Activity Sheet	
Gr 7 - Lesson #8	Animal Adaptions
Date:	Name(s):

Check That I'm Done ☑
This will require coding skills learned through lessons 1-7

Learn
Animals have certain adaptions which help them to survive in a given ecosystem. They must adapt to become effective predators, or effective prey and seek out the resources they need. For example, lions have large fangs for tearing through meat, whilst buffalo have flat teeth for grinding grass. Buffalo are also very skittish and will run away if something approaches, where a lion's instinct is too attack. Lions have also evolved to make loud aggressive noises, whereas buffalo are great at being quiet. To preserve energy, lions will only seek out water when they're thirsty, whilst buffalo are always on the move. All of these behaviour's can be codded into an EV3 robot. For example, the display allows you to choose different teeth, the ultrasonic sensor can tell when other threats are around, the speaker on the EV3 robot is capable of making tons of various sounds, and finally the light sensor can tell if its changed environment such as moved over a body of water.

Predict and Plan

It is going to be your task to develop a new species of animal! You will need to think about the

Circle your choices:

My robot is mostly a predator / prey
producer /consumer
travels in a pack / travels lone
is warm blooded / cold blooded

Describe your animal's habitat:

_____

_____

Describe your animal's behaviour:

_____

_____

Demonstrate/Design/Discover

- ✓ Using your EV3 robot and software, create a program which can demonstrate at least 5 of your robot's behaviours. All of which are adaptions to survive.
- ✓ You may need to go back and adjust the behavious to make sure you're capable of demonstrating them with your robot.
- ✓ Your program should include the screen display, brick buttons, lights, sounds, ultrasonic sensor, light sensor, motors, and the switch block

in your program. Tips: Don't be afraid to go back and forth between programming and your animal's characteristics until you have something that is believable and achievable. Remember, you want all of these behaviours to happen at more or less the same time. Lastly, ask your teacher if its ok to use construction paper and tape to make your animal even more believable.

Record
Record the 5 animal adaptions you are demonstrating with your robot. Make sure to explain how it makes sense for your animals survial AND how your robot is able to demonstate this behaviour. 1. 2. 3. 4. 5.

Questions	
Question 1 Science	Describe, in detail, how your animal fits into the larger ecosystem. How does its waste get decomposed? What factors effects the population. Where does it get its energy and how does it pass it along?

Phone: 905.604.8445
Email: info@logicsacademy.com
Website: www.logicsacademy.com

Question 2 Science	Describe your animals biggest threat and why.
Question 3 Science	What does your animal eat, and what makes them good at obtaining that resource?
Question 4 Science	What animal is your robot most similar to (you can use a combination if you wish).
Question 5 Science	How man of your animal could be supported in their ecosystem?

Extension Coding and Science	If you've got a great animal you're happy with, partner up with another group and try and make them have some sort of automated interaction. This could be a fight for resources, or a predator prey interaction.

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