

EIGHTH GRADE  
Grade Level Expectations

**Mathematics Curriculum Overview**

**Number and Operations**

Student will be able to understand numbers, ways of representing numbers, relationships among numbers and number systems

1. Read, write and compare numbers
2. Represent and use rational numbers
3. Compose and decompose numbers
4. Classify and describe numeric relationships

Student will be able to understand meanings of operations and how they relate to one another

1. Describe effects of operations
2. Apply properties of operations
3. Apply operations on real and complex numbers

Student will be able to compute fluently and make reasonable estimates

1. Compute problems
2. Estimate and justify solutions
3. Use proportional reasoning

**Algebraic Relationships**

Student will be able to understand patterns, relations and functions

1. Create and analyze patterns
2. Sort objects by size
3. Identify and compare functions

Student will be able to represent and analyze mathematical situations and structures using algebraic symbols

1. Represent mathematical situations
2. Describe and use mathematical manipulations

Student will be able to use mathematical models to represent and understand quantitative relationships

Student will be able to analyze change in various contexts

## **Geometric and Spatial Relationships**

Student will be able to analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships

1. Describe and use geometric relationships
2. Apply geometric relationships

Student will be able to specify locations and describe spatial relationships using coordinate geometry and other representational systems

Student will be able to apply transformations and use symmetry to analyze mathematical situations

1. Use transformations on objects
2. Use transformations on functions
3. Use symmetry

Student will be able to use visualization, spatial reasoning and geometric modeling to solve problems

Recognize and draw three-dimensional representations

## **Measurement**

Student will be able to understand measurable attributes of objects and the units, systems and processes of measurement

1. Identify equivalent measures

Student will be able to apply appropriate techniques, tools and formulas to determine measurements

1. Use angle measurement
2. Apply geometric measurements
3. Analyze precision
4. Use relationships within a measurement system

## **Data and Probability**

Student will be able to formulate questions that can be addressed with data and collect, organize and display relevant data to answer them

1. Formulate questions
2. Represent and interpret data

Student will be able to select and use appropriate statistical methods to analyze data

1. Describe and analyze data
2. Compare data representations

**Student will be able to develop and evaluate inferences and predictions that are based on data**

**Understand and apply basic concepts of probability**

### **Communication Arts - Reading Curriculum Overview**

**Develop and apply skills and strategies to the reading process**

Phonics - apply decoding strategies to independently "problem-solve" unknown words when reading & when needed

Fluency - read grade-level instructional text with fluency, accuracy and expression adjusting reading rate to difficulty and type of text

Vocabulary - develop vocabulary through text, using

1. roots and affixes
2. context clues
3. glossary and thesaurus

Pre-Reading - apply pre-reading strategies to aid comprehension

1. access prior knowledge
2. preview
3. predict
4. set a purpose for reading

During reading, utilize strategies to

1. determine meaning of unknown words
2. monitor comprehension
3. question the text
4. infer
5. visualize
6. paraphrase
7. summarize

Post-Reading - apply post-reading skills to comprehend, interpret, analyze, and evaluate text:

1. question to clarify
2. reflect
3. draw conclusions
4. summarize
5. paraphrase

Making Connections - compare, contrast and analyze connections:

1. text to self (text ideas and own experiences)
2. text to text (information and relationships in various fiction and non-fiction works)
3. text to world (text ideas and the world by identifying how literature reflects a culture and historic time frame)

**Develop and apply skills and strategies to comprehend, analyze and evaluate fiction, poetry & drama from a variety of cultures and times.**

Text Features - interpret and analyze information in title recognize and interpret the text features of fiction, poetry and drama in grade-level text

Literary Techniques - identify and explain literary techniques, emphasizing

1. onomatopoeia
2. alliteration and
3. analyze literary techniques previously introduced

Literary Elements - use details from text to

1. identify and explain flashback, mood and theme
2. analyze point of view
3. determine how an incident foreshadows a future event
4. interpret actions, behaviors and motives of characters
5. evaluate problem-solving processes of characters, consequences of
6. character's actions and effectiveness of solutions

**Develop and apply skills and strategies to comprehend, analyze and evaluate nonfiction (such as biographies, newspapers, technical manuals) from a variety of cultures and times.**

Text Features - explain and evaluate the author's use of text features to clarify meaning

Literary Techniques - identify and explain literary techniques and figurative language in nonfiction text, emphasizing jargon, dialect and slang

## Text Structures in reading

1. evaluate adequacy of evidence presented by author
2. determine author's purpose based on text analysis
3. analyze the text for
4. word choice and connotation
5. organizational effectiveness
6. accuracy of information
7. analyze multiple texts to:
8. compare and contrast
9. determine importance of information
10. analyze authors' viewpoints
11. identify problem solving processes and explain the effectiveness of solutions

Understanding Directions - read and follow multi-step directions to complete a complex task

## **Communication Arts - Writing Curriculum Overview**

### **Apply a writing process in composing text**

Writing Concepts - follow a writing process to

1. use appropriate prewriting strategies as needed
2. generate a draft
3. revise for audience and purpose, ideas and content, organization and sentence structure, and word choice
4. edit for conventions (W2E)
5. publish writing

### **Compose well-developed text**

Audience & Purpose - compose text

1. showing awareness of audience
2. choosing a form appropriate to topic and specific audience

Ideas & Contents - compose text with

1. strong controlling idea
2. relevant specific details
3. complex ideas
4. freshness of thought

## Organization & Sentence Structure - compose text with

1. an effective beginning, middle, and end
2. a logical order
3. effective paragraphing
4. a variety of sentence structures, including compound- complex
5. cohesive devices, including transitions, repetition, pronoun antecedent, and parallel structure

## Word Choice - compose text using

1. precise and vivid language
2. writing techniques, such as figurative language, sensory detail, and purposeful dialogue

## Conventions in written text

1. use conventions of capitalization,
2. use colon and semi-colon in list and compound sentence
3. use correct pronoun case
4. use dictionary, spell-check and other resources to edit for correct spelling

## **Write effectively in various forms and types of writing**

### Forms/Types/Modes of Writing - compose a variety of texts

1. using narrative, descriptive, expository, and/or persuasive features
2. in various formats, including workplace communication (e.g., business letter with a correctly addressed envelope, email communications)
3. including summary
4. including literature response