Name: _____ **Date:** _____ **Class/Period:**_____

Lesson 3: How do behaviors impact survival?

Purpose

Species constantly engage in a variety of behaviors or activities that help increase their chance of survival. For example, a bird may build a nest or a coyote might communicate to other coyotes through howling. In this activity, you are going to explore the plasticity of behaviors – the ability of an organism to change or modify its behaviors based on the external conditions. Specifically, you will examine your own behaviors, but then consider how your behaviors would be similar or different from other species. You will then consider how the plasticity of an organism's behaviors impacts its chance of survival within an urban environment.

Procedure for Structure #1

1. Determine which partner will be the *Describer* and which partner will be the *Builder*.
2. The *Describer* should receive the envelope with the two cards with pictures of the structures. Do NOT show the pictures to your partner.
3. The *Builder* will receive the bag of gumdrops.
4. When your teacher tells you to start, the *Describer* will take the card with Structure #1 out of the envelope without showing your partner. You will describe the structure pictured on the card so that your partner can build it. Your goal is to have the *Builder* construct the structure as accurately and quickly as possible. Both partners can talk and use gesture. The *Describer* can look at what the *Builder* is creating.
5. Use a stopwatch or timer to measure how long it took to build the structure.
6. After you have finished building the structure, record the time it took to build the structure, the accuracy of the structure and any strategies that you used to help your partner below.

Data Collection: Structure #1

Time	Accuracy of Structure	Building Strategies

Procedure for Structure #2

1. Similar to the last activity, the *Describer* will describe the structure (without showing the picture) and the *Builder* will construct it. You should have the same roles as you did for Structure #1.
2. This time the *Builder* and *Describer* cannot look at each other. The *Describer* should turn around so their back is facing the *Builder*. You can both still talk, but you will not be able to use gesture, because you cannot look at each other or at the structure that is being built.
3. After you have finished building the structure, record the time it took to build the structure, the accuracy of the structure and any strategies that you used to help your partner below.

Data Collection: Structure #2

Time	Accuracy of Structure	Building Strategies

Conclusions

1. Did you use or rely on different strategies when building Structure #2 where you could not look at each other compared to building Structure #1? Why do you think your behavior either did or did not change?

2. Human activity in urban areas tends to be greatest in daylight. One common behavioral modification urban animals make in response to human activity is that they change the time of day when they complete an activity and in some cases become strictly nocturnal. This could change their behavior because sight is limited (like when you and your partner could no longer see each other). Think about one behavior of a species (e.g. feeding, building a nest or den, reproduction, etc.). How might that behavior change if the organism had to complete it at night instead of during the day? Why?

3. Some species have greater behavioral plasticity. Behavioral plasticity means that an organism is able to respond to its environment in different ways. How important do you think behavioral plasticity is to the chances of a species surviving in an urban environment? Why?