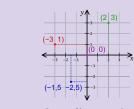
Mathematics

8th Grade



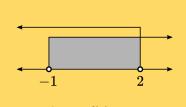
Number Patterns

Understanding place values, order of operations and multiplying/dividing by factors of 10



Coordinates & Linear graphs

Visualizing, converting and performing operations with fractions



Inequalities

Connecting with decimals; harnessing the tool of bar modeling



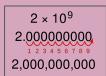
Proportions & Data Handling

Tackling word problems; Using tables and bar models to visualize



Probability of Simple & Combined Events

Measuring and determining unknown degrees of rotation in circle, Prisms and angles



Exponents & Scientific Notation

Using mean, median and mode to make meaning out of data



Linear Equations & Factorization

Defining linear relationships between two variables

$$x = \frac{-b \pm \sqrt{b^2 - 4a\alpha}}{2a}$$

Quadratic Equations

Solving quadratic equations using 4 different methods: graphing, factorization, quadratic formula, and completing the square

Mathematics

8th Grade - Geometry



Introducing Geometry

Discovering geometry in nature, art and world cultures



Reasoning in Geometry

Performing geometry investigations and making discoveries by observing common features or patterns



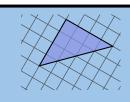
Using Tools of Geometry

Developing skills using a compass, a straightedge, and patty paper



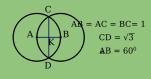
Triangle & Polygon Properties

Discover relationships between the sides and angles of triangles and polygon



Area & Volume

Using area formulas to solve problems; Finding the surface areas of prisms, pyramids, cylinders, and cones



Circle Properties

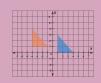
Seeing relationships among chords, arcs, and angles; Calculating length of an arc





Similarity

Identifying area & volume relationships in similar polygons and solids



Transformations

Discovering some basic properties of transformations And define similar polygons and solids



The Pythagorean Theorem

Exploring the Pythagorean Theorem, one of the most important discoveries in mathematics



Trigonometry

Defining three important ratios between the sides of a right triangle

Physics & Chemistry

8th Grade



Motion Energy & Forces

Applying understanding of motion properties, displacement, velocity and acceleration as vectors Interpreting graphs of different motion scenarios

Demonstrating understanding of energy transformation & forces in daily situation

Understanding Newton's Laws of Motion; Identifying two or more forces acting on an object and how they change an object's velocity

Forces in fluids: Buoyant force and Bernoulli's Law.



Simple Machines & the Rube Goldberg Project

Recognizing and identifying the six simple machines

Defining the concept of work

Explaining why engineers are interested in simple machines; Calculating the mechanical advantage of simple machines & understanding the forces involved in their functioning

Constructing a Rube Goldberg machine that will perform a simple task that involves chain reactions of various energy transformations



Astronomy

Demonstrating understanding of the solar system structure; Differentiating between universes, galaxies and solar systems

Grasping the concept of fusion and the origin of heavy elements in supernovas, and nebulas as stars' nurseries

Respecting the role technology plays in the service of the space program; Discovering a telescope's basic design, and the ISS's structure and functions



Chemistry

Applying understanding of the atom theory, states of matter and atoms' physical & chemical properties

Identifies organizational structures & patterns in the periodic table, including groups of elements (compounds & molecules)

Predicting chemical reactions & energy changes; Grasping the structure of carbon, protein, fats & nucleic acids



Language Arts, Big Picture

8th Grade

Integration of Jewish Studies

- ★ What are the connections between the skills necessary to study Jewish and secular texts?
- ★ How do the themes and content of the Jewish and secular texts we study support each other and contradict each other?
- ★ How are our sacred Jewish texts relevant to who we are and who we are becoming?
- ★ What does it mean to walk in the world today as a Jew, and how does our rich textual tradition help us along the way?

Group Work and Community

- ★ How do I take care of myself, take care of others, and take care of the environment? How do I work in a group on complex, multi-stage projects?
- ★ How do I do my share in a group writing project while also giving my group members a balance of support and independence?
- ★ How do I assert my own voice while allowing for the voices of others?
- ★ How do I bring my best self to class and contribute to a positive classroom environment?

Hevruta Study

- ★ How do we give the text a voice, engage in civil discourse, and dive deep into a text, offering interpretations that are rooted in textual evidence?
- ★ How does learning in partnership deepen our understanding of a text? How do we create a balanced partnership between ourselves, our partner, and the text?
- ★ How do we develop the skills of listening and articulating, wondering and focusing, and supporting and challenging, and how do these help to deepen our relationship to a text and to our hevruta?

Shift from Literal to Interpretive Thinking

- ★ How can I begin to shift my thinking from literal to figurative, from concrete to interpretive?
- ★ How do I recognize symbolism and metaphor?
- ★ How do I identify literary themes?
- ★ How do I move past summarizing and begin to provide my own analysis, practicing interpretive skills in order to make meaning from text.



Language Arts, Reading

8th Grade

The Power of Myth

- ★ Why do humans create myths?
- ★ What does a culture's myth teach us about the nature of that culture?
- What are the similarities and differences between creation myths from various cultures?

Megillat Esther: Sacred Text as Literature

- ★ What are the elements of farce?
- ★ How do authors use farce to highlight themes and overarching ideas?
- ★ How do readers make inferences to analyze character development?
- ★ What is the power of myth?
- ★ What is the importance of authorship and audience?

Independent Reading

★ How do readers pick "just right" books so that reading is a joy and a pleasure?

How can we become active readers?

- ★ How can I increase my reading stamina?
- ★ How can I use a text to deepen my own experience and to peer through a window to a world outside my own experience?

Integration and The Little Rock Nine Shared Memoir: Warriors Don't Cry

- ★ What can we do, alone and with others, to confront racism?
- ★ How can we as individuals and as citizens make a positive difference in our school, community, and nation?
- ★ What is the historical context of racial integration in the 1950s?
- ★ How do authors use vivid description to tell an engaging story?
- ★ How do memoirs compare and contrast with fictional narratives?

Contemporary Native American Experience Shared Novel: The Absolutely True Diary of a Part-Time Indian

- ★ How do internal and external expectations manifest themselves in our lives?
- ★ How can such societal expectations impact our identities?
- ★ Should a person's responsibility to their family, tribe, or community take precedence over their individual goals?
- ★ How does literature help us to understand ourselves and the world around us?
- ★ What is the historical context of Native American reservations?
- ★ How does systemic racism still affect Native Americans today?
- ★ What does it mean to have privilege?



Language Arts, Writing

8th Grade

Grammar and Mechanics

- ★ How do I write effectively for different audiences and to different purposes?
- ★ Why is it important to become masterful and creative users of the English language? What is the importance of using the English language correctly and thoughtfully?
- ★ How does studying the mechanics of a language help a writer to write in a clean, concise, and organized manner?
- ★ What are all the parts of speech and parts of a sentence?
- ★ How do I fix run-on sentences and very my sentence length?

Playwriting: Parody and Farce

- ★ How do playwrights tell a story through dialogue, movement, and visuals?
- ★ How can we adapt a text?
- ★ How do we write a comedy that will appeal to a broad audience?

Instructions and Lesson Plans

- ★ How do we create meaningful, engaging programming for various ages?
- ★ How do we decide what is important to teach about a wide subject/text?
- ★ How can we write clear instructions so other can follow them easily?

Creative Writing: Creation Myth

- ★ What kind of voice is appropriate for myths?
- ★ How do writers use vivid description and figurative language to tell an engaging story and to "show, not tell"?

Formal Response to Literature

- ★ How do writers answer interpretive questions with analysis, not with summary?
- ★ How do writers craft organized, formal paragraphs?
- ★ How do writers synthesize information from a variety of sources to form and articulate an opinion?
- ★ How do writers craft a thesis statements and organize a formal essay?

Personal Narrative

- ★ How do authors decide what aspects of their lives to write about?
- ★ How much can/should we fictionalize our personal narratives?
- ★ Why might an author choose to fictionalize their memoir or autobiography?
- ★ How do I write with a clear, unique voice while also maintaining impeccable mechanics so that my writing is engaging, fun, clear, and easy to read?

Social Studies

8th Grade



Our Colonial Heritage

Learning about the first Americans, early European colonists, and life in the colonies



Revolution in the Colonies

Exploring the causes of the Revolution and the development of American ideals of freedom



Forming a Nation

Learning about how America's early leaders created the documents that guide the government and protect the people



Launching the Republic

Connecting the nation's guiding documents to the struggles of implementing a Government for the People



An Expanding Nation

Learning about western expansion and the growing divide between North and South



The Union Challenged

Learning about the multiple causes and consequences of the Civil War



Migration & Industry

Examining conflict in the West alongside the rise of industrialism and an expanding immigrant population



A Modern Nation Emerges

Learning about the development of modern American ideas of freedom and rights





Hebrew

Conversational Hebrew שיחה בעברית

Developing acute listening comprehension; using words we have learned in every-day speech; expressing ourselves in Hebrew; Using newly-learned vocabulary in conversation; asking questions, making presentations in Hebrew, conveying a message.

Reading קריאה

Honing letter and sound recognition; reading words and sentences smoothly;
Strengthening reading comprehension;
Reading and analyzing books, poems & stories across types of genres; Reading with and without vowels, reading for pleasure, reading logs.

Writing כתיבה

Mastering letter formation in both print and script; sounding words out correctly, forming sentences; Writing paragraphs, stories and poetry; Answering questions in writing; typing in Hebrew, including writing emails, texts, letters & blogs

Vocabulary אוצר מילים

Expanding vocabulary to allow for simple conversation; gaining target vocabulary for subjects learned; learning vocabulary through context; finding to shoresh (root) and understanding vocabulary through word families; using the dictionary; Implementing newly learned vocabulary in conversation and writing

Grammar דקדוק

Making habits of correct sentence formation; utilizing male-female, singular-plural & putting elements together in a sentence never heard before; Using Shorashim (roots), binyanim, word families, parts of speech, beged kefet letters, and grammar absorbed through conversation & writing

Israeli Culture תרבות ישראלית

Familiarizing with important people in Israeli history including writers, leaders, composers & humanitarians; Learning Israeli games, songs, folk dances, Israeli food, expressions, phrases & slang; Creating ceremonies memorializing holidays

Literature & Poetry oerin ושירה

Analysing hebrew literature & poetry; learning about the great Hebrew authors, poets and composers; noticing rhymes, foreshadowing, imagery, metaphors, motifs, similes, onomatopoeia & personification; Writing our own stories and poems.



Flag Football

Rules, fundamental skills: passing, catching, running, flag pulling, general structure of the game. Strategic concepts.



Soccer

Basic fundamentals: passing, dribbling, movement without the ball. Strategic attacking & positioning



Basketball

Rules, fundamental skills: passing, dribbling, shooting, rebounding, defensive positioning, structure of the game. Advanced strategic concepts



Olympic Handball

Fundamentals of the game. Similarities to American sports? Differences? Intersport strategic implementation.



Field Games

Application of skills required for common field games such as Capture the Flag.. Familiarization of fundamental tactics.



Team Building

Skills both social & physical required to work effectively as a team through activities designed to increase motivation and promote cooperation



Street Hockey

Basic fundamentals: passing, shooting, puck-handling. Movement without the puck. Strategic positioning



Obstacle Course

Combination of all skills and activities learned throughout the school year. Weaves into Lag B'omer



Music Curriculum: Middle School





Course Overview: Performance, Writing, Composition & Production

The middle school music curriculum goals are to facilitate leadership and creativity, and to empower students to be active musical leaders in the community. In addition, by completing the K-5 music program, this middle school curriculum aims to form a sustainable music education program at school where students express their learning as music leaders in service of the community.

Ensembles & Classes:

Modern Bands Jewish Bands African Drum Ensemble Choir Production Music Appreciation Music Appreciation Music Theatre	Music Composition & Songwriting	Jewish Songleading
--	---------------------------------------	-----------------------