for the 11<sup>th</sup> grade Science TAKS test for graduation. Yet, the only course options that these students have are Chemistry, Physics, or Principles of Technology classes for their third year of science credit. The earth science based science classes are rigorous courses that integrate chemistry, physics and biology; and will support the objectives required for the 11<sup>th</sup> grade Science TAKS test; and therefore should be considered for the third year of science.

The *National Science Education Standards* developed by the National Academy of Sciences/National Research Council identify earth science as a core science curriculum area in grades K-12. Earth science is unique in that it integrates chemistry, physics and biology in an applied context, especially at the high school (9-12) level. In Texas, earth science based courses include Astronomy, Aquatic Science, Environmental Systems, AP or IB Environmental Science and the course entitled Geology, Meteorology and Oceanography (GMO). TSELA strongly supports the *National Science Education Standards*. Further, TSELA believes that the addition of earth science based courses as an option to the core science curriculum for high school students will provide students a better understanding of the environmental, energy and water issues that are challenging our state, nation and world.

**TSELA urges the State Board of Education to allow all earth science courses to meet the requirements for the third year of science, only after a student has completed the necessary IPC and biology courses of study. Of the 6 courses currently identified as earth science electives, TSELA supports flexibility, in that each district may select TEKS-based earth science electives, or Advanced Placement-level or Internationally Baccalaureate-level earth science electives, as locally determined, to meet the third year science option in the recommended degree plan and Distinguished Achievement Plan.** We understand that this option does not preclude a student from taking Chemistry, Physics, or Principles of Technology for the third year of science. School districts across the state have laboratory equipment and supplies that can be used to support the earth science courses that meet the needs of their students. This is a reasonable and viable option for students, schools, and school districts.

Awareness of earth science concepts is integral to all students' ability to understand the problems and challenges that are of primary importance to today's world. Students who have studied the scientific knowledge and processes of geology, hydrology, meteorology, oceanography and astronomy will be better prepared to critically analyze the information provided by special interest groups and make informed decisions that are based upon scientific fact.

The Texas Science Education Leadership Association (TSELA) joins the Science Teachers Association of Texas (STAT) and the Texas Earth Science Teachers Association (TESTA) in urging Texas to join the growing contingency of states that support the National Academy of Sciences/National Research Council in identifying earth science as a core science curriculum. By changing the earth science based classes from elective to core status, Texas will be acknowledging the need and importance of a strong earth science based curriculum for our students.

*TSELA represents over 400 department chairpersons, coordinators, and directors, and other leaders in Texas science education, from kindergarten through college level.*

*This version of the Position Statement was revised to achieve consensus among TSELA members in March 2004.*

*This Position Statement was circulated via email to ensure endorsement from a majority of TSELA members in April 2004.*

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Enclosure

**VERSION 1 of 2: PROPOSAL SUBMITTED BY  
THE TEXAS SCIENCE EDUCATION LEADERSHIP ASSOCIATION (TSELA)  
April 27, 2004**

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**Text of Proposed Amendments to 19 TAC  
Chapter 74. Curriculum Requirements**

**§74.53. Recommended High School Program.**

- (3) Science--three credits. One credit must be a biology credit (Biology, Advanced Placement (AP) Biology, or International Baccalaureate (IB) Biology). Students must choose the remaining two credits from subparagraph (A) or (B) of this paragraph. Students on the Recommended High School Program are encouraged to take courses in biology, chemistry, and physics to complete the science requirements.
- (A) After successful completion of a biology course, a student may select two credits from the following areas. Not more than one credit may be chosen from each of the areas to satisfy this requirement.
- (i) Integrated Physics and Chemistry (IPC);
  - (ii) Chemistry, AP Chemistry, or IB Chemistry; and
  - (iii) Physics, Principles of Technology I, AP Physics, or IB Physics.
- (B) After successful completion of a biology course and IPC, a student may select the third required credit from one of these courses.
- (i) Geology, Meteorology, and Oceanography (GMO)
  - (ii) Advanced Placement (AP) Environmental Science or International Baccalaureate (IB) Environmental Science
  - (iii) Astronomy
  - (iv) Aquatic Science
  - (v) Environmental Systems

**§74.54. Distinguished Achievement High School Program--Advanced High School Program.**

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- (B) After successful completion of a biology course and IPC, a student may select the third required credit from one of these courses.
- (i) Geology, Meteorology, and Oceanography (GMO)
  - (ii) Advanced Placement (AP) Environmental Science or International Baccalaureate (IB) Environmental Science
  - (iii) Astronomy
  - (iv) Aquatic Science
  - (v) Environmental Systems

**VERSION 2 of 2: PROPOSAL SUBMITTED BY  
THE TEXAS SCIENCE EDUCATION LEADERSHIP ASSOCIATION (TSELA)  
April 27, 2004**

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- (B) After successful completion of a biology course and IPC, a local school district may choose to select the third required credit from one of these courses.
- (vi) Geology, Meteorology, and Oceanography (GMO)
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