Using Resources: Mathematics in science contexts, Levels 3+-4+

## Common Pasture

You need

- ★ game recording sheet and calf market table (see copymasters)
- ★ a computer spreadsheet (optional) ★ classmates

#### Game

# Common Pasture is a game for 3–5 players (farmers).

#### Important information:

- Calves always cost \$100 to buy.
- The more grass each calf gets, the bigger it grows and the more money it's worth at the end of the year.
- All the calves graze on the same piece of shared land. The more calves there are in total, the less grass there is for each one.
- All the calves are sold at the end of the year, and the pasture grows back fully.

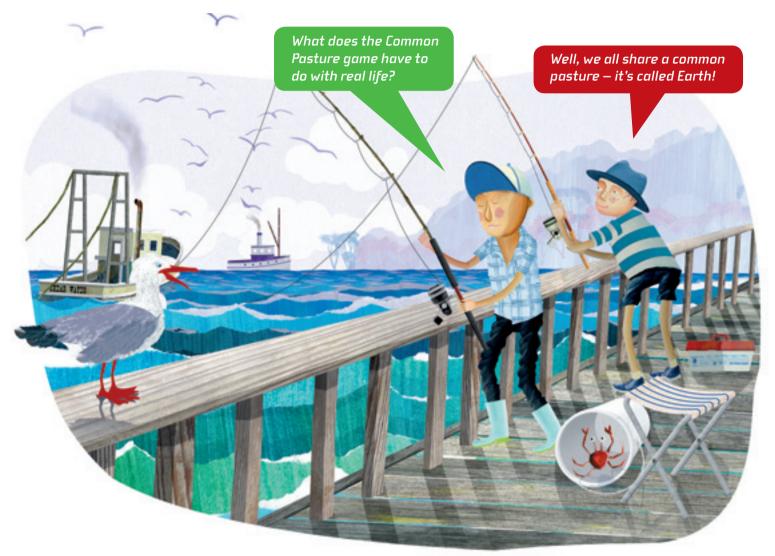
## How to play:

- Together, players count to 3 and then hold out 0–5 fingers. Each finger represents 1 calf you will raise in year 1.
- Add up the total number of calves for your group.
- Find the selling price of a calf from the table.
- Multiply the price by your own number of calves. Subtract the cost of each calf. Record your profit.
- Compare your profit with that of others in the game. Repeat for years 2–5.
- The winner is the farmer who has the most money after 5 years.



#### **Activity One**

- 1.) After one game, discuss with the other players:
  - a. What strategy did the winning player use?
  - b. Did your strategy change as you played the game?
  - c. What happened in a year when one or more farmers chose a large number of calves?
- 2. Play Common Pasture with different groups of classmates.
  - **a.** Discuss with a classmate what else you have learnt about winning strategies for this game.
  - b. What total number of calves would give the greatest group profit?



### **Activity Two**

- 1. Farmers don't normally share pasture with others, but everyone fishes the same oceans.
  - a. What can happen to fish stocks if the fish are caught in large numbers?
  - b. What can be done to ensure that fisheries are a renewable resource?
- 2. Discuss ways in which the game you have played relates to our use of Earth's resources.

Focus Calculating profit and comparing strategies