Kindergarten American Online School

MATHEMATICS CURRICULUM

Exploring Patterns, Time, and Measurement

Version June/2025

1. Introduction

The Role of Mathematics in Kindergarten

In Kindergarten, mathematics is an exciting adventure of discovery and practice. Students learn to recognize and use numbers, shapes, patterns, and measurements in their everyday life. The focus is on building number sense, understanding basic concepts of time, and organizing information in meaningful ways. Students will develop essential skills for problem-solving, comparison, and estimation through hands-on activities, games, and real-world examples.

By the end of this course, students will:

✓ **Understand how to compare and organize objects, shapes, and numbers.**

✓ **Identify and create simple patterns and sequences.**

✓ **Understand the basic concepts of time and sequencing events.**

✓ **Estimate durations and recognize weekday names.**

✓ **Express mathematical ideas through discussion and simple written reports.**

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2. Core Competence Areas

MTH.1 Comparison and Organization – "Compare and Organize"

Learning Outcomes

By the end of this course, students will be able to:

✓ **Compare the size, shape, and color of objects.**

✓ **Sort and organize objects by different attributes (size, color, type).**

✓ **Use comparative language (e.g., bigger, smaller, same, different).**

Competencies

MTH.1.A.1 – Sorting and classifying objects

- Sort objects into groups by attributes (e.g., shapes, sizes, colors).
- Use sorting trays or digital tools for interactive sorting exercises.

MTH.1.A.2 – Comparing objects and quantities

- Use visual aids (e.g., greater than, less than symbols) to compare objects and numbers.
- Work in pairs or small groups to organize classroom materials by color, shape, or size.

MTH.2 Patterns and Sequences – "Patterns"

Learning Outcomes

By the end of this unit, students will be able to:

✓ **Recognize and complete simple repeating patterns.**

✓ **Identify patterns in shapes, sounds, and objects.**

✓ **Create their own patterns using colors, objects, or sounds.**

Competencies

MTH.2.A.1 – Recognizing and creating patterns

- Create patterns using blocks, beads, or stickers (e.g., red, blue, red, blue).

- Practice identifying patterns in nature (e.g., leaves, clouds, flowers) and in the classroom (e.g., desks, books).

MTH.2.A.2 – Extending and describing patterns

- Continue simple patterns using everyday objects (e.g., buttons, pencils, fruits).
- Describe patterns using appropriate language ("ABAB pattern," "red, blue, red").

MTH.3 Time and Sequence – "Time Order" and "Estimate Duration"

Learning Outcomes

By the end of this unit, students will be able to:

✓ **Recognize the order of events in a day.**

✓ **Estimate how long activities take (e.g., how long it takes to eat lunch, play a game).**

✓ **Understand and use the concept of morning, afternoon, and night.**

Competencies

MTH.3.A.1 – Organizing events by time order

- Create a daily schedule with pictures and activities.
- Sequence events in the correct order (e.g., wake up, eat breakfast, go to school).

MTH.3.A.2 – Estimating durations

- Estimate how long different activities will take (e.g., "How long will it take to clean up?").
- Use timers or sand clocks to show the passing of time during activities.

MTH.4 Understanding Weekdays and Festivals – "Weekdays" and "Festivals"

Learning Outcomes

By the end of this unit, students will be able to:

✓ **Name the days of the week in order.**

✓ **Understand and describe basic holidays and festivals (e.g., Christmas, birthdays).**

✓ **Recognize the difference between a workday and a weekend day.**

Competencies

MTH.4.A.1 – Identifying and sequencing days of the week

- Use a classroom calendar to point out and discuss weekdays and weekends.
- Sing songs like "This is the way we…" to reinforce the names of the days.

MTH.4.A.2 – Understanding holidays and celebrations

- Learn about and celebrate different holidays (e.g., Christmas, Thanksgiving).
- Discuss simple reasons behind celebrations (e.g., "We celebrate birthdays to remember the day someone was born").

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3. Assessment and Evaluation

Formative Assessments – Daily Observations and Practice

✓ **Participation in sorting, patterning, and sequencing activities.**

✓ **Journal reflections on time-based activities (e.g., "What I Did Today").**

✓ **Observations during hands-on games and estimation tasks.**

Summative Assessments – Projects and Presentations

✓ **"Week in Review" poster showing the days of the week and student's schedule.**

✓ **Pattern-making challenge or timed activity.**

✓ **End-of-unit review with picture-based sequencing tests.**

Authentic Assessment – Applied Learning and Collaboration

✓ **"Time Traveler's Journal" with weekly records of time estimation.**

✓ **Group activities where students share their understanding of the time-related concepts (days, hours, activities).**

✓ **Holiday celebration project or a calendar creation project.**

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4. Instructional Strategies for Online Learning

Hands-On and Visual Learning

✓ Use real objects, such as clocks, timers, and everyday materials, for measurement activities.

✓ Integrate art (e.g., collage, drawing) to visualize time and patterns.

Routine-Based and Repetitive

✓ Establish a class routine that reinforces the concept of time and sequencing (e.g., daily weather chart, classroom calendar).

✓ Use repetition and movement to reinforce pattern identification (e.g., "Clap the Pattern" games).

Celebratory and Inclusive

✓ Celebrate each student's understanding and progress in pattern-making, time-telling, and scheduling.

✓ Use interactive games and songs to create a joyful, welcoming math environment.