

# Course Syllabus

## Science, Grade 11

Jefferson County Schools Curriculum, Final  
Jefferson County Schools

The Terra Nova Multiple Assessments Battery for Science "measures knowledge of key concepts and facility with science process skills. By applying scientific concepts to objects and situations that are familiar to them, students draw connections between what they learn in the classroom and what they find in their own lives. Engaging graphics, photographs, and page designs typify science instructional materials and invite students to participate fully in the test.

The test covers the traditional core areas of science - inquiry, physical science, life science, Earth and space sciences - and adds science and technology, science in personal and social perspectives, and the history and nature of science, as suggested in the National Science Education Standards. Implicit in many questions is the measurement of higher-order thinking skills - the student's ability to analyze, infer, synthesize, and evaluate."

The Tennessee Science Curriculum Standards provide standards, performance indicators, and accomplishments for students in science.

The Terra Nova Complete Battery assesses students in eleventh and twelfth grade (Level 21/22).

### Earth and Space Science

The Earth and Space Science unit addresses the composition, structure, exploration, and history of the earth and space. Topics include plate tectonics, the atmosphere, geological cycles and processes, weather, climate, the solar system, and the universe.

- The learner will be able to understand that there are many different systems, such as the water cycle or solar system, that exist in our world.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#1, #4, Item#13, Item#17, Item#23, Item#27 week tested: 36.
- The learner will be able to comprehend the most pertinent ideas and principles of earth/space science.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #22 week tested: 36.

- The learner will be able to use understanding of earth/space science in experiments and real world situations.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #22 week tested: 36.

### Life Science

The Life Science unit addresses the characteristics and cycles of and relationships between living things and their environments. Topics include cellular organization, classification, ecosystems, genetics, and human health issues.

- The learner will be able to understand the adaptations and diversity of organisms.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#22, Item#32 week tested: 36.
- The learner will be able to begin to understand ecosystems.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#28, Item#33 week tested: 36.
- The learner will be able to comprehend the most pertinent ideas and principles of biology.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #21 week tested: 36.
- The learner will be able to use understanding of biology in experiments and real world situations.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #21 week tested: 36.
- The learner will be able to develop an understanding of personal and community health.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#15 week tested: 36.
- The learner will be able to understand the behavior and regulation of living things.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#9 week tested: 36.
- The learner will be able to show that s/he knows populations.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#28, Item#33 week tested: 36.

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- The learner will be able to develop an understanding of organisms' characteristics.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#19, #21 week tested: 36.

- The learner will be able to develop an understanding of organisms and the environments in which they live.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#11, Item#20 week tested: 36.

### Physical Science

The Physical Science unit includes concepts related to matter, forces, motion, and energy, as well as their interactions. Topics include chemical and physical changes, electricity, magnetism, heat, light, sound, machines, work and power.

- The learner will be able to understand the structure of atoms.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#29, Item#31 week tested: 36.

- The learner will be able to understand chemical reactions.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#36 week tested: 36.

- The learner will be able to understand that there exists a relationship between force and motion.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#25, Item#39 week tested: 36.

- The learner will be able to comprehend the most pertinent ideas and principles of physical science.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #20, Item#34 week tested: 36.

- The learner will be able to use understanding of physical science in experiments and real world situations.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #20 week tested: 36.

- The learner will be able to develop an understanding of energy.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#12 week tested: 36.

### Research and Inquiry

The Research and Inquiry unit focuses on the knowledge, processes, and real world issues associated with science and technology. Topics include experimentation, data analysis, science related careers, and technological advances.

- The learner will be able to begin to develop the skills necessary to perform scientific inquiries.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#6, #7, #8, Item#14, Item#37, #38 week tested: 36.

- The learner will be able to develop an appreciation for science as a human endeavor.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #25, Item#16, Item#18 week tested: 36.

- The learner will be able to comprehend the most pertinent ideas and principles of science that affect society.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #24 week tested: 36.

- The learner will be able to understand the principles of scientific inquiry.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #19 week tested: 36.

- The learner will be able to exhibit the ability to conduct science inquiry.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #19 week tested: 36.

- The learner will be able to understand how science and technology relate to each other.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #23, Item#2, #3, Item#10 week tested: 36.

- The learner will be able to comprehend the history of science.

Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #25, Item#30, Item#40 week tested: 36.

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- The learner will be able to comprehend technological design.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #23, Item#26 week tested: 36.
- The learner will be able to understand the nature of scientific understandings.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Obj Statement #25 week tested: 36.
- The learner will be able to understand that technological solutions have benefits and consequences, some of which can be predicted and others which cannot be predicted.  
Source: Terra Nova, Complete Battery, 1997, Level 21/22, Item#5, Item#24, Item#35 week tested: 36.