

### Alternate Science Testing Structure

The testing structure for science reflects both the number of operational assessment items and the number of field test assessment items.

Grade	Administration Window*
3-5	Multiple untimed sessions <ul style="list-style-type: none"> <li>24 multiple choice items (20 operational items and 4 field test items)</li> </ul>

\* Teachers may administer the assessment in as many sessions as necessary throughout the entire administration window.

### TCAP Grades 3-5 Alternate Science Blueprints

The blueprints reflect only operational assessment items.

Grade 3		
Content	# of items	% of test
<b>Physical Science</b>	<b>7-9</b>	<b>35%-45%</b>
<b>3.PS1.1</b>	Describe the properties of solids, liquids, and gases and identify that matter is made up of particles too small to be seen.	
<b>3.PS1.3</b>	Describe and compare the physical properties of matter including color, texture, shape, length, mass, temperature, volume, state, hardness, and flexibility.	
<b>3.PS2.1</b>	Explain the cause and effect relationship of magnets.	
<b>3.PS3.1</b>	Recognize that energy is present when objects move; describe the effects of energy transfer from one object to another.	
<b>Life Science</b>	<b>3-5</b>	<b>15%-25%</b>
<b>3.LS1.1</b>	Analyze the internal and external structures that aquatic and land animals and plants have to support survival, growth, behavior, and reproduction.	
<b>3.LS4.1</b>	Explain the cause and effect relationship between a naturally changing environment and an organism's ability to survive.	
<b>Earth and Space Science</b>	<b>7-9</b>	<b>35%-45%</b>
<b>3.ESS1.1</b>	Use data to categorize the planets in the solar system as inner or outer planets according to their physical properties.	
<b>3.ESS2.1</b>	Explain the cycle of water on Earth.	
<b>3.ESS2.3</b>	Use tables, graphs, and tools to describe precipitation, temperature, and wind (direction and speed) to determine local weather and climate.	
<b>3.ESS3.1</b>	Explain how natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) impact humans and the environment.	

Grade 4		
Content	# of items	% of test
<b>Physical Science</b>	<b>5-7</b>	<b>25%-35%</b>
<b>4.PS3.1</b>	Use evidence to explain the cause and effect relationship between the speed of an object and the energy of an object.	
<b>4.PS3.2</b>	Observe and explain the relationship between potential energy and kinetic energy.	
<b>4.PS4.1</b>	Use a model of a simple wave to explain regular patterns of amplitude, wavelength, and direction.	
<b>Life Science</b>	<b>7-9</b>	<b>35%-45%</b>
<b>4.LS2.1</b>	Support an argument with evidence that plants get the materials they need for growth and reproduction chiefly through a process in which they use carbon dioxide from the air, water, and energy from the sun to produce sugars, plant materials, and waste (oxygen); and that this process is called photosynthesis.	
<b>4.LS2.3</b>	Using information about the roles of organisms (producers, consumers, decomposers), evaluate how those roles in food chains are interconnected in a food web, and communicate how the organisms are continuously able to meet their needs in a stable food web.	
<b>4.LS2.5</b>	Analyze and interpret data about changes (land characteristics, water distribution, temperature, food, and other organisms) in the environment and describe what mechanisms organisms can use to affect their ability to survive and reproduce.	
<b>4.LS4.1</b>	Obtain information about what a fossil is and ways a fossil can provide information about the past.	
<b>Earth and Space Science</b>	<b>5-7</b>	<b>25%-35%</b>
<b>4.ESS1.2</b>	Use a model to explain how the orbit of the Earth and sun cause observable patterns: a. day and night; b. changes in length and direction of shadows over a day.	
<b>4.ESS2.2</b>	Interpret maps to determine that the location of mountain ranges, deep ocean trenches, volcanoes, and earthquakes occur in patterns.	
<b>4.ESS3.1</b>	Obtain and combine information to describe that energy and fuels are derived from natural resources and that some energy and fuel sources are renewable (sunlight, wind, water) and some are not (fossil fuels, minerals).	

<b>Grade 5</b>		
<b>Content</b>	<b># of items</b>	<b>% of test</b>
<b>Physical Science</b>	<b>9-11</b>	<b>45%-55%</b>
<b>5.PS1.1</b>	Analyze and interpret data from observations and measurements of the physical properties of matter to explain phase changes between a solid, liquid, or gas.	
<b>5.PS1.4</b>	Evaluate the results of an experiment to determine whether the mixing of two or more substances result in a change of properties.	
<b>5.PS2.1</b>	Test the effects of balanced and unbalanced forces on the speed and direction of motion of objects.	
<b>5.PS2.3</b>	Use evidence to support that the gravitational force exerted by Earth on objects is directed toward the Earth's center.	
<b>5.PS2.4</b>	Explain the cause and effect relationship of two factors (mass and distance) that affect gravity.	
<b>Life Science</b>	<b>5-7</b>	<b>25%-35%</b>
<b>5.LS1.1</b>	Compare and contrast animal responses that are instinctual versus those that are gathered through the senses, processed, and stored as memories to guide their actions.	
<b>5.LS3.2</b>	Provide evidence and analyze data that plants and animals have traits inherited from parents and that variations of these traits exist in a group of similar organisms.	
<b>5.LS4.2</b>	Use evidence to construct an explanation for how variations in characteristics among individuals within the same species may provide advantages to these individuals in their survival and reproduction.	
<b>Earth and Space Science</b>	<b>3-5</b>	<b>15%-25%</b>
<b>5.ESS1.4</b>	Explain the cause and effect relationship between the positions of the sun, earth, and moon and resulting eclipses, position of constellations, and appearance of the moon.	
<b>5.ESS1.5</b>	Relate the tilt of the Earth's axis, as it revolves around the sun, to the varying intensities of sunlight at different latitudes. Evaluate how this causes changes in day-length and seasons.	