Science Curriculum Map

Unit Title:_____Animals Two by Two_____ **Grade:**_____K_____

Quarter: [ ] 1 [ ] 2 [ ] 3 [X] 4

Unit Topic: Goldfish and Guppies	**Length: 8 days**	**Big Idea: All Living Things have Basic Needs**	
Learner Outcomes /Competencies: • Fish have identifiable structures. • Fish have basic needs • Fish change their environment. • Fish behavior is influenced by condition in the environment. • Each kind of fish have similar structures and behaviors. • All animals deserve respect and gentle care		**Anchors/Standards:** 3.1.3.A1 Describe characteristics of living things that help to identify and classify them S3.B.1.1.1: Identify and describe the functions of basic structures of animals and plants. 3.1.3.A2 Describe the basic needs of living things and their dependence on light, food, air, water, and shelter. S3.B.3.1: Identify and describe living and nonliving things in an ecosystem and their interaction. S3.B.1.1: Identify and describe the similarities and differences of living things and their life processes. S4.A.1.3.4: Explain what happens to a living organism when its food supply, access to water, shelter, or space is changed (e.g., it might die, migrate, change behavior, eat something else).	**Assessments** Students will label and identify the structures of a fish on a fish outline sheet. FOSS: Animals Two by Two Student Journal Entry Investigation 1 Part 1 Assessment Checklist FOSS: Animals Two by Two Student Journal Entry Investigation 1 Part 2 FOSS: Animals Two by Two Assessment Checklist Modeling Fish Behavior with an Aquarium Model and Paper Fish FOSS Animals Two by Two Student Journal Entry Investigation 1 Part 3 Venn Diagram Comparing Goldfish and Guppies FOSS Assessment Checklist FOSS Assessment Checklist
Science Process Skills Observe Communicate Compare	**Vocabulary** Aquarium Eye, fin ,gill ,goldfish, head, mouth, Scale ,tail Backward, bottom, clean, dirty, food, forward, middle, prefer, surface, water Above, behind, below, in front of, next to, through, tunnel, compare, guppy, female, male	**Math Integration** Measuring Fish Food Fish Related Addition and Subtraction Counting and Recording Number of Fish **Reading Integration** Science Journals Entries Kid-writing Prompts Guided Reading Books	**Resources** FOSS Website FOSS Animals Two by Two Resource Section **Materials** FOSS Kit Animals Two By Two

Science Curriculum Map

Unit Title:___Animals Two By Two_____ **Grade:**____K_____

Quarter: [ ] 1 [ ] 2 [ ] 3 [X] 4

Unit Topic: Big and Little Worms	**Length: 8 days**	**Big Idea: All Living Things Are Made Up of Parts That Have Specific Functions**	
Learner Outcomes /Competencies: • Worms have identifiable structures. • Worms have basic needs. • Worm behavior is influence by conditions in the environment. • Each kind of worm has unique structures and behavior. • Different kinds of worms have similar structures and behaviors. • All animals deserve respect and gentle care.		**Anchors/Standards:** **3.1.3.A1 Describe characteristics of living things that help to identify and classify them** **S3.B.1.1.1: Identify and describe the functions of basic structures of animals and plants.** **3.1.3.A2 Describe the basic needs of living things and their dependence on light, food, air, water, and shelter** **S3.B.3.1: Identify and describe living and nonliving things in an ecosystem and their interaction.** **S3.B.1.1: Identify and describe the similarities and differences of living things and their life processes.** S4.A.1.3.4: Explain what happens to a living organism when its food supply, access to water, shelter, or space is changed (e.g., it might die, migrate, change behavior, eat something else).	**Assessments** **FOSS Student Journal Entry Investigation 3: Part 1 Assessment Checklist** **FOSS Journal Entry Investigation 3:Part 1 Terrarium Drawing** **FOSS Student Journal Entry Investigation 3: Part 2 Worm Behavior** **FOSS Assessment Checklist: Animals Two by Two** **FOSS Student Journal Entry Investigation 3: Part 3** **FOSS Assessment Checklist: Animals Two by Two** **FOSS Assessment Checklist: Animals Two by Two**
Science Process Skills **Observe** **Compare** **Communicate**	**Vocabulary** **Backward, behavior, body, bottom, bristle, burrow, clitellum, earthworm, forward, head, hide, moist, mouth, night crawler, react, redworm, rough, segment, sideways smooth, soil, swollen, trop**	**Math Integration** **Compare Worm Lengths** **Reading Integration** **Student Science Journal Entries**	**Resources** **FOSS Animals Two by Two Resource Section** **Materials** **FOSS Animals Two by Two Kit**

Science Curriculum Map

Unit Title:____Animals Two By Two_____ **Grade:**_____K____

Quarter: [ ] 1 [ ] 2 [ ] 3 [X] 4

<table>
<tr><td colspan="2">Unit Topic: Pill Bugs and Sow Bugs</td><td>Length: 10 days</td><td colspan="2">Big Idea: The survival of living things is dependent on their adaptations and ability to respond to natural changes in and human influences on the environment.</td></tr>
<tr><td colspan="2">Learner Outcomes /Competencies:

• Isopods have identifiable structures and behavior.

• Each kind of isopod has unique structures and behavior.

• Different kinds of isopods have similar structures and behaviors.

• Isopod behavior is influenced by the conditions in the environment.

• Animals have similar needs. The all need food, water, air, and space.

• All animals deserve respect and gentle care.</td><td colspan="2">Anchors/Standards:

3.1.3.A1 Describe characteristics of living things that help to identify and classify them

S3.B.1.1.1: Identify and describe the functions of basic structures of animals and plants.

S3.B.1.1: Identify and describe the similarities and differences of living things and their life processes

S3.B.3.1: Identify and describe living and nonliving things in an ecosystem and their interaction

3.1.3.A2 Describe the basic needs of living things and their dependence on light, food, air, water, and shelter.

S4.A.1.3.4: Explain what happens to a living organism when its food supply, access to water, shelter, or space is changed (e.g., it might die, migrate, change behavior, eat something else).</td><td>Assessments

FOSS Student Journal Entry Investigation 4: Part 1
FOSS Assessment Checklist

FOSS Student Journal Entry Investigation 4: Part 2
FOSS Assessment Checklist

FOSS Student Journal Entry Investigation 4: Part 3
FOSS Assessment Checklist

FOSS Assessment Checklist</td></tr>
<tr><td>Science Process Skills
Observe
Communicate
Compare</td><td>Vocabulary
Air, antenna, ball, bottom, carapace, condition, encourage, finish, flatter, food, habitat, head, isopod, jagged, leg, moisture, pill bug, plants, protect, race roll up, rounder, section sides, sort, sow bug, start, tail, terrarium, top, turn over, water.</td><td colspan="2">Math Integration

Reading Integration
Science Journal Entries</td><td>Resources

FOSS Animals Two By Two Resource Section

Materials
FOSS Animals Two By Two Kit</td></tr>
</table>

Science Curriculum Map

Unit Title:___Life Science__ Grade:____Kindergarten_____

Quarter: [X] 1 [X] 2 [X] 3 [X] 4

<table>
<tr><td colspan="2">Unit Topic: Trees</td><td colspan="2">Length: 30 min</td><td colspan="2">Big Idea: All Living Things Have Parts and Specific Functions</td></tr>
<tr><td colspan="2">Learner Outcomes /Competencies:
Trees are identifiable by their shape.
Leaves have many properties that can be compared.
Trees have identifiable structures (roots, trunk, leaves, branches).
Trees have identifiable structures that serve different functions.
Trees change through the seasons.</td><td colspan="2">Anchors/Standards:
3.1.3.A1 Describe characteristic of living things that help to identify and classify them.
3.1.3.A5 Identify the Structures in plants that are responsible for food production, support, water transport,, reproduction, growth and protection.
S4.B.1: Structure and Function of organisms
S4.A.3.3: Identify and make observations about patterns that regularly occur and reoccur in nature.</td><td>Assessments
Students will draw and label a tree.
Students will make a tree structure book and label parts.
Students will draw a tree at the beginning and end of year.
Students will draw a tree for each season in a journal.</td></tr>
<tr><td>Science Process Skills

Observing
Communicating</td><td>Vocabulary
Bark
Branch
Leaf
Root
Trunk
Tree
Twig
Living
Shape
Above
Below</td><td colspan="2">Math Integration
2.9.1 Compare the attributes of shapes, sort geometric figures according to common attributes.
2.9.3 Use position words to describe the location of objects.
2.3.2 Estimate and measure objects using non standard units.

Reading Integration</td><td>Resources
Foss Trees Investigation 1

Materials</td></tr>
</table>

Science Curriculum Map

Unit Title:___Life Science__ **Grade:**____Kindergarten_____

Quarter: [X] 1 [X] 2 [X] 3 [X] 4

<table>
<tr><td colspan="2">Unit Topic: Trees
Investigation 2, Leaves</td><td>Length: 30 min</td><td colspan="2">Big Idea: All Living Things Have Specific Characteristics</td></tr>
<tr><td colspan="3">Learner Outcomes /Competencies:
Leaves can be identified by their shape.
Leaves have identifiable structures.
Leaves have many properties that can be compared.</td><td>Anchors/Standards:
<u>3.1.3.A1:</u> Describe characteristics of living things that help to identify and classify them.
<u>3.1.4.A1:</u> Classify plants and animals according to the physical characteristics that they share.
<u>3.1.3.A9:</u> • Ask questions about objects, organisms, and events. •</td><td>Assessments
Students will sort leaves by shape.
Students will go on a leaf hunt and record their finding by matching leaves by shape.
Students will ask partners questions about color, shape, and size of leaves (teacher observation).</td></tr>
<tr><td>Science Process Skills

Observing
Communicating
Comparing
Classifying</td><td>Vocabulary
Big
Small
Same
Different
Size
Color
Shape
More
Less</td><td>Math Integration
2.3.4 Compare objects using direct comparison. Group objects according to common properties.
2.3.3 Analyze charts and graphs of objects.
2.9.1 Compare the attributes of shapes and sorts the geometric figures according to common attributes.

Reading Integration</td><td colspan="2">Resources

Foss Trees Investigation 2

Materials</td></tr>
</table>

Science Curriculum Map

Unit Title:_____Life Science Grade:_____Kindergarten_____

Quarter: [X] 1 [X] 2 [X] 3 [X] 4

<table>
<tr><td colspan="2">Unit Topic: Trees, Investigation 3, Seasons
Length: 30 min.</td><td colspan="2">Big Idea: Natural Resources Provide for the Needs and Wants of all Living Things</td></tr>
<tr><td colspan="2">Learner Outcomes /Competencies:
Trees are resources.
Trees are resources they provide people with wood and food.
Trees change through the seasons.</td><td>Anchors/Standards:
<u>4.3.3.B:</u> Identify local <u>natural resources.</u>
<u>4.3.4.A:</u> Identify ways humans depend on <u>natural resources</u> for survival.
Identify resources used to provide humans with energy, food, employment, housing and water. 3.1c.3: Identify reasons for observed changes
S4.A.3.3: Identify and make observations about patterns that regularly occur and reoccur in nature.</td><td>Assessments
Teacher made tree product sort. (Students will sort pictures of products and non-products that come from tree).
Draw and write about a food that comes from a tree.
Draw a tree in student journal according to season.</td></tr>
<tr><td>Science Process Skills

Identifying
Comparing
Communicating
Inferring</td><td>Vocabulary
Above
Below
Spring
Summer
Winter
Fall
Season
Evergreen
Needle
Bud
Flower/blossom
Seed
Changes</td><td>Math Integration
2.9.3 Use position words to describe the location of objects.
2.11.2 Identify situations that occur in real life that occur quickly and slowly.

Reading Integration</td><td>Resources
Foss Trees Investigation 3

Materials</td></tr>
</table>

Science Curriculum Map

Unit Title:_____**Physical Science Grade:**_____**Kindergarten**_____

Quarter: [ ] 1 [ ] 2 [x] 3 [x] 4

<table>
<tr><td colspan="2">Unit Topic: Wood and Paper, Investigation 1
Length: 30 min</td><td colspan="2">Big Idea: Matter has observable physical properties .</td></tr>
<tr><td colspan="2">Learner Outcomes /Competencies:
Students will make observations using their five senses.
Students will know that objects have different properties.
Students will know that trees are a resource.</td><td>Anchors/Standards:
3.1.a.9 Use the five senses as tools with which to observe, collect information, classify, describe and solve problems. Use observation to develop a descriptive vocabulary based on sensory experiences.
3.2.3.A1: Differentiate between properties of objects such as size, shape, and weight and properties of materials that make up the objects such as color, texture, and hardness .
<u>4.3.3.A:</u> Identify the <u>natural resources</u> used to make various products.
3.1.3.A9:Scientific Investigations</td><td>Assessments
Teacher made checklist.
Students will sort objects by color, shape or size and record the sorting rule.
Draw a picture and write a sentence about a wood product.</td></tr>
<tr><td>Science Process Skills

Identifying
Comparing
Communicating
Inferring</td><td>Vocabulary
More/Less
Rough/Smooth
Same/Different
Float/Sink</td><td>Math Integration
2.3.3 Analyze charts and graphs of objects.
2.3.4 Compare two objects using direct comparison.
2.3.2 Estimate and measure objects using non standard units.
2.4.1 Verify predictions and solutions about environmental objects.

Reading Integration</td><td>Resources
Foss Wood and Paper Investigation 1

Materials</td></tr>
</table>

Science Curriculum Map

Unit Title:_____**Physical Science Grade:**_____**Kindergarten**_____

Quarter: [ ] 1 [ ] 2 [x] 3 [x] 4

<table>
<tr><td colspan="2">Unit Topic: Wood and Paper, Investigation 2 Changing Wood
Length:</td><td colspan="2">Big Idea: Matter has observable physical properties and the potential to mix and form new materials.</td></tr>
<tr><td colspan="2">Learner Outcomes /Competencies:
Know that wood has observable properties.
Students will know that products can be produced.
Students know that asking questions will lead to information gathering.</td><td>Anchors/Standards:
<u>3.2.3.A1:</u> Differentiate between properties that make up the objects such as color, texture, and hardness.

<u>3.4.4.D1:</u> Investigate how things are made and how they can be improved.
<u>3.4.3.D3:</u> Collect information about everyday products and systems by asking questions.</td><td>Assessments
A five senses chart on the properties of sawdust.
Draw and label a before and after picture of plywood. (T-Chart).
Teacher checklist for question skills.</td></tr>
<tr><td>Science Process Skills

Observing
Communicating
Predicting</td><td>Vocabulary
Mix
Change
Shape</td><td>Math Integration
2.11.2 Identify situations that occur in real life quickly and slowly. Sequencing
2.7.2 Predict outcomes of events.

Reading Integration</td><td>Resources
Foss Wood and Paper Investigation 2

Materials</td></tr>
</table>

Science Curriculum Map

Unit Title:_____**Physical Science Grade:**_____**Kindergarten**_____

Quarter: [ ] 1 [ ] 2 [x] 3 [x] 4

<table>
<tr><td colspan="2">Unit Topic: Wood and Paper, Investigation 3 Getting to Know Paper</td><td>Length: 30 min</td><td colspan="2">Big Idea: Matter has observable physical properties .</td></tr>
<tr><td colspan="2">Learner Outcomes /Competencies:
Students will know that paper has many observable properties.
Students will know that different papers read to water in different ways.</td><td colspan="2">Anchors/Standards:
<u>3.2.3.A1:</u> Differentiate between properties of objects such as size, shape, and weight and properties of materials that make up the objects such as color, texture, and hardness.
<u>3.2.3.A4:</u> Use basic reactions to demonstrate observable changes in properties of matter .</td><td>Assessments
Students will classify paper according to properties.
Students will record observations in student science journal.</td></tr>
<tr><td>Science Process Skills

Observing
Communicating
Comparing</td><td>Vocabulary
Absorb
Bend
Bumpy
Change
Tear
Texture
Rough
Smooth
Flat
Float
Wet</td><td colspan="2">Math Integration
2.7.2 Predict outcomes of events.
2.9.2 Create an example of symmetry.
2.5.1: Identify and analyze a problem for possible solutions. Seek information through observation and conversations.

Reading Integration</td><td>Resources
Foss Wood and Paper Investigation 3

Materials</td></tr>
</table>

Science Curriculum Map

Unit Title:_____**Physical Science Grade:**_____**Kindergarten**_____

Quarter: [ ] 1 [ ] 2 [x] 3 [x] 4

Unit Topic: Wood and Paper, Investigation 4, Changing Paper	**Length: 30 min**	**Big Idea: The use of sustainable natural resources is essential for all living things now and in the future.**	
Learner Outcomes /Competencies: Students will know that matter can change. Students will know that resources can be recycled. Students will know that products are made from natural resources.		**Anchors/Standards:** 3.2.3.A4: Use basic reactions to demonstrate observable changes in properties of matter. 3.4.3.B2: Explain how materials are re-used or recycled. 4.3.3.A: Identify the natural resources used to make various products. S4.D.1.2.2: Identify the types and uses of Earth materials for renewable, nonrenewable, and reusable products (e.g., human-made products: concrete, paper, plastics, fabrics).	**Assessments** Draw a before and after picture or recycled paper. (T-chart in journal) Students will sequence pictures on paper recycling. Draw a picture of where paper comes from. Draw two products that we made from trees and record in journal.
Science Process Skills Observing Communicating Comparing	**Vocabulary** Absorb Dry Recycle	**Math Integration** 2.7.2: Predict outcomes of events 2.11.2: Identify situations that occur quickly or slowly. Sequencing 2.5.1: Identify and analyze a problem for possible solution. Seek information through observation and conversations. **Reading Integration**	**Resources** Foss Wood and Paper Investigation 4 **Materials**

Science Curriculum Map

Unit Title:_____Physical Science Grade:_____Kindergarten_____

Quarter: [ ] 1 [ ] 2 [x] 3 [x] 4

<table>
<tr><td colspan="2">Unit Topic: Wood and Paper, Investigation 5, Constructions
Length: 30 min</td><td colspan="2">Big Idea: Technological design is a creative process that anyone can do which may result in new inventions and innovations.</td></tr>
<tr><td colspan="2">Learner Outcomes /Competencies:
Students will know that art can be made from resources.
Students will know that inventions require creativity.
Students will know that materials can be reused or recycled.</td><td>Anchors/Standards:
<u>3.4.3.C2:</u> Explain why the <u>design</u> process requires creativity and consideration of all ideas.
<u>3.4.5.C3:</u> Identify how <u>invention</u> and <u>innovation</u> are creative ways to turn ideas into real things.
<u>3.4.3.B2:</u> Explain how materials are re-used or recycled.</td><td>Assessments
Students will make a museum plaque for their wood sculptures and present to the class.
Students will Kid Write about their weaving.
Students will get a box and turn it into something else.</td></tr>
<tr><td>Science Process Skills

Observing
Communicating
Comparing</td><td>Vocabulary
Weave
Design
Sculpture
Artistic</td><td>Math Integration
2.8.5 Create a math story from a pictorial.
2.9.1 Compare the attributes of shapes.
2.7.2 Predict outcomes of events.

Reading Integration</td><td>Resources
Foss Wood and Paper Investigation 5

Materials</td></tr>
</table>