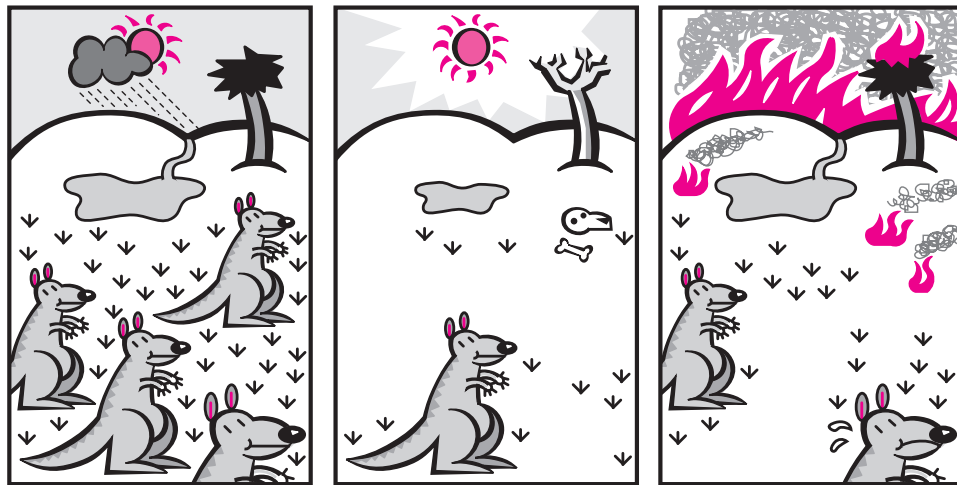


Oo-Roo!

Have you ever seen kangaroos in the bush? They spend their time searching for the food, water, shelter and space they need to survive. When these things are plentiful, most of the animals stay healthy and give birth to their young. Most of them can avoid being killed by predators. In a year with lots of food, water, shelter and space, the number of kangaroos usually increases.



In some years, however, there is less food, water, shelter or space. A drought may dry up the water supplies, or a bushfire may burn all the plants the kangaroos use for food. Without water or food the animals often become stressed. Stressed animals, as well as very old or young animals, are more likely to die from a disease or be killed by a predator, such as a dingo or kangaroo shooter. Then there would be fewer kangaroos. Their numbers would decrease.

The game of 'Oo-Roo'

Your class will play a game to find out how the number of kangaroos changes each year. Some students will pretend to be the food, water, shelter or space that the kangaroos need for survival. Other students will pretend to be kangaroos. A few students will also pretend to be a disease or a predator that can kill kangaroos. Each round of the game will represent one year.

Each year, the kangaroos will search for the food, water, shelter and space they need for survival. Those kangaroos that find what they need and avoid disease and predators will live and produce joeys that survive. Any that do not find what they need will die. A few might also die each year because of diseases or predators.

During the next round of the game, the unsuccessful kangaroos will become food, water, shelter or space for the remaining kangaroos in the mob. At the end of each round (or year), your class will count how many kangaroos survived and reproduced successfully.

As you play this game, watch how the number of kangaroos changes year by year as the amount of available food, water, shelter or space changes.

Getting ready to play the game

Your teacher will tell you whether you will begin the game as a kangaroo or as an available resource. Kangaroos will stand along one line and the resources will stand along the other line. All players will stand with their backs to the opposite line.

What the kangaroos do

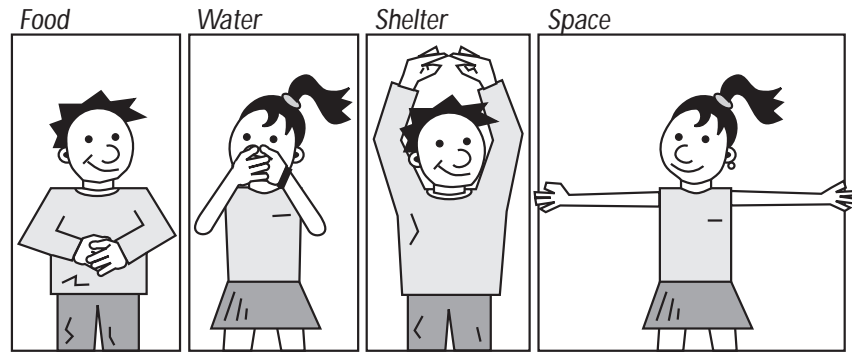
Before each round of the game, each kangaroo will decide whether to look for food, water, shelter or space and will make the sign of that need. Once the sign is made, a kangaroo cannot change what it will look for.

What the resources do

Before each round of the game, each student who represents a resource will choose to be food, water, shelter or space and will make the sign of that resource. Once the signs are made, students cannot change what

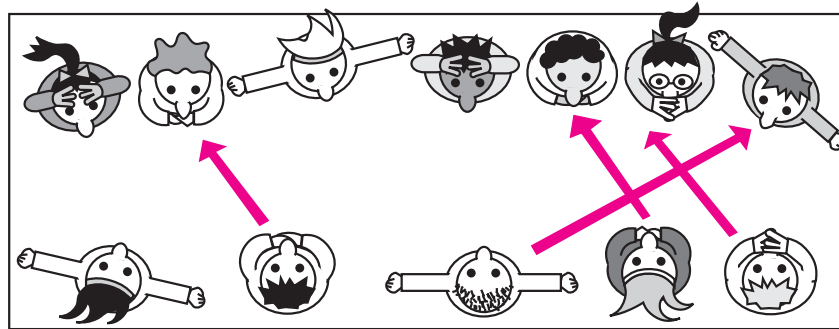
they represent. Your teacher will secretly assign one student to represent a disease and another student to represent a 'roo shooter in addition to representing a resource.

Signs



Playing the game

When your teacher says 'go', both lines will turn and face each other. Still making the sign of what they need, kangaroos will run across the playing area and try to collect those resources from the opposite line.



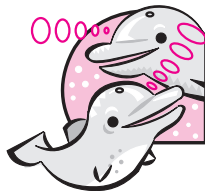
When a kangaroo finds a matching sign for food, water, shelter or space, it will take its match back to the kangaroo side of the playing area. This will show that the kangaroo met its need and successfully reproduced that year.

Any kangaroo that doesn't find a matching sign for food, water, shelter or space will die and become part of the resources in the next round. If a kangaroo finds a matching resource that also represents a disease or a 'roo shooter, that kangaroo will die and become part of the resources in the next round.

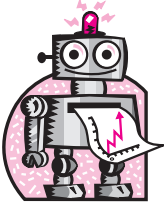
Those students who represent the resources will stay in line until a kangaroo needs them. If no kangaroo needs a particular resource during any round, those students will continue to be resources in the next round.

After each round, your teacher will count and record how many kangaroos are left. Then everyone chooses a different sign, and your teacher assigns different students to be a disease and a 'roo shooter.

Let's talk about it



- 1 In your game, what happened to the number of kangaroos when there was plenty of food, water, shelter and space?
- 2 What happened to the number of kangaroos when there was a shortage of food, water, shelter or space?
- 3 In the bush, what would kangaroos use for food, water and shelter?
- 4 What might cause the availability of food, water and shelter to change from year to year?
- 5 Which kangaroos would be the most likely to be killed by diseases or by predators?
- 6 Do you think that the number of kangaroos would change or remain steady each year?
- 7 Could the number of kangaroos change for reasons other than births or deaths?



Graphing the data

Your class counted and recorded the number of kangaroos in the mob at the beginning of each round of the game of 'Oo-roo'. These numbers are called data. Just looking at the numbers might not tell you much. A better way to look at these data is to graph the numbers. A graph can help you see patterns in the data.

- 1 Put a cross on the worksheet to mark the number of kangaroos there were at the beginning of Year 1 (round 1 of your game).
- 2 Repeat step 1 for each round (year) of your game.
- 3 Draw a line to connect the crosses.

Use your graph to help you answer these questions:

- 1 **What was the highest number of kangaroos that survived in your game?**
- 2 **What happened to the number of kangaroos the year after the mob was at its largest?**
- 3 **What was the lowest number of kangaroos that survived?**
- 4 **What happened to the number of kangaroos the year after the mob was at its smallest?**
- 5 **Why does the pattern on your graph go up and down instead of remaining in a straight line?**