Inquiry Project Design Plan

Teacher/Designer Names: COSTELLO/HANRAHAN (School Five)	
Name of Project: Imbalance in our Ecosystem	**Grade Level: 5th**
Est Launch Date: Oct/Nov	**Est Duration (in weeks): 2-3**
Disciplines Involved: Science, ELA, Math, Technology, engineering	
Problem Statement: There are invasive species in our ecosystem.	

STAGE 1: DESIRED RESULTS

Big Idea: Ecosystem

Enduring Understandings:

- Humans have an impact on their environment. /What we do affects others.
- We can educate the public about environmental issues.
- We can design solutions to effect change.

Essential Question(s):

- How does the introduction of invasive species impact the organisms of an ecosystem.
- What measures can be taken to eradicate an ecosystem of invasive species

Established Goals (Standards, Performance Indicators, Learning Goals):
*choose relevant standards to unit/project plan timing and learning goals; do not need to use all disciplines below.
** unpack into SWK and SWBAT under identified standards as this will lead to aligned assessment design

Science Standards:

5- LS21-.A: Interdependent Relationships in Ecosystems ♣ The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem.

SWK: there are relationships in ecosystems

SWBAT:

- research relationships in ecosystems
- identify the effects of invasive speices on our local ecosystem (School Five Orchard/garden and local parks)

Social Studies Standards:

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Mathematics Standards:

ELA Standards:

5W2: Write informative/explanatory texts to explore a topic and convey ideas and information relevant to the subject.

SWK:
topics convey ideas and information about a subject

SWBAT:
Research and identify topics on invasive species and convey ideas and inforation in written form
Paraphrase information and findings to be published

Technology Standards:

- **NYS Computer Science and Digital Fluency:**
-

4-6.DL.4 Use a variety of digital tools and resources to create and revise digital artifacts

SWK: digital tools can be used to educate the public about environmental/invasive species issues

SWBAT: Use ThingLink to create a AR to showcase research on invasive speices

- **ISTE:**

1.2 Digital Citizen - Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

1.3 Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

Social Justice Standards:
Identity 5 ID.3-5.5 I know my family and I do things the same as and different from other people and groups, and I know how to use what I learn from home, school and other places that matter to me.

Other (Art, SEL, etc):

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Links to Standards/Reference Frameworks: NGSS, NGSS by DCI Nat'l C3 SS Framework, NYS K-8 SS Standards, Common Core, ISTE, Learning for Justice Social Justice Standards, CASEL SEL Framework, NYS CS and Digital Fluency	
Students will know (SWK):	**Students will be able to do (SWBAT):**
See above under each standard	

STAGE 2: EVIDENCE & ASSESSMENTS:

Performance Task Narrative:

Goal: *Provide a statement of the task. Establish the goal, problem, challenge, or obstacle in the task.*

To guide students to think about their role in defending ecosystems from an invasive species (specifically the Lantern Fly).

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

Researches, Designers, Conservationists, Scientists

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

School Orchard/Garden community and school neighborhood

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

Invasion. What does that mean to you (word cloud, mentimeter)? Ecosystems exist and have a balance, or at times an imbalance. Our ecosystems are precious and help to sustain life for ALL living things. But do some living things have priority over others? Further develop...

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

- AR (Thinglink; model of our Orchard and School area focusing in on trees.Create an educational resource to educate others.
- Engineer a solution to the problem (Lantern Flies) - protecting the trees
- Potential: a proposal that is shared back with an expert (landscape or garden person) for feedback

Standards (criteria for success): *Provide students with a clear picture of success. Identify specific standards for success.*

- O rubrics
- O checklist
- O
- O

Other Evidence/Assessments:

Complete research on invasive species worksheet.
Design an "Invasive Species" WANTED poster *see link

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Design a trap/solution for the Lantern Fly

Invasive Species Wanted poster see download

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 acquire and use domain specific vocabulary:
Invasive, species, ecosytem, habitat, organisms, interconnected, relationships

Students will discuss topics to convey ideas and information about invasive species.

Learning Events:

Students will work in groups and determine the meaning of the vocabulary (4-square model – word cloud)
Students will view (YouTube) Magic School Bus – Frizzle of the Future

Students will walk around the School Five orchard/garden.

Formative Assessments:

Students will complete the 4-square model for understanding domain specific vocabulary.

Students will complete the Frizzle of the Future – Magic School Bus – Check list

Notes/Resources:
***** see download on TPT and my documents*** figure out how to put link here.**

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Week 2

Learning Goals:

Students will be able to research the invasive species (Lantern Fly).
Students will be able to evaluate potential sources to support their project (AR).

Learning Events:

Students will read about invasive species (They are Here! How Invasive Species are Spoiling our Ecosystem – by Roland Smith) and discuss.
Students will use key words to search online for potential sources.
Students will evaluate potential sources for reliability, credibility, and timeliness.

Formative Assessments:

Notes/Resources:

Week 3

Learning Goals:
Students will be able to utilize technology to create a AR (ThingLink)
Students will be able to plan their project.

Learning Events:

Students will read about
Students will use drones to capture photos and/or video of School Five Orchard/Garden.
Students will plan out their layout for the AR.
Students will use “ThinkLink”

Formative Assessments:

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Notes/Resources:
Week 4
Learning Goals:
Learning Events:
Formative Assessments:

Notes: