Inquiry Project Design Plan

Teacher/Designer Names: Elizabeth DiNApoli/Laura Anson **School: William Boyce Thompson**	
Name of Project: seasonal changes in the environment	**Grade Level: pre-k**
Est Launch Date: October	**Est Duration (in weeks): 12**
Disciplines Involved: ELA, math, science, Art	
Problem Statement: We don't always know about the seasons and how it effects the environment and us! There are patterns in seasons and because weather is changing we don't always know how people and living things in the environment will react to those changes.	

STAGE 1: DESIRED RESULTS

Big Idea: Environment

Enduring Understandings:

- We can use our 5 senses to understand the world around us and help us solve problems.
- We can learn from our 3rd grade buddies from the research we do together to solve real-world problems.
- Seasons have different weather which affects living things in the environment. These seasons effect us, animals, and the environment and when is changes unexpectedly, it can change what we think is going to happen.

Essential Question(s):
(MEANT TO BE SHARED WITH STUDENTS)

- How do living things respond to changes throughout the seasons?
- What happens to the environment and surroundings when the seasons change?

Established Goals (Standards, Performance Indicators, Learning Goals):
PK.AL.2 Actively engages in problem solving

Science Standards (list if using, unpack under each standard into SWK and SWBAT)**:**

PK.SCI.5. [P-LS1-2.] Plans and conducts investigations to determine how familiar plants and/or animals use their external parts to help them survive in the environment

SWK:

- How to observe familiar plants and animals (including humans) and describes what they need to survive during the different seasons
- Students will explore what a variety of living organisms need to live and grow during the seasonal changes (e.g., water, nutrients, environment)

SWBAT:

- Students will observe and represent famillts and animals (e.g., draws pictures, builds and plays with toy or model animals in their habitats)
- Students will compare baby and adult animals and recognizes similarities (e.g., matches adult stufed animals with their baby in a play setting)
- ∉ Students will recognize the diferent structures of familiar plants and animals (e.g., roots, stems, leaves for plants and eyes, ears, mouth, arms, legs for animals)

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- ∉ Students will observe the relationships between the physical and living environment (e.g. views habitats of plants and animals)
- ∉ Students will develop a model to describe that some young plants and animals are similar to, but not exactly like, their parents.

Social Studies Standards (list if using, unpack under each standard into SWK and SWBAT)**:**

SWK:
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SWBAT:
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Mathematics Standards
(list if using, unpack under each standard into SWK and SWBAT)**:**

Identifes and describes shapes (squares, circles, triangles and rectangles)
PK.MATH.12. [NY-PK.G.1.] Describes objects in the environment using names of shapes and describes the relative positions of these objects using terms such as top, bottom, up, down, above, below, in front of, behind, over, under, next to
PK.MATH.13. [NY-PK.G.2.] Names shapes regardless of size Explores and creates two and three-dimensional objects
PK.MATH.10. [NY-PK.MD.1.]
Identifes measurable attributes of objects, such as length or weight, and describes them using appropriate vocabulary (e.g., small, big, short, tall, empty, full, heavy, light)

SWK:
- How to identify an object in the nenvironment using math vocabulary: (e.g., small, big, short, tall, empty, full, heavy, light)
- How to describe an object in the environment using names of shapes, colors, size

SWBAT:
- Students will explore two-and three-dimensional objectsin the environment and use informal language to describe their similarities, diferences, and other attributes
- Students will create and build shapes of the environment from components (e.g., sticks, blocks, clay)

ELA Standards (list if using, unpack under each standard into SWK and SWBAT)**:**

PK.ELAL.22. [PKSL.4] Describes familiar people, places, things and events
PK.ELAL.23. [PKSL.5] Creates a visual display (e.g., drawing, art work, building, writing)
PK.ELAL.24. [PKSL.6] Expresses thoughts, feelings, and ideas (e.g., role-playing, music, drawing, art work, building, writing)

SWK:
- How to describe objects and changes in the environment during the seasonal changes
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SWBAT:
- STudents will Create a project of what they observed about seasonal changes
- Students will describe what they observed and draw their observations in a journal
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Technology Standards:

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- **NYS Computer Science and Digital Fluency** (select at least 1 for Smart Start)**:**

K-1.IC.3 Identify computing technologies in the classroom, home and community.

- **ISTE:**

Social Justice Standards:

Other (Art, SEL, etc):
PK.AL.2 Indicators:
a. Identifes a problem and tries to solve it independently
b. Attempts multiple ways to solve a problem
c. Communicates more than one solution to a problem
d. Engages with peers and adults to solve problems

PK.AL.4. Exhibits curiosity, interest, and willingness to learn new things and have new experiences
PK.AL.4. Indicators:
a. Asks questions using who, what, how, why, when, where, what if
b. Expresses an interest in learning about and discussing a growing range of ideas
c. Actively explores how things in the world work
d. Investigates areas of interest
e. Takes objects and materials apart and attempts to reassemble them (e.g., puzzles, models, nuts and bolts) f. Willingly engages in new experiences and activities

PK.AL.3. Approaches tasks and problems with creativity, imagination and/or willingness to try new experiences
PK.AL.3 Indicators:
a. Uses materials/props in novel ways to represent ideas, characters and objects
b. Identifes new or additional materials to complete a task
c. Experiments to further knowledge
d. Seeks additional clarity to further understanding e. Demonstrates innovative thinking

Links to Standards/Reference Frameworks:
NYS NextGen ELA and Math, NGSS, NGSS by DCI Nat'l C3 SS Framework, NYS K-8 SS Standards, ISTE, Social Justice Standards, CASEL SEL Framework, NYS CS and Digital Fluency

Teaching/Learning Goal Notes for Stage 1:

STAGE 2: EVIDENCE & ASSESSMENTS:

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Performance Task Narrative

Goal: *Provide a statement of the task. Establish the goal, problem, challenge, or obstacle in the task.*
The goal is for the students to understand how seasonal changes effect the environment and surroundings around us.

Role: *Define the role of the students in the task. State the job of the students for the task.*

The role of the student will be to observe the changes around them by being scientists (meterologist), designers, and investigators.

Audience: *Identify the target audience within the context of the scenario.*

The target audience within the context of this scenario are older students, classmates, teachers, parents and adiminstartors.

Situation: *Set the context of the scenario. Define the narrative.*

The environment is important to the wellbeing of the Earth. What happens to the envirmont during seasonal changes and how does it impact our lives as well as nature and animals?

Product(s): *Clarify what the students will create and why they will create it.*

- Students will create a model for each season displaying differences in habitats of plants, animals, and humans
- Using the Book Creator site, we will create a book using pictures from the drones as well as drawings and writings that the students create

Criteria for Success): *Provide students with a clear picture of success. Identify specific standards for success such as rubrics, checklists, quizzes, etc.*

- ❏ Journal drawing and dictation
- ❏ Labeling the environmant and changes of the seasons
- ❏ Speaking into a microphone about what they observed, and record their findings
- ❏ Use ipads to take pictures of observations and voice record what they have taken a picture of to prove understanding
- ❏ Explain the differences of seasons
- ❏ Make individual books about the seasonal changes
- ❏ Identify seasons using 5 senses

Other Evidence/Assessments:

Check for understanding using above criteria

Book Creator

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STAGE 3: THE LEARNING PLAN:

Learning Activities

(potential layout below. Can be daily, divided by periods, or even using the Engineering Design Process to divide into stages such as Ask, Imagine, Plan, Create, Improve)

Week 1

Learning Goals:
Students will identify the names of each season and explain what they know about what happens in the different changes that happen in each

Learning Events:
Read seasons book
KWL chart (Do only what they Know)

Formative Assessments:

What they know about seasons: an exit ticket (drawings) Teacher/aid will dictate

(These drawings will become an individual book about seasons) using bookcreator.com

Notes/Resources:

A Stroll Through the seasons by: Kay Barnham
Bookcreator.com

Week 2

Learning Goals:

Sudents will tell us what they want to learn about the seasons

Learning Events:

Sensory walk outdoors obsering the scenery around them
Using the drones, We will take a picture from above a specific tree on our school grounds so that they can desribe what they see.
KWL: (What they want to learn about the seasons)

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Formative Assessments:

What they want to learn about the seasons: an exit ticket (drawings) Teacher/aid will dictate

(These drawings will become an individual book about seasons) using bookcreator.com

Notes/Resources:
Bookcreator.com
DRONES

Week 3

Learning Goals:

Studentswill use robots to identify each season Also teach them directional words)

Learning Events:

I will supply pictures of each season on the floor. I will describe a season and myself as well as the student buddies from 3rd grade will gude the students as they program the robots to go to that season described.

Formative Assessments:

Students will be able to do above activity on their own with little guidance)
Students can also describe a season to a student in the class and that student will have the robot go to that season.

Notes/Resources:

ROBOTS
3rd grade student buddies will also help

Week 4

Learning Goals:
Students will go another sensory walk using drones to capture any changes of the environment from the previous walk

Learning Events:

Compare/contrast any changes in the environment using a venn diagram
This will be ongoing for weeks to come

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Formative Assessments:

Students will draw pictures of whatthey observed on the sensory walk and tell me any changes they saw compared to their last drawing.
Teacher and aid will dictate
Drawings and dictations will be added to BOOKCTREATOR.COM project