TEXAS TECH UNIVERSITY
TTU K-12™

To the Parent(s):

After registration is complete, your child may take the Credit by Examination for MATH K. (If the child is taking the print exam, their proctor must be approved.)

WHAT TO BRING

- several sharpened No. 2 pencils

- one box of 24 crayons

- 20 pennies

- 20 paperclips

ABOUT THE EXAM

For print CBEs:

The examination for Kindergarten English Language Arts and Reading consists of 50 questions.

Because of the amount of reading on this exam, the parent/proctor will read all of the directions, questions, and answer choices to the student *unless otherwise instructed*.

For online CBEs:

The examination for Kindergarten Mathematics is in two parts: **(1) a quiz and (2) an upload assignment.** The student should **complete the quiz** *first*.

NOTE: The upload assignment requires you to print a set of worksheets, have the student complete them, then scan or photograph the finished work and upload it into Blackboard.

- **You must download and print the worksheets from the CBE website _before_ starting the exam.**

- **The student will complete the worksheets at the _end_ of the exam.**

The parent/proctor will read all questions and all answer choices.

DO NOT submit the quiz until your student has completed the worksheets within view of the student's camera *while the proctoring software is enabled.*

Once the student completes the worksheets, submit the quiz for grading, then proceed to upload the worksheets in the upload assignment area.

Worksheet Submission

Scan or take digital photographs of the finished worksheets. If you use a mobile device to take the photo, you'll need to upload it to a cloud service (Google Drive, OneDrive, Dropbox, or Box.com) or copy it to your computer (how to transfer photos from phone to computer). Once the file is available, upload it using the instructions given.

This exam should be an accurate representation of your child's ability. It is being remotely proctored. Please ensure that the work performed is that of your student and your student alone.

The exam is based on the Texas Essential Knowledge and Skills (TEKS) for this subject. The full list of TEKS is included in this document (it is also available online at the Texas Education Agency website). The TEKS outline specific topics covered in the exam, as well as more general areas of knowledge and levels of critical thinking. Use the TEKS to focus your study in preparation for the exam.

The examination will take place under supervision, and the recommended time limit is three hours. You may not use any notes or books. A percentage score from the examination will be reported to the official at your school.

In preparation for the examination, review the TEKS for this subject. All TEKS are assessed. It is important to prepare adequately. Any textbook from the Texas Adoption list can be used for a review.

Good luck on your test!

Texas Essential Knowledge and Skills
MATH K – Mathematics, Kindergarten

§111.2. Kindergarten, Adopted 2012.

(a) Introduction.

(1) The desire to achieve educational excellence is the driving force behind the Texas essential knowledge and skills for mathematics, guided by the college and career readiness standards. By embedding statistics, probability, and finance, while focusing on computational thinking, mathematical fluency, and solid understanding, Texas will lead the way in mathematics education and prepare all Texas students for the challenges they will face in the 21st century.

(2) The process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, algorithms, paper and pencil, and technology and techniques such as mental math, estimation, number sense, and generalization and abstraction to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, computer programs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(3) For students to become fluent in mathematics, students must develop a robust sense of number. The National Research Council's report, "Adding It Up," defines procedural fluency as "skill in carrying out procedures flexibly, accurately, efficiently, and appropriately." As students develop procedural fluency, they must also realize that true problem solving may take time, effort, and perseverance. Students in Kindergarten are expected to perform their work without the use of calculators.

(4) The primary focal areas in Kindergarten are understanding counting and cardinality, understanding addition as joining and subtraction as separating, and comparing objects by measurable attributes.

(A) Students develop number and operations through several fundamental concepts. Students know number names and the counting sequence. Counting and cardinality lay a solid foundation for number. Students apply the principles of counting to make the connection between numbers and quantities.

(B) Students use meanings of numbers to create strategies for solving problems and responding to practical situations involving addition and subtraction.

(C) Students identify characteristics of objects that can be measured and directly compare objects according to these measurable attributes.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(b) Knowledge and skills.

(1) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(2) **Number and operations.** The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system. The student is expected to:

(A) count forward and backward to at least 20 with and without objects;

(B) read, write, and represent whole numbers from 0 to at least 20 with and without objects or pictures;

(C) count a set of objects up to at least 20 and demonstrate that the last number said tells the number of objects in the set regardless of their arrangement or order;

(D) recognize instantly the quantity of a small group of objects in organized and random arrangements;

(E) generate a set using concrete and pictorial models that represents a number that is more than, less than, and equal to a given number up to 20;

(F) generate a number that is one more than or one less than another number up to at least 20;

(G) compare sets of objects up to at least 20 in each set using comparative language;

(H) use comparative language to describe two numbers up to 20 presented as written numerals; and

(I) compose and decompose numbers up to 10 with objects and pictures.

(3) **Number and operations.** The student applies mathematical process standards to develop an understanding of addition and subtraction situations in order to solve problems. The student is expected to:

(A) model the action of joining to represent addition and the action of separating to represent subtraction;

(B) solve word problems using objects and drawings to find sums up to 10 and differences within 10; and

(C) explain the strategies used to solve problems involving adding and subtracting within 10 using spoken words, concrete and pictorial models, and number sentences.

(4) **Number and operations.** The student applies mathematical process standards to identify coins in order to recognize the need for monetary transactions. The student is expected to identify U.S. coins by name,including pennies, nickels, dimes, and quarters.

(5) **Algebraic reasoning.** The student applies mathematical process standards to identify the pattern in the number word list. The student is expected to recite numbers up to at least 100 by ones and tens beginning with any given number.

(6) **Geometry and measurement.** The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:

(A) identify two-dimensional shapes, including circles, triangles, rectangles, and squares as special rectangles;

(B) identify three-dimensional solids, including cylinders, cones, spheres, and cubes, in the real world;

(C) identify two-dimensional components of three-dimensional objects;

(D) identify attributes of two-dimensional shapes using informal and formal geometric language interchangeably;

(E) classify and sort a variety of regular and irregular two- and three-dimensional figures regardless of orientation or size; and

(F) create two-dimensional shapes using a variety of materials and drawings.

(7) **Geometry and measurement.** The student applies mathematical process standards to directly compare measurable attributes. The student is expected to:

(A) give an example of a measurable attribute of a given object, including length, capacity, and weight; and

(B) compare two objects with a common measurable attribute to see which object has more of/less of the attribute and describe the difference.

(8) **Data analysis.** The student applies mathematical process standards to collect and organize data to make it useful for interpreting information. The student is expected to:

(A) collect, sort, and organize data into two or three categories;

(B) use data to create real-object and picture graphs; and

(C) draw conclusions from real-object and picture graphs.

(9) **Personal financial literacy.** The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:

(A) identify ways to earn income;

(B) differentiate between money received as income and money received as gifts;

(C) list simple skills required for jobs; and

(D) distinguish between wants and needs and identify income as a source to meet one's wants and needs.

Source: The provisions of this §111.2 adopted to be effective September 10, 2012, 37 TexReg 7109.