

Activity 2.16 Reebops

Purpose

- To examine how characteristics are inherited.
- To illustrate one of the ways in which meiosis is responsible for the tremendous variation that exists in every sexual species. (This is revisited and examined through Topic 3.)

Safety

Students should not eat edible parts as hygiene cannot be guaranteed in the laboratory.



Notes on the procedure

'Reebops' are imaginary animals, made out of marshmallows, pins and cocktail sticks! They have an affectionate place in the homes of most students who make them, and they are fun to 'create'. Far from being an exercise suited to younger students, this activity has been proved to be very popular with post-16 students.

Foam packaging pieces can be used instead of marshmallows to allow reuse and to avoid the issue of eating in laboratories.

Before starting, ensure students have grasped the idea of one chromosome of each homologous pair coming from each parent. There is an information sheet which could be read in advance of the lesson.

The task involves three stages.

- 1 Before the lesson you will need to make up Mum and Dad Reebop (Figure 1), so that you can show the group what they look like and use their features as the starting points for discussions on the inheritance of features from parents. Both parents are heterozygous for all their characteristics.

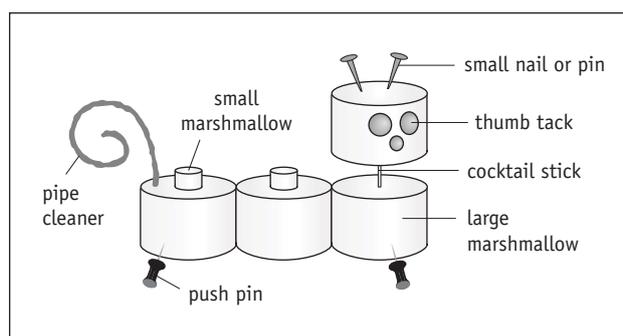


Figure 1 A Reebop parent.

- 2 The students are then given envelopes containing the chromosomes of the parents, from which they select (following meiotic principles) half the chromosomes at random (Figure 2).
- 3 These chromosomes provide the genotypes of the offspring. Using the decoder key provided on the Student sheet, students construct baby Reebops. The offspring are then compared to the parents and to one another.

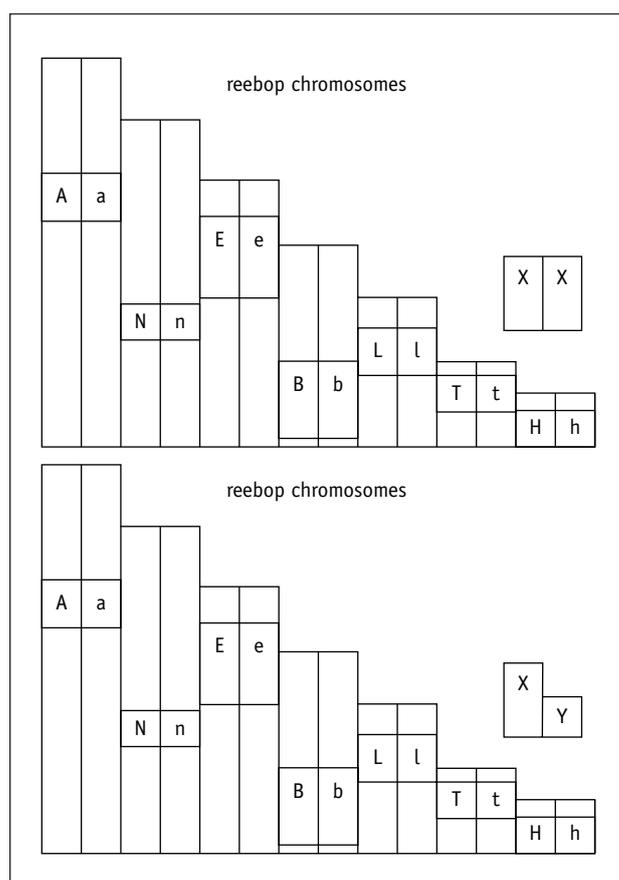


Figure 2 Mum (top) and Dad (bottom) Reebop chromosome genotypes.

There are eight chromosomes, which should guarantee a good range of phenotypic expression. If you have a large group of students, then you may want to add more features such as wings or gills for example.

Even if some students get the instructions wrong, this can be turned into an advantage by using their 'abnormal' Reebop as an example of, say, non-disjunction, etc.