



# Act like an Ectotherm

## Virtual Classroom Extension

### **Grade Levels**

Grades K-1

### **Objectives**

These activities are designed to start your at-home students in recognizing themselves as scientists and in thinking critically about problem-solving. The goal is to teach concepts through discovery and to encourage using scientific thought processes. Feel free to adapt the lessons provided to better suit your students' abilities. Take these ideas, make them your own, and your students will have a greater chance of success.

### **Background Information**

This activity can be used with your at-home students after viewing the naked mole-rat Facebook Live stream from 4/14/2020. At-home students will demonstrate their knowledge of ectothermic characteristics of some animals while playing a fun game.

### **Procedures**

1. Review what was learned about naked mole-rats during the Facebook Live stream, reminding your at-home students that they are mammals but have characteristics that are more like other species. For example, they live in a social structure more like bees, and cannot regulate their own body temperature like reptiles.
2. Tell your at-home students that they are going to learn a little more about animals called ectotherms today. Ask if they have ever heard the term "cold blooded" in reference to certain animals like snakes and lizards and discuss what they think it means.
3. Next, share the following information with your at-home students:
  - a. Reptiles are known as cold-blooded, but the more appropriate scientific term is ectotherms. Ectotherm animals depend on external sources of heat to regulate their body temperature, like the sun or a warm rock. They cannot regulate their own body temperature. Ectotherms are much more active in warm environments and are very sluggish in cold environments.
  - b. Opposite of an ectotherm is an endotherm, or warm-blooded animals. Endotherms like most mammals and birds keep their bodies at a constant temperature. When in a cooler environment they generate their own heat, when they are in a hotter environment, they cool themselves off (e.g. perspiration).

4. Tell your at-home students that in order to explain how an ectotherm warms up/cool down to survive, they are going to play a game where they can pretend they are a reptile.
5. Each player should pick their favorite reptile to role-play the next steps.
6. Once each player has chosen their favorite reptile, read through the following scenarios while the players act them out as a reptile, making sure to reinforce what an ectotherm needs to do:
  - a. It is nighttime -turn off the lights or go someplace dark to mimic where a reptile would seek shelter at night. Players can hide or go underneath things as if it was their hole/shelter so they can stay warm through the night.
  - b. It is morning and the sun is up -turn the lights back on. Remind players that reptiles need to warm-up their bodies. Players should find an area to bask and warm-up from the night.
  - c. Time to look for food. Reptiles need to hunt/search for food while it is daylight.
  - d. It is now the middle of the day and the sun is intense. Remind players that the sun is too hot to continue to hunt. Players need to find shade -have them find a place that is shaded or underneath something.
  - e. It is early evening and the sun has now cooled down. Players can come back out into the sunlight and look for food again.
  - f. It is nighttime again -turn off the lights. Players need to find their shelter/hole for the night.
7. Feel free to run through these scenarios multiple times as different reptiles. Or challenge your at-home students to come up with a role play game where they act like the naked mole rats they learned about during the live stream video.
8. To conclude the activity, ask each at-home student to share one new thing they learned about naked mole rats and/or reptiles.

**Standards**

| <b>Ohio Academic Content Standards</b>   |
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| Grade K Life Science Topic: Physical and Behavioral Traits of Living Things<br>Living things have specific characteristics and traits.<br>Living things have physical traits and behaviors, which influence their survival.          |
| Grade 1 Life Science Topic: Basic needs of Living Things<br>Living things have basic needs, which are met by obtaining materials from the physical environment.<br>Living things survive only in environments that meet their needs. |