



SCIENCE | TECHNOLOGY | ENGINEERING | ARTS | MATHEMATICS

**Academy**  
Course Description  
Catalog  
Kindergarten – 4<sup>th</sup> Grade  
2017-2018  
\*5<sup>th</sup> and 6<sup>th</sup> Grade projected in 2018-2019





Dear Students and Parents,

Skyline Education has a proud 17-year tradition of offering an outstanding program of academic courses, athletic programs, and fine arts. Our mission of providing a high quality college preparatory education that bolsters character development through academics, arts, and athletics, leads us to seek offerings that will best prepare students for life after high school. This course book provides a brief description of our new STEAM program, and policies at Skyline Education.

Skyline's academic curriculum and school culture promote:

- A **results-focused education** with a clear end in mind that begins in Kindergarten and builds to mastery of the knowledge and skills that colleges and employers value
- **Clear and consistent goals** with an emphasis on real-world application of knowledge and skills
- **Relevant content** that increases ability to effectively use critical thinking and problem solving skills to communicate, collaborate, and adapt to new situations in either college or in the workplace
- A sound, rigorous, **evidence-based preparation** for success in college and/or career.

According to a new report from the Center for Education Reform, the US is ranked 35<sup>th</sup> in math, 15<sup>th</sup> in reading, and 18<sup>th</sup> in Science worldwide. We want every student to be prepared for the future. Therefore, our STEAM program is highly rigorous and focuses on Science, Technology, Engineering, the Arts, and Math. The teachers are highly trained facilitators of knowledge and utilize hands on experiences that integrate STEAM principles within all content disciplines.

It is critical for both students and parents to be involved in the course selection process and work closely with their principal to make the appropriate selection necessary to meet his or her goals. Please feel free to reach out to the principal and teachers for assistance and with any questions you may have.

Faculty and staff at Skyline Education are here to support every student in an effort to achieve their lifelong pursuits. Remember that your involvement and partnership in this process is essential for success. Join us on our journey!

Sincerely,

Ronda Owens, M. Ed.  
CEO, Skyline Education, Inc.

Dr. Michael Troop  
Vice President, Skyline Education, Inc.

# School Contact Information

## South Phoenix Campus

Grades	School	Administration
K-4	<b>South Phoenix Prep and Arts Academy</b> 7450 S. 40 <sup>th</sup> Street Phoenix, AZ 85042 Phone: (877) 225-2118 Fax: (877) 821-5462	Jacqueline Zander, Principal

## Chandler Campus

Grades	School	Administration
K-6	<b>Vector Prep and Arts Academy</b> 2020 N. Arizona Ave. Suite 5 Chandler, AZ 85225 Phone: (877) 225-2118 Fax: (877) 821-5462	Debra Coleman, Principal

### ***District Mission***

Our mission is to provide each student and family we serve with high quality college preparatory educational programs and services designed to stimulate life-long learning while developing character through academics, arts, and athletics.

### ***Educational Philosophy***

Our charter schools are founded on the premise that all students can be successful in college. For this to become reality, we must provide children with a focused, college prep curriculum beginning with the elementary grades. Student mastery will be achieved through scientifically-based and content-rich curriculum that imparts core knowledge and essential learning skills. In order to achieve academic excellence, our program must also have a specific focus on character development through academics, athletics, and the arts. Combining the constant focus on character development and academic excellence will lead our students to be prepared for the challenges that lie ahead of them in education and in life. As a vector, with dynamic effort and direction, all students will strive to reach their full potential and be empowered to lead successful and productive lives.



### Overview of STEAM Program

The K-4<sup>th</sup> Grade STEAM Academy is a small learning community at Skyline that utilizes standards driven thematic units to engage students in learning based on Science, Technology, Engineering, the Arts, and Mathematics. Our integrated curriculum sets the foundation for learning in all content areas, while focusing on STEAM principles that awaken students' curiosity of the world around them.

The Academy Goals:

- Provide hands-on experiential learning
- Expose students to real world problems and approaches to solve those problems
- Set the foundation for independent and critical thinking
- Learn how to use science and engineering practices to solve problems
- Create a well-rounded and versatile thinker

This program is limited to 30 students per grade level. Students that wish to enter the program after the 30 student limit is reached, will be placed on a waiting list and placed in our traditional program until space is available.

### Schedule changes

Each year, a new master schedule is created to accommodate students' program selections. Faculty members are employed, textbooks are purchased, and rooms are assigned on the basis of program demand. Students may modify their course requests at designated times during the spring and summer months. Students receive a copy of their final schedule at orientation. Upon receipt of the final schedule, students may not modify their schedules unless they are unable to

meet the academic or behavioral expectations of the program.

### Records Request(s)

Arizona Revised Statute § 15-828(G) states: Within five school days after enrolling a transfer pupil from a private school or another school district, a school shall request directly from the pupil's previous school a certified copy of the pupil's record. The requesting school shall exercise due diligence in obtaining the copy of the record requested. Notwithstanding any financial debt owed by the pupil, any school requested to forward a copy of a transferring pupil's record to the new school shall comply and forward the record within ten school days after receipt of the request unless the record has been flagged pursuant to section 15-829. \* \* \* School districts shall include in the educational records required by this subsection data collected pursuant to sections 15-741 and 15-766 as prescribed by the state board of education.

Arizona law also requires that any disclosure of educational records by a school or a school district comply with the Family Educational Rights and Privacy Act (FERPA). A.R.S. § 15-828(H). FERPA allows a school to disclose students' education records without prior consent when the disclosure is to another school where the student seeks or intends to enroll. 34 C.F.R. § 99.31(a)(2).

The following information needs to be included to complete your request:

1. Students full name at time of enrollment
2. Date of birth
3. Contact Phone number

4. Email address
5. Dates of attendance
6. Number of copies requested
7. The address where the records are to be sent (include specific departments if applicable)

Requests can be sent to:

1. Email: [pr@skylineschools.com](mailto:pr@skylineschools.com)
2. Fax: (877) 821-5462
3. Mail: Skyline Education - 2020 N. Arizona Ave. Chandler, AZ 85225  
- Attn: Registrar

**\*\*Requests will be sent in 1-2 business days from receiving a payment and written request.**

To speak with a registrar please call 480-779-2000.

### Grading

In order to gain an accurate picture of student readiness and mastery, multiple assessment structures are needed. Graded tasks may include but are not limited to the following:

1. Summative Assessments
2. Alternative Assessments
3. Long term Projects
4. Labs
5. Daily Activities

### Skyline Scholars

Students will be recognized quarterly for academic achievement based on the following criteria:

**K-2<sup>nd</sup> grade** award criteria:

	<b>Highly Proficient</b>	<b>Proficient</b>
Math	Students earn HP status in all domains.	Students earn Proficient (or better) in each domain.

ELA	Students earn HP status in all strands.	Students earn Proficient (or better) in each strand.
Science	Students earn HP status in all Disciplinary Core Ideas (DCI) and Science Strands	Students earn proficient (or better) in all DCI and Science Strands
Social Studies	Students earn HP status in all strands.	Students earn Proficient (or better) in each strand.

**3<sup>rd</sup>-4<sup>th</sup> grade** award criteria:

	<b>Highest Honors</b>	<b>Honors</b>
Math	Students earn all A's in academic content areas.	Students earn B or better in academic content areas.
ELA		
Science		
Social Studies		



# English Language Arts

## Kindergarten-4<sup>th</sup> grade

To view AZCCRS ELA standards, [click here](#).

Key Features of the Standards	
<b>Reading: Text complexity and the growth of comprehension</b>	The Reading standards place equal emphasis on the sophistication of what students read and the skill with which they read. Standard 10 defines a grade-by-grade "staircase" of increasing text complexity that rises from beginning reading to the college and career readiness level. Whatever they are reading, students must also show a steadily growing ability to discern more from and make fuller use of text, including making an increasing number of connections among ideas and between texts, considering a wider range of textual evidence, and becoming more sensitive to inconsistencies, ambiguities, and poor reasoning in texts.
<b>Writing: Text types, responding to reading, and research</b>	The Standards acknowledge the fact that whereas some writing skills, such as the ability to plan, revise, edit, and publish, are applicable to many types of writing; other skills are more properly defined in terms of specific writing types: arguments, informative/explanatory texts, and narratives. Standard 9 stresses the importance of the writing-reading connection by requiring students to draw upon and write about evidence from literary and informational texts. Because of the centrality of writing to most forms of inquiry, research standards are prominently included in this strand, though skills important to research are infused throughout the document
<b>Speaking and Listening: Flexible communication and collaboration</b>	Including but not limited to skills necessary for formal presentations, the Speaking and Listening standards require students to develop a range of broadly useful oral communication and interpersonal skills. Students must learn to work together, express and listen carefully to ideas, integrate information from oral, visual, quantitative, and media sources, evaluate what they hear, use media and visual displays strategically to help achieve communicative purposes, and adapt speech to context and task.
<b>Language: Conventions, effective use, and vocabulary</b>	The Language standards include the essential "rules" of standard written and spoken English, but they also approach language as a matter of craft and informed choice among alternatives. The vocabulary standards focus on understanding words and phrases, their relationships, and their nuances and on acquiring new vocabulary, particularly general academic and domain-specific words and phrases.

The Kindergarten – 4th grade standards define what students should understand and be able to do by the end of each grade. They correspond to the College and Career Readiness (CCR) anchor standards below by number. The CCR and grade-specific standards are necessary complements—the former providing broad standards and the latter providing additional specificity—that together define the skills and understandings that all students must demonstrate. Within the STEAM Academy, standards are integrated with other content areas and taught within thematic units of study.

### **Key Ideas and Details**

1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
3. Analyze how and why individuals, events, and ideas develop and interact over the course of a text.

### **Craft and Structure**

4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
6. Assess how point of view or purpose shapes the content and style of a text.

### **Integration of Knowledge and Ideas**

7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.\*
8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
9. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

### **Range of Reading and Level of Text Complexity**

10. Read and comprehend complex literary and informational texts independently and proficiently.
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## **Kindergarten**

In kindergarten, students will learn the alphabet and the basic features of letters and words. They will break down spoken and written words into syllables and letters and identify the sounds each letter makes. These important skills will enable your child to learn new words and to read and understand simple books and stories. Students will also learn to write and share information in a variety of ways, including drawing, writing letters and words, listening to others, and speaking aloud. Activities in these areas will include:

- Naming and writing upper- and lowercase letters
- Matching letters to sounds and using other methods to figure out unfamiliar words when reading and writing
- Learning and using new words
- Identifying words that rhyme
- Reading common words such as the, of, you, are, she, and my
- Asking and answering questions about a story the teacher reads out loud
- Identifying characters, settings, and major events in a story
- Recognizing the person, place, thing, or idea that an illustration shows
- Participating in discussions by listening and taking turns speaking
- Using a combination of drawing, speaking, and writing to describe an event, give information about a topic, or share an opinion
- Taking part in shared reading, writing, and research projects
- Expressing thoughts, feelings, and ideas clearly

## **1<sup>st</sup> grade**

In grade one, your child will build important reading, writing, speaking, and listening skills. Students will continue to learn the letters and sounds that make up words. They will think, talk, and write about what they read in stories, articles, and other sources of information. In their writing, students will work on putting together clear sentences on a range of topics using a growing vocabulary. Activities in these areas will include:

- Reading stories and showing they understand the lesson or moral of the story
- Asking and answering questions about a story, including characters, settings, and major events
- Comparing and contrasting the experiences of different characters
- Identifying the reasons an author gives to support a point
- Explaining differences between texts that tell stories and texts that provide information
- Learning and using new words
- Participating in class discussions by listening, responding to what others are saying, and asking questions
- Describing people, places, things, and events, expressing feelings and ideas clearly
- Learning basic rules of spoken and written English
- Working with others to gather facts and information on a topic
- Writing to describe an event, provide information on a topic, or share an opinion



## **2nd grade**

In grade two, students will continue to build important reading, writing, speaking, and listening skills. They will think, talk, and write about what they read in variety of texts, such as stories, books, articles, and other sources of information including the Internet. In their writing, students will learn how to develop a topic and strengthen their skills by editing and revising. Activities in these areas will include:

- Reading stories, including fables and folktales from different cultures, and identifying the lesson or moral of the story
- Reading texts about history, social studies, or science and identifying the main idea
- Answering who, what, where, when, why, and how questions about stories and books
- Describing the reasons that an author gives to support a point
- Learning and using new words
- Learning the rules of spoken and written English
- Participating in class discussions by listening and building on what others are saying
- Describing in their own words information learned from articles or books read aloud
- Working together to gather facts and information on a topic
- Writing about a short series of events and describing actions, thoughts, and feelings
- Writing about opinions on books using important details and examples to support a position

## **3rd grade**

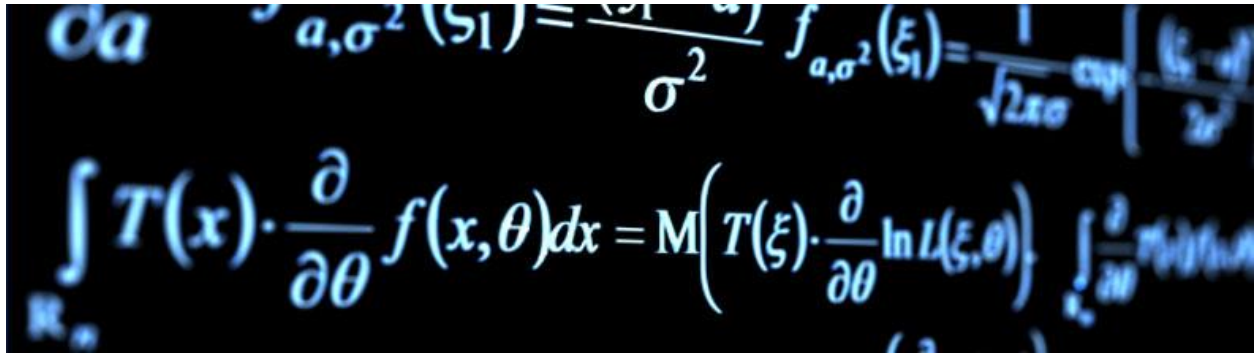
In grade three, students will build important reading, writing, speaking, and listening skills. They will think, talk, and write about what they read in a variety of articles, books, and other texts. In their writing, students will pay more attention to organizing information, developing ideas, and supporting these ideas with facts, details, and reasons. Activities in these areas will include:

- Reading a wide range of stories and describing how a story teaches a lesson
- Describing characters in a story and how their actions contributed to events
- Reading texts about history, social studies, or science and answering questions about what they learned
- Referring to information from illustrations such as maps or pictures as well as the words in a text to support their answers
- Learning the rules of spoken and written English
- Learning and using new words, including words related to specific subjects (such as science words)
- Participating in class discussions by listening, asking questions, sharing ideas, and building on the ideas of others
- Giving a class presentation on a topic or telling a story using relevant facts and details and speaking clearly
- Writing stories with dialogue and descriptions of character's actions, thoughts, and feelings
- Gathering information from books, articles, and online sources to build understanding of a topic
- Writing research or opinion papers over extended periods of time

## **4<sup>th</sup> grade**

In grade four, students will continue to build important reading, writing, speaking, and listening skills. They will read more challenging literature, articles, and other sources of information and continue to grow their vocabulary. They will also be expected to clearly explain in detail what they have read by referring to details or information from the text. In writing, students will organize their ideas and develop topics with reasons, facts, details, and other information. Activities in these areas will include:

- Identifying the theme or main idea of a story, play, or poem
- Comparing stories from different cultures
- Explaining how an author uses facts, details, and evidence to support their points
- Reading and understanding information presented in charts, graphs, timelines, and other illustrations
- Learning the rules of spoken and written English
- Learning and using new words, including words related to specific subjects (such as science words)
- Participating in class discussions by listening, asking questions, sharing ideas, and building on the ideas of others
- Giving a class presentation on a topic or telling a story using relevant, organized facts and details and speaking clearly
- Writing stories with dialogue and descriptions of character's actions, thoughts, and feelings
- Taking notes and organizing information from books, articles, and online sources to learn more about a topic
- Writing research or opinion papers over extended periods of time



# Mathematics

## Kindergarten – 5<sup>th</sup> grade

The AZ College and Career Readiness standards call for greater focus, coherence, and rigor when teaching mathematics. Rather than racing to cover many topics in a mile-wide, inch-deep curriculum, the standards ask math teachers to significantly narrow and deepen the way time and energy are spent in the classroom.

The Mathematical Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. Within the STEAM Academy, standards are integrated with other content areas and taught within thematic units of study.

To view AZCCRS math standards, [click here](#).

### Domain Progression

Kindergarten	1	2	3	4
Counting & Cardinality				
Number & Operations in Base Ten				
			Numbers & Operations - Fractions	
Operations and Algebraic Thinking				
Geometry				
Measurement and Data				

## Kindergarten

In Kindergarten, instructional time will focus on two critical areas: (1) representing, relating, and operating on whole numbers, initially with sets of objects; (2) describing shapes and space.

In kindergarten, your child will focus primarily on two important areas. The first is learning numbers and what numbers represent. The second is addition and subtraction. Students will also learn to identify and work with shapes. Activities in these areas include:

- Counting how many objects are in a group and comparing the quantities of two groups of objects
- Comparing two numbers to identify which is greater or less than the other
- Understanding addition as putting together and subtraction as taking away from
- Adding and subtracting very small numbers quickly and accurately
- Breaking up numbers less than or equal to 10 in more than one way (for example,  $9=6+3$ ,  $9=5+4$ )
- For any number from 1 to 9, finding the missing quantity that is needed to reach 10
- Representing addition and subtraction word problems using objects or by drawing pictures
- Solving addition and subtraction word problems involving numbers that add up to 10 or less or by subtracting from a number 10 or less

## 1<sup>st</sup> grade

In Grade 1, instructional time will focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.

In grade one, students will work with whole numbers and place value—including grouping numbers into tens and ones as they learn to add and subtract up through 20. Students will also use charts, tables, and diagrams to solve problems. Activities in these areas will include:

- Quickly and accurately adding numbers together that total up to 10 or less and subtracting from numbers up through 10
- Understanding the rules of addition and subtraction (for example,  $5+2=2+5$ )
- Solving word problems that involve adding or subtracting numbers up through 20
- Understanding what the different digits mean in two-digit numbers (place value)
- Comparing two-digit numbers using the symbols  $>$  (more than),  $=$  (equal to), and  $<$  (less than)
- Understanding the meaning of the equal sign ( $=$ ) and determining if statements involving addition and subtraction are true or false (for example, which of the following statements are true?  $3+3=6$ ,  $4+1=5+2$ )

- Adding one- and two-digit numbers together
- Measuring the lengths of objects using a shorter object as a unit of length
- Putting objects in order from longest to shortest or shortest to longest
- Organizing objects into categories and comparing the number of objects in different categories
- Dividing circles and rectangles into halves and quarters

## **2<sup>nd</sup> grade**

In Grade 2, instructional time will focus on four critical areas: (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes.

In grade two, students will extend their understanding of place value to the hundreds place. They will use this place value understanding to solve word problems, including those involving length and other units of measure. Students will continue to work on their addition and subtraction skills, quickly and accurately adding and subtracting numbers up through 20 and also working with numbers up through 100. They will also build a foundation for understanding fractions by working with shapes and geometry. Activities in these areas will include:

- Quickly and accurately adding numbers together that total up to 20 or less or subtracting from numbers up through 20
- Solving one- or two-step word problems by adding or subtracting numbers up through 100
- Understanding what the different digits mean in a three-digit number
- Adding and subtracting three digit numbers
- Measuring lengths of objects in standard units such as inches and centimeters
- Solving addition and subtraction word problems involving length
- Solving problems involving money
- Breaking up a rectangle into same-size squares
- Dividing circles and rectangles into halves, thirds, or fourths
- Solving addition, subtraction, and comparison word problems using information presented in a bar graph
- Writing equations to represent addition of equal numbers

## **3<sup>rd</sup> grade**

In Grade 3, instructional time will focus on four critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with numerator 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes.

In grade three, students will continue to build their concept of numbers, developing an understanding of fractions as numbers. They will learn the concepts behind

multiplication and division and apply problem-solving skills and strategies for multiplying and dividing numbers up through 100 to solve word problems. Students will also make connections between the concept of the area of a rectangle and multiplication and addition of whole numbers. Activities in these areas will include:

- Understanding and explaining what it means to multiply or divide numbers
- Multiplying all one-digit numbers from memory (knowing their times table)
- Multiplying one-digit numbers by multiples of 10 (such as 20, 30, 40)
- Solving two-step word problems using addition, subtraction, multiplication, and division
- Understanding the concept of area
- Relating the measurement of area to multiplication and division
- Understanding fractions as numbers
- Understanding and identifying a fraction as a number on a number line
- Comparing the size of two fractions
- Expressing whole numbers as fractions and identifying fractions that are equal to whole numbers (for example, recognizing that  $\frac{3}{1}$  and 3 are the same number)
- Measuring weights and volumes and solving word problems involving these measurements
- Representing and interpreting data

#### **4<sup>th</sup> grade**

In Grade 4, instructional time will focus on three critical areas: (1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

In grade four, your child will use addition, subtraction, multiplication, and division to solve word problems, including problems involving measurement of volume, mass, and time. Students will continue to build their understanding of fractions—creating equal fractions, comparing the size of fractions, adding and subtracting fractions, and multiplying fractions by whole numbers. They will also start to understand the relationship between fractions and decimals. Activities in these areas will include:

- Adding and subtracting whole numbers up to 1 million quickly and accurately
- Solving multi-step word problems, including problems involving measurement and converting measurements from larger to smaller units
- Multiplying and dividing multi-digit numbers
- Extending understanding of fractions by comparing the size of two fractions with different numerators (top numbers) and different denominators (bottom numbers)
- Creating equal fractions ( $\frac{3}{4} = \frac{3 \times 2}{4 \times 2} = \frac{6}{8}$ )
- Adding and subtracting fractions with the same denominator

- Building fractions from smaller fractions ( $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$ )
- Connecting addition and subtraction of whole numbers to multiplying fractions by whole numbers
- Connecting addition of fractions to the concept of angle measurement
- Representing and interpreting data
- Converting fractions with denominators of 10 or 100 into decimals
- Locating decimals on a number line
- Comparing decimals and fractions using the symbols  $>$  (more than),  $=$  (equal to), and  $<$  (less than)



# Science

## Kindergarten – 4<sup>th</sup> grade

Science instruction should involve students actively using scientific processes to understand course content and make connections to real life and related areas of study. The STEAM Academy has carefully aligned the Next Generation Science Standards (NGSS) with the six strands (Inquiry Process, History and Nature of Science, Science in Personal and Social Perspective, Life Science, Physical Science, and Earth and Space Science) of the Arizona Science Standards. Students will have the opportunity to develop both the skills and content knowledge necessary to be scientifically literate members of the community. Within the STEAM Academy, standards are integrated with other content areas and taught within thematic units of study.

To view the AZ Science standards, [click here](#).  
 To view the Next Generation Science Standards, [click here](#).

Strand	Concept	K	1	2	3	4
<b>1 Inquiry Process</b>	1 - Observations, Questions and Hypotheses					
	2 - Scientific Testing (Investigation and Modelling)					
	3 - Analysis and Conclusions					
	4 - Communication					
<b>2 History and Nature of Science</b>	1- History of Science as a Human Endeavor					
	2 - Nature of Scientific Knowledge					
<b>3 Science in Personal and Social Perspectives</b>	1 - Changes in Environment					
	2 - Science and Technology in Society					
	3 - Human Population Characteristics (HS)					
<b>4 Life Science</b>	1 - Characteristics of Organisms (K-4), Structure and Function in Living Systems (5-8), The Cell (HS)					
	2 - Life Cycles (K-4), Reproduction and Heredity (5-8), Molecular Basis of Heredity (HS)					
	3 - Organisms and Environments (K-4), Populations of Organisms in an Ecosystem (5-8), Interdependence of Organisms (HS)					
	4 - Diversity, Adaptation, and Behavior (K-8) Biological Evolution (HS)					
	5 - Matter, Energy and Organization in Living Systems (HS)					





## **Kindergarten**

The performance expectations in kindergarten help students formulate answers to questions such as: "What happens if you push or pull an object harder? Where do animals live and why do they live there? What is the weather like today and how is it different from yesterday?" Kindergarten performance expectations include PS2, PS3, LS1, ESS2, ESS3, and ETS1 Disciplinary Core Ideas from the NRC Framework. Students are expected to develop understanding of patterns and variations in local weather and the purpose of weather forecasting to prepare for, and respond to, severe weather. Students are able to apply an understanding of the effects of different strengths or different directions of pushes and pulls on the motion of an object to analyze a design solution. Students are also expected to develop understanding of what plants and animals (including humans) need to survive and the relationship between their needs and where they live. The crosscutting concepts of patterns; cause and effect; systems and system models; interdependence of science, engineering, and technology; and influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for these disciplinary core ideas. In the kindergarten performance expectations, students are expected to demonstrate grade-appropriate proficiency in asking questions, developing and using models, planning and carrying out investigations, analyzing and interpreting data, designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information. Students are expected to use these practices to demonstrate understanding of the core ideas. Students will also explore the history of science as a human endeavor, science and technology in society, and an introduction to life science concepts such as the characteristics of organisms, life cycles, and organisms and environments.

## **First Grade**

The performance expectations in first grade help students formulate answers to questions such as: "What happens when materials vibrate? What happens when there is no light? What are some ways plants and animals meet their needs so that they can survive and grow? How are parents and their children similar and different? What objects are in the sky and how do they seem to move?" First grade performance expectations include PS4, LS1, LS3, and ESS1 Disciplinary Core Ideas from the NRC Framework. Students are expected to develop understanding of the relationship between sound and vibrating materials as well as between the availability of light and ability to see objects. The idea that light travels from place to place can be understood by students at this level through determining the effect of placing objects made with different materials in the path of a beam of light. Students are also expected to develop understanding of how plants and animals use their external parts to help them survive, grow, and meet their needs as well as how behaviors of parents and offspring help the offspring survive. The understanding is developed that young plants and animals are like, but not exactly the same as, their parents. Students are able to observe, describe, and predict some patterns of the movement of objects in the sky. The crosscutting concepts of patterns; cause and effect; structure and function; and influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for these disciplinary core ideas. In the first grade performance expectations, students are expected to demonstrate grade-appropriate proficiency in planning and carrying out investigations, analyzing and interpreting data,

constructing explanations and designing solutions, and obtaining, evaluating, and communicating information. Students are expected to use these practices to demonstrate understanding of the core ideas. Students will also explore the history of science as a human endeavor, science and technology in society, and an introduction to life science concepts such as the characteristics of organisms, life cycles, and organisms and environments.

## **Second Grade**

The performance expectations in second grade help students formulate answers to questions such as: "How does land change and what are some things that cause it to change? What are the different kinds of land and bodies of water? How are materials similar and different from one another, and how do the properties of the materials relate to their use? What do plants need to grow? How many types of living things live in a place?" Second grade performance expectations include PS1, LS2, LS4, ESS1, ESS2, and ETS1 Disciplinary Core Ideas from the NRC Framework. Students are expected to develop an understanding of what plants need to grow and how plants depend on animals for seed dispersal and pollination. Students are also expected to compare the diversity of life in different habitats. An understanding of observable properties of materials is developed by students at this level through analysis and classification of different materials. Students are able to apply their understanding of the idea that wind and water can change the shape of the land to compare design solutions to slow or prevent such change. Students are able to use information and models to identify and represent the shapes and kinds of land and bodies of water in an area and where water is found on Earth. The crosscutting concepts of patterns; cause and effect; energy and matter; structure and function; stability and change; and influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for these disciplinary core ideas. In the second grade performance expectations, students are expected to demonstrate grade-appropriate proficiency in developing and using models, planning and carrying out investigations, analyzing and interpreting data, constructing explanations and designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information. Students are expected to use these practices to demonstrate understanding of the core ideas. Students will also explore the history of science as a human endeavor, science and technology in society, and an introduction to life science concepts such as the characteristics of organisms, life cycles, and nature of scientific knowledge.

## **Third Grade**

The performance expectations in third grade help students formulate answers to questions such as: "What is typical weather in different parts of the world and during different times of the year? How can the impact of weather-related hazards be reduced? How do organisms vary in their traits? How are plants, animals, and environments of the past similar or different from current plants, animals, and environments? What happens to organisms when their environment changes? How do equal and unequal forces on an object affect the object? How can magnets be used?" Third grade performance expectations include PS2, LS1, LS2, LS3, LS4, ESS2, and

ESS3 Disciplinary Core Ideas from the NRC Framework. Students are able to organize and use data to describe typical weather conditions expected during a particular season. By applying their understanding of weather-related hazards, students are able to make a claim about the merit of a design solution that reduces the impacts of such hazards. Students are expected to develop an understanding of the similarities and differences of organisms' life cycles. An understanding that organisms have different inherited traits, and that the environment can also affect the traits that an organism develops, is acquired by students at this level. In addition, students are able to construct an explanation using evidence for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. Students are expected to develop an understanding of types of organisms that lived long ago and also about the nature of their environments. Third graders are expected to develop an understanding of the idea that when the environment changes some organisms survive and reproduce, some move to new locations, some move into the transformed environment, and some die. Students are able to determine the effects of balanced and unbalanced forces on the motion of an object and the cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. They are then able to apply their understanding of magnetic interactions to define a simple design problem that can be solved with magnets. The crosscutting concepts of patterns; cause and effect; scale, proportion, and quantity; systems and system models; interdependence of science, engineering, and technology; and influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for these disciplinary core ideas. In the third grade performance expectations, students are expected to demonstrate grade-appropriate proficiency in asking questions and defining problems; developing and using models, planning and carrying out investigations, analyzing and interpreting data, constructing explanations and designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information. Students are expected to use these practices to demonstrate understanding of the core ideas. Students will also explore the history of science as a human endeavor, science and technology in society, and an introduction to life science concepts such as the characteristics of organisms, life cycles, changes in the environment, the nature of scientific knowledge, diversity, adaptation, and behavior.

#### **Fourth Grade**

The performance expectations in fourth grade help students formulate answers to questions such as: "What are waves and what are some things they can do? How can water, ice, wind and vegetation change the land? What patterns of Earth's features can be determined with the use of maps? How do internal and external structures support the survival, growth, behavior, and reproduction of plants and animals? What is energy and how is it related to motion? How is energy transferred? How can energy be used to solve a problem?" Fourth grade performance expectations include PS3, PS4, LS1, ESS1, ESS2, ESS3, and ETS1 Disciplinary Core Ideas from the NRC Framework.

Students are able to use a model of waves to describe patterns of waves in terms of amplitude and wavelength, and that waves can cause objects to move. Students are

expected to develop understanding of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. They apply their knowledge of natural Earth processes to generate and compare multiple solutions to reduce the impacts of such processes on humans. In order to describe patterns of Earth's features, students analyze and interpret data from maps. Fourth graders are expected to develop an understanding that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. By developing a model, they describe that an object can be seen when light reflected from its surface enters the eye. Students are able to use evidence to construct an explanation of the relationship between the speed of an object and the energy of that object. Students are expected to develop an understanding that energy can be transferred from place to place by sound, light, heat, and electric currents or from object to object through collisions. They apply their understanding of energy to design, test, and refine a device that converts energy from one form to another. The crosscutting concepts of patterns; cause and effect; energy and matter; systems and system models; interdependence of science, engineering, and technology; and influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for these disciplinary core ideas. In the fourth grade performance expectations, students are expected to demonstrate grade-appropriate proficiency in asking questions, developing and using models, planning and carrying out investigations, analyzing and interpreting data, constructing explanations and designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information. Students are expected to use these practices to demonstrate understanding of the core ideas. Students will also explore the history of science as a human endeavor, science and technology in society, and an introduction to life science concepts such as the characteristics of organisms, changes in the environment, the nature of scientific knowledge, diversity, adaptation, and behavior.



# Social Studies

## Kindergarten-4<sup>th</sup> grade

Social Studies combines history, geography, economics, current events and citizenship with the social emotional competencies. Within the STEAM Academy, standards are integrated with other content areas and taught within thematic units of study.

To view the K-4 Social studies standards, [click here](#).  
To view the Social Emotional standards, [click here](#).

## Key Concepts

<b>Kindergarten</b>	History strands introduce the concept of exploration as a means of discovery and a way of exchanging ideas, goods, and culture. Important presidents and symbols of our country are also introduced.
<b>1<sup>st</sup> grade</b>	History strands introduce the concept that settlement enabled cultures and civilizations to develop in different places around the world, advancing their own and later civilizations. North America and Egypt are introduced as examples. Exploration is revisited by introducing the impact of interaction between Native Americans and Europeans during the period of colonization
<b>2<sup>nd</sup> grade</b>	History strands introduce how the United States became a nation. The impact of exploration is revisited through the introduction of western expansion of the New Nation. The development of cultures and civilizations and their contributions are expanded into the continent of Asia
<b>3<sup>rd</sup> grade</b>	History strands introduce the reasons for and effects of the exploration of North America to provide a foundation for further study in fourth and fifth grades. The idea of freedom is explored through the study of our nation from the Civil War through late 19 <sup>th</sup> and early 20 <sup>th</sup> century immigration. The development of cultures and civilizations and their contributions are expanded through the introduction of ancient Greece and Rome.
<b>4<sup>th</sup> grade</b>	History strands emphasize the history of Arizona and the Southwest from its earliest civilizations to modern times. Early civilizations in Central and South America and their encounters with Europeans, as well as events in the Middle Ages which spurred exploration of the New World, are also studied to provide the historical foundation for the exploration and settlement of the Southwest.



# ***Fine Arts/Visual Arts***

## ***Kindergarten – 4<sup>th</sup> grade***

Skyline Education offers an integrated and comprehensive performance and visual arts education, aligned to the Arizona State Grade Articulated and National Standards, as well as the National Standards for Arts Education. Courses offered range within the disciplines of Performing and Visual Arts. Students in grades K-4<sup>th</sup> grade experience and create as they progress through the program. Within the STEAM Academy, standards are integrated with other content areas and taught within thematic units of study. The next page outlines the Arts topics that are integrated into STEAM Academy classes.

Art programs are integrated into the daily schedule just as athletic programs to provide students with stimulation around the Arts. Years of research shows that Art is closely linked to almost everything that we as a nation say we want for our children and demand from our schools: academic achievement, social and emotional development, civic engagement, and equitable opportunity ([Smith, Edutopia.org](http://Smith.Edutopia.org)).



# Visual Arts

## General Art

Students in this class will complete projects in cartooning, drawing, and painting. Art history, principles of design, and elements of design will be incorporated into the various projects.

## 3-D Art

Students in this class will create projects in sculpture, and pottery. Art history, principles of design, and elements of design will be incorporated into the various projects.

## Graphic Arts

Students in this class will use principles and elements of design to create graphic illustrations and animations using industry standard software. **(This class is only open to 4<sup>th</sup> grade).**

# Fine Arts

## Beginning Ballet (Full year)

A basic class that introduces the student to the elementary positions of classical ballet. Classes are slow and thorough to ensure proper alignment and understanding.

## Intermediate Ballet (Full year)

An extension of the Beginning class for students who are comfortable and can move easily through the barre and center.

## Beginning Theater (Full year)

This is a beginning class that will start the student on a study course of the history of theater, monologues, voice, theater, theater, design and lighting, and stage production. Students in this class will perform at assemblies and work toward a stage performance.

## Intermediate Theater (Full year)

This is an intermediate class that will continue the student on a study course of voice, theater, and stage production. Students in this class will perform at assemblies and work toward a stage performance. Students in this class will show more determination and presence on stage. Students will be expected to coach other students, perform in solos, and promote the Theater Arts program.

## Beginning Dance (Full Year)

This is a beginning dance class that will teach hip-hop, lyrical, jazz, military, and modern dance steps. Students are expected to dress out in appropriate dance attire for this class. Students will perform dance routines at assemblies.

## Intermediate Dance (Full Year)

This is an intermediate dance class that will teach hip-hop, lyrical, jazz, military, and modern dance steps. Students are expected to dress out in appropriate dance attire for this class. Students will perform dance routines at assemblies.

## Beginning Music (Full Year)

This is a beginning class that teaches vocal sounds through song and poetry. Students will perform at assemblies and work toward performing at recitals.

## Intermediate Music (Full Year)

This is an intermediate class that teaches vocal sounds through song and poetry. Students will perform at assemblies and work toward and perform at recitals. Students should be mastering vocal sounds to progress towards solo performances.





# ***Technology***

## ***Kindergarten – 4<sup>th</sup> grade***

Technology is deeply embedded throughout our global society and therefore, technology instruction is an essential component to the development of a competent and productive citizen. Carefully designed technology topics have been integrated into the STEAM program that lay the foundation for technological literacy.

To view the AZ Science standards, [click here.](#)

To view the Next Generation Science Standards, [click here.](#)

To view AZCCRS math standards, [click here.](#)



## **K-2 Technology**

Grades: K-2<sup>nd</sup>

K-2 Technology is an introduction to the fundamentals of how to use personal computers and includes the AZ Educational Technology Standards. The primary focus is beginning keyboarding skills with a goal of touch-typing, word processing skills, internet safety and "netiquette" will be discussed.

## **3-5 Technology**

Grades: 3<sup>rd</sup>-5<sup>th</sup> grade

This program series is an introduction to the basics of coding, technology and design using HTML, Game Design and/or Minecraft.

## **4-8 Robotics**

Grades: 4<sup>th</sup>-8<sup>th</sup>

This course will follow basic principles of the curriculum from the FIRST LEGO League (FLL) program, which exposes students to science, technology, engineering and math. Students will problem solve, research, and use critical thinking as essential components of these subjects. FLL introduces students to engineering challenges based on real-world scenarios by building LEGO-based robots to complete specific tasks.

# STEAM Studio

STEAM Studio is an afterschool and summer enrichment program designed to offer fun and engaging hands on learning experiences in science, engineering, robotics, computer coding, video game development, and the digital arts. This program is open to all students with priority given to students enrolled in our STEAM Academy.

Students will have an opportunity to select and compete in STEM competitions such as:

[Science Olympiad](#)

[ExploraVision](#)

[EngineerGirl](#)

[National STEM Video Game Challenge](#)

[Bright Schools Competition](#)

[Ecybermission](#)

\*There is a fee associated with this program that covers expenses.

