

# Course Syllabus

## Science, TN: Grade 2

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 Multiple Assessments assess students in second grade (Level 12).

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### 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.

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geological cycles and processes, weather, climate, the solar system, and the universe.

- The learner will be able to (IMPORTANT) recognize the earth's major geological features (e.g., continents, oceans, lakes).
- The learner will be able to (IMPORTANT) observe that earth materials can be recycled or conserved and identify various methods to conserve earth resources (e.g., soil, trees, water).
- The learner will be able to (ESSENTIAL) understand the properties of Earth's materials.
- The learner will be able to (ESSENTIAL) develop an understanding of the various changes to the earth and sky.
- The learner will be able to (IMPORTANT) identify that the sun provides a main source of heat and light for the earth and compare the heating and cooling rates of land, water, and air.
- The learner will be able to (IMPORTANT) recognize the phases of the moon as components of a cycle of regular change.
- The learner will be able to (IMPORTANT) identify that there are too many stars to count in the night sky and that they vary in brightness, color, and location.
- The learner will be able to (ESSENTIAL) develop an understanding of the objects in the sky.
- The learner will be able to (IMPORTANT) identify that different objects appear in the sky during the day and at night.
- The learner will be able to (IMPORTANT) identify the composition of sand and soil.
- The learner will be able to (IMPORTANT) observe the properties of sand and soil.
- The learner will be able to (IMPORTANT) identify that the brightest object in the sky is the sun and that it is the earth's closest star.

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- The learner will be able to (IMPORTANT) use the position of the sun in the sky to establish the approximate time of day.
- The learner will be able to (IMPORTANT) identify that events in the universe occur in predictable patterns.

### 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.

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- The learner will be able to (IMPORTANT) give evidence of the fact that animals of the same kind can have differences and provide specific examples of these differences.
- The learner will be able to (IMPORTANT) examine the smaller parts of animals and identify their functions through the use of magnifiers.
- The learner will be able to (IMPORTANT) identify that living things have certain traits that enable them to adapt to specific environments and carry out basic life processes and classify organisms according to the environment in which it can best survive.
- The learner will be able to (IMPORTANT) examine the relationships among plants, animals and their environments.

- The learner will be able to (IMPORTANT) recognize that offspring often resemble their parents and associate parents with their offspring.
- The learner will be able to (ESSENTIAL) comprehend the life cycles of living things.
- The learner will be able to (IMPORTANT) identify alterations in the appearance of plants and animals, as they get older.
- The learner will be able to (IMPORTANT) recognize how living and non-living things are different and categorize objects as living or non-living.
- The learner will be able to (ESSENTIAL) understand that various living things live in various habitats.
- The learner will be able to (IMPORTANT) identify that the small parts that make up an organism contribute to the performance and well being of the whole organism and use magnifiers to observe and describe what occurs when a plant or an animal loses a specific part.
- The learner will be able to (ESSENTIAL) understand behavioral and/or structural adaptations.
- The learner will be able to (ESSENTIAL) utilize various classification systems for living things.
- The learner will be able to (IMPORTANT) identify the basic needs living things require for survival and compare how plants and animals satisfy these basic needs.
- The learner will be able to (IMPORTANT) recognize that there are plants and animals that once lived on the earth and are now no longer found.
- The learner will be able to (IMPORTANT) recognize that organisms use their senses to interact with the environment around them and determine how these interactions occur.
- The learner will be able to (IMPORTANT) recognize forms of pollution and identify that pollution can impact the environment and the organisms that live in it.

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- The learner will be able to (IMPORTANT) recognize that all organisms come from other organisms.

### 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.

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- The learner will be able to (ESSENTIAL) understand the properties of energy.
- The learner will be able to (ESSENTIAL) understand and use concepts about and principles of force and motion.
- The learner will be able to (IMPORTANT) recognize what materials are attracted to magnets.
- The learner will be able to (IMPORTANT) describe ways in which a material can be changed.
- The learner will be able to (IMPORTANT) identify that when some materials are combined, they keep their individual characteristics (e.g., salt and pepper).
- The learner will be able to (IMPORTANT) identify that when some materials are combined, they lose their individual characteristics (e.g., powdered drink mix with water).
- The learner will be able to (ESSENTIAL) understand the properties and structure of matter.

- The learner will be able to (IMPORTANT) identify that the observable properties of an object can change under different conditions.
- The learner will be able to (IMPORTANT) recognize that objects fall unless supported.
- The learner will be able to (IMPORTANT) observe how changing the weight of an object and its position affect balance.
- The learner will be able to (IMPORTANT) recognize the physical properties that can be used to describe materials.

### 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 (ESSENTIAL) interpret scientific data.
- The learner will be able to (ESSENTIAL) understand methods of scientific inquiry.
- The learner will be able to (ESSENTIAL) comprehend the design of an experiment.
- The learner will be able to (ESSENTIAL) comprehend technological design.
- The learner will be able to (ESSENTIAL) utilize available and suitable technology.