Activity Title: Diagrams across grade levels **Subject**:SS/Science/CS **Grade**: 3-5	**Teacher**: **Duration time**:

Coding Badge Description: (Kidoyo Created Badge)

Interactive Diagram

- Description:

Program an Interactive Diagram to make your school project more engaging.

- Criteria:

Use the Scratch programming language to create a diagram that displays information about the parts of the diagram when the mouse is rolled over the parts.

Summary of Lesson
This lesson will be used across all three grade levels. However, the topic for the interactive diagram will differ for each grade.

Grade 3 Focus-Ecosystems
Grade 4 Focus-Parts of a map
Grade 5 Focus-Parts of the Water Cycle

- We will start by reviewing the Kidoyo created badge, Interactive Diagram.
- After reviewing the description and criteria, I will ask the students to help me plan out what is needed to achieve the badge.
    - A backdrop
    - Sprites (that describe the part of the diagram when clicked)
- As a class, we will recap vocabulary such as the stage, backdrops, and sprites.
- I will model how to search and import a background since this is the first coding assignment that requires them not to use a backdrop that is already set in Hatch! For younger grades, we will have a folder of already made backgrounds for students to use who have trouble finding one.
- Then, I will circulate as students start to import their backdrop, design their sprites, and begin coding.
- Since this is a badge that they will need some support with designing, Google Classroom will refer them to the Hatch Pointers and the following Scratch Tutorial Videos:
    - Getting Started
    - Add a Sprite
    - Add a Backdrop

NYS CS & DF Standards:: **Computer Science** • 2-3.CT.1 Create a model of an object of a computational process in order to identify patterns and essential elements of the object or process. • 2-3.CT.3 Present the same data in multiple visual formats in order to tell a story about the data. • 4-6.CT.1 Develop a computational model of a system that shows changes in output when there are changes in inputs. • 4-6.CT.4 Decompose a problem into smaller named tasks, some of which can themselves be decomposed into smaller steps. • 4-6.CT.7 Identify pieces of information that might change as a program or process runs. • 4-6.DL.2 Select appropriate digital tools to communicate and collaborate while learning with others. • 4-6.DL.4 Use a variety of digital tools and resources to create and revise digital artifacts.	**Vocabulary**: Grade 3 Ecosystem Vocabulary • Consumer • Producer • Deforestation • Food chain/web • Carnivores • Herbivores Grade 4 Parts of a Map Vocabulary • Compass rose • Cardinal directions • Intermediate directions • Map key • Title • Symbols Grade 5 Parts of the Water Cycle Vocabulary • condensation • evaporation • runoff • groundwater • precipitation Coding Vocabulary • Stage • Backdrop • Run • Sprite • Coding block	**Resources** (provide URLs if necessary): Grade 3 Ecosystem Resources www.pnwboces.org/Science21/Grade_3/ThirdGrade.html Grade 4 Parts of a Map Resources https://www.youtube.com/watch?v=V0Uqf_r49S0 Grade 5 Parts of the Water Cycle Resources https://studyjams.scholastic.com/studyjams/jams/science/weather-and-climate/water-cycle.htm Coding Resources https://www.youtube.com/watch?v=7QgHO0qtGfk

Learning Objectives:
The student will be able to...

- Understand and explain the parts to their assigned diagram.
- Code a diagram to explain each part.

Assessment Evidence	
Summative Assessment: They will be assessed on the diagram they complete using a rubric for design as well as accurate content.	**Extensions**: • With partners, revise your diagram after it is critiqued by a peer.