Dr. Jan Harris
Superintendent of Education

Cullman Middle School

Eighth Grade

Student Learning Objectives

Reading/Language Arts
Math
Science
Social Science

EIGHTH GRADE

The Cullman City School System continually strives to promote a high quality education for all or our students. The school system encourages each teacher to incorporate a wide variety of teaching strategies in an effort to ensure the academic success of each student. The Cullman City School System values high academic standards and promotes excellence through a challenging curriculum. Cullman Middle School has received certification as an Alabama Math, Science, and Technology Initiative site. Teachers receive on-going training in a continuous effort to improve reading instruction for all students. This booklet identifies the minimum student learning objectives by subject as identified by the Alabama Course of Study. Each year students in the eighth grade are assessed through the administration of the Alabama Reading and Math Test (ARMT), and the Stanford Achievement Test, 10th Edition (Stanford 10). In addition, classroom teachers continually monitor student progress to determine gains in student achievement in all academic areas. Teachers in the Cullman City School system design instruction based on the standards outlined in the Alabama Course of Study (ACOS), the Alabama High School Graduation Exam (AHSGE), the Stanford 10, and the ARMT. The following information is provided in an effort to assist you in monitoring the educational progress of your child. Please feel free to contact your child's teacher if you have further questions concerning these standards. Also, you may view additional curriculum information on the web at www.cullmancats.net or www.alsde.edu.

Minimum Required Content
LANGUAGE ARTS

Students will:

1. Apply appropriate strategies to materials across the curriculum to construct meaning through interpretation and evaluation.
2. Read with ease textual, functional, and recreational materials encountered in daily life.
3. Exhibit the habit of reading for a substantial amount of time daily, including assigned and self-selected materials at their independent and instructional levels.
4. Demonstrate reading improvement gained through substantial amounts of daily reading.
5. Distinguish various forms of literature according to characteristics.
6. Determine the author's purpose.
7. Value recognized written, spoken, and visual works of literature representative of various cultures and eras.
8. Appreciate writing and speaking styles that incorporate dialects, idioms, and intonation patterns.
9. Analyze the etymology of language.
10. Demonstrate an appreciation for the power of language as it evokes emotion; expands thinking; and influences problem solving, decision making, and action.
11. Demonstrate active listening and speaking behaviors related to effective oral communication in a number of situations for various purposes.
12. Select and indicate preference for sources of information.
13. Use study processes to manage information.
14. Conduct individual research utilizing all aspects of the research process.
15. Critique with understanding and empathy information read, viewed, and heard.
16. Comprehend and display an extended vocabulary through reading, listening, viewing, writing, speaking, and presenting.
17. Use available computer technology to enhance reading and writing skills.
18. Demonstrate effective listening and speaking behaviors for varied situations and purposes.
19. Internalize the writing process.
20. Know and apply principles of grammar and usage in writing, speaking, and presenting and apply mechanics in writing.
21. Compose using recognized literature as models.
22. Use self-monitoring and feedback from peers and teachers to evaluate reading, writing, listening, viewing, studying, and research skills.
23. Organize content of written composition with attention to basic characteristics.
24. Compose descriptive, narrative, expository, and persuasive essays.
25. Compose and present in many forms using different techniques for various audiences and occasions both formal and informal.
26. Participate in presentations of written material.
27. Express personal feelings, opinions, and information in formal and informal situations.

Minimum Required Content
Pre-Algebra

Students will:

Number and Operations

1. Use various strategies and operations to solve problems involving real numbers.
2. Simplify expressions containing natural number exponents by applying one or more of the laws of exponents.
3. Use order of operations to evaluate and simplify algebraic expressions.

Algebra

4. Graph linear relations by plotting points or by using the slope and y-intercept.
5. Solve problems involving linear functions.
6. Solve multi-step linear equations, including equations requiring the use of the distributive property.

Geometry

7. Solve problems using the Pythagorean Theorem.
8. Compare quadrilaterals, triangles, and solids, using their properties and characteristics.

Measurement

9. Determine the measures of special angle pairs, including adjacent, vertical, supplementary, and complementary angles, and angles formed by parallel lines cut by a transversal.
10. Find the perimeter and area of regular and irregular plane figures.
11. Determine the surface area and volume of rectangular prisms, cylinders, and pyramids.
12. Determine the lengths of missing sides and measures of angles in similar and congruent figures.

Data Analysis and Probability

13. Interpret data from populations, using given and collected data.
14. Determine the theoretical probability of an event.

Minimum Required Content
Algebra I

Students will:

Number and Operations

1. Simplify numerical expressions using properties of real numbers and order of operations, including those involving square roots, radical form, or decimal approximations.

Algebra

2. Analyze linear functions from their equations, slopes, and intercepts.
3. Determine characteristics of a relation, including its domain, range, and whether it is a function, when given graphs, tables of values, mappings, or sets of ordered pairs.
4. Represent graphically common relations, including x = constant, y = constant,
5. Perform operations of addition, subtraction, and multiplication on polynomial expressions.
6. Factor binomials, trinomials, and other polynomials using GCF, difference of squares, perfect square trinomials, and grouping.
7. Solve multistep equations and inequalities including linear, radical, absolute value, and literal equations.
8. Solve systems of linear equations and inequalities in two variables graphically or algebraically.
9. Solve quadratic equations using the zero product property.

Geometry

10. Calculate length, midpoint, and slope of a line segment when given coordinates of its endpoints on the Cartesian plane.

Measurement

11. Solve problems algebraically that involve area and perimeter of a polygon, area and circumference of a circle, and volume and surface area of right circular cylinders or right rectangular prisms.

Data Analysis and Probability

12. Compare various methods of data reporting, including scatterplots, stem-and-leaf plots, histograms, box-and-whisker plots, and line graphs, to make inferences or predictions.
13. Identify characteristics of a data set, including measurement or categorical and univariate or bivariate.
14. Use a scatterplot and its line of best fit or a specific line graph to determine the relationship existing between two sets of data, including positive, negative, or no relationship.
15. Estimate probabilities given data in lists or graphs.

Minimum Required Content
SCIENCE

Students will:

Physical Science

1. Identify steps within the scientific process.
2. Describe the structure of atoms, including the location of protons, neutrons, and electrons.
3. Determine the number of protons, neutrons, and electrons, and the mass of an element using the periodic table.
4. State the law of conservation of matter.
5. Differentiate between ionic and covalent bonds.
6. Define solution in terms of solute and solvent.
7. Describe states of matter based on kinetic energy of particles in matter.
8. Identify Newton's three laws of motion.
9. Describe how mechanical advantages of simple machines reduce the amount of force needed for work.
10. Differentiate between potential and kinetic energy.
11. Explain the law of conservation of energy and its relationship to energy transformation, including chemical to electrical, chemical to heat, electrical to light, electrical to mechanical, and electrical to sound.
12. Classify waves as mechanical or electromagnetic.

Minimum Required Content
SOCIAL SCIENCE

Students will:

World History to 1500

1. Explain how artifacts and other archaeological findings provide evidence of the nature and movement of prehistoric groups of people.
2. Analyze characteristics of early civilizations in respect to technology, division of labor, government, calendar, and writings.
3. Compare the development of early world religions, philosophies, and their key tenets.
4. Identify cultural contributions of Classical Greece, including politics, intellectual life, arts, literature, architecture, and science.
5. Describe the role of Alexander the Great in the Hellenistic world.
6. Trace the expansion of the Roman Republic and its transformation into an empire, including key geographic, political, and economic elements.
7. Describe the widespread impact of the Roman Empire.
8. Describe the development of a classical civilization in India and China.
9. Describe the rise of the Byzantine Empire, its institutions, and its legacy, including the influence of the Emperors Constantine and Justinian, and the effect of the Byzantine Empire upon art, religion, architecture, and law.
10. Trace the development of the early Russian state and the expansion of its trade systems.
11. Describe early Islamic civilizations, including the development of religious, social, and political systems.
12. Describe China's influence on culture, politics, and economics in Japan, Korea, and Southeast Asia.
13. Compare the African civilizations of Ghana, Mali, and Songhai to include their geography, religions, slave trade, economic systems, empires, and cultures.
14. Describe key aspects of pre-Columbian cultures in the Americas including the Olmecs, Mayans, Aztecs, Incas, and North American tribes.
15. Describe military and governmental events that shaped Europe in the early Middle Ages (600-1000).
16. Describe major cultural changes in Western Europe in the High Middle Ages (1000-1350).
17. Explain how events and conditions fostered political and economic changes in the late Middle Ages and led to the origins of the Renaissance.