

A Kesling Parent's Survival Guide to Understanding ISTEP+ Testing



What is ISTEP+?

ISTEP+ stands for Indiana Statewide Testing for Educational Progress-Plus. The Indiana Statewide Testing for Educational Progress-Plus (ISTEP+) measures what students know and are able to do at each grade level. Based on Indiana's Academic Standards, ISTEP+ provides a learning check-up to make sure students are on track and signal whether they need extra help. The test is designed to test a student to insure that he/she has retained, according to grade level, an acceptable amount of knowledge based upon the state standards that have been set forth. The test covers the areas of math as well as English/Language Arts, science (grade 6) and social studies (grade 7). The test indicates what areas may be a deficiency for a student and also allows the school to know if it is meeting all the standards that have been adopted by the State of Indiana.

When will my child take the ISTEP+ exam?

ISTEP+ exams are now taken by all students in grades 3-8 in the spring of each year in two sections. The first part will be given in early March. Students will be administered short answer and essay questions in this section of the test. The second part of the test, multiple choice, will be given to students in late April/early May.

Why is it important for my child to excel on the ISTEP+?

The reason behind doing well on the ISTEP+ at the middle level is to help prepare for the student to be successful down the road when it comes time for high school. When your son or daughter is in high school, they must pass the End of the Course Assessment (ECA) in Algebra I and English I as a requirement for graduation. The more success he/she has with the ISTEP+ a confidence level is built up and by the time he/she is in high school that success will carry over and allow him/her to obtain a score that he/she will need to qualify for graduation. The other factor is with a high test score it indicates the amount of knowledge that he/she has obtained in school and you can celebrate the success with your son or daughter.

How is my child being prepared for the ISTEP?

The information that is being taught in the classroom is based upon the state standards that have been adopted by the State of Indiana. These standards are what the teachers use as guides to what the students need to know when they finish each grade level. These standards are what the ISTEP test is based upon. There are four major categories, Math, English/Language Arts, Social Studies and Science that the teachers must instruct. Students take the Math and English/Language Arts tests in grades 6-8, Science in grade 6 and Social Studies in grade 7.

What are the core standards being covered at each grade level in the four academic discipline areas?

Grade 6 – English/Language Arts

During the sixth-grade year, students apply skills they learned in earlier grades to make sense of longer, more challenging texts. They identify ways in which authors try to influence readers and find evidence in the text to support ideas. They identify and interpret figurative language and words with multiple meanings. They begin to recognize the origins and meanings of frequently used foreign words in English, such as enchilada (Spanish), lasagna (Italian), and delicatessen (German). They read a variety of grade-level-appropriate classic and contemporary literature, nonfiction, poetry, and plays, and they begin to read autobiographies. They do critiques of both informational and literary writing. They apply their research skills by writing or delivering reports that demonstrate the distinction between their own ideas and the ideas of others. They use simple, compound, and complex sentences to express their thoughts. They deliver oral presentations on problems and solutions and show evidence to support their views.

Standard 1: Word Recognition, Fluency, and Vocabulary Development

Students use their knowledge of word parts and word relationships, as well as context (the meaning of the text around a word), to determine the meaning of specialized vocabulary and to understand the precise meaning of grade-level-appropriate words.

Standard 2: Comprehension and Analysis of Nonfiction and Informational Text

Students read and understand grade-level-appropriate material. The selections in the *Indiana Reading List* (www.doe.state.in.us/standards/readinglist.html) illustrate the quality and complexity of the materials to be read by students. At Grade 6, in addition to regular classroom reading, students read a variety of nonfiction, such as biographies, autobiographies, books in many different subject areas, magazines, newspapers, reference and technical materials, and online information.

Standard 3: Comprehension and Analysis of Literary Text

Students read and respond to grade-level-appropriate historically or culturally significant works of literature. The selections in the *Indiana Reading List* (www.doe.state.in.us/standards/readinglist.html) illustrate the quality and complexity of the materials to be read by students. At Grade 6, students read a wide variety of fiction, such as classic and contemporary literature, historical fiction, fantasy, science fiction, mysteries, adventures, folklore, mythology, poetry, short stories, dramas, and other genres.

Standard 4: Processes and Features

Students discuss and keep a list of writing ideas and use graphic organizers to plan writing. They write clear, coherent, and focused essays. Students progress through the stages of the writing process and proofread, edit, and revise writing.

Standard 5: Writing Applications (Different Types of Writing and Their Characteristics)

At Grade 6, students write narrative, expository (informational), persuasive, and descriptive texts (research reports of 400 to 700 words or more). Student writing demonstrates a command of Standard English and the research, organizational, and drafting strategies outlined in Standard 4 — Writing Processes and Features. Writing demonstrates an awareness of the audience (intended reader) and purpose for writing.

Standard 6: English Language Conventions

Students write using Standard English conventions appropriate to this grade level.

Standard 7: Listening and Speaking: Skills, Strategies, and Applications

Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication. Students deliver well-organized formal presentations using traditional speech strategies, including narration, exposition, persuasion, and description. Students use the same Standard English conventions for oral speech that they use in their writing.

Grade 6 - Math

In this technological age, mathematics is more important than ever. When students leave school, they are more and more likely to use mathematics in their work and everyday lives — operating computer equipment, planning timelines and schedules, reading and interpreting data, comparing prices, managing personal finances, and completing other problem-solving tasks. *What* they learn in mathematics and *how* they learn it will provide an excellent preparation for a challenging and ever-changing future. The state of Indiana has established the following mathematics standards to make clear to teachers, students, and parents what knowledge, understanding, and skills students should acquire in Grade 6.

Standard 1: Number Sense

Understanding the number system is the basis of mathematics. Students continue to develop their understanding of the relationship between fractions and decimals. They extend the number system to include negative numbers. They also relate percentages to fractions and decimals and begin learning how to use ratios. They find multiples and factors of whole numbers, using the multiples and factors to solve problems involving fractions.

Standard 2: Computation

Fluency in computation is essential. Students add, subtract, multiply, and divide fractions, decimals, and both positive and negative integers. They solve problems using ratios, proportions, and percentages, including calculating discount and interest. They use mental arithmetic to add or subtract simple fractions and decimals.

Standard 3: Algebra and Functions

Algebra is a language of patterns, rules, and symbols. Students at this level write and solve simple equations and inequalities, and write and use formulas to solve problems. They use parentheses in more complex expressions to show the order of operations. They also extend graphs of straight lines to include negative values.

Standard 4: Geometry

Students learn about geometric shapes and develop a sense of space. They draw special types of angles and use them to solve problems. They find and use the sum of the angles of a triangle and of a quadrilateral. They identify shapes that are similar (the same shape but not necessarily the same size). They draw reflections and translations of shapes, and they also draw two-dimensional views of three-dimensional shapes.

Standard 5: Measurement

The study of measurement is essential because of its uses in many aspects of everyday life. Students measure in order to compare lengths, areas, volumes, weights, times, temperatures, etc. They learn about the number π and use it to calculate the circumference and area of circles. They construct models, find the volume and surface area of prisms and cylinders, and they convert temperatures between Celsius and Fahrenheit.

Standard 6: Data Analysis and Probability

Data are all around us — in newspapers and magazines, in television news and commercials, in quality control for manufacturing — and students need to learn how to understand data. At this level, they learn how to display data in frequency tables and in stem-and-leaf plots. They compare the mean, median, and mode. They find probabilities for compound events and write them as fractions, decimals, and percentages. They also estimate the probabilities of future events.

Standard 7: Problem Solving

In a general sense, mathematics is problem solving. In all mathematics, students use problem-solving skills: they choose how to approach a problem, they explain their reasoning, and they check their results. As they develop their skills with negative numbers, calculating angles, or finding areas, for example, students move from simple to more complex ideas by taking logical steps that build a better understanding of mathematics.

Grade 6 - Science

Beginning with Grade 6, Indiana's academic standards for science contain seven standards, with the addition of Historical Perspectives. Each standard is described below.

Standard 1: The Nature of Science and Technology

This first standard draws portraits of science and technology that emphasize their roles in the scientific endeavor and reveal some of the similarities and connections between them. In order for students to truly understand the nature of science and technology, they must model the process of scientific investigation through inquiries, fieldwork, lab work, etc. Through these experiences, students will practice designing investigations and experiments, making observations, and formulating theories based on evidence.

Standard 2: Scientific Thinking

There are certain thinking skills associated with science, mathematics, and technology that young people need to develop during their school years. These are mostly, but not exclusively, mathematical and logical skills that are essential tools for both formal and informal learning and for a lifetime of participation in society as a whole. Good communication is also essential in order to both receive and disseminate information and to understand others' ideas as well as have one's own ideas understood. Writing, in the form of journals, essays, lab reports, procedural summaries, etc., should be an integral component of students' experiences in science.

Standard 3: The Physical Setting

This standard contains recommendations for basic knowledge about the overall structure of the universe and the physical principles on which it seems to run, with emphasis on Earth and the solar system. This standard focuses on two principle subjects: the structure of the universe and the major processes that have shaped planet Earth, and the concepts with which science describes the physical world in general – organized under the headings of *Matter and Energy* and *Forces of Nature*. In Grade 6, students learn some of the relationships between physical objects, events, and processes in the universe.

Standard 4: The Living Environment

This standard offers recommendations on basic knowledge about how living things function and how they interact with one another and their environment. In Grade 6, students learn that plants and animals obtain energy in different ways and contain different structures for obtaining energy.

Standard 5: The Mathematical World

Mathematics is essentially a process of thinking that involves building and applying abstract, logically connected networks of ideas. These ideas often arise from the need to solve problems in science, technology, and everyday life – problems ranging from how to model certain aspects of a complex scientific problem to how to balance a checkbook.

Standard 6: Historical Perspectives

Through examples, students will gain insight into the historical background of the development of the modern science of chemistry.

Standard 7: Common Themes

A focus on *Constancy and Change* within this standard provides students opportunities to engage in long-term and on-going laboratory and fieldwork, and thus understand the role of change over time in studying The Physical Setting and The Living Environment.

Grade 6 – Social Studies

Peoples, Places and Cultures in Europe and the Americas

Students in Grade 6 study the regions and countries of Europe and the Americas, including geographical, historical, economic, political and cultural relationships. The areas emphasized are Europe and North and South America, including Central America and the Caribbean. The Indiana's K – 8 academic standards for social studies are organized around four content areas. The content area standards and the types of learning experiences they provide to students in Grade 6 are described below.

Standard 1: History

Students will explore the key historic movements, events and figures that contributed to the development of modern Europe and America from early civilizations through modern times by examining religious institutions, trade and cultural interactions, political institutions, and technological developments.

Standard 2: Civics and Government

Students will compare and contrast forms of government in different historical periods with contemporary political structures of Europe and the Americas and examine the rights and responsibilities of individuals in different political systems.

Standard 3: Geography

Students will identify the characteristics of climate regions in Europe and the Americas and describe major physical features, countries and cities of Europe and the Western Hemisphere.

Standard 4: Economics

Students will examine the influence of physical and cultural factors upon the economic systems of countries in Europe and the Americas

Grade 7 – English/Language Arts

During the seventh-grade year, students develop advanced skills in reading and writing. They identify and understand idioms and comparisons, such as analogies and metaphors, in prose and poetry. They begin to use their knowledge of Greek, Latin, and Anglo-Saxon roots and word parts to understand science, social studies, and mathematics vocabulary. They continue to read a variety of grade-level-appropriate classic and contemporary literature, nonfiction, poetry, and plays, and they begin to identify their own areas of reading interest. They begin to read reviews, as well as critiques of both informational and literary writing. They write or deliver longer research reports that take a position on a topic, and they support their positions by citing a variety of reference sources. They use a variety of sentence structures and modifiers to express their thoughts. They deliver persuasive presentations that state a clear position in support of an argument or proposal.

Standard 1: Word Recognition, Fluency, and Vocabulary Development

Students use their knowledge of word parts and word relationships, as well as context (the meaning of the text around a word), to determine the meaning of specialized vocabulary and to understand the precise meaning of grade-level-appropriate words.

Standard 2: Comprehension and Analysis of Nonfiction and Informational Text

Students read and understand grade-level-appropriate material. The selections in the *Indiana Reading List* (www.doe.state.in.us/standards/readinglist.html) illustrate the quality and complexity of the materials to be read by students. At Grade 7, in addition to regular classroom reading, students read a variety of nonfiction, such as biographies, autobiographies, books in many different subject areas, magazines, newspapers, reference and technical materials, and online information.

Standard 3: Comprehension and Analysis of Literary Text

Students read and respond to grade-level-appropriate historically or culturally significant works of literature, such as the selections in the *Indiana Reading List* (www.doe.state.in.us/standards/readinglist.html) illustrate the quality and complexity of the materials to be read by students. At Grade 7, students read a wide variety of fiction, such as classic and contemporary literature, historical fiction, fantasy, science fiction, mysteries, adventures, folklore, mythology, poetry, short stories, dramas, and other genres.

Standard 4: Processes and Features

Students discuss, list, and graphically organize writing ideas. They write clear, coherent, and focused essays. Students progress through the stages of the writing process and proofread, edit, and revise writing.

Standard 5: Writing Applications (Different Types of Writing and Their Characteristics)

At Grade 7, students continue to write narrative, expository (informational), persuasive, and descriptive texts (research reports of 500 to 800 words or more). Students are introduced to biographical and autobiographical narratives and to writing summaries of grade-level-appropriate reading materials.

Standard 6: English Language Conventions

Students write using Standard English conventions appropriate to the grade level.

Standard 7: Listening and Speaking: Skills, Strategies, and Applications

Deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. Students evaluate the content of oral communication. Students deliver well-organized formal presentations using traditional speech strategies, including narration, exposition, persuasion, and description. Students use the same Standard English conventions for oral speech that they use in their writing.

Grade 7 – Math

In this technological age, mathematics is more important than ever. When students leave school, they are more and more likely to use mathematics in their work and everyday lives — operating computer equipment, planning timelines and schedules, reading and interpreting data, comparing prices, managing personal finances, and completing other problem-solving tasks. What they learn in mathematics and how they learn it will provide an excellent preparation for a challenging and ever-changing future. The state of Indiana has established the following mathematics standards to make clear to teachers, students, and parents what knowledge, understanding, and skills students should acquire in Grade 7.

Standard 1: Number Sense

Understanding the number system is the basis of mathematics. Students extend this understanding to include irrational numbers, such as π and the square root of 2. They compare and order rational and irrational numbers and convert terminating decimals into fractions. They also use exponents to write whole numbers in scientific notation and to write the prime factorizations of numbers.

Standard 2: Computation

Students add, subtract, multiply, and divide integers, fractions, and decimals. They solve problems using percentages, including calculating discounts, markups, and commissions. They use mental arithmetic to compute with simple fractions, decimals, and powers.

Standard 3: Algebra and Functions

Algebra is a language of patterns, rules, and symbols. Students at this level use variables and other symbols to translate verbal descriptions into equations and formulas. They write and solve linear equations and inequalities, and write and use formulas to solve problems. They also use properties of the rational numbers to evaluate and simplify algebraic expressions, and they further extend their understanding of graphs by investigating rates of change for linear and nonlinear functions and by developing and using the concept of the slope of a straight line.

Standard 4: Geometry

Students link geometry to coordinate graphs, using them to plot shapes, calculate lengths and areas, and find images under transformations. They understand the Pythagorean Theorem and use it to find lengths in right triangles. They also construct nets (two-dimensional patterns) for three-dimensional objects, such as prisms, pyramids, cylinders, and cones.

Standard 5: Measurement

Students measure in order to compare lengths, areas, volumes, weights, times, temperatures, etc. They develop the concept of similarity and use it to make scale drawings and scale models and to solve problems relating to these drawings and models. They find areas and perimeters of two-dimensional shapes and volumes and surface areas of three-dimensional shapes, including irregular shapes made up of more basic shapes.

Standard 6: Data Analysis and Probability

Students learn how to display data in bar, line, and circle graphs and in stem-and-leaf plots. They analyze data displays to find whether they are misleading and analyze the wording of survey questions to tell whether these could influence the results. They find the probability of disjoint events. They also find the number of arrangements of objects using a tree diagram.

Standard 7: Problem Solving

In all mathematics, students use problem-solving skills: they choose how to approach a problem, they explain their reasoning, and they check their results. As they develop their skills with irrational numbers, analyzing graphs, or finding surface areas, for example, students move from simple ideas to more complex ones by taking logical steps that build a better understanding of mathematics.

Grade 7 - Science

Beginning with Grade 6, Indiana's academic standards for science contain seven standards, with the addition of Historical Perspectives. Each standard is described below. These ideas build a foundation for understanding the intent of each standard.

Standard 1: The Nature of Science and Technology

This first standard draws portraits of science and technology that emphasize their roles in the scientific endeavor and reveal some of the similarities and connections between them. Students will practice designing investigations and experiments, making observations, and formulating theories based on evidence.

Standard 2: Scientific Thinking

There are certain thinking skills associated with science, mathematics, and technology that young people need to develop during their school years. These are mostly, but not exclusively, mathematical and logical skills that are essential tools for both formal and informal learning and for a lifetime of participation in society as a whole. Good communication is also essential in order to both receive and disseminate information and to understand others' ideas as well as have one's own ideas understood. Writing, in the form of journals, essays, lab reports, procedural summaries, etc., should be an integral component of students' experiences in science.

Standard 3: The Physical Setting

This standard focuses on two principle subjects: the structure of the universe and the major processes that have shaped planet Earth, and the concepts with which science describes the physical world in general – organized under the headings of *Matter and Energy* and *Forces of Nature*. In Grade 7, students continue to learn about the relationships between physical objects, events, and processes in the universe.

Standard 4: The Living Environment

This standard offers recommendations on basic knowledge about how living things function and how they interact with one another and their environment. In Grade 7, students trace the flow of matter and energy through ecosystems.

Standard 5: The Mathematical World

Mathematics is essentially a process of thinking that involves building and applying abstract, logically connected networks of ideas. These ideas often arise from the need to solve problems in science, technology, and everyday life – problems ranging from how to model certain aspects of a complex scientific problem to how to balance a checkbook.

Standard 6: Historical Perspectives

Examples of historical events provide a context for understanding how the scientific enterprise operates. By studying these events, one understands that new ideas are limited by the context in which they are conceived, are often rejected by the scientific establishment, sometimes spring from unexpected findings, and grow or transform slowly through the contributions of many different investigators. The historical events listed in Grade 7 are certainly not the only events that could be used to illustrate this standard, but they provide an array of examples. Through these examples, students will gain insight into germ theory.

Standard 7: Common Themes

Some important themes pervade science, mathematics, and technology and appear over and over again, whether we are looking at ancient civilization, the human body, or a comet. These ideas transcend disciplinary boundaries and prove fruitful in explanation, in theory, in observation, and in design. A focus on *Constancy and Change* within this standard provides students opportunities to engage in long-term and on-going laboratory and fieldwork, and thus understand the role of change over time in studying The Physical Setting and The Living Environment.

Grade 7 – Social Studies

Peoples, Places and Cultures in Africa, Asia and the Southwest Pacific

Students in Grade 7 study the regions and nations of Africa, Asia and the Southwest Pacific, including historical, geographical, economic, political and cultural relationships. This study includes the following regions: Africa, Southwest and Central Asia, South Asia, Southeast Asia, East Asia, and the Southwest Pacific (Australia, New Zealand and Oceania). The Indiana's K – 8 academic standards for social studies are organized around four content areas. The content area standards and the types of learning experiences they provide to students in Grade 7 are described below.

Standard 1: History

Students will examine the major movements, events and figures that contributed to the development of Africa, Asia and the Southwest Pacific from ancient civilizations to modern times by examining religious institutions, trade and cultural interactions, political institutions, and technological developments.

Standard 2: Civics and Government

Students will trace the development of different forms of government in different historical eras and compare various contemporary political structures in Africa, Asia, and the Southwest Pacific in terms of power, approach to human rights, and roles of citizens.

Standard 3: Geography

Students will explain how atmospheric and oceanic systems affect the seasons and climate. They will understand and use technology and grid systems to identify and locate places geographically. They will identify and categorize the major geographic characteristics and regions of Africa, Asia and the Southwest Pacific. They will also name and locate major physical features, countries and major cities and will use geographic skills and technology to examine geographic relationships within and between these regions and the rest of the world.

Standard 4: Economics

Students will examine the influence of physical and cultural factors upon the economic systems found in countries of Africa, Asia and the Southwest Pacific.

Grade 8 – English/Language Arts

During the eighth-grade year, students begin to look forward to high school. Grade 8 standards get students ready for the challenges and transition to come. Students begin to study the history and the development of English vocabulary. They continue to read a variety of grade-level-appropriate classic and contemporary literature, nonfiction, poetry, and plays, and they begin to compare and contrast the different types of writing as well as different perspectives on similar topics or themes. They evaluate the logic of informational texts and analyze how literature reflects the backgrounds, attitudes, and beliefs of the authors. They not only write or deliver research reports but also conduct their own research. They use the conventions of Standard English correctly. They deliver a variety of types of presentations and effectively respond to questions and concerns from the audience.

Standard 1: Word Recognition, Fluency, and Vocabulary Development

Students use their knowledge of word parts and word relationships, as well as context (the meaning of the text around a word), to determine the meaning of specialized vocabulary and to understand the precise meaning of grade-level-appropriate words.

Standard 2: Comprehension and Analysis of Nonfiction and Informational Text

Students read and understand grade-level-appropriate material. The selections in the *Indiana Reading List* (www.doe.state.in.us/standards/readinglist.html) illustrate the quality and complexity of the materials to be read by students. At Grade 8, in addition to regular classroom reading, students read a variety of nonfiction, such as biographies, autobiographies, books in many different subject areas, magazines, newspapers, reference and technical materials, and online information.

Standard 3: Comprehension and Analysis of Literary Text

Students read and respond to grade-level-appropriate historically or culturally significant works of literature, such as the selections in the *Indiana Reading List* (www.doe.state.in.us/standards/readinglist.html), which illustrate the quality and complexity of the materials to be read by students. At Grade 8, students read a wide variety of fiction, such as classic and contemporary literature, historical fiction, fantasy, science fiction, mysteries, adventures, folklore, mythology, poetry, short stories, dramas, and other genres.

Standard 4: Processes and Features

Students discuss, list, and graphically organize writing ideas. They write clear, coherent, and focused essays. Students progress through the stages of the writing process and proofread, edit, and revise writing.

Standard 5: Writing Applications (Different Types of Writing and Their Characteristics)

At Grade 8, students continue to write narrative, expository (informational), persuasive, and descriptive essays (research reports of 700 to 1,000 words or more). Students are introduced to writing technical documents. Student writing demonstrates a command of Standard English and the research, organizational, and drafting strategies outlined in Standard 4 — Writing Processes and Features. Writing demonstrates an awareness of the audience (intended reader) and purpose for writing.

Standard 6: English Language Conventions

Students write using Standard English conventions appropriate to this grade level.

Standard 7: Listening and Speaking: Skills, Strategies, and Applications

Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication. Students deliver well-organized formal presentations using traditional speech strategies, including narration, exposition, persuasion, and description. Students use the same Standard English conventions for oral speech that they use in their writing.

Grade 8 - Math

In this technological age, mathematics is more important than ever. Students are more and more likely to use mathematics in their work and everyday lives — operating computer equipment, planning timelines and schedules, reading and interpreting data, comparing prices, managing personal finances, and completing other problem-solving tasks. What they learn in mathematics and how they learn it will provide an excellent preparation for a challenging and ever-changing future. The state of Indiana has established the following mathematics standards.

Standard 1: Number Sense

Students extend their understanding of irrational numbers, such as π and the square root of 2, learning the relationship between the nature of the decimal of a number and whether it is rational or irrational. They use negative exponents to write decimals in scientific notation, and they use the inverse relationship between squaring and finding a square root to calculate approximate square roots.

Standard 2: Computation

Students add, subtract, multiply, and divide rational numbers. They use percentages to calculate simple and compound interest. They also use mental arithmetic to compute with fractions, decimals, powers, and percentages.

Standard 3: Algebra and Functions

Students at this level write and solve linear equations and inequalities, including solving pairs of linear equations by the substitution method. They use properties of the rational numbers to evaluate and simplify algebraic expressions. They further extend their understanding of the relationship between equations and graphs by connecting slopes to rates of change and by drawing graphs of quadratic functions and simple cubic functions.

Standard 4: Geometry

Students learn new concepts relating to shapes, such as altitudes, bisectors, and chords and perform constructions connected with them. They further develop their sense of three-dimensional space by investigating how objects intersect in space. They draw a wide range of transformations of shapes, and they apply the Pythagorean Theorem and its converse to problems in two- and three-dimensions.

Standard 5: Measurement

Students convert common measurements for lengths, areas, volumes, weights, capacities, and times. They develop and use the concept of rate and derived measures — e.g., velocity and density. They apply the concepts of similarity, ratio, and proportion to problems involving scale factors, areas, and volumes. They find areas, perimeters, volumes, and surface areas, including those of irregular shapes made up of more basic shapes.

Standard 6: Data Analysis and Probability

At this level, students evaluate whether claims based on data are reasonable and employ various sampling methods, analyzing their strengths and weaknesses. They understand the concepts of the median and quartiles and use these measures to draw and analyze box-and-whisker plots. They represent and analyze two-variable data using scatterplots. They understand the concept of equally likely events and use it to find probabilities. They also find the number of arrangements of objects using the Basic Counting Principle.

Standard 7: Problem Solving

In all of their mathematics, students use problem-solving skills: they choose how to approach a problem, they explain their reasoning, and they check their results. As they develop their skills with irrational numbers, analyzing graphs, or finding surface areas, for example, students move from simple ideas to more complex ones by taking logical steps that build a better understanding of mathematics.

Grade 8 - Science

Beginning with Grade 6, Indiana's academic standards for science contain seven standards, with the addition of Historical Perspectives. Each standard is described below.

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This first standard draws portraits of science and technology that emphasize their roles in the scientific endeavor and reveal some of the similarities and connections between them. In order for students to truly understand the nature of science and technology, they must model the process of scientific investigation through inquiries, fieldwork, lab work, etc. Through these experiences, students will practice designing investigations and experiments, making observations, and formulating theories based on evidence.

Standard 2: Scientific Thinking

There are certain thinking skills associated with science, mathematics, and technology that young people need to develop during their school years. These are mostly, but not exclusively, mathematical and logical skills that are essential tools for both formal and informal learning and for a lifetime of participation in society as a whole. Good communication is also essential in order to both receive and disseminate information and to understand others' ideas as well as have one's own ideas understood. Writing, in the form of journals, essays, lab reports, procedural summaries, etc., should be an integral component of students' experiences in science.

Standard 3: The Physical Setting

This standard contains recommendations for basic knowledge about the overall structure of the universe and the physical principles on which it seems to run, with emphasis on Earth and the solar system. This standard focuses on two principle subjects: the structure of the universe and the major processes that have shaped planet Earth, and the concepts with which science describes the physical world in general – organized under the headings of *Matter and Energy* and *Forces of Nature*. In Grade 8, students refine their knowledge about the relationships between physical objects, events, and processes in the universe.

Standard 4: The Living Environment

This standard offers recommendations on basic knowledge about how living things function and how they interact with one another and their environment. In Grade 8, students trace the flow of matter and energy through ecosystems and recognize that the total amount of matter stays constant.

Standard 5: The Mathematical World

Mathematics is essentially a process of thinking that involves building and applying abstract, logically connected networks of ideas. These ideas often arise from the need to solve problems in science, technology, and everyday life – problems ranging from how to model certain aspects of a complex scientific problem to how to balance a checkbook.

Standard 6: Historical Perspectives

Examples of historical events provide a context for understanding how the scientific enterprise operates. By studying these events, one understands that new ideas are limited by the context in which they are conceived, are often rejected by the scientific establishment, sometimes spring from unexpected findings, and grow or transform slowly through the contributions of many different investigators. The historical events listed in Grade 8 are certainly not the only events that could be used to illustrate this standard, but they provide an array of examples. Through these examples, students will gain insight into chemistry, specifically that of nuclear chemistry.

Standard 7: Common Themes

A focus on *Constancy and Change* within this standard provides students opportunities to engage in long-term and on-going laboratory and fieldwork, and thus understand the role of change over time in studying The Physical Setting and The Living Environment.

Grade 8 – Social Studies

United States History – Growth and Development

In Grade 8, students focus upon United States history, beginning with a brief review of early history, including the Revolution and Founding Era, and the principles of the United States and Indiana constitutions, as well as other founding documents and their applications to subsequent periods of national history and to civic and political life. Students then study national development, westward expansion, social reform movements, and the Civil War and Reconstruction. The Indiana's K – 8 academic standards for social studies are organized around four content areas. The content area standards and the types of learning experiences they provide to students in Grade 8 are described below.

Standard 1: History

Students will examine the relationship and significance of themes, concepts, and movements in the development of United States history, including review of key ideas related to the colonization of America and the revolution and Founding Era. This will be followed by emphasis on social reform, national development and westward expansion, and the Civil War and Reconstruction period.

Standard 2: Civics and Government

Students will explain the major principles, values and institutions of constitutional government and citizenship, which are based on the founding documents of the United States and how three branches of government share and check power within our federal system of government.

Standard 3: Geography

Students will identify the major geographic characteristics of the United States and its regions. They will name and locate the major physical features of the United States, as well as each of the states, capitals and major cities, and will use geographic skills and technology to examine the influence of geographic factors on national development.

Standard 4: Economics

Students will identify, describe and evaluate the influence of economic factors on national development from the founding of the nation to the end of Reconstruction.

How do I know how my child did on the ISTEP+?

The results of the test will be given to you but it does take some time for these results to be finalized. There is much time and effort that goes into assessing these tests. The results can be accessed on line using your personalized access code provided to your child's school and you will be sent a copy home through mail. Once you have the document that shows the results there is some important information you will need to observe closely.

- ✓ The front page will break the test results back into two sections in grade 8, the English/ Language Arts results as well as the math results. In grades 6 and 7, there are three sections. Grade 6 will have results from the Science test and grade 7 will have results from the Social Studies test as well as English/Language Arts and Math results. Each section will indicate, with a scale, whether or not your child has passed each section of the test. It will also indicate the lowest possible pass score, an arrow indicating where your child's score fell, and what score was given to each particular section.

- ✓ The backside of the score sheet will break each of the two sections down into particular areas that were tested. This will allow you as parents to understand the area which your child is doing well in or where they need improvement. This will show what your child's score was, what score was needed to pass, and the state average.

Open-Ended vs. Multiple Choice Questions

On the test there are questions that are multiple choice and other questions that are open-end, which is your child needed to figure out the problem and answer on his/her own. The score sheet will give you a break-down on the open-end questions and give you a number on how each question was rated. To understand how these questions are rated you may go to the ISTEP+ InfoCenter at the Indiana Department of Education website (which is explained below).

What can I do to help my child prepare for the ISTEP+?

The Indiana Department of Education has a website that includes sample questions and explanations about how questions are assessed web address: <http://www.doe.in.gov/istep/>. By using the sample questions given on the website as well as understanding how questions will be assessed, you will aid in preparing your child to take the ISTEP+ test. Going over this information with your child will help him/her be more comfortable with the test and increase his/her chances of improving their scores. You can also contact your child's teachers to ask for additional assistance and ideas to help your child succeed in school as measured by the ISTEPP+ exam.