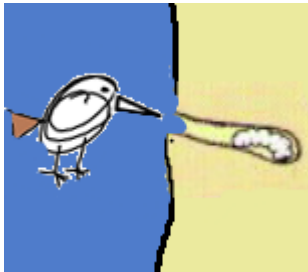


In this species of 'squiggle birds' shown in the diagram below beak length is controlled by a small number of genes. Each generation shows some natural variation in the beak lengths. Some birds have longer beaks because they have more of the alleles for long beak length. Other birds have shorter beaks because they have fewer 'long beak length' alleles.



The squiggle birds eat mostly insect larvae (maggots) which hide in holes in trees.

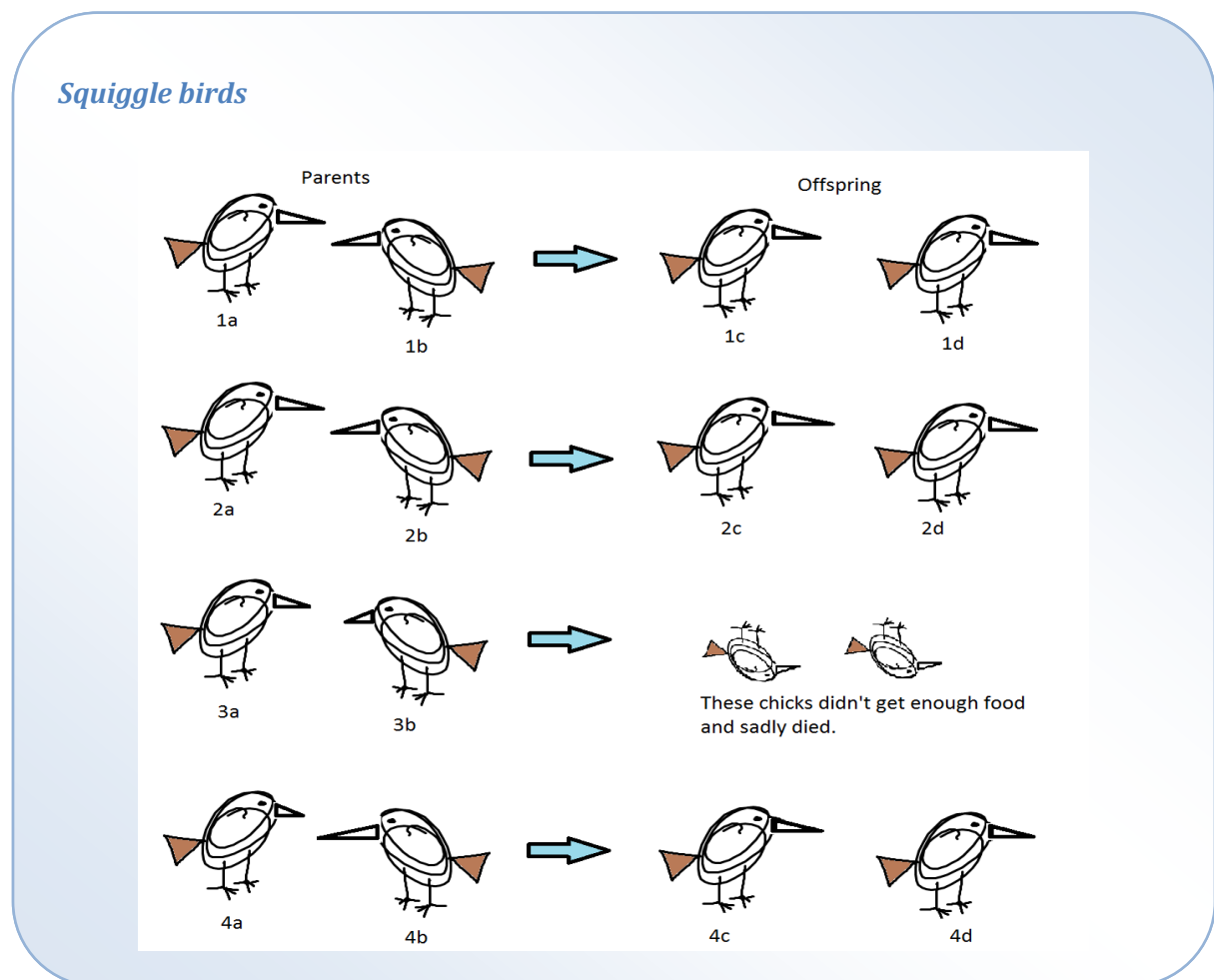
This means that birds with longer beaks can reach further into the cracks to get maggots.

This is a particular advantage when food is in short supply.

## Activity 1- Measure the beak length of Squiggle birds

1. Measure the beak length of each of the parent birds and put your data into the table below.

*Squiggle birds*



Parents

Offspring

1a 1b 1c 1d

2a 2b 2c 2d

3a 3b 3c 3d

4a 4b 4c 4d

These chicks didn't get enough food and sadly died.

2. Now measure the beak lengths of the surviving offspring from this year's hatchlings.



## Results table for squiggle bird beak length

3. After recording the beak lengths in this table, calculate the average of each column.

	Parent bird beak lengths / mm		Offspring beak lengths / mm
1a		1c	
1b		1d	
2a		2c	
2b		2d	
3a		3c	Sadly died
3b		3d	Sadly died
4a		4c	
4b		4d	
Average			

### Questions

1. Suggest why the offspring of parents 3a & 3b did not survive.

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2. Estimate what the average beak length might be in;

a) The next generation

.....

b) In five generations time

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3. State two factors about beak length which are important in order for this gradual change in length to occur over several generations?

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4. What is the definition of evolution?

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