Observing Jet the Gerbil*

Grade Range: K – 3

Time: 30 minutes, with optional 5-minute observations throughout the day.

Materials:

o <u>The Legend of Jet the Gerbil</u> by Michael Keller
o Large paper or board for writing
o Options for organisms to observe:
  · Class pet
  · Online videos of gerbils or other animals, at least 5 minutes long.
  · Outdoor area with reliable 'wildlife' available to observe (ducks, squirrels, ants)

Standards:

NGSS – 1 – LS1.D: Information Processing
Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs.

NGSS – 1 – LS3.B: Variation of Traits
Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.

CCSS.ELA-LITERACY.RL.1.1: [With prompting and support,] ask and answer questions about key details in a text.

CCSS.MATH.CONTENT.K.MD.B.3
Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Overview:

In this lesson, students will use a reading of <u>The Legend of Jet the Gerbil</u> to introduce and explore the concept of hypotheses. Students will practice developing hypotheses, making observations, collecting data and drawing conclusions.

Vocabulary:

behavior: the actions of a person or animal

hypothesis: a guess about something based on what you already know

observation: carefully watching to learn something new

Introduction

Read <u>The Legend of Jet the Gerbil</u>.

Discuss: *If a TV show followed you around all day, what would we see you spending most of your day doing? Sleeping? Eating? Going to school? Playing outside? Playing video games?*
What would people think you like to do based on what they would see?

*One way scientists try to learn about animals is to watch their **behavior**: the different activities they do throughout the day. Pets, like Jet the Gerbil, are a great way to start studying animal behavior, because it is easy to watch them all day, like they are in their own reality TV show!*

What behaviors did Michael see Jet the Gerbil doing?
        Make a list down the side of a large piece of paper or whiteboard. Review the book as needed to help students identify behaviors described in the book such as running (in his ball, on his wheel), chewing, "boxing", and squeaking.

What other behaviors do you imagine Jet the Gerbil also did during his day?

Eating, sleeping, drinking

If you were to watch Jet the Gerbil for a whole day, what do you think Jet the Gerbil would do the <u>most often</u>?

Have students 'vote' for their choice, and use hash marks to indicate the number of students that voted for each choice. Count each (or have students count) to find out which behavior got the most votes.

*Scientists will also make a guess, called a **hypothesis**, about what they think animals will do, based on what they already know about the animal. Why didn't anyone think that gerbils would spend their time flying?*

You already know that gerbils don't have wings, so that wouldn't be a good guess, or, hypothesis. A good hypothesis is based on what you already know.

The next thing scientists do is test their hypothesis! How do you think you could test your hypothesis about how gerbils spend their day?

*We can't watch Jet the Gerbil, but we can make a hypothesis about other types of animal behavior and test the hypothesis by watching, or **observing,** an animal!*

Application

Option 1: Class Pet
If your class has a pet, have students brainstorm hypotheses about which activities the animal does most often. Make a simple chart with the activities listed. Have students spend 5 minutes at different times of the day observing the pet, individually or in pairs, and marking down how many of the behaviors they observe.

Option 2: Pet videos
Search for online videos of gerbils or other small pets. Videos should be at least 5 minutes long and just show the animals doing normal behaviors in their cages. Have students brainstorm hypotheses about which activities the animal will do most often. Make a simple chart with the activities listed. Either watch as a class, marking down how many of the behaviors they observe on the chart, or have each student mark down behaviors on their own chart, as the class watches the video.

Option 3: Outdoor observations
Identify an area with 'wildlife' that is reliably present (ducks, squirrels, ants).
<u>Younger students:</u> Brainstorm possible behaviors in the classroom and create a standard chart for all students to copy and use to collect their observations.
<u>Older students:</u> challenge each student to make their own list/chart either ahead of time or on site.
Have students observe for 5 minutes (or longer, as appropriate) and record behaviors.

Conclusion

Either as a group or individually, count up the number of times each behavior was observed. Discuss whether the hypothesis matched the observed behavior. Challenge the class to suggest explanations for why some behaviors were observed more often. Point out that these could be used as the basis of additional rounds of hypothesis testing, which is what scientists would do next!

Older students: Have students share their results or create a short presentation/poster showing their question, hypothesis, data chart, whether the observations matched their hypothesis, and any new questions they have.

Extensions:

○ Identify testable questions that resulted from the class discussion and do an additional round of hypothesis testing.

○ Introduce students to Jane Goodall, a scientist who learned about gorillas by watching them day after day for many years!

Sample Chart:

Eating	(((	3
Sleeping	((((	4
Drinking	(	1
Digging	(((	3
Running on wheel	(	1
Hiding in house	(((((((	7