Learning Plan

Name: Lisa Meyer	**Age of Children**: 6 – 9 years	**Date**: November 10, 2021
Title: Pet Food Story Problem		

Learning Standards and Outcomes

Learning Standard:

Math Common Core State Standards

CCSS 2.OA.A.1 Use addition and subtraction within 100 to solve one and two step word problems. Involving situations of adding to, taking from, putting together, taking apart, and comparing with unknown in all positions by using drawings and equations with a symbol for the unknown number to represent the problem.

CCSS 2.OA.B.2 Fluently add and subtract within 20 using mental strategies by the end of Grade 2, know from memory all sums of two one-digit numbers.

New Generation Science Standards

2-LS2.A. Interdependent Relationships in Ecosystems

Animals depend on their surroundings to get what they need including food, water, shelter, and a favorable temperature. Animals depend on plants or other animals for food. How and why do organisms interact with their environment and what are the effects of these interactions?

If research element is added to lesson:

Common Core Standards English Language Arts

CCSS ELA Literacy. RF.2.4.a

Read grade level texts for a purpose and understanding.

CCSS ELA Literacy. W.2.7

Participate in shared research and writing projects. (e.g., Read a number of books on a single topic to produce a report; record scientific observations)

Child Outcome:

The Student will be able to …

1. **Choose an animal from around their home environment or world.**
2. **Identify a special purpose this animal might provide for your family in an interdependent relationship.**
3. **Research what the animal eats in the wild (optional)**
4. **Make a plan for how much to feed your animal daily and weekly.**
5. **Make a drawing to visually represent their mathematical thinking for a word problem.**
6. **Write an equation that has two equal sides separated by an equal sign to solve a word problem.**
7. **Use addition to solve the word problems.**

Learning Experience

Describe the Learning Activity/Opportunity

Children will learn about interdependence, predators, and diet. Children will be given an example of Duke the dog who save the chickens from coyotes. Interdependent relationships will be explored. Student's will calculate how much dog food I feed my pet Duke. Creating their own story problem, will lead students to calculate how much they will feed their own pet daily and weekly.

Student Lead Selection of an Animal Ideas:

1. Child chooses an animal already living in their home environment.
2. Child chooses an animal in their extended family or neighborhood environments.
3. Child chooses an animal that lives in the wild near their home. (Examples: insects, frogs, birds, rabbits, deer, squirrels)
4. Child selects a toy or stuffed animal that they play with often as their animal.
5. Child selects an animal from their mental concept from previous knowledge. (Example: elephants eat peanuts and monkeys eat bananas)
6. Child selects an animal that they would like to learn more about from a different habitat than they live in.

Some children do not have access to real or toy animals in their environments. All children have the concept of an animal. Allowing the children to use their imagination to have any pet in the world, helps the child to reach beyond the physical parameters of their lives. Limitations of space, resources, and permission from parents is quickly alieved by the use of the child's imagination. A child may choose to get a tiger from the jungle to chase away the bullies and feed him a hamburger a day. All is good in the land of fantasy and children love to operate in this dimension!

Older children may enjoy the challenge of adding the research element to their projects. Some children do not have access to natural animal habits, zoos, or aquariums. Children can make scientific observations by looking at and reading books about animals from the library. Researching what their animal eats in their natural environments is very interesting. This added knowledge of what their animal ate while living in the wild, could lead to all kinds of fun and creative diet adaptations while living in a suburb of the city. If the research element is added by older children's desire to pursue their interests, then the language arts learning standards would be added to this lesson.

I wrote this lesson from the perspective that the child would use their mental concepts of an animals to select an animal as a pet. I choose the perspective of a mental concepts rather than a real animal due to the fact that some children do not have access to real or toy animals.

***Resources Needed**:*

Paper, pencil, crayons or colored pencils, research materials about animal's diets if desired. Animals to observe in domestic or natural habitats close to home if desired. Toy or

stuffed animals and their toy food or imagined food if desired. Child may also use whatever mental concept they have of any animal that is interesting to them.

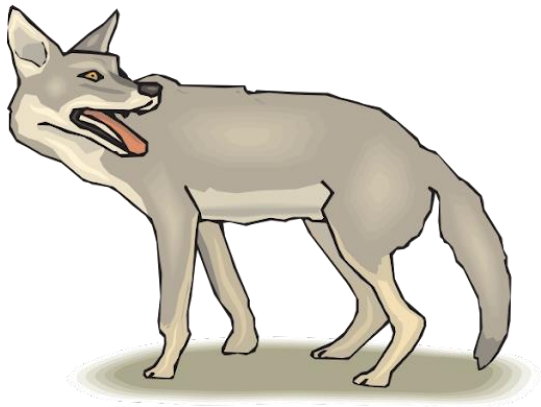
Procedures:

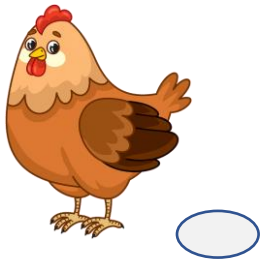
1. ***ENGAGE***

"We have someone very important at our house and that is Duke. Duke is my dog. He is a big one! He barks very loud when the coyotes come around our yard. Woof! Woof! The coyotes want to eat the chickens, so Duke keeps those coyotes away from the chickens! Good job, Duke!"

Interdependence: how one living thing can count on another living thing to survive.

Our family depends on Duke to scare away the coyotes. Our chickens also depend on Duke to scare away their predators. A **predator** is an animal that lives by killing and eating other animals. A common predator of chickens are coyotes. When our chickens stay safe, we can depend upon them for eggs to eat.





2. ***EXPLORE***

Duke is dependent upon us to feed him every day.

Morning **Evening**

"Duke eats dog food. Duke gets one scoop in the morning and one scoop at night? How many scoops does Duke get in a day? How many scoops does Duke get in a week?"

Draw a picture and write an equation to solve the problem.

"What kind of a picture could you draw to solve this math problem?"
"What kind of equation could you write to solve this math problem?"

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

_____ + _____ + _____ + _____ + _____ + _____ + _____

3. *MAKE SENSE*

1. **Choose an animal from around their home environments or around the world.**
2. **Identify a special purpose this animal might provide for your family in an interdependent relationship.**
3. **Discover what the animal eats and make a plan for how much to feed your animal daily and weekly.**
4. **Make a drawing to visually represent their mathematical thinking for a word problem.**
5. **Write an equation that has two equal sides separated by an equal sign to solve the word problem.**
6. **Use addition to solve the word problems.**

If you could own any animal in the world, what kind of pet would you have?

1. **"Who is your new pet?" Draw a <u>picture</u> and name your animal.**
   "Can you show me what is your choice of pet?"
2. **"Tell me about your interdependent relationship with your pet."**
   "Why did you pick this animal?"
   "How will you depend upon your pet?"
   "How will your pet depend upon you?"

If you could own any animal in the world, what would you feed your pet?

1. **"What will your new pet's diet be?" Draw a <u>picture</u> of your pet's favorite food.**
   "What does your pet eat in the wild?"
   "What will your pet's diet be while living in your house?"
2. **"How many times a day will you feed your pet?"**
   "Does your pet get breakfast, lunch, and dinner?"
   "Does your pet only get breakfast and dinner?"
3. **"What is your plan for a feeding schedule?"**
   "Plan how much will you feed your pet in a day?"
   "Plan how much would you need to feed your pet in a week?"
4. Draw a **picture** and write an **equation** to show the answer.

   "Can you draw a picture to represent your pet's feeding schedule?"
   "Can you write an equation to show how you solved the problem?"

Remember: Write an **equation** to show your mathematical thinking and the answer for your story problems. An equation is a mathematical sentence that has two equal sides separated by an equal sign.

1. CLOSE

"Wow, look at all the new pets we have here. You must be a very pet owner. Tell me all about your feeding schedule."

Ask children to share their own story problems about their new pets.

I will check for a visual representation in their **pictures** to match their equations. For example, the serving quantities matches the digits of addends for their addition problem. Once a child knows the quantities for one day, the quantities are added seven times to represent seven days in a week. The correct answer to the children's **equations** is also important so the both side of the equation are equal to each other and separated by an equal sign.

Conclusion Questions to ask the Child:

"Does your picture of your animal display realistic characteristics of your pet?"
"Is your pet's diet a realistic amount of food for your animal's age, size, and appetite?"
"Does your picture of your pet's diet represent specific foods and quantities?"
"Does your first picture represent how much your pet eats in a day?"
"Does your next picture represent seven days in a week?"
"Does your equation accurately represent the data from your feeding schedule?"

2. ***FOLLOW UP***

"Congratulations on completing your own pet food story problem!"

Continuation of the Pet Food Story Problems:

Add to the Pet Food story problem by repeating the same lesson questions, but the children choose another pet to add to the family. The students will explore the interdependent relationships that the new pet creates. Students will discover the new pet's diet. Then students will calculate the amount of food the pet will need daily and for a week. The important and effective strategy of drawing a picture and writing equations to solve story problems will be continued throughout the school year.

Science Extension:

Add to the study of the interdependent relationships between animals by researching it further. Children choose a habitat, then explore the unique interdependent relationships in that environment.

"What other animals display an interdependent relationship with other animals ?"

List a minimum of 3 new vocabulary words that children will develop as part of this learning plan:

1. Interdependence - how one living thing can count on another living thing to survive
2. Predator- an animal that lives by killing and eating other animals.
3. Diet- is the sum of food consumed by a person or animal.

3 open-ended questions:

1. If you could have any animal in the world for a pet, what would you choose? Why?
2. What is your pet's diet?
3. How much do you feed your pet in a day and in a week?

Why this activity is developmentally appropriate for this group of children.

Age Appropriate-

Pet food story problems are an engaging lesson for children because it incorporates, animals and food, two of children's favorite topics. The child's competence in the operation skills of addition meets second grade level common care standards. The child's competence in making and documenting observations on the diversity of animal's diets meets new generation science standards for second grade. Children also begin the process of understanding interdependent relationships in different ecosystems.

Individually appropriate-

Children choose the animal they want as a pet which gives them a chance to explore real or fictional interdependent relationships. Children discover their pet's diet and then manipulate the quantities that they want to work with. Children who desire a challenge can give their pets higher quantities of food to produce higher numbers to add together. Children who desire less of a challenge can give their pet smaller quantities to produce lower numbers to add together.

Questions to Ask Children:
"Do you want an easier math problem? Give your pet a smaller amount of food."
"Do you want a challenge? Give your pet a larger amount of food?"

Culturally Appropriate-
Teaching children to appreciate the interdependent relationships around them is relevant in all the habitats of every culture. Keeping an animal as a pet is an integral part of many cultures. Families owning animal that provide the family with a benefit that the family depends on is at the heart of domestic interdependent relationships. These traditional partnerships with nature and animals have been passed down for many generations.
"Where do interdependent relationship start?" (A Need)
"Why do many families around the world keep pets?"

Describe how in this activity you promote the following (please utilize specific examples and avoid overly vague generalizations or connections:

1. ***Promoting Analysis and Reasoning:***

Science Connection of the Interdependent Relationships in Ecosystems Discussion Questions:
Students Make Observations:

"Why are animal dependent on water?"
"Why are animals dependent on plants?"
"Why are animals dependent on each other?"
"How are people dependent on our environment for heat, water, plants, and animals?"

Students Make Predictions:

"What would happen if we couldn't depend on our environment?"
"What would happen if our pets couldn't depend on us to feed them?"
"How would our lives change if we couldn't depend on our pets to help us?"

2. ***Promoting Opportunities for Creating:***

Brainstorming-
1. Discussion of the different kinds of animals you could have as a pet.
2. Discussion of the different benefits that a special animal pet would give us.

"What kinds of benefits would your unique animal pet give you?" (Real or Imagined)

Planning-
1. Children will plan their pet's diet.

"What will you feed your pet?"
"Is your picture a good representation of your animal's diet?"

2. Children will plan their equation that is a math sentence that has two equal sides separated by an equal sign.

"Does your equation have two equal side separated by an equal sign?"
"Does you equation have the correct answer making both side equal to each other?"
"Do you have one math equation that describes how many times a day and how much a day you will feed your pet?"

"Do you have a math equitation that describes how much you will feed your pet in a week?"

Authentic Production-

1. Children will produce authentic representations of their pet and their pet's diet.

"Does your picture of your animal display realistic characteristics of your pet?"
"Does your picture of your pet's diet represent specific foods and quantities?"
"Does your picture represent seven days in a week?"
"Is your pet's diet a realistic amount of food for your animal's age, size, and appetite?"
"Does your equation accurately represent the data from your feeding schedule?"

3. ***Promoting Opportunities for Integration:***

Science Connections Interdependent Relationships in Ecosystems Discussion Questions:
"What plants are we dependent on for food?"
"What trees are we dependent on for food?"
"What bushes are we dependent on for food?"
"What are plants, trees, and bushes dependent upon to grow?"
"What animals do we depend on for food?"
"What food do we get from chickens?" (eggs)
"What food do we get from cows?" (dairy products)
"What kinds of foods support a healthy diet?"

4. ***Promoting Opportunities for Connections to the Real World:***

Animal' s Food:
"Do farmers calculate the amount of food they will need to feed their animals?"
"Do farmers ever grow food for the animals on their farm?"
"Do farmers make changes in what animals eat or in how much they eat?" Why?

Family Relationships:
"How do baby animal's diets differ from their parents."
"How are young animals in the wild dependent on their mothers or fathers for food?"
"How are you dependent on your parents for your food?"

I certify that the lesson I am submitting does not utilize a worksheet or rote learning experience. My lesson is focusing on promoting concept development through high quality interactions and everyday materials easily obtained in a family's home or surrounding outdoor environment. The outcome of my lesson is not a "cookie cutter" product.

__x__ ***Yes***

____ ***No***