

The survival game

(Ireland and Denmark)

Background

This is a classroom-based game with a storyline that builds on the previous activity. A series of cards bring student groups through a sequence of environmental changes that affect the population of organisms in which there are several different coloured varieties. Students observe the effect of different environmental pressures on the population over a few generations. The colour of organisms is seen to influence their ability to survive and reproduce, passing on their traits (colour) to their offspring.

You will need:

- ✓ The story cards as shown.
- ✓ Different Coloured counters

Follow these steps:

1. Students work in groups of four.
2. Each student is assigned a different colour counter.
3. The story begins with a population containing four different coloured variants of the same species.
4. Students take turns to read out the cards.
5. The population is adjusted according to the instructions on the cards.



So what happened?

The relative numbers of different coloured variants changes over generations. Different environmental pressures result cause changes in the population. Possessing a particular colour is a selective advantage in some circumstances, but in another

environment is a disadvantage. Biotic and abiotic factors can be identified by students.

What next?

The sequence of the cards can be rearranged to investigate if the population changes are different. Dice can be introduced and the story can be adapted as a game in which each student represents a particular coloured variant of the species, and a dice roll can introduce the element of chance into the survival of that particular variant.

There is plenty of food, so your population survives and reproduces. Add 5.

There's lots of food and hiding places for the green and blue, but the red ones can't hide and get eaten.

When food is plentiful again the remainder mate and produce 5 offspring some white and some yellow.

It's winter and 5 of your population die.

It is a particularly hot summer, blue and green are poor temperature regulators; white and yellow, which reflect heat, are much more likely to survive.

The bright yellow of some of your offspring attracts predators. All but two of them get eaten.

There is plenty of food when spring arrives, so another 10 offspring are born. There is a variety of colours.

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The bright red colour attracts mosquitoes carrying a deadly disease. They all die.

There is lots of food, and all reproduce 2 offspring, but the whites are better at finding water and hiding from predators so they produce 5 offspring.