

# Standards by Grade Level

## Fifth Grade



## Table of Contents

Purpose.....	2
Guiding Principle .....	2
Standards.....	2
COMPUTER SCIENCE.....	2
ENGLISH LANGUAGE ARTS.....	5
FINANCIAL LITERACY.....	11
FINE ARTS: DANCE.....	12
FINE ARTS: DRAMA .....	13
FINE ARTS: MUSIC.....	14
FINE ARTS: VISUAL ARTS .....	16
MATHEMATICS.....	18
PHYSICAL EDUCATION .....	25
SCIENCE.....	29
SOCIAL STUDIES .....	30
TECHNOLOGY.....	32
WORLD LANGUAGES AND CULTURES.....	35

## Purpose

The *Standards by Grade Level for Fifth Grade* is a compilation of all learning standards for fifth grade. This document does not take the place of Ohio's Learning Standards and Model Curricula. The Department of Education designed this tool to view the standards by grade level instead of content area. Every student should receive instruction aligned to the learning standards.

## Guiding Principle

### *Prioritizing student learning*

Continue to value and use **Ohio's Learning Standards** as the basis for guiding instruction and student acquisition of knowledge and skills. Ensure opportunities for students to master **core subject areas** and pursue **well-rounded learning** (such as fine arts, technology, computer science and world languages and cultures).

## Standards

COMPUTER SCIENCE	
<b>Instructional Supports:</b> <a href="#">Ohio's Learning Standards for Computer Science</a> <a href="#">Computer Science Model Curriculum</a>	
Code	Standard
Computing Systems	
Topic 1: Devices	
CS.D.5.a	Explore the internal parts of the computing system and their function to understand and describe the role they play in a computer system.
Topic 2: Hardware and software	
CS.HS.5.a	Evaluate digital learning tools/devices to support planning, implementing and reflecting across curricular areas.
Topic 3: Troubleshooting	
CS.T.5.a	Diagnose problems and develop strategies to resolve technology issues.

## COMPUTER SCIENCE

### Networks and the Internet

#### Topic 1: Networking

NI.N.5.a	Model how information is broken down to be transmitted and then reassembled to help students gain a better understanding of the internet and networks.
NI.N.5.b	Apply knowledge of network addresses, names and rules (i.e., protocols) to discuss real-world scenarios.

#### Topic 2: Cybersecurity

NI.C.5.a	Demonstrate password creation techniques to develop and use a strong password used on personal accounts.
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### Data and Analysis

#### Topic 1: Data collection and storage

DA.DCS.5.a	Gather and organize multiple quantitative data elements using a tool to perform various tasks.
DA.DCS.5.b	Compare and contrast file formats to demonstrate the advantages and disadvantages of each.

#### Topic 2: Visualization and communication

DA.VC.5.a	Organize and present collected data using visual or other types of representations to highlight relationships and support a claim.
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#### Topic 3: Inference and modeling

DA.IM.5.a	Utilize data to propose cause and effect relationships and predict outcomes.
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### Algorithmic Thinking and Programming

#### Topic 1: Algorithms

ATP.A.5.a	Evaluate a multi-step process to diagram the proper steps to solve a problem.
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#### Topic 2: Variables and data representation

ATP.VDR.5.a	Create a variable, a placeholder for storing a value, to understand how it is used in a multi-step process (i.e., algorithm).
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#### Topic 3: Control structures

ATP.CS.5.a	Create a program using sequences, events, loops and conditionals to solve a problem.
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## COMPUTER SCIENCE

**Topic 4: Modularity**

ATP.M.5.a	Decompose (i.e., break down) the steps needed or not needed (i.e., abstraction) into precise sequences of instructions to design an algorithm.
ATP.M.5.b	With grade appropriate complexity, modify, remix or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.

**Topic 5: Program development**

ATP.PD.5.a	Use a design process to plan and develop a program that includes multiple steps and end user preferences.
ATP.PD.5.b	Using guided questions, work through a program to identify errors and discuss possible solutions to repair the program.

## Impacts of Computing

**Topic 1: Culture**

IC.Cu.5.a	Explain how computing technologies have changed the global community and express how those technologies influence and are influenced by cultural practices.
IC.Cu.5.b	Develop, test and refine digital artifacts to improve accessibility and usability.

**Topic 2: Social interactions**

IC.SI.5.a	Collaborate and consider diverse perspectives to improve digital artifacts.
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**Topic 3: Safety, law and ethics**

IC.SLE.5.a	Use public domain or Creative Commons media, and refrain from copying or using material created by others without permission.
IC.SLE.5.b	Communicate the effects of sharing personal information on the safety of student identity to determine how to protect students.
IC.SLE.5.c	Evaluate the need to keep personal information secure and protect the digital footprint.

## ENGLISH LANGUAGE ARTS

**Instructional Supports:**

Ohio's Learning Standards for English Language Arts  
 English Language Arts Model Curriculum with Instructional Supports

Code	Standard
<b>Reading Standards for Literature</b>	
<b>Key ideas and details</b>	
RL.5.1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
RL.5.2	Analyze literary text development. <ol style="list-style-type: none"> <li>Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic.</li> <li>Summarize the text, incorporating a theme determined from details in the text.</li> </ol>
RL.5.3	Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).
<b>Craft and structure</b>	
RL.5.4	Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors, similes, and idioms.
RL.5.5	Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.
RL.5.6	Describe how a narrator's or speaker's point of view and perspective influence how events are described.
<b>Integration of knowledge and ideas</b>	
RL.5.7	Analyze how visual and multimedia elements contribute to the meaning, tone, mood, or appeal of a text (e.g., graphic novel, multimedia presentation of fiction, folktale, myth, poem).
RL.5.8	(Not applicable to literature)
RL.5.9	Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics.

**ENGLISH LANGUAGE ARTS**

**Range of reading and level of text complexity**

RL.5.10	By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 4–5 text complexity band independently and proficiently. Activate prior knowledge and draw on previous experiences in order to make text-to-self or text to-text connections and comparisons.
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**Reading Standards for Information Text**

**Key ideas and details**

RI.5.1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.5.2	Analyze informational text development. a. Determine the main ideas of a text and explain how they are supported by key details. b. Provide a summary of the text that includes the main ideas and key details, as well as other important information.
RI.5.3	Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

**Craft and structure**

RI.5.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
RI.5.5	Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.
RI.5.6	Analyze multiple accounts of the same event or topic, noting important similarities and differences in the perspectives they represent.

**Integration and knowledge and ideas**

RI.5.7	Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
RI.5.8	Explain how an author uses evidence to support particular points in a text, identifying which evidence supports corresponding point(s).
RI.5.9	Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

**Range of reading and level of text complexity**

RI.5.10	By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 4–5 text complexity band independently and proficiently.
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**ENGLISH LANGUAGE ARTS**

**Reading Standards for Foundational Skills**

**Print concepts**

Not applicable

**Phonemic awareness**

Not applicable

**Phonics and word recognition**

RF.5.3

Know and apply grade-level phonics and word analysis skills in decoding words by using combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.

**Fluency**

RF.5.4

Read with sufficient accuracy and fluency to support comprehension.

- a. Read grade-level text with purpose and understanding.
- b. Read grade-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings.
- c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

**Writing Standards**

**Text types and purposes**

W.5.1

Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

- a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer's purpose.
- b. Provide logically ordered reasons that are supported by facts and details.
- c. Link opinion and reasons using words, phrases, and clauses (e.g., consequently, specifically).
- d. Provide a concluding statement or section related to the opinion presented.

W.5.2

Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

- a. Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia to aid in comprehension, if needed.
- b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
- c. Link ideas within and across categories of information using words, phrases, and clauses (e.g., in contrast, especially).
- d. Use precise language and domain specific vocabulary to inform about or explain the topic.
- e. Provide a concluding statement or section related to the information or explanation presented.



**ENGLISH LANGUAGE ARTS**

W.5.3	<p>Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.</p> <ul style="list-style-type: none"> <li>a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.</li> <li>b. Use narrative techniques, such as dialogue, description, and pacing, to develop experiences and events or show the responses of characters to situations.</li> <li>c. Use a variety of transitional words, phrases, and clauses to manage the sequence of events.</li> <li>d. Use concrete words and phrases and sensory details to convey experiences and events precisely.</li> <li>e. Provide a conclusion that follows from the narrated experiences or events.</li> </ul>
<b>Production and distribution of writing</b>	
W.5.4	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
W.5.5	With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 5.)
W.5.6	With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others, while demonstrating sufficient command of keyboarding skills.
<b>Research to build and present knowledge</b>	
W.5.7	Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.
W.5.8	Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work and provide a list of sources.
W.5.9	<p>Draw evidence from literary or informational texts to support analysis, reflection, and research.</p> <ul style="list-style-type: none"> <li>a. Apply grade 5 Reading standards to literature (e.g., “Compare and contrast two or more characters, settings, or events in a story or a drama, drawing on specific details in the text [e.g., how characters interact]”).</li> <li>b. Apply grade 5 Reading standards to informational texts (e.g., “Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point[s]”).</li> </ul>
<b>Range of writing</b>	
W.5.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

**ENGLISH LANGUAGE ARTS**

**Speaking and Listening Standards**

**Comprehension and collaboration**

SL.5.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. b. Follow agreed-upon rules for discussions and carry out assigned roles. c. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others. d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.
SL.5.2	Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
SL.5.3	Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.

**Presentation of knowledge and ideas**

SL.5.4	Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
SL.5.5	Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.
SL.5.6	Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation. (See grade 5 Language standards 1 and 3 for specific expectations.)

**Language Standards**

**Conventions of standard English**

L.5.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. a. Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences. b. Form and use the perfect (e.g., I had walked; I have walked; I will have walked) verb tenses. c. Use verb tense to convey various times, sequences, states, and conditions. d. Recognize and correct inappropriate shifts in verb tense. e. Use correlative conjunctions (e.g., either/or, neither/nor).
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**ENGLISH LANGUAGE ARTS**

L.5.2	<p>Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.</p> <ul style="list-style-type: none"> <li>a. Use punctuation to separate items in a series.</li> <li>b. Use a comma to separate an introductory element from the rest of the sentence.</li> <li>c. Use a comma to set off the words yes and no (e.g., Yes, thank you), to set off a tag question from the rest of the sentence (e.g., It's true, isn't it?), and to indicate direct address (e.g., Is that you, Steve?).</li> <li>d. Use underlining, quotation marks, or italics to indicate titles of works.</li> <li>e. Spell grade-appropriate words correctly, consulting references as needed.</li> </ul>
<b>Knowledge of language</b>	
L.5.3	<p>Use knowledge of language and its conventions when writing, speaking, reading, or listening.</p> <ul style="list-style-type: none"> <li>a. Expand, combine, and reduce sentences for meaning, reader/listener interest, and style.</li> <li>b. Compare and contrast the varieties of English (e.g., dialects, registers) used in stories, dramas, or poems.</li> </ul>
<b>Vocabulary acquisition and use</b>	
L.5.4	<p>Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.</p> <ul style="list-style-type: none"> <li>a. Use context (e.g., cause/effect relationships and comparisons in text) as a clue to the meaning of a word or phrase.</li> <li>b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., photograph, photosynthesis).</li> <li>c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.</li> </ul>
L.5.5	<p>Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.</p> <ul style="list-style-type: none"> <li>a. Interpret figurative language, including similes and metaphors, in context.</li> <li>b. Recognize and explain the meaning of common idioms, adages, and proverbs.</li> <li>c. Use the relationship between particular words (e.g., synonyms, antonyms, homographs) to better understand each of the words.</li> </ul>
L.5.6	<p>Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., however, although, nevertheless, similarly, moreover, in addition).</p>

## FINANCIAL LITERACY

### Instructional Supports:

[Ohio's Learning Standards for Financial Literacy in Elementary Grades](#)  
[Financial Literacy Model Curriculum](#)

Code	Standard
<b>Financial responsibility and decision making</b>	
1	People have limited resources and must prioritize their needs and wants. Saving and/or investing a percentage of income contributes to an individual's financial well-being. Professionals can help individuals determine financial goals.
2	Competencies (knowledge and skills), commitment (motivation and enthusiasm), competition (globalization and automation), training, work ethic, abilities and attitude are all factors impacting one's earning potential and employability.
3	People may receive money as gifts, allowance or income. Incomes can vary based on knowledge, skills and experiences.
4	Recognize that people pay taxes on the money they earn. Money collected from taxes is used to provide local, state and national government services.
<b>Planning and money management</b>	
5	Financial responsibility includes the development of a spending and savings plan (personal budget).
<b>Informed consumer</b>	
6	An informed consumer makes decisions on purchases that may include a decision-making strategy to determine if purchases are within their budget.
<b>Credit and debt</b>	
7	Examine the different ways that people pay for goods and services.
8	People may have to borrow money for large purchases. There are financial responsibilities with borrowing
9	Saving today can help meet future goals, including education.
<b>Risk management and insurance</b>	
10	Individuals must protect their identity, money and property.

## FINE ARTS: DANCE

**Instructional Supports:**

[Ohio's 2012 Learning Standards for Dance](#)  
[Grade 3-5 Dance Model Curriculum](#)  
[Fine Arts Instructional Strategies](#)

Code	Standard
<b>Perceiving / Knowing (PE)</b>	
1PE	Interpret various dances and support their interpretations with specific observations using appropriate dance vocabulary.
2PE	Observe, identify and describe basic choreographic elements.
3PE	Observe selected dances and identify creative problem-solving strategies using specific dance concepts and vocabulary.
4PE	Further develop kinesthetic awareness by attending to and describing a range of somatic ideas.
5PE	Recognize and describe features of dance forms in the United States and how they represent their historical and cultural contexts.
<b>Producing / Performing (PR)</b>	
1PR	Demonstrate strength, flexibility and movement patterning when performing movement sequences with clarity, focus and kinesthetic awareness.
2PR	Demonstrate safe practices for dance, including warm-up, stretching, partnering and appropriate use of shared spaces in increasingly complex movement situations.
3PR	Learn and demonstrate dances from various cultures represented in the United States, past and present.
4PR	Create, refine and perform dances based on concepts and issues drawn from historical and contemporary times.
5PR	Use formal and informal compositional structures in choreography and improvisation.
6PR	Demonstrate initiative when working alone, with partners and in small groups to improvise and solve movement problems.

## FINE ARTS: DANCE

### Responding (RE)

1RE	Discuss personal reactions to dances viewed or performed and consider how these are informed by cultural and social influences.
2RE	Identify ways that the same dance movement can be described differently, based on point of view.
3RE	Reflect on how attention to physical sensations can impact movement experiences and performance.
4RE	Use forms of writing (e.g., note-taking, graphic organizers, motif notation) to record choices made in the dance-making process.
5RE	Reflect on, evaluate and refine choreographic, rehearsal and performance processes based on established criteria.

## FINE ARTS: DRAMA

### Instructional Supports:

[Ohio's 2012 Learning Standards for Drama](#)  
[Grade 3-5 Drama Model Curriculum](#)  
[Fine Arts Instructional Strategies](#)

Code	Standard
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### Creating (CE)

1CE	Investigate how past and present drama, theatre and storytelling forms of various cultural groups reflect their beliefs and traditions.
2CE	Research and explain where, when and how dramatic or theatrical activities occurred in a specific time period.
3CE	Discuss contributions to theatre made by a playwright or screenwriter.
4CE	Discuss how a written adaption of a story varies among media, including theatre, film, video and other arts media.
5CE	Differentiate among the unique characteristics of live theatre, film, video and new media forms.

### Producing / Performing (PR)

1PR	Use sensory and memorization skills to create a character's movement and voice in comedic and dramatic situations, scripted and improvised.
2PR	Analyze and represent various design components used in a theatrical event.
3PR	Write a scripted scene that includes stage direction prompts and provides exposition, consistent point of view, sensory details and dialogue.

### FINE ARTS: DRAMA

4PR	Work cooperatively in different roles or jobs within a dramatic and theatrical experience.
5PR	Combine at least three art forms to create a theatrical experience.
<b>Responding (RE)</b>	
1RE	Examine and discuss the aesthetic qualities in dramatic and theatrical works.
2RE	Describe how traditional and new media arts (e.g., film, video, digital technologies influence dramatic production and audience response.
3RE	Identify factors that contribute to diverse opinions about a play or theatre experience.
4RE	Explain personal reasons for valuing the study and involvement in dramatic and theatrical and performance.
5RE	Create criteria and use it to evaluate ideas and artistic choices made for dramatic and theatrical performances.

### FINE ARTS: MUSIC

**Instructional Supports:**

[Ohio's 2012 Learning Standards for Music](#)  
[Grade 3-5 Music Model Curriculum](#)  
[Fine Arts Instructional Strategies](#)

Code	Standard
<b>Creating (CE)</b>	
1CE	Explore and identify musical instruments from different historical periods and world cultures.
2CE	Listen to, identify, and respond to music of different composers, historical periods and world cultures.
3CE	Identify terms related to form (e.g., D.C. and D.S. al Fine; D.C. and D.S. al Coda; repeat signs, first and second endings).
4CE	Recognize and identify longer music forms (e.g., sonata, 12-bar blues, and theme and variations).
5CE	Identify elements of music including tonality, dynamics, tempo and meter, using music vocabulary.
6CE	Differentiate between melody and harmony.
7CE	Identify patterns of whole and half steps in a major scale.

## FINE ARTS: MUSIC

**Producing / Performing (PR)**

1PR	Sing a varied repertoire with accurate rhythm and pitch, appropriate expressive qualities, good posture and breath control.
2PR	Perform, on instruments, a varied repertoire with accurate rhythm and pitch, appropriate expressive qualities, good posture and breath control.
3PR	Improvise, compose and arrange music.
4PR	Use technology and the media arts to create and perform music.
5PR	Read, write and perform rhythm patterns (e.g., 2/4, 3/4 and 4/4 meter) using sixteenth through whole notes including dotted half-note and syncopated rhythms.
6PR	Read, write and perform diatonic melodies and the major scale on the treble staff.
7PR	Demonstrate appropriate audience etiquette at live performances.

**Responding (RE)**

1RE	Justify personal preferences for certain musical pieces, performances, composers and musical genres both orally and in writing.
2RE	Discuss contributions of musical elements to aesthetic qualities in performances of self and others.
3RE	Describe how the process of learning in music connects to learning in other arts and other subject areas.
4RE	Defend interpretations of music via dance, drama and visual art using appropriate vocabulary.
5RE	Consider and articulate the influence of technology on music careers.
6RE	Develop and apply criteria for critiquing more complex performances of live and recorded music.



## FINE ARTS: VISUAL ARTS

**Instructional Supports:**

Ohio's 2012 Learning Standards for Visual Art

Grade 3-5 Visual Art Model Curriculum

Fine Arts Instructional Strategies

Code	Standard
<b>Perceiving / Knowing (PE)</b>	
1PE	Understand that the context of an art object has an effect on how that object is perceived.
2PE	Identify and communicate how historical and cultural contexts influence ideas that inform artists.
3PE	Investigate the role of cultural objects in our everyday environment.
4PE	Compare and contrast how form and style are influenced by social, environmental and political views in artworks.
5PE	Focus attention on selected artworks to identify and pose questions about aesthetic qualities (e.g., sensory, organizational, emotional) in the works.
6PE	Select and access contemporary digital tools media arts to investigate ideas and inform artmaking.
<b>Producing / Performing (PR)</b>	
1PR	Integrate observational and technical skills to strengthen artmaking.
2PR	Use digital tools to explore ideas, create and refine works of art during the artmaking process.
3PR	Experiment with various ideas and visual art media to solve a problem that addresses a contemporary social issue.
4PR	Select and use the elements and principles of art and design to communicate understanding of an interdisciplinary concept.
5PR	During collaborative artmaking experiences, demonstrate respect and support for peer ideas and creativity.

## FINE ARTS: VISUAL ARTS

## Responding (RE)

1RE	Apply reasoning skills to analyze and interpret the meaning in artworks.
2RE	Describe how personal experiences can influence artistic preferences.
3RE	Explain the reasons and value of documenting and preserving works of art and art objects in some cultures.
4RE	Communicate how personal artistic decisions are influenced by social, environmental and political views.
5RE	Express what was learned and the challenges that remain when assessing their artworks.
6RE	Use criteria to assess works of art individually and collaboratively.

**MATHEMATICS**

**Instructional Supports:**

[Ohio's Learning Standards for Grade 5 Mathematics](#)  
[Ohio's Kindergarten – Grade 8 Learning Progressions](#)  
[Grade 5 Mathematics Model Curriculum](#)

Code	Standard
<b>Standards for Mathematical Practice</b>	
<b>MP.1</b>	<b>Make sense of problems and persevere in solving them.</b>
<p>Students solve problems by applying their understanding of operations with whole numbers, decimals, and fractions including mixed numbers. They solve problems related to volume and measurement conversions. Students seek the meaning of a problem and look for efficient ways to represent and solve it. For example, Sonia had <math>2 \frac{1}{3}</math> candy bars. She promised her brother that she would give him <math>\frac{1}{2}</math> of a candy bar. How much will she have left after she gives her brother the amount she promised? They may check their thinking by asking themselves, “What is the most efficient way to solve the problem?”, “Does this make sense?”, and “Can I solve the problem in a different way?”.</p>	
<b>MP.2</b>	<b>Reason abstractly and quantitatively.</b>
<p>Fifth graders should recognize that a number represents a specific quantity. They connect quantities to written symbols and create a logical representation of the problem at hand, considering both the appropriate units involved and the meaning of quantities. They extend this understanding from whole numbers to their work with fractions and decimals. Students write simple expressions that record calculations with numbers and represent or round numbers using place value concepts. For example, students use abstract and quantitative thinking to recognize that <math>0.5 \times (300 \div 15)</math> is <math>\frac{1}{2}</math> of <math>(300 \div 15)</math> without calculating the quotient.</p>	
<b>MP.3</b>	<b>Construct viable arguments and critique the reasoning of others.</b>
<p>In fifth grade, students may construct arguments using concrete referents, such as objects, pictures, and drawings. They explain calculations based upon models and properties of operations and rules that generate patterns. They demonstrate and explain the relationship between volume and multiplication. They refine their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” They explain their thinking to others and respond to others’ thinking.</p> <p>Students use various strategies to solve problems and they defend and justify their work with others. For example, two afterschool clubs are having pizza parties. The teacher will order 3 pizzas for every 5 students in the math club; and 5 pizzas for every 8 students in the student council. If a student is in both groups, decide which party he/she should to attend. How much pizza will each student get at each party? If a student wants to have the most pizza, which party should he/she attend?</p>	

## MATHEMATICS

### MP.4 Model with mathematics.

Students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, making a chart, list, or graph, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed. Fifth graders should evaluate their results in the context of the situation and whether the results make sense. They also evaluate the utility of models to determine which models are most useful and efficient to solve problems.

### MP.5 Use appropriate tools strategically.

Fifth graders consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, they may use unit cubes to fill a rectangular prism and then use a ruler to measure the dimensions. They use graph paper to accurately create graphs and solve problems or make predictions from real-world data.

### MP.6 Attend to precision.

Students continue to refine their mathematical communication skills by using clear and precise language in their discussions with others and in their own reasoning. Students use appropriate terminology when referring to expressions, fractions, geometric figures, and coordinate grids. They are careful about specifying units of measure and state the meaning of the symbols they choose. For instance, when figuring out the volume of a rectangular prism they record their answers in cubic units.

### MP.7 Look for and make use of structure.

In fifth grade, students look closely to discover a pattern or structure. For instance, students use properties of operations as strategies to add, subtract, multiply and divide with whole numbers, fractions, and decimals. They examine numerical patterns and relate them to a rule or a graphical representation.

### MP.8 Look for and express regularity in repeated reasoning.

Fifth graders use repeated reasoning to understand algorithms and make generalizations about patterns. Students connect place value and their prior work with operations to understand algorithms to fluently multiply multi-digit numbers and perform all operations with decimals to hundredths. Students explore operations with fractions with visual models and begin to formulate generalizations.

**MATHEMATICS**

**Operations and Algebraic Thinking**

**Write and interpret numerical expressions.**

5.OA.1	Use parentheses in numerical expressions, and evaluate expressions with this symbol. Formal use of algebraic order of operations is not necessary.
5.OA.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. <i>For example, express the calculation “add 8 and 7, then multiply by 2” as <math>2 \times (8 + 7)</math>. Recognize that <math>3 \times (18,932 + 921)</math> is three times as large as <math>18,932 + 921</math>, without having to calculate the indicated sum or product.</i>

**Analyze patterns and relationships.**

5.OA.3	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. <i>For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</i>
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**Numbers and Operations in Base Ten**

**Understand the place value system.**

5.NBT.1	Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.
5.NBT.2	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole number exponents to denote powers of 10.
5.NBT.3	Read, write, and compare decimals to thousandths. a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form <sup>G</sup> , e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (\frac{1}{10}) + 9 \times (\frac{1}{100}) + 2 \times (\frac{1}{1000})$ . b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.
5.NBT.4	Use place value understanding to round decimals to any place, millions through hundredths.

**Perform operations with multi-digit whole numbers and with decimals to hundredths.**

5.NBT.5	Fluently <sup>G</sup> multiply multi-digit whole numbers using a standard algorithm <sup>G</sup> .
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MATHEMATICS

5.NBT.6	Find whole number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
5.NBT.7	Solve real-world problems by adding, subtracting, multiplying, and dividing decimals using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction, or multiplication and division; relate the strategy to a written method and explain the reasoning used. <ul style="list-style-type: none"> <li>a. Add and subtract decimals, including decimals with whole numbers, (whole numbers through the hundreds place and decimals through the hundredths place).</li> <li>b. Multiply whole numbers by decimals (whole numbers through the hundreds place and decimals through the hundredths place).</li> <li>c. Divide whole numbers by decimals and decimals by whole numbers (whole numbers through the tens place and decimals less than one through the hundredths place using numbers whose division can be readily modeled). <i>For example, 0.75 divided by 5, 18 divided by 0.6, or 0.9 divided by 3.</i></li> </ul>

Numbers and Operations – Fractions

**Use equivalent fractions as a strategy to add and subtract fractions. (Fractions need not be simplified).**

5.NF.1	Add and subtract fractions with unlike denominators (including mixed numbers and fractions greater than 1) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. <i>For example, use visual models and properties of operations to show <math>\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}</math>. In general, <math>\frac{a}{b} + \frac{c}{d} = (\frac{a}{b} \times \frac{d}{d}) + (\frac{c}{d} \times \frac{b}{b}) = \frac{(ad + bc)}{bd}</math>.</i>
5.NF.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models <sup>6</sup> or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. <i>For example, recognize an incorrect result <math>\frac{2}{5} + \frac{1}{2} = \frac{3}{7}</math>, by observing that <math>\frac{3}{7} &lt; \frac{1}{2}</math>.</i>

**Apply and extend previous understandings of multiplication and division to multiply and divide fractions. (Fractions need not be simplified).**

5.NF.3	Interpret a fraction as division of the numerator by the denominator ( $\frac{a}{b} = a \div b$ ). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. <i>For example, interpret <math>\frac{3}{4}</math> as the result of dividing 3 by 4, noting that <math>\frac{3}{4}</math> multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size <math>\frac{3}{4}</math>. If 9 people want to share a 50 pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?</i>
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## MATHEMATICS

5.NF.4	<p>Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p> <p>a. Interpret the product <math>(\frac{a}{b}) \times q</math> as a parts of a partition of <math>q</math> into <math>b</math> equal parts, equivalently, as the result of a sequence of operations <math>a \times q \div b</math>. <i>For example, use a visual fraction model to show <math>(\frac{2}{3}) \times 4 = \frac{8}{3}</math>, and create a story context for this equation. Do the same with <math>(\frac{2}{3}) \times (\frac{4}{5}) = \frac{8}{15}</math>. (In general, <math>(\frac{a}{b}) \times (\frac{c}{d}) = \frac{ac}{bd}</math>.)</i></p> <p>b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.</p>
5.NF.5	<p>Interpret multiplication as scaling (resizing).</p> <p>a. Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.</p> <p>b. Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence <math>\frac{a}{b} = \frac{(n \times a)}{(n \times b)}</math> to the effect of multiplying <math>\frac{a}{b}</math> by 1.</p>
5.NF.6	<p>Solve real-world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.</p>
5.NF.7	<p>Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. In general, students able to multiply fractions can develop strategies to divide fractions, by reasoning about the relationship between multiplication and division, but division of a fraction by a fraction is not a requirement at this grade.</p> <p>a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. <i>For example, create a story context for <math>(\frac{1}{3}) \div 4</math>, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that <math>(\frac{1}{3}) \div 4 = (\frac{1}{12})</math> because <math>(\frac{1}{12}) \times 4 = (\frac{1}{3})</math>.</i></p> <p>b. Interpret division of a whole number by a unit fraction, and compute such quotients. <i>For example, create a story context for <math>4 \div (\frac{1}{5})</math>, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that <math>4 \div (\frac{1}{5}) = 20</math> because <math>20 \times (\frac{1}{5}) = 4</math>.</i></p> <p>c. Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. <i>For example, how much chocolate will each person get if 3 people share <math>\frac{1}{2}</math> pound of chocolate equally? How many <math>\frac{1}{3}</math> cup servings are in 2 cups of raisins?</i></p>

MATHEMATICS

Measurement and Data

Convert like measurement units within a given measurement system.

5.MD.1 Know relative sizes of these U.S. customary measurement units: pounds, ounces, miles, yards, feet, inches, gallons, quarts, pints, cups, fluid ounces, hours, minutes, and seconds. Convert between pounds and ounces; miles and feet; yards, feet, and inches; gallons, quarts, pints, cups, and fluid ounces; hours, minutes, and seconds in solving multi-step, real-world problems.

Represent and interpret data.

5.MD.2 Display and interpret data in graphs (picture graphs, bar graphs, and line plots<sup>6</sup>) to solve problems using numbers and operations for this grade, e.g., including U.S. customary units in fractions  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ , or decimals.

Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.  
 a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.  
 b. A solid figure which can be packed without gaps or overlaps using  $n$  unit cubes is said to have a volume of  $n$  cubic units.

5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.

5.MD.5 Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume.  
 a. Find the volume of a right rectangular prism with whole number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole number products as volumes, e.g., to represent the Associative Property of Multiplication.  
 b. Apply the formulas  $V = \ell \times w \times h$  and  $V = B \times h$  for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real-world and mathematical problems.  
 c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems.



## MATHEMATICS

### Geometry

#### Graph points on the coordinate plane to solve real-world and mathematical problems.

5.G.1	Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond, e.g., x-axis and x-coordinate, y-axis and y-coordinate.
5.G.2	Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

#### Classify two-dimensional figures into categories based on their properties.

5.G.3	Identify and describe commonalities and differences between types of triangles based on angle measures (equiangular, right, acute, and obtuse triangles) and side lengths (isosceles, equilateral, and scalene triangles).
5.G.4	Identify and describe commonalities and differences between types of quadrilaterals based on angle measures, side lengths, and the presence or absence of parallel and perpendicular lines, e.g., squares, rectangles, parallelograms, trapezoids <sup>G</sup> , and rhombuses.

**PHYSICAL EDUCATION**

**Instructional Supports:**  
[Ohio's Learning Standards for Physical Education](#)

<b>Code</b>	<b>Standard</b>
<b>Standard 1</b>	<b>Demonstrates competency in a variety of motor skills and movement patterns.</b>
<b>Benchmark A: Combine locomotor and non-locomotor skills into movement patterns.</b>	
<b>Locomotor and non-locomotor combined skills</b>	
1	Perform a movement sequence comprised of both basic and intermediate skills (e.g., dance, gymnastics, jump rope) with smooth transitions between those movements.
2	Jump rope demonstrating a variety of footwork, arm action skills and/or tricks of choice.
3	Combine balance and transferring weight with movement skills in a gymnastics or dance sequence.
4	Combine skills in dances with correct rhythm and pattern.
<b>Benchmark B: Apply the critical elements of fundamental manipulative skills in a variety of physical activities.</b>	
<b>Application of skills</b>	
1	Throw overhand to reach a medium-sized target with sufficient force using appropriate critical elements.
2	Catch with an implement (e.g., glove, scoop) using the critical elements.
3	Strike an object with an implement using critical elements in relation to distance, space and direction demands.
4	Receive a kick, dribble and then kick a ball to a target using the critical elements (e.g., move into line with the ball, receiving foot to the ball, move the ball in the direction of the dribble, keep the ball close in the dribble, pass to target).
5	Dribble under control during a game or game-like situation using the critical elements.
6	Send (e.g., pass, roll) an object using critical elements while varying body, space, effort and relationship to defenders.

**PHYSICAL EDUCATION**

**Standard 2** Applies knowledge of concepts, principles, strategies and tactics related to movement and performance.

**Benchmark A: Demonstrate and apply basic tactics and principles of movement.**

**Strategies and tactics**

1	Identify similar patterns/concepts across related activities (e.g., striking with a bat, tennis forehand).
2	Analyze and modify a movement based on the characteristics of the task (e.g., size of object, distance to target, goal, speed or time to complete movement) and/or environment (e.g., space, number of players) in a dynamic or changing environment.
3	Demonstrate offensive and defensive positioning in simple game settings (e.g., maintain or return to base position, positioning relative to a goal or opponent).
4	Demonstrate basic decision-making capabilities in simple performance settings (e.g., what skill should I use?).

**Benchmark B: Demonstrate knowledge of critical elements for more complex motor skills.**

**Principles and critical elements**

1	Apply critical elements to analyze and provide feedback on motor-skill performance of others.
2	Suggest ways to improve skill performance using the principles of practice (e.g., part-practice, variable practice, simplifying the environment, identifying key cues).

**Standard 3** Demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.

**Benchmark A: Describes current level of physical activity and identifies additional physical activity opportunities to create calorie balance.**

**Physical activity knowledge**

1	Identify school, home and community physical activity opportunities to meet physical activity guidelines.
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**Evaluate level of physical activity**

2	Track physical activity minutes to determine progress toward daily recommendation.
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**Healthy habits in relation to physical activity**

3	Discuss the benefits of healthy eating in relation to physical activity.
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**PHYSICAL EDUCATION**

**Benchmark B: Understand the principles, components and practices of health-related physical fitness to maintain or improve one's level of fitness.**

**Health-related fitness knowledge**

1 Recall specific activities that could improve each health-related fitness component.

**Cardio**

2 Interpret heart rate during physical activity and exercise to determine appropriate level of intensity.

**Muscular strength and endurance**

3 Identify specific activities to improve muscular strength and endurance throughout the body.

**Flexibility**

4 Identify warm-up and cool-down activities.

**Planning (FITT and other principles)**

5 Analyze the results of a fitness assessment to identify exercises and/or activities to improve or maintain health-related fitness components.

6 Link/match the FITT principle with the appropriate description.

**Standard 4 Exhibits responsible personal and social behavior that respects self and others**

**Benchmark A: Understand the purpose of and apply appropriate rules, procedures and safe practices in physical activity settings.**

**Self-direction**

1 Adhere to class and activity-specific rules and safe practices.

**Safety**

2 Adjust performance to characteristics of the environment to ensure safe play (e.g., space, equipment, others).

3 Engage in activities and take responsibility for actions.

**PHYSICAL EDUCATION**

**Benchmark B: Interact and communicate positively with others.**

**Cooperation**

1	Lead, follow and support group members to improve play in cooperative and competitive settings.
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**Respect**

2	Evaluate personal behavior to ensure positive effects on others.
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**Resolving conflict**

3	Demonstrate respectful and responsible behavior toward peers different from oneself.
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4	Demonstrate cooperation with others when resolving conflict.
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<b>Standard 5</b>	<b>Recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.</b>
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**Benchmark A: Identifies multiple, specific health benefits as a reason to value physical activity.**

**Health reasons to be physically active**

1	Identify multiple specific health benefits from different dimensions (e.g., physical, emotional, intellectual) from participation in physical activity.
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**Benchmark B: Expresses multiple, specific reasons (enjoyment, challenge, social) to participate in physical activity.**

**Values physical activity through various means**

1	Identify multiple specific reasons for enjoying a selected physical activity.
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2	Identify aspects of a physical activity that are challenging, yet enjoyable.
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3	Identify specific social benefits of a selected physical activity.
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## SCIENCE

**Instructional Supports:**

[Ohio's Learning Standards and Model Curriculum for Science](#)  
[Science Resources](#)

Code	Standard
<b>Earth science</b>	
5.ESS.1	The solar system includes the sun and all celestial bodies that orbit the sun. Each planet in the solar system has unique characteristics.
5.ESS.2	The sun is one of many stars that exist in the universe.
5.ESS.3	Most of the cycles and patterns of motion between the Earth and sun are predictable.
<b>Physical science</b>	
1.PS.1	The amount of change in movement of an object is based on the mass of the object and the amount of force exerted.
1.PS.2	Light and sound are forms of energy that behave in predictable ways.
<b>Life science</b>	
1.LS.1	Organisms perform a variety of roles in an ecosystem.
1.LS.2	All of the processes that take place within organisms require energy.

**SOCIAL STUDIES**

**Instructional Supports:**

Ohio's Learning Standards for Social Studies  
Grade 5 Social Studies Model Curriculum

Code	Standard
<b>History Strand</b>	
<b>Historical thinking and skills</b>	
1	Events can be arranged in order of occurrence using the conventions of B.C. and A.D. or B.C.E. and C.E.
<b>Early civilizations</b>	
2	Early Indian civilizations (Maya, Inca, Aztec, Mississippian) existed in the Western Hemisphere prior to the arrival of Europeans. These civilizations had developed unique governments, social structures, religions, technologies, and agricultural practices.
<b>Heritage</b>	
3	European exploration and colonization during the 1400s-1600s had lasting effects which can be used to understand the Western Hemisphere today.
<b>Geography Strand</b>	
<b>Spatial thinking and skills</b>	
4	Geographic tools can be used to gather, process and report information about people, places and environments. Cartographers decide which information to include in maps.
5	Latitude and longitude can be used to make observations about location and generalizations about climate.
<b>Places and regions</b>	
6	Regions can be determined using data related to various criteria including landform, climate, population, and cultural and economic characteristics.
<b>Human systems</b>	
7	The variety of physical environments within the Western Hemisphere influences human activities. Likewise, human activities modify the physical environments.
8	American Indians developed unique cultures with many different ways of life. American Indian tribes and nations can be classified into cultural groups based on geographic and cultural similarities.

**SOCIAL STUDIES**

9	Political, environmental, social and economic factors cause people, products and ideas to move from place to place in the Western Hemisphere and results in diversity.
10	The Western Hemisphere is culturally diverse (e.g., language, food, religion, art, music) due to the influences and interactions of a variety of world cultures.

**Government Strand**

**Civic participation and skills**

11	Individuals can better understand public issues by gathering, interpreting and checking information for accuracy from multiple sources. Data can be displayed graphically to effectively and efficiently communicate information.
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**Roles and systems of government**

12	Democracies, dictatorships and monarchies are categories for understanding the relationship between those in power or authority and citizens.
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**Economics Strand**

**Economic decision making and skills**

13	Information displayed in circle graphs can be used to show relative proportions of segments of data to an entire body of data.
14	The choices made by individuals and governments have both present and future consequences.

**Scarcity**

15	The availability of productive resources (i.e., entrepreneurship, human resources, capital goods and natural resources) promotes specialization that could lead to trade.
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**Production and consumption**

16	The availability of productive resources and the division of labor can have a positive or negative impact on productive capacity.
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**Markets**

17	Regions and countries become interdependent when they specialize in what they produce best and then trade with other regions to increase the amount and variety of goods and services available.
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**Financial literacy**

18	Workers can improve their ability to earn income by gaining new knowledge, skills and experiences.
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## TECHNOLOGY

**Instructional Supports:**  
[Ohio's Learning Standards for Technology](#)  
[Technology resources](#)

Code	Standard
<b>Information and Communications Technology</b>	
<b>Topic 1: Identify and use appropriate digital learning tools and resources to accomplish a defined task.</b>	
3-5.ICT.1.a.	With guidance, identify and use digital learning tools or resources to support planning, implementing and reflecting upon a defined task.
3-5.ICT.1.b.	Explain the use of selected digital learning tools and resources to support productivity and learning.
<b>Topic 2: Use digital learning tools and resources to locate, evaluate and use information.</b>	
3-5.ICT.2.a.	Identify questions related to a topic of interest to broaden or narrow the topic as needed.
3-5.ICT.2.b.	Use appropriate search techniques to locate needed information using digital learning tools and resources.
3-5.ICT.2.c.	Use multiple criteria developed with guidance to differentiate between relevant and irrelevant information found with digital learning tools and resources.
3-5.ICT.2.d.	Explain basic ideas of plagiarism and copyright.
3-5.ICT.2.e.	Use digital citation tools to cite sources with appropriate guidance.
<b>Topic 3: Use digital learning tools and resources to construct knowledge.</b>	
3-5.ICT.3.a.	Gather, organize and summarize information from multiple digital learning tools and resources to build knowledge of a topic.
3-5.ICT.3.b.	Interpret images, diagrams, maps, graphs, infographics, videos, animations, interactives, etc., in digital learning tools and resources to clarify and add to knowledge.
3-5.ICT.3.c.	Organize observations and data collected during student explorations to determine if patterns are present.
3-5.ICT.3.d.	Create artifacts using digital learning tools and resources to demonstrate knowledge.

**TECHNOLOGY**

**Topic 4: Use digital learning tools and resources to communicate and disseminate information to multiple audiences.**

3-5.ICT.4.a.	With guidance, discuss and identify communication needs considering goals, audience and content.
3-5.ICT.4.b.	With guidance, select media formats appropriate to content and audience.
3-5.ICT.4.c.	Evaluate the features of digital learning tools and resources based on the characteristics of a specific audience.
3-5.ICT.4.d.	Produce and publish information appropriate for a target audience using digital learning tools and resources.

**Society and Technology**

**Topic 1: Demonstrate an understanding of technology’s impact on the advancement of humanity – economically, environmentally and ethically.**

3-5.ST.1.a.	Demonstrate appropriate use of technology and explain the importance of responsible and ethical technology use.
3-5.ST.1.b.	Identify positive and negative impacts one’s use of personal technology and technology systems (e.g., agriculture, transportation, energy generation, water treatment) can have on one’s community.
3-5.ST.1.c.	Describe legal and responsible practices when utilizing technology.

**Topic 2: Analyze the impact of communication and collaboration in both digital and physical environments.**

3-5.ST.2.a.	Create a plan and select collaboration and/or communication tools to complete a given task.
3-5.ST.2.b.	Exercise digital etiquette when communicating and collaborating.
3-5.ST.2.c.	Identify the positive and negative impact the use of technology can have on relationships, communities and self.

**Topic 3: Explain how technology, society and the individual impact one another.**

3-5.ST.3.a.	Describe the advantages and disadvantages of technology (past, present, future) to understand the relationship between technology, society and the individual.
3-5.ST.3.b.	Demonstrate how technology innovations/inventions can have multiple applications.
3-5.ST.3.c.	Identify and discuss how the use of technology affects self and others in various ways.
3-5.ST.3.d.	Identify the components of one’s digital identity and one’s digital footprint.
3-5.ST.3.e.	Identify and discuss laws and rules that apply to digital content and information.

**TECHNOLOGY**

**Design and Technology**

**Topic 1: Define and describe technology, including its core concepts of systems, resources, requirements, processes, controls, optimization and trade-offs.**

3-5.DT.1.a.	Demonstrate how applying human knowledge using tools and machines extends human capabilities to meet our needs and wants.
3-5.DT.1.b.	Give examples of how requirements for a product can limit the design possibilities for that product.
3-5.DT.1.c.	Describe a process as a series of actions and how it is used to produce a result.
3-5.DT.1.d.	Identify and describe examples of technology products and processes.
3-5.DT.1.e.	Explain how controls use information to cause systems to change, like a home thermostat turning on the heat based on the low temperature of a room.

**Topic 2: Identify a problem and use an engineering design process to solve the problem.**

3-5.DT.2.a.	Critique needs and opportunities for designing solutions.
3-5.DT.2.b.	Plan and implement a design process: identify a problem, think about ways to solve the problem, develop possible solutions, test and evaluate solution(s), present a possible solution, and redesign to improve the solution.
3-5.DT.2.c.	Generate, develop and communicate design ideas and decisions using appropriate terms and graphical representations.

**Topic 3: Demonstrate that solutions to complex problems require collaboration, interdisciplinary understanding and systems thinking.**

3-5.DT.3.a.	Design a product with multiple components and describe how the components interact to form a system.
3-5.DT.3.b.	Explore and document connections between technology and other fields of study.
3-5.DT.3.c.	Identify a product and describe how people from different disciplines combined their skills in the design and production of the product.

**Topic 4: Evaluate designs using functional, aesthetic and creative elements.**

3-5.DT.4.a.	Use criteria developed with guidance to evaluate a new or improved product for its functional, aesthetic and creative elements.
3-5.DT.4.b.	Examine a familiar product or process and suggest improvements to its design.

**WORLD LANGUAGES AND CULTURES**

**Instructional Supports:**

[Ohio's Learning Standards for World Languages and Cultures](#)  
[World Languages Resource Center](#)

Students will engage with and progress through language and culture courses at differing stages of their K-12 education. The novice levels for K-6 are displayed below. Choose the column that fits the proficiency level of your student(s). Additional levels can be found in the world languages and cultures standards.

Functions	Novice Low	Novice Mid	Novice High
<b>Interpretive intercultural communication (E.INT-C)</b>			
Investigate Intercultural Products, Practices and Perspectives	Recognize a few typical products and practices related to familiar, everyday life in native and other cultures.	Identify typical cultural products and practices related to familiar, everyday life in native and other cultures to help understand perspectives.	Identify and compare typical products and practices related to familiar, everyday life in native and other cultures to help understand perspectives.
Compare Intercultural Behaviors	Recognize a few very simple behaviors in other cultures.	Identify familiar or everyday behaviors in other cultures.	Identify and compare familiar or everyday behaviors in native and other cultures.
Comprehend Authentic Texts that are Spoken, Written or Signed	Understand a few familiar words or phrases in: a. Simple, authentic informational texts; b. Simple, authentic fictional texts; c. Simple, overheard or observed conversations.	Understand very basic information in: a. Simple, authentic informational texts; b. Simple, authentic fictional texts; c. Simple, overheard or observed conversations.	Understand the topic and some isolated facts in: a. Simple, authentic informational texts; b. Simple, authentic fictional texts; c. Simple, overheard or observed conversations.
<b>Interpretive literacy (E.INT-LIT)</b>			
Infer Meaning of Texts	Recognize traditional and nontraditional letters, accents, characters or tone marks, as well as cognates and familiar or practiced words.	Recognize non-traditional letters, accents, characters or tone marks, as well as cognates and words from context.	Recognize cognates and infer meaning of unfamiliar words or phrases using context clues and background knowledge.

**WORLD LANGUAGES AND CULTURES**

Recognize and Use Organizational Features of Texts	Recognize visual, aural and organizational features to identify the purpose of very simple texts, such as lists, labels, titles or headlines.	Recognize visual, aural and organizational features to identify the purpose of simple texts, such as schedules, song refrains, simple poems or infographics.	Use visual, aural and organizational features to identify the purpose of simple texts, such as announcements, instructions, fables or graphics.
Apply Self-Questioning Skills	Use literal or factual self-questioning before, during and after engaging with texts, such as “Who, where, when, what or how many?”	Use literal or factual self-questioning before, during and after engaging with texts, such as “What time, who is, why or how?”	Use a mixture of literal and inferential self-questioning before, during and after engaging with texts, such as “What happened or what might happen next?”
Make Text Connections	Make personal connections to a text using background knowledge or experiences.	Make personal connections to a text using background knowledge or experiences.	Make simple text-to-text connections using information from previous texts.
Use Resources Appropriately	Use digital and cultural resources appropriately.	Use digital and cultural resources appropriately.	Use digital and cultural resources appropriately.
<b>Interpersonal intercultural communication (E.INP-C)</b>			
Investigate Intercultural Products, Practices and Perspectives	Identify a few typical products and practices related to familiar, everyday life in native and other cultures.	Identify typical products and practices related to familiar, everyday life in native and other cultures.	Identify products and practices related to everyday life to help understand perspectives of native and other cultures.
Interact with Culturally Appropriate Language and Behavior	Interact in very familiar intercultural situations using practiced language and behaviors.	Interact in very familiar intercultural situations using practiced language and behaviors and show cultural awareness by recognizing a few culturally inappropriate behaviors.	Interact in familiar, everyday intercultural situations using practiced language and behaviors, and show cultural awareness by recognizing culturally inappropriate behaviors.
Exchange Information	Provide basic information on very familiar topics.	Request and share simple information on familiar or everyday topics.	Request and share information on familiar and everyday topics.
Meet Personal Needs	Express a few basic personal needs in very familiar situations.	Express basic needs in familiar or everyday situations.	Interact with others to meet basic needs in familiar and everyday situations.

**WORLD LANGUAGES AND CULTURES**

Express and React to Preferences and Opinions	Express a few basic preferences or feelings.	Express basic preferences or feelings and react to those of others.	Express, ask about, and react to simple preferences, feelings or opinions on familiar topics.
<b>Interpersonal literacy (E.INP-LIT)</b>			
Communicate, React and Show Interest	Use familiar, relevant vocabulary or structures and rehearsed or imitated cultural behaviors to communicate, react and show interest.	Use familiar, relevant vocabulary and structures and rehearsed or imitated cultural behaviors to communicate, react and show interest.	Use culturally appropriate and relevant language and rehearsed or learned behaviors to communicate, react and show interest.
Continue and Extend Conversations	Use a few very simple verbal or nonverbal rejoinders or interjections.	Use very simple verbal and nonverbal interrogatives, rejoinders, interjections or requests for clarification.	Use simple interrogatives, rejoinders interjections, requests for clarification or transition words.
Increase Comprehensibility and Clarity of Expression	Increase comprehensibility using gestures, hand shapes, facial expressions or repetition.	Increase comprehensibility using gestures, hand shapes, facial expressions, repetition or word substitution.	Increase comprehensibility and clarify information using word substitution, rephrasing, circumlocution or attention to pronunciation, tone or pitch.
Infer Meaning of Unfamiliar Language	Infer meaning of unfamiliar language from gestures, facial and body expressions or context clues during simple interactions.	Infer meaning of unfamiliar language from gestures, facial and body expressions or context clues during simple interactions.	Infer meaning of unfamiliar language from gestures, facial and body expressions, context clues or topic of conversation.
Use Resources Appropriately	Use digital and cultural resources appropriately.	Use digital and cultural resources appropriately.	Use digital and cultural resources appropriately.
<b>Presentational intercultural communication (E.P-C)</b>			
Investigate Intercultural Products, Practices and Perspectives	Identify a few typical products and practices related to familiar, everyday life in native and other cultures.	Identify typical products and practices related to familiar, everyday life in native and other cultures.	Identify similarities and differences between typical products and practices related to everyday life to help understand perspectives of native and other cultures.

**WORLD LANGUAGES AND CULTURES**

Communicate in Culturally Appropriate Ways	Present in very familiar intercultural situations using memorized or practiced language and behaviors.	Present in very familiar intercultural situations using practiced or learned language and behaviors.	Present in very familiar situations using practiced or learned language and behaviors.
Inform and Describe	Name very familiar people, places and objects.	Give simple information about very familiar topics.	Give simple descriptions of familiar and everyday topics.
Narrate About Life and Activities	Provide very basic details about self.	Provide simple details about self, interests and activities.	Provide details about personal life, interests and activities.
Express Preferences	Express likes and dislikes about very familiar topics from native and other cultures.	Express likes and dislikes about familiar topics from native and other cultures.	Express preferences on familiar and everyday topics or topics of interest from native and other cultures.
<b>Presentational literacy (E.P-LIT)</b>			
Choose Relevant, Authentic Content	Use familiar vocabulary and structures that are relevant to the topic and very simple authentic resources as needed.	Use familiar vocabulary and structures that are relevant to the topic and very simple authentic resources as needed.	Use familiar content, structures and syntax that are relevant to the topic and authentic resources as needed.
Organize Information	Organize very simple information in a logical sequence and support with gestures or visuals	Organize simple information in a logical sequence and support with gestures or visuals.	Organize information in a logical sequence, with topic sentence, simple details and conclusion, and support with gestures, visuals or additional language as needed.
Increase Comprehensibility	Communicate with emerging awareness of pronunciation, spelling, punctuation, hand shapes or signing parameters.	Communicate with awareness of pronunciation, spelling, punctuation, hand shapes or signing parameters.	Communicate with attention to pronunciation, spelling, punctuation, hand shapes or signing parameters.
Maintain Audience Interest	Maintain audience interest via gestures, creativity, emotion, technology or visuals.	Maintain audience interest via gestures, creativity, emotion, humor, technology or visuals.	Maintain audience interest via content, creativity, emotion, humor, technology or visuals.
Use Resources Appropriately	Use digital and cultural resources appropriately.	Use digital and cultural resources appropriately.	Use digital and cultural resources appropriately.