



## Student Worksheet

W




**Today you are going to undertake a study into Evolution.** Evolution is the theory which accounts for the changes in a population over time.

You will become members of a bird population called Springbeaks on an imaginary place called Clippy Island. Springbeaks are simple creatures, they can't fly and live on three species of bean that live on the island. You will gather food and compete with one another over four seasons of breeding on the island.

The 'food' provided are 3 different types of bean which have different calorie values. These values are listed in the chart here.

As in nature, these birds will need a certain amount of food to survive, but a greater amount of food is needed to both survive and reproduce. See the chart on the next page to find out much food you will need to survive and how much you will need to reproduce based on your beak size.

**At the end of each 'season' you must calculate the amount of food you have collected. This will tell you if you have in fact, died, survived, or survived and reproduced.**

FOOD TYPE	CALORIES (SCORE)
RED BEANS 	10
WHITE BEANS 	5
BLACK BEANS 	2

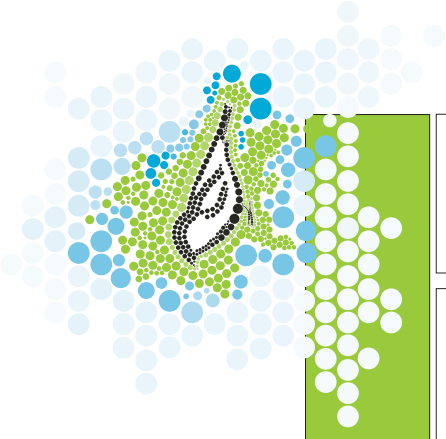
### The Threshold for Survival: Food Requirements

BEAK SIZE	DIE	SURVIVE	SURVIVE AND REPRODUCE
BIG BEAK	Less than 75 calories	75 calories	150 calories
MEDIUM BEAK	Less than 50 calories	50 calories	100 calories
SMALL BEAK	Less than 25 calories	25 calories	50 calories
GAPING BEAK	Less than 100 calories	100 calories	200 calories
TINY BEAK	Less than 10 calories	10 calories	20 calories

- o If you did not meet the target score, you have **DIED**. You must put your beak back and sit down.
- o If you reached the target score, you have **SURVIVED**. Congratulations! You can feed during the next season.
- o If you doubled the target score, you have **REPRODUCED**! Congratulations! Find another clip of the same size and invite one of your classmates to feed on your island during the next season.



You can calculate the number of points you scored by using the score sheet below.  
Fill in the chart to see how you did for each season!



## Student Score Sheet

	Number of Red Beans (10 calories each)	Number of White Beans (5 calories each)	Number of Black Beans (2 calories each)	Total
Pre-Season	$\times 10 =$	$\times 5 =$	$\times 2 =$	
Season One	$\times 10 =$	$\times 5 =$	$\times 2 =$	
Season Two	$\times 10 =$	$\times 5 =$	$\times 2 =$	
Season Three	$\times 10 =$	$\times 5 =$	$\times 2 =$	
Season Four	$\times 10 =$	$\times 5 =$	$\times 2 =$	