COPPELL ISD SCIENCE YEAR AT A GLANCE

SUBJECT: SCIENCE	GRADE KINDERGARTEN	6 Units

Program Transfer Goals

- Ask questions, recognize and define problems, and propose solutions.
- Safely and ethically collect, analyze, and evaluate appropriate data.
- Use models to understand the world.
- Make valid claims and informed decisions based on scientific evidence.
- Effectively communicate scientific reasoning to a target audience.

PACING

First Nine Weeks	Second Nine Weeks	Third Nine Weeks	Fourth Nine Weeks

Unit 1 6 Weeks	Unit 2 6 Weeks	Unit 3 6 Weeks	Unit 4 6 Weeks	Unit 5 6 Weeks	Unit 6 6 Weeks

Assurances for a Guaranteed and Viable Curriculum

Adherence to this scope and sequence affords every member of the learning community clarity on the knowledge and skills on which each learner should demonstrate proficiency. In order to deliver a guaranteed and viable curriculum, our team commits to and ensures the following understandings:

Shared Accountability: Responding to the Needs of All Learners

- High levels of learning for all students.
- The district and course formative assessments aligned to the standards for this course support educators and learners in monitoring academic achievement and leveraging interventions.

Shared Understanding: Curriculum Design

- The district curriculum design weaves together the elements of content, skills and assessments in order to adhere to curriculum design at the macro and micro level, ensuring vertical alignment.
- The district curriculum incorporates standards, scope and sequence, enduring understandings, essential questions, performance assessments, and recommended resources.

Interdependence: Curriculum Units

Members of the learning community utilize the curriculum units, plan collaboratively, and reflect on results for continuous improvement.

The district curriculum units may be found: http://tinyurl.com/Coppell-Curriculum

UNIT 1: Physical Science: Physical Properties

TIMELINE: 6 WEEKS

Unit Summary: Learners will explore and discover how to use their senses and other scientific tools to observe and describe physical properties of materials. They will also investigate how materials can be changed by heating and cooling.

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Students will know…

- Objects have properties and patterns.
- Objects can be described and sorted based upon their properties.
    - Size
    - Mass
    - Bigger/Smaller
    - Heavier/Lighter
    - Shape, color and texture
- Some properties of materials may be changed by heating or cooling.
- Our senses can be used as tools to explore properties of materials.
- Information and critical thinking are used in scientific problem solving.

Students will be skilled at…

- Observe and record properties of objects, including relative size and mass, such as bigger or smaller, and heavier or lighter, shape, color, and texture.
- Observe, record, and discuss how materials can be changed by heating or cooling.
- Conduct classroom and outdoor investigations following home and school safety procedures.
- Use environmentally appropriate and responsible practices.
- Ask questions and seek answers in classroom and outdoor investigations.
- Use age-appropriate tools and models to investigate the natural world.

Embedded Processing Skills:

- Actively participates in conducting investigations using tools safely
- Observes, collects, records and communicates scientific data
- Makes predictions based on data
- Demonstrates how to use, conserve and dispose of natural resources and materials

UNIT 2: Physical Science: Force, Motion, and Energy

TIMELINE: 6 WEEKS

Unit Summary: Learners will understand that force, motion, and energy are part of everyday life. They will use their senses to explore different forms of energy using critical thinking and problem solving.

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    - Use models to understand the world.
    - Make valid claims and informed decisions based on scientific evidence.
    - Effectively communicate scientific reasoning to a target audience.

Students will know…

- Energy, force, and motion are a part of students' everyday lives.
    - Location of an object (above, below, behind, in front of, beside)

- Magnets
- Sound
- Heat / Cooling
- How object can move (straight line, zig-zag, up, down, back and forth….)

- Our senses can be used as tools to explore different forms of energy.
- Information and critical thinking are used in scientific problem solving.

Students will be skilled at…

- Use the five senses to explore different forms of energy such as light, heat, and sound.
- Explore interactions between magnets and various materials.
- Observe and describe the relative positions of objects.
- Observe and describe the ways objects move.
- Conduct classroom and outdoor investigations following home and school safety procedures.
- Use environmentally appropriate and responsible practices.
- Ask questions and seek answers in classroom and outdoor investigations.
- Use age-appropriate tools and models to investigate the natural world.

Embedded Processing Skills:

- Actively participates in conducting investigations using tools safely
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- Makes predictions based on data
- Demonstrates how to use, conserve and dispose of natural resources and materials

UNIT 3: Earth Science: Patterns in the Natural World

TIMELINE: 6 WEEKS

Unit Summary: Learners will understand that there are recognizable patterns in the natural world and among objects in the sky. They will use critical thinking and problem solving to observe and describe weather changes, patterns in nature (seasons, weather, day/night), and objects in the sky.

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  - Safely and ethically collect, analyze, and evaluate appropriate data.
  - Use models to understand the world.
  - Make valid claims and informed decisions based on scientific evidence.
  - Effectively communicate scientific reasoning to a target audience.

Students will know…

- There are recognizable patterns in the natural world and among objects in the sky.
- Weather changes day to day and over seasons.
- Information and critical thinking are used in scientific problem solving.

Students will be skilled at…

- Observe and describe weather changes from day to day and over seasons.
- Identify events that have repeating patterns, including seasons of the year and day and night.
- Observe, describe, and illustrate objects in the sky such as the clouds, Moon, and stars, including the Sun.
- Conduct classroom and outdoor investigations following home and school safety procedures and uses environmentally appropriate and responsible practices.
- Ask questions and seek answers in classroom and outdoor investigations.

- Use age-appropriate tools and models to investigate the natural world

Embedded Processing Skills:

- Actively participates in conducting investigations using tools safely
- Observes, collects, records and communicates scientific data
- Makes predictions based on data
- Demonstrates how to use, conserve and dispose of natural resources and materials

UNIT 4: Earth Science: Earth Materials

TIMELINE: 6 WEEKS

Unit Summary: Learners will understand that Earth materials including rocks, water, and soil can be observed, described and sorted based upon physical properties. Using hands on age appropriate tools they will investigate these materials during both indoor and outdoor experiences.

- **Transfer Goal:**
  - Ask questions, recognize and define problems, and propose solutions.
  - Safely and ethically collect, analyze, and evaluate appropriate data.
  - Use models to understand the world.
  - Make valid claims and informed decisions based on scientific evidence.
  - Effectively communicate scientific reasoning to a target audience.

Students will know…

- The natural world includes earth materials (such as- rocks, soil, and water).
- Earth materials have properties and patterns. (such as- size, shape, color, and texture).
- Earth materials are used in everyday life.
- Information and critical thinking are used in scientific problem solving.

Students will be skilled at…

- Observe, describe, compare, and sort rocks by size, shape, color, and texture.
- Observe and describe physical properties of natural sources of water, including color and clarity.
- Give examples of ways rocks, soil, and water are useful.
- Conduct classroom and outdoor investigations following home and school safety procedures and use environmentally appropriate and responsible practices.
- Ask questions and seek answers in classroom and outdoor investigations.
- Use age-appropriate tools and models to investigate different things in the natural world.

Embedded Processing Skills:

- Actively participates in conducting investigations using tools safely
- Observes, collects, records and communicates scientific data
- Makes predictions based on data
- Demonstrates how to use, conserve and dispose of natural resources and materials

UNIT 5: Life Science: Living Things

TIMELINE: 6 WEEKS

Unit Summary: Learners will understand that organisms resemble their parents and have systems in place to help them survive. They will use critical thinking and problem solving to sort plants and animals and identify parts of plants including the plant lifecycle.

- **Transfer Goal:**
  - Ask questions, recognize and define problems, and propose solutions.
  - Safely and ethically collect, analyze, and evaluate appropriate data.
  - Use models to understand the world.
  - Make valid claims and informed decisions based on scientific evidence.
  - Effectively communicate scientific reasoning to a target audience.

Students will know…

- Organisms resemble their parents and have structures and processes that help them survive within their environments.
- Plants and animals have basic needs.
- Everything can be classified into living, once living and nonliving things.
- Information and critical thinking are used in scientific problem solving.

Students will be skilled at…

- Sort plants and animals into groups based on physical characteristics such as color, size, body covering, or leaf shape.
- Identify parts of plants such as roots, stems, and leaves and parts of animals such as head, eyes, and limbs.
- Identify ways that young plants resemble their parent plant.
- Observe changes that are a part of a simple life cycle of a plant: seed, seedling, plant, flower, fruit.
- Conduct classroom and outdoor investigations following home and school safety procedures.
- Uses environmentally appropriate and responsible practices.
- Ask questions and seek answers in classroom and outdoor investigations.
- Use age-appropriate tools and models to investigate the natural world.

Embedded Processing Skills:

- Actively participates in conducting investigations using tools safely
- Observes, collects, records and communicates scientific data
- Makes predictions based on data
- Demonstrates how to use, conserve and dispose of natural resources and materials

UNIT 6: Life Science: Where Living Things Live

TIMELINE: 6 WEEKS

Unit Summary: Learners will understand that plants and animals have basic needs and depend on living and nonliving things for survival. They will use critical thinking and problem solving while conducting hands on investigations to examine evidence of basic needs including food, water, and shelter for animals and air water, nutrients, sunlight, and space for plants.

- **Transfer Goal:**
  - Ask questions, recognize and define problems, and propose solutions.
  - Safely and ethically collect, analyze, and evaluate appropriate data.
  - Use models to understand the world.
  - Make valid claims and informed decisions based on scientific evidence.

- Effectively communicate scientific reasoning to a target audience.

Students will know…

- Plants and animals have basic needs and depend on living and nonliving things around them for survival.
- Living organisms have basic needs such as food, water, and shelter for animals and air, water, nutrients, sunlight, and space for plants.
- Information and critical thinking are used in scientific problem solving.

Students will be skilled at…

- Differentiate between living and nonliving things based upon whether they have basic needs and produce offspring.
- Examine evidence that living organisms have basic needs such as food, water, and shelter for animals and air, water, nutrients, sunlight, and space for plants.
- Conduct classroom and outdoor investigations following home and school safety procedures.
- Use environmentally appropriate and responsible practices.
- Ask questions and seek answers in classroom and outdoor investigations.
- Use age-appropriate tools and models to investigate the natural world.

Embedded Processing Skills:

- Actively participates in conducting investigations using tools safely
- Observes, collects, records and communicates scientific data
- Makes predictions based on data
- Demonstrates how to use, conserve and dispose of natural resources and materials