

# KEY CONCEPTS AND TEKS ALIGNMENT

## ZOOM (TM)

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### KEY CONCEPTS

Did you know that . . .

- Buoyancy is an object's tendency to float.
- Engineering is a broad discipline that includes many specialized fields. The term engineering comes from the
- Latin words "ingenium" meaning "cleverness" and "ingeniare" meaning "to contrive, devise."
- Verbal and nonverbal communication is essential to teamwork. In a fast-paced game, children understand the value of listening as a communication tool.
- There are a multitude of job opportunities in the STEM field. Exposing children to a few options opens their minds to the many possibilities in their future.
- Prototyping is making a model that brings an idea into reality.
- Chemistry is the study of matter and how it transforms and interacts with other substances.
- The term polymer comes from the Greek word "poly," meaning many, and "meros," meaning parts. Children explore science using a polymer material that resembles snow.
- Primary colors are red, blue, and yellow. Mixing primary colors together results in secondary colors, which are green, orange, and purple. Mixing secondary colors together results in tertiary colors, which are yellow-orange, yellow-green, red-orange, red-purple, blue-purple, and blue-green.
- A mixture is a combination of different substances whose physical and chemical properties do not change when mixed together.
- A solution is a special type of mixture in which one substance dissolves in another substance.
- Children explore polymer science through play by comparing and contrasting the properties of various types of slime.
- Many veterinarians use the same tools to help sick animals that doctors use. Children will explore some of these tools, such as x-rays and stethoscopes.
- Our heart is a muscle that pumps blood to the rest of our body. It is one of the most important organs in our whole body.
- You can hear your heart pumping blood if you use a stethoscope. It sounds like, "thump, thump, thump."
- Structures such as houses and buildings begin on paper.
- Architects begin designing structures with a drawing called a blueprint.
- There are many tools that they can use to draw a blueprint and often times just start out with paper, pencil, and an architect's scale.
- Wide foundations support tall structures.
- Some aspects of demolition require careful planning. Architects, engineers, and construction crews often work together to make sure that only targeted areas are demolished. They must also think about where the debris goes.
- The solar system consists of the sun and a collection of objects, including planets, their moons, and asteroids that are held in orbit around the sun by its gravitational pull on them.
- Earth is always moving. It simultaneously rotates once every 24 hours on its axis and orbits around the sun once every 365 days.
- Properties of matter like color, size, texture, and shape form the foundation for science and engineering.
- Matter is anything around us that takes up space and can be found in three common states which are solids, liquids, and gases.
- The Earth orbits, or goes around the sun, while it is rotating. Rotation is the action of spinning on an axis.
- Orbiting is when an object moves in a circular path around another object.
- Constant rotation and orbiting of the Earth can make it difficult for scientists to determine an exact landing location when launching rockets that come back to Earth, land on the moon, or even on other planets.

- There are many factors that scientists have to consider when launching and landing rockets, such as the speed at which the Earth is rotating and orbiting, the rate at which the rocket is moving, and the distance that the rocket has to travel to its landing location.

# KEY CONCEPTS AND TEKS ALIGNMENT

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## I. SOCIAL AND EMOTIONAL DEVELOPMENT DOMAIN

### A. SELF CONCEPT SKILLS

- I.A.1. Child is aware of where own body is in space and respects personal boundaries.
- I.A.2. Child shows self awareness and can express pride in age appropriate abilities and skills.
- I.A.3. Child shows reasonable opinion of his own abilities and limitations.
- I.A.4. Child shows initiative in independent situations and persists in attempting to solve problems.

### B. SELF REGULATION SKILLS

- I.B.1.a. Child follows classroom rules and routines with occasional reminders from teacher.
- I.B.1.b. Child takes care of and manages classroom materials.
- I.B.1.c. Child regulates his own behavior with occasional reminders or assistance from teacher
- I.B.2.a. Child begins to understand difference and connection between emotions/feelings and behaviors.
- I.B.2.b. Child can communicate basic emotions/feelings.
- I.B.3.a. Child sustains attention to personally chosen or routine (teacher directed) tasks until completed.
- I.B.3.b. Child remains focused on engaging group activities for up to 20 minutes at a time.

### C. RELATIONSHIPS WITH OTHERS

- I.C.1. Child uses effective verbal and non verbal communication skills to build relationships with teachers/adults
- I.C.2. Child assumes various roles and responsibilities as part of a classroom community.
- I.C.3. Child shows competence in initiating social interactions.
- I.C.4. Child increasingly interacts and communicates with peers to initiate pretend play scenarios that share a common plan and goal.
- I.C.5. Child initiates problem-solving strategies and seeks adult help when necessary.
- I.C.6. Child demonstrates empathy and caring for others.
- I.C.7. Child interacts with a variety of playmates and may have preferred friends.

## D. SOCIAL AWARENESS SKILLS

### A. LISTENING COMPREHENSION SKILLS

- II.A.1. Child shows understanding by responding appropriately.
- II.A.2. Child shows understanding by following two-step oral directions and usually follows three step directions.
- II.A.3. Child shows understanding of the language being spoken by teachers and peers.

### B. SPEAKING (CONVERSATION) SKILLS

- II.B.1. Child is able to use language for different purposes.
- II.B.2. Child engages in conversations in appropriate ways.
- II.B.3. Child provides appropriate information for various situations.
- II.B.4. Child demonstrates knowledge of verbal conversational rules
- II.B.5. Child demonstrates knowledge of nonverbal conversational rules.
- II.B.6. Child matches language to social contexts.

## II. LANGUAGE AND COMMUNICATION

### A. LISTENING COMPREHENSION SKILLS

- II.A.1. Child shows understanding by responding appropriately.
- II.A.2. Child shows understanding by following two-step oral directions and usually follows threestep directions.
- II.A.3. Child shows understanding of the language being spoken by teachers and peers.

## **B. SPEAKING (CONVERSATION) SKILLS**

- II.B.1. Child is able to use language for different purposes.
- II.B.2. Child engages in conversations in appropriate ways.
- II.B.3. Child provides appropriate information for various situations.
- II.B.4. Child demonstrates knowledge of verbal conversational rules.
- II.B.5. Child demonstrates knowledge of nonverbal conversational rules.
- II.B.6. Child matches language to social contexts.

## **C. SPEECH PRODUCTION SKILLS**

- II.C.1. Child's speech is understood by both the teacher and other adults in the school.

## **D. VOCABULARY SKILLS**

- II.D.1. Child uses a wide variety of words to label and describe people, places, things, and actions.
- II.D.2. Child demonstrates understanding of terms used in the instructional language of the classroom.
- II.D.5. Child increases listening vocabulary and begins to develop vocabulary of object names and common phrases.

## **E. SENTENCES AND STRUCTURE SKILLS**

- II.E.1. Child typically uses complete sentences of four or more words and grammatical complexity usually with subject, verb, and object orders.
- II.E.7. Child uses single words and simple phrases to communicate meaning in social situations.
- II.E.8. Child attempts to use new vocabulary and grammar in speech.

## **III. EMERGENT LITERACY READING**

### **A. MOTIVATION TO READ SKILLS**

- III.A.1. Child engages in pre-reading and reading-related activities.
- III.A.3. Child recognizes that text has meaning.

### **C. ALPHABET KNOWLEDGE SKILLS**

- III.D.1. Child retells or re-enacts a story after it is read aloud.
- III.D.2. Child uses information learned from books by describing, relating, categorizing, or comparing and contrasting.
- III.D.3. Child asks and responds to questions relevant to the text read aloud.
- III.D.4. Child will make inferences and predictions about text.

### **E. PRINT CONCEPTS**

- III.E.1 Child can distinguish between elements of print including letters, words, and pictures.
- II .E.2 Child demonstrates understanding of print directionality including left to right and top to bottom.
- III.E.3 Child can identify some conventional features of print that communicate meaning including end punctuation and case.

## **IV. EMERGENT LITERACY WRITING**

### **A. MOTIVATION TO WRITE SKILLS**

- IV.A.1. Child intentionally uses marks, letters, or symbols to record language and verbally shares meaning
- IV.A.2 Child independently writes to communicate his/her ideas for a variety of purposes.

### **B. WRITING AS A PROCESS**

- IV.B.1. Child discusses and contributes ideas for drafts composed in whole/small group writing\ activities.
- IV.B. 2. Child interacts and provides suggestions to revise (add, take out, change order) and edit (conventions) class-made drafts.
- IV. B.3 Child shares and celebrates classmate and individual written products

### **C. CONVENTIONS IN WRITING**

- IV.C.1. Child writes own name (first name or frequent nickname) using legible letters in proper sequence.

- IV. C 4. Child uses appropriate directionality when writing (top to bottom, left to right).

## V. MATHEMATICS

### A. COUNTING SKILLS

- V.A.1. Child knows that objects, or parts of an object, can be counted.
- V.A.3. Child counts 1– 10 items, with one count per item.
- V.A.4. Child demonstrates that the order of the counting sequence is always the same, regardless of what is counted.
- V.A.5. Child counts up to 10 items and demonstrates that the last count indicates how many items were counted.
- V.A.6. Child demonstrates understanding that when counting, the items can be chosen in any order.
- V.A.7. Child uses the verbal ordinal terms.
- V.A.8. Child verbally identifies, without counting, the number of objects from 1 to 5.
- V.A.9. Child recognizes one-digit \ numerals, 0–9.
- V.B.1. Child uses concrete objects, creates pictorial models and shares a verbal word problem for adding up to 5 objects.
- V.B.2. Child uses concrete models or makes a verbal word problem for subtracting 0–5 objects from a set
- V.B.3. Child uses informal strategies to separate up to 10 items into equal groups.
- V.C.1. Child names common shapes.
- V.C.2. Child creates shapes.
- V.C.3. Child demonstrates use of location words (such as “over,” “under,” “above,” “on,” “beside,” “next to,” “between,” “in front of,” “near,” “far,” etc.).
- V.C.4. Child slides, flips, and turns shapes to demonstrate that the shapes remain the same.
- V.D.1. Child recognizes and compares heights or lengths of people or objects.
- V.D.2. Child recognizes how much can be placed within an object.
- V.D.3. Child informally recognizes and compares weights of objects or people.
- V.D.4. Child uses language to describe concepts associated with the passing of time.

### E. CLASSIFICATION AND PATTERNS SKILLS

- V.E.1. Child sorts objects that are the same and different into groups and uses language to describe how the groups are similar and different.
- V.E.2. Child collects data and organizes it in a graphic representation.
- V.E.3. Child recognizes and creates patterns

## VI. SCIENCE

### A. PHYSICAL SCIENCE SKILLS E

- VI.A.1. Child observes, investigates describes, and discusses properties and characteristics of common objects.
- VI.A.2. Child observes, investigates describes and discusses position and motion of objects.
- VI.A.3. Child uses simple measuring devices to learn about objects.
- VI.A.4. Child observes investigates describes and discusses sources of energy including light, heat, and electricity.

### C. EARTH AND SPACE SCIENCE SKILLS

- VI.C.1. Child observes, investigates, describes and discusses earth materials, and their properties and uses.
- VI.C.2. Child identifies, observes, and discusses objects in the sky.
- VI.C.3. Child observes and describes what happens during changes in the earth and sky.
- V1.C.4 Child demonstrates the importance of caring for our environment and our planet.

## VII. SOCIAL STUDIES

### A. PEOPLE, PAST AND PRESENT SKILLS

- VII.A.1. Child identifies similarities and differences between himself, classmates and other children inclusive of specific characteristics and cultural influences.

- VII.A.2. Child identifies similarities and differences in characteristics of families.
- VII.A.3. Child connects their life to events, time, and routines.

### C. GEOGRAPHY SKILLS

- VII.C.1. Child identifies and creates common features in the natural environment.
- VII.C.2. Child explores geography tools and resources

### D. CITIZENSHIP SKILLS

- VII.D.3. The child engages in voting as a method for group decision-making.

## VIII. FINE ARTS

### A. ART SKILLS

- VIII.A.1. Child uses a variety of art materials and activities for sensory experience and exploration.
- VIII.A.2. Child uses art as a form of creative self-expression and representation.
- VIII.A.3. Child demonstrates interest in and shows appreciation for the creative work of others.

### B. MUSIC SKILLS

- VIII.B.1. Child participates in classroom music activities including singing, playing musical instruments, and moving to rhythms.
- VIII.B.2. Child responds to different musical styles through movement and play.

### C. DRAMATIC EXPRESSION SKILLS

- VIII.C.1. Child creates or recreates stories, moods, or experiences through dramatic representations.

## IX. PHYSICAL DEVELOPMENT

### A. GROSS MOTOR DEVELOPMENT SKILLS

- IX.A.1. Child demonstrates coordination and balance in isolation (may not yet coordinate consistently with a partner).
- IX.A.2. Child coordinates sequence of movements to perform tasks.
- IX.A.2. Child coordinates sequence of movements to perform tasks.

### B. FINE-MOTOR DEVELOPMENT SKILLS

- IX.B.1. Child shows control of tasks that require small-muscle strength and control.
- IX.B.2. Child shows increasing control of tasks that require eye-hand coordination.

### C. PERSONAL SAFETY AND HEALTH SKILLS

- IX.C.1. Child practices good habits of personal safety.
- IX.C.2. Child practices good habits of personal health and hygiene.
- IX.C.3. Child identifies good habits of nutrition and exercise.