

## K- 5<sup>th</sup> Problem-Based Learning

### Essential Question & Attendance:

When visitors come to the TN Safari Park, their knowledge of the animals may be limited. Design a display that provides more information to visitors of the park.

Since our students attend a virtual school, STEM days are done on the 2<sup>nd</sup> and 4<sup>th</sup> Fridays of the month. Attendance is mandatory but it can vary. Approximately 35% of our K-5 students attend.

### Standards & Alignment

#### **Science/Social Studies**

SSP.01 (3-5 grade) Gather information from a variety of primary and secondary sources, including printed materials, graphic representations, artifacts, media and technology sources.

SSP.02 (3-5) Critically examine a primary or secondary source to order to:

- summarize significant ideas and relevant information.
- Distinguish between fact and opinion.
- Draw inferences and conclusions
- Recognize author's purpose, point of view, and reliability.

4.ETS1: Engineering Design- Categorize the effectiveness of design solutions by comparing them to specified criteria for constraints.

4.EST2. Links among Engineering, Technology, Science, and society.

- 1) Use appropriate tools and measurements to build a model.
- 2) Determine the effectiveness of multiple solutions to a design problem given the criteria and the constraints.

#### **Math**

4.MD.A.1 Measure and estimate to determine relative sizes of measurement units within a single system of measurement involving length, liquid volume, and mass/weight of objects using customary and metric units.

4.MD.A.2 Solve one-to-two step real-world problems involving whole number measurements with all four operations within a single system of measurement including problems involving simple fractions.

**ELA**

4.RI.IKI.7 Interpret information presented visually, orally, or quantitatively and explain how the information contributes to an understanding of the text in which it appears.

4. RI.CS.4 Determine the meaning of words and phrases as they are used in a text relevant to a grade 4 topic or subject area, including figurative language, connotative, and technical meanings.

4.W.TP.2 Informative/explanatory texts to examine a topic and convey ideas and information.

- a. introduce a topic
- b. Group related information in paragraphs and sections.
- c. Include formatting, features, illustrations, and multimedia, when needed, to provide clarity to the reader.

4.FL.SC.6 Demonstrate command of the conventions of standard English grammar and usage when speaking and conventions of standard English grammar and usage, including capitalization and punctuation, when writing.

4.SL.CC.2 Paraphrase portions of a text presented in diverse media such as visual, quantitative, and oral formats.

5.RI.KID.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

5. RI.CS.4 Determine the meaning of words and phrases as they are used in a text relevant to a grade 5 topic or subject area, including figurative, connotative, and technical meanings.

5.FL.SC.6 Demonstrate command of a conventions of standard English grammar and usage when speaking and conventions of standard English grammar and usage, including capitalization, and punctuation when writing.

5.RI.IKI.7 locate an answer to a question or solve a problem, drawing on information from multiple print or digital sources.

**Computer Science**

1.AT: Algorithmic Thinking 1) Identify and revise problem-solving strategies to solve a simple problem. 2) Classify and sort information into logical order with and/or without a computer.

2.AT: Algorithmic Thinking 1) Plan and create a design document to illustrate thoughts, ideas, and stories in a sequential (step-by-step) manner (e.g., story map, storyboard, sequential graphic organizer). 2) Compare and evaluate multiple ways to get a solution

Students will consider potential solutions to a simple problem, which is providing visitors to the safari park information about an assigned animals. They have completed a graphic organizer to sort their information using a computer for research. Students are going to work as a team to determine a single solution among many possibilities. As they receive feedback from the community partner, they will make modifications to their solution. Finally, they will present their final solution to the community partner.

5.RI.IKI.9 Integrate information from two or more texts on the same topic in order to build content knowledge

5.SL.CC.2 Summarize a text presented in diverse media such as visual quantitative, and oral formats

5.W.TP.2 Write informative/explanatory texts to examine a topic and convey ideas and information.

a.) introduce a topic by providing a general observation and focus.

b.) Group related information logically.

c.) Include formatting features, illustrations, and multimedia, when needed, to provide clarity to the reader.