



SYLLLABUS

YEAR-2

NURSERY LEVEL

Rationale for STEM Education for Future Generations

STEM (Science, Technology, Engineering, and Mathematics) education is essential for preparing future generations to thrive in a rapidly changing and increasingly complex world. The rationale for prioritizing STEM education encompasses several key factors:

1. Driving Economic Growth

STEM fields are critical to the economy. As technology evolves, industries require a workforce skilled in STEM disciplines to innovate and drive growth. By investing in STEM education, we equip students with the necessary skills to participate in high-demand careers, ultimately enhancing economic stability and competitiveness on a global scale.

2. Fostering Innovation and Creativity

STEM education encourages students to think critically and solve real-world problems. By engaging in hands-on projects and collaborative learning, students develop innovative thinking and creativity. These skills are vital for addressing contemporary challenges such as climate change, healthcare, and sustainable energy solutions, enabling future generations to create a better world.

3. Enhancing Critical Thinking and Problem-Solving Skills

STEM education cultivates analytical thinking and the ability to approach problems methodically. Students learn to formulate hypotheses, conduct experiments, and analyze data. These critical thinking skills are not only applicable in STEM fields but also essential in everyday life, empowering individuals to make informed decisions and tackle complex issues.

4. Promoting Equity and Inclusion

Investing in STEM education helps bridge the gap in underrepresented communities. By providing access to quality STEM programs, we can inspire diverse talent and perspectives, ensuring that all students, regardless of background, have opportunities to succeed in these fields. This inclusivity fosters a more equitable society and enhances innovation by incorporating varied viewpoints.

5. Preparing for the Future Job Market

The job market is increasingly shifting toward technology and STEM-related fields. Many of the fastest-growing occupations require skills in data analysis,

engineering, and computer science. By emphasizing STEM education, we prepare students for future careers that will dominate the job landscape, equipping them with the skills needed to adapt and excel in an evolving workforce.

6. Encouraging Lifelong Learning

STEM education instills a passion for inquiry and learning. As technology and scientific understanding progress, the ability to learn and adapt becomes crucial. Students engaged in STEM are more likely to embrace continuous learning, seeking new knowledge and skills throughout their lives, which is essential in a world characterized by rapid change.

7. Contributing to Global Challenges

Many global challenges, such as health crises, environmental issues, and energy shortages, require scientific and technological solutions. STEM education empowers future generations to engage with these issues, fostering a sense of responsibility and enabling them to contribute positively to society. By equipping students with the tools to tackle such challenges, we can create a more sustainable and resilient future.

8. Building Collaboration and Communication Skills

STEM education often involves teamwork and collaboration, simulating real-world work environments. Through group projects and discussions, students learn to communicate effectively, share ideas, and work collaboratively toward common goals. These skills are invaluable in any career and foster a sense of community and shared responsibility.

Conclusion

In conclusion, STEM education is vital for shaping future generations capable of navigating an increasingly complex world. By fostering innovation, critical thinking, and problem-solving skills, we prepare students to contribute to economic growth, address global challenges, and thrive in a technology-driven society. Investing in STEM education today ensures that future leaders and thinkers are well-equipped to create a brighter, more sustainable future for all.

Why NOT the Traditional Curriculum BUT STEM Education: A Pathway to a Brighter Future for Our Children

As parents, we all want the best for our children. We envision a future where they are not only successful in their careers but also equipped with the skills and knowledge to navigate a rapidly

changing world. In today's fast-paced, technology-driven society, it is essential to rethink how we approach education. Traditional curricula, while having served their purpose, often fall short in preparing our children for the challenges they will face. This is where STEM education comes in—a revolutionary approach that emphasizes Science, Technology, Engineering, and Mathematics. Here's why you should consider advocating for STEM education over the traditional curriculum.

1. Fostering Critical Thinking and Problem-Solving Skills

Traditional education often emphasizes rote memorization and standardized testing, which can stifle creativity and critical thinking. In contrast, STEM education encourages children to engage in hands-on learning experiences that challenge them to think critically and solve real-world problems. By exploring complex concepts through experimentation and collaboration, children develop the ability to analyze situations, make informed decisions, and tackle challenges creatively.

2. Cultivating a Love for Learning

One of the biggest drawbacks of a traditional curriculum is that it can sometimes make learning feel like a chore. The rigid structure often leaves little room for exploration and curiosity. STEM education, however, transforms learning into an exciting adventure. With interactive projects, engaging experiments, and collaborative activities, children develop a passion for learning that lasts a lifetime. When they see the real-world applications of what they are studying, their intrinsic motivation to learn grows.

3. Preparing for Future Careers

The job market is evolving, with many of the fastest-growing careers requiring strong STEM skills. From engineers and data scientists to healthcare professionals and environmental specialists, the demand for STEM graduates is on the rise. By providing children with a solid foundation in STEM education, we equip them with the necessary skills to thrive in their future careers. This prepares them not just for jobs, but for meaningful careers that can positively impact the world.

4. Encouraging Collaboration and Teamwork

In the traditional classroom, students often work in isolation, competing against one another rather than collaborating. STEM education, on the other hand, emphasizes teamwork and collaboration. Students learn to communicate effectively, share ideas, and work together to solve problems. These interpersonal skills are crucial in today's interconnected world and are highly valued by employers.

5. Building Resilience and Adaptability

STEM education fosters an environment where failure is viewed as a stepping stone to success. When children engage in experiments, they learn that not every attempt will yield the desired result. This builds resilience and teaches them to adapt their strategies, learn from mistakes,

and persevere in the face of challenges. These are essential life skills that will serve them well in any endeavor.

6. Integrating Real-World Applications

One of the key benefits of STEM education is its focus on real-world applications. Children see firsthand how what they learn in the classroom applies to their everyday lives. Whether it's understanding the science behind climate change, using technology to solve community problems, or engineering solutions for everyday challenges, STEM education makes learning relevant and meaningful.

7. Encouraging Diversity in STEM Fields

STEM fields have historically lacked diversity, with many underrepresented groups facing barriers to entry. By introducing STEM education at an early age, we can inspire a diverse range of students to explore these fields. It's crucial that all children see themselves as potential scientists, engineers, and innovators. Encouraging diversity not only enriches the learning environment but also drives innovation and creativity in STEM fields.

Conclusion

As we consider the future of our children, it is essential to advocate for educational approaches that prepare them for success in a rapidly changing world. STEM education offers a dynamic and engaging alternative to traditional curricula, equipping our children with the critical skills, knowledge, and mindset they need to thrive. By embracing STEM education, we are not just preparing our children for future careers; we are nurturing the next generation of thinkers, problem-solvers, and leaders.

Let's work together to create an educational environment that inspires our children, ignites their curiosity, and empowers them to make a difference in the world. The future is bright, and with STEM education, we can ensure our children are ready to shine in it!

Year 01 Syllabus Overview for TESOL Elementary School (Age 3-4)

Introduction:

At TESOL Elementary School, Year 01 is an important foundation for your child's learning journey. It introduces young learners to the world of STEM (Science, Technology, Engineering, and Mathematics) in a simple, engaging, and hands-on way. Using the Montessori method, students are encouraged to explore, experiment, and grow in a child-centered environment. The Year 01 curriculum focuses on developing key skills such as curiosity, critical thinking, teamwork, and creativity. Parents play a crucial role in supporting and reinforcing these concepts at home.

Foundation Science

Theme: Discovering the World Around Us

Objectives:

1. Introduction to the five senses through play.
2. Explore basic elements of nature (water, air, earth).
3. Learn about common animals and plants in daily life.
4. Understand simple weather patterns (sunny, rainy, cloudy).
5. Begin to ask basic questions about the world.

Activities:

1. **Senses Exploration:** Use everyday items to identify smells, tastes, and textures (e.g., flowers, fruits, soft fabrics).
2. **Water Fun:** Experiment with water (floating and sinking objects).
3. **Nature Walk:** Observe plants and animals in the schoolyard or home garden.
4. **Weather Chart:** Create a simple weather chart, marking sunny, rainy, and cloudy days.
5. **Basic Animal Recognition:** Identify common animals (cat, dog, bird) through pictures or toys.

Evaluation:

- Teacher observation during activities.
- Parent feedback on at-home activities.
- Simple drawing and labeling of weather or animals.

Motivation:

“Science is all around us! As you explore the world, you’ll learn how things work and why they are so special.”

Foundation Phonics

Theme: Early Sound Recognition and Vocabulary

Objectives:

1. Identify basic letter sounds.
2. Recognize common objects that start with the same sound.
3. Develop fine motor skills through tracing and coloring.
4. Begin learning simple vocabulary (CVC words).
5. Boost confidence in sound recognition through fun activities.

Activities:

1. **Sound Matching:** Match sounds to objects (e.g., “Find something that starts with ‘A’”).
2. **Letter Tracing:** Trace the alphabet with crayons and colored pencils.
3. **Phonics Song Time:** Sing simple songs that focus on phonics sounds.
4. **Picture Cards:** Match pictures to the beginning sound (cat, bat, rat).
5. **Story Time:** Read interactive books that emphasize phonics sounds.

Evaluation:

- Oral sound recognition.
- Simple tracing and coloring tasks.
- Teacher observation during phonics songs and storytime.

Motivation:

“Phonics is the key to unlocking new words! You’ll soon be able to recognize the sounds of the letters and begin reading simple words.”

Foundation Technology & IT

Theme: Introducing Technology in Learning

Objectives:

1. Learn how technology can help us in daily life.
2. Develop basic hand-eye coordination with simple tools (tablets, toy cameras).
3. Explore how technology helps solve problems.
4. Recognize simple devices used at home (TV, phone, microwave).
5. Begin working on simple puzzles and drawing with technology.

Activities:

1. **Tablet Drawing:** Use a tablet to draw simple shapes and pictures.
2. **Puzzle Play:** Work on digital puzzles to improve problem-solving.
3. **Picture Time:** Use toy cameras to take pictures of family members or objects.
4. **Virtual Playdates:** Attend virtual playdates with friends to explore fun online games.
5. **Technology Talk:** Discuss how technology (TV, phone) helps us in daily life.

Evaluation:

- Teacher observation during tablet and puzzle activities.
- Parent feedback on how children interact with technology at home.

- Simple presentations of photos or drawings.

Motivation:

“Technology is all around us, helping us every day! You can learn, play, and create amazing things with technology.”

Foundation Engineering

Theme: Building with Simple Objects

Objectives:

1. Develop basic motor skills through block building.
2. Learn about balance and structure.
3. Explore problem-solving by creating towers and bridges.
4. Encourage teamwork through collaborative building.
5. Spark creativity by using different materials for construction.

Activities:

1. **Block Building:** Build towers with blocks of different shapes and sizes.
2. **Seesaw Balance:** Use a simple seesaw to learn about balance.
3. **Bridge Challenge:** Create a bridge using toy blocks and test its strength.
4. **Team Building:** Work in pairs to create a tall structure with blocks.
5. **Parent-Assisted Construction:** Build a simple home structure using recyclable materials.

Evaluation:

- Teacher observation during block-building activities.
- Parent feedback on home construction projects.
- Simple reflections on building experiences (what worked, what didn't).

Motivation:

“Engineering helps us build amazing things! When you build and design, you're using your creativity and problem-solving skills to make the world better.”

Foundation Mathematics

Theme: Learning Numbers and Patterns

Objectives:

1. Understand basic numbers and counting.
2. Recognize common shapes.
3. Develop basic pattern recognition skills.
4. Learn about simple comparisons (big/small, long/short).
5. Begin to use simple math vocabulary (more, less, equal).

Activities:

1. **Counting Games:** Use everyday objects like toys and fruits to practice counting.
2. **Shape Sort:** Sort objects by their shape (circle, square, triangle).
3. **Pattern Play:** Use beads or blocks to create basic patterns (AB, AAB).
4. **Size Comparison:** Compare objects by size and length (which is bigger?).
5. **Number Songs:** Sing counting songs to reinforce number knowledge.

Evaluation:

- Simple counting tasks and games.
- Teacher observation during shape and pattern activities.
- Parent feedback on math activities at home.

Motivation:

“Math is fun! It helps you solve puzzles, count your toys, and recognize patterns in the world.”

Foundation Ethics & Religion

Theme: Understanding Good Behavior

Objectives:

1. Introduce simple concepts of right and wrong.
2. Learn about kindness, sharing, and helping others.
3. Understand basic religious rituals and prayers.
4. Develop empathy through group activities.
5. Start to recognize cultural values and moral principles.

Activities:

1. **Kindness Role-Play:** Act out simple scenarios of sharing and helping others.
2. **Prayer Practice:** Learn basic religious prayers and their meanings.
3. **Story Time:** Listen to stories that teach good behavior (e.g., honesty, respect).
4. **Helping Hands:** Help teachers and friends during clean-up time.
5. **Parent-Led Discussions:** Parents guide conversations on daily good choices.

Evaluation:

- Teacher observation of student behavior during activities.
- Parent feedback on moral behavior at home.
- Simple self-reflection (talk about how you helped today).

Motivation:

“Kindness makes the world a better place. By helping and sharing, you can bring happiness to everyone around you!”

Conclusion:

The Year 01 curriculum at TESOL Elementary School focuses on fostering curiosity and creativity while introducing foundational concepts in STEM, language, and ethics. Through engaging, hands-on activities and strong parental involvement, students develop essential skills that will prepare them for more advanced learning in Year 02. This first step in their educational journey is designed to be both fun and enriching, laying the groundwork for a lifetime of exploration and discovery.

Year 02: Pre-Kindergarten Students

Foundation Science

1. **Exploring Habitats:** Create a small habitat model for an animal.
2. **Nature Art:** Use natural materials to create art.
3. **Magnifying Glass Exploration:** Use magnifying glasses to explore nature.
4. **Animal Sounds:** Listen to and mimic different animal sounds.
5. **Simple Weather Observations:** Record daily weather and discuss.
6. **Water Cycle Craft:** Create a water cycle diagram.
7. **Hands-On Chemistry:** Mix baking soda and vinegar to create a reaction.
8. **Plant Growth Journal:** Keep a journal of plant growth over time.
9. **Color in Nature:** Identify and classify colors found in nature.
10. **Simple Ecosystems:** Create a mini-ecosystem in a jar.
11. **Floating and Sinking Activities:** Explore why some things float.
12. **Animal Adaptations:** Discuss and create animals with adaptations.
13. **Shadow Observations:** Observe and record shadows throughout the day.
14. **Nature Scavenger Hunt:** Search for various plants and animals.
15. **Exploring Textures:** Feel and describe different natural textures.
16. **Seasons Chart:** Create a chart showing changes in seasons.
17. **Simple Food Chain:** Create a simple food chain diagram.
18. **Experiments with Ice:** Observe and record ice melting.
19. **Hands-On Astronomy:** Create a simple solar system model.
20. **Sound Exploration:** Explore how sound travels through different materials.
21. **Gardening Project:** Start a small garden and observe changes.
22. **Plant Dissection:** Examine and discuss parts of a plant.
23. **Color Mixing Experiments:** Mix colors with water and food dye.
24. **Life Cycle Crafts:** Create crafts representing life cycles of animals.
25. **Build a Birdhouse:** Construct simple birdhouses for the garden.

Foundation Phonics for Pre-Kindergarten Students

1. **Phonics Storytime:** Read stories emphasizing phonetic sounds.
2. **Sound Match Game:** Match sounds with pictures.
3. **Phonics Rhymes:** Create rhymes using phonetic sounds.
4. **Letter Sound Collage:** Create collages for each letter.
5. **Phonics Crafting:** Make crafts that start with specific letters.
6. **Sound Patterns:** Create patterns using sounds and objects.
7. **Interactive Phonics Chart:** Add pictures to a phonics chart.
8. **Letter Hunt:** Search the classroom for specific letters.
9. **Story Soundtrack:** Create sounds for different parts of a story.
10. **Phonics Songs and Dances:** Sing and dance to phonics songs.
11. **Sound Sorting:** Sort objects by their starting sounds.
12. **Phonics Puzzle:** Solve puzzles that emphasize phonics.
13. **Letter Recognition Games:** Play games that involve recognizing letters.

14. **Phonics Flashcards:** Use flashcards for practice.
15. **Interactive Story Creation:** Create stories using specific sounds.
16. **Rhyming Match:** Match rhyming words with pictures.
17. **Phonics Art:** Create art that represents phonetic sounds.
18. **Syllable Clapping:** Clap out syllables in words.
19. **Phonics Play:** Use toys to represent phonetic sounds.
20. **Letter Relay:** Relay race to find letters around the room.
21. **Phonics Word Wall:** Create a word wall with phonetic words.
22. **Story Character Sounds:** Create sounds for story characters.
23. **Interactive Phonics Games:** Use educational games to practice phonics.
24. **Letter Tracing:** Trace letters using different materials.
25. **Phonics Review Games:** Play review games to reinforce learning.

Foundation Technology, IT and Vocational Teaching for Pre-Kindergarten Students

1. **Nature Photography:** Take photos of plants and animals using tablets.
2. **Interactive Learning Apps:** Use educational apps for learning.
3. **Digital Storytelling:** Create simple digital stories with pictures.
4. **Coding Basics with Toys:** Use programmable toys for basic coding.
5. **Online Learning Games:** Play online educational games together.
6. **Building Virtual Models:** Use software to design simple structures.
7. **Hands-On Technology Exploration:** Explore different classroom devices.
8. **Create a Video Project:** Record a simple class project on video.
9. **Digital Drawing Activities:** Use apps to create digital art.
10. **Simple Programming Games:** Engage with coding games for young learners.
11. **Tech-Free Crafting:** Craft using technology for instructions.
12. **Exploring Virtual Worlds:** Use VR headsets to explore different environments.
13. **Building Robots:** Use simple kits to build robots.
14. **Creating a Class Website:** Work together to create a simple class website.
15. **Learning about Digital Footprints:** Discuss what a digital footprint is.
16. **Online Story Time:** Participate in virtual story sessions.
17. **Interactive Learning Tools:** Use smart boards for interactive lessons.
18. **Explore Coding Apps:** Try kid-friendly coding applications.
19. **Virtual Field Trips:** Explore places online like museums.
20. **Technology in Daily Life:** Discuss technology used at home.
21. **Building Blocks with Tech:** Use tech to create digital models of structures.
22. **Simple Website Creation:** Build a simple class webpage together.
23. **Hands-On Robotics:** Explore basic robotics using classroom kits.
24. **Exploring Apps Together:** Discover educational apps as a class.
25. **Creating Digital Art Projects:** Create digital art using apps.

Foundation Engineering for Pre-Kindergarten Students

1. **Building with Blocks:** Use blocks to create structures and discuss stability.
2. **Simple Machine Exploration:** Explore levers and pulleys with toys.
3. **Paper Airplane Designs:** Create and test different airplane designs.
4. **Build a Bridge:** Construct a bridge using popsicle sticks.
5. **Egg Drop Experiment:** Create a container to protect an egg from a drop.
6. **Recycling Project:** Design items using recyclable materials.
7. **Cardboard Construction:** Build structures using cardboard boxes.
8. **Water Wheel Construction:** Make a simple water wheel using materials.
9. **Balloon Rockets:** Create rockets using balloons and test distance.
10. **Simple Robot Building:** Construct basic robots with kits.

11. **Create a Castle:** Design and build a castle using blocks.
12. **Obstacle Course Design:** Create an obstacle course for toys.
13. **Kite Building:** Design and create kites to fly.
14. **Making Catapults:** Build simple catapults and launch items.
15. **Designing a Playground:** Plan a playground layout on paper.
16. **Building a Shelter:** Create small shelters for toys.
17. **Design a Vehicle:** Construct vehicles using various materials.
18. **Simple Circuit Projects:** Use batteries and bulbs for simple circuits.
19. **Marshmallow Structures:** Build structures with marshmallows and toothpicks.
20. **Making Water Filters:** Create simple water filters using common materials.
21. **Designing a Garden:** Plan and design a small garden layout.
22. **Wind-Powered Cars:** Build small cars powered by wind.
23. **Building Towers:** See who can build the tallest tower.
24. **Create a Maze:** Design and construct a maze for toys.
25. **Explore Engineering Roles:** Discuss different engineering careers and roles.

Foundation Mathematics for Pre-Kindergarten Students

1. **Counting with Objects:** Count and categorize classroom objects.
2. **Sorting by Attributes:** Sort objects by size, color, or shape.
3. **Building Shapes:** Create shapes using various materials.
4. **Measurement with Blocks:** Measure items using blocks as a unit.
5. **Counting Songs:** Sing songs that reinforce counting.
6. **Math Story Problems:** Create simple math problems using stories.
7. **Graphing Class Favorites:** Create a graph of favorite fruits or colors.
8. **Shape Scavenger Hunt:** Find and identify shapes around the classroom.
9. **Time Activities:** Use clocks to learn about time.
10. **Money Sorting:** Sort play money by type and value.
11. **Measurement Games:** Measure the height of friends using non-standard units.
12. **Pattern Making:** Create patterns with beads or colored objects.
13. **Number Line Jump:** Create a number line on the floor to jump on.
14. **Daily Calendar Math:** Use a calendar to track days and months.
15. **Math Puzzles:** Solve puzzles that reinforce counting and shapes.
16. **Simple Addition Games:** Play games that involve adding small numbers.
17. **Counting Activities:** Count and sort different snack items.
18. **Explore Fractions:** Use pizza slices to introduce simple fractions.
19. **Hands-On Graphing:** Create a bar graph of classroom items.
20. **Story Time with Numbers:** Read stories that include counting.
21. **Estimating Games:** Practice estimating quantities of items.
22. **Building Blocks Math:** Use building blocks to explore shapes and numbers.
23. **Math Relay Races:** Conduct races where students solve math problems.
24. **Create a Math Book:** Make a class math book with illustrations and problems.
25. **Time with Songs:** Learn about time through songs.