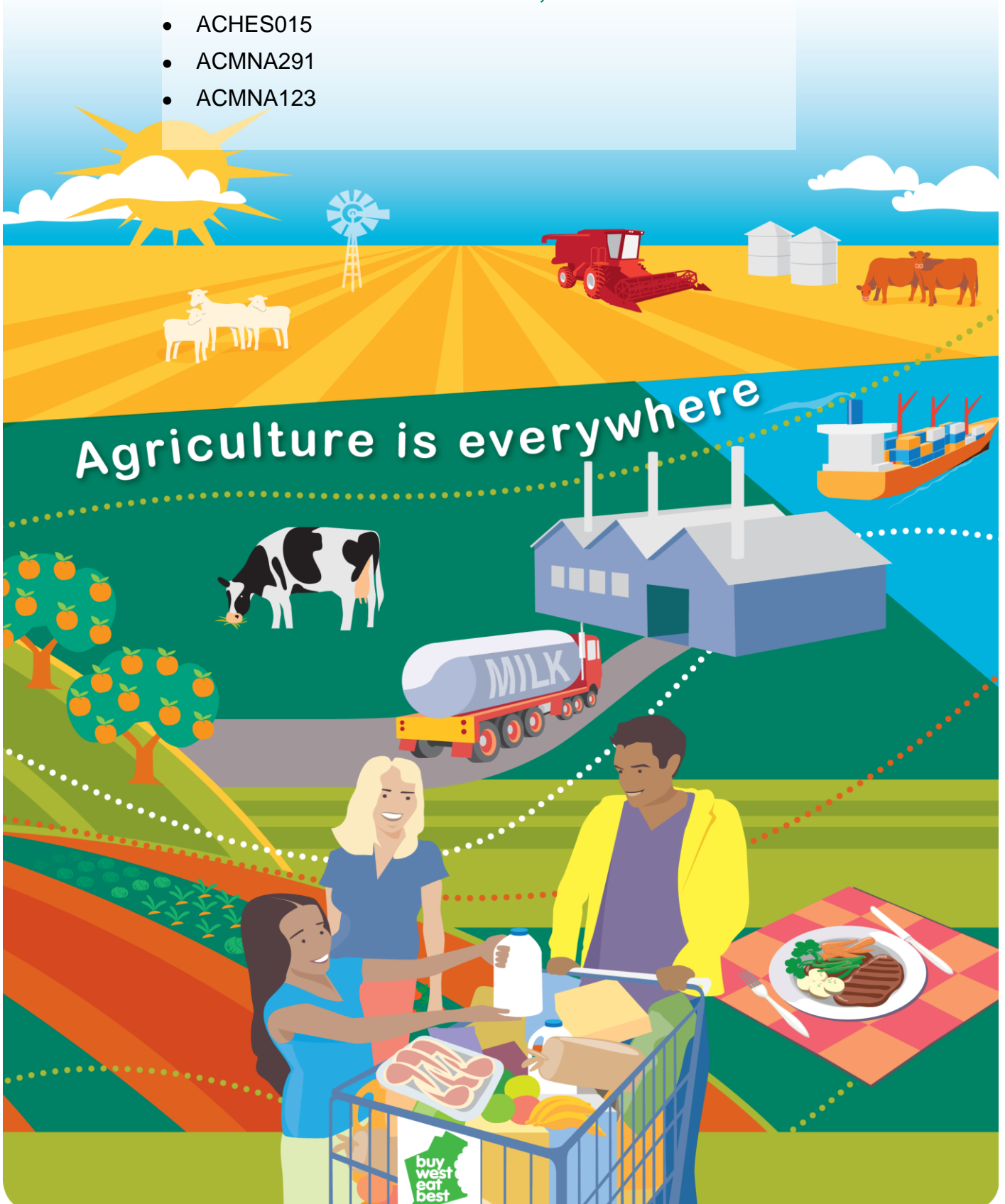


Jobs in your Lunchbox

Mathematics on the farm

Humanities and Social Sciences; Mathematics

- ACHES015
- ACMNA291
- ACMNA123



Mathematics on the farm

Lesson overview

Farmers, farm managers and farm financial advisers use sophisticated mathematics on a daily basis when running their farming business. Students will apply mathematical skills to solve a variety of questions with an agribusiness focus.

Australian Curriculum: Humanities and Social Sciences; Mathematics

Economics and Business *Year 5 and 6* - Apply [economics](#) and [business](#) knowledge and skills in familiar situations ([ACHES015](#))

Numbers and Algebra

Year 5 - Use efficient mental and written strategies and apply appropriate digital technologies to solve problems ([ACMNA291](#))

Year 6 - Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers ([ACMNA123](#))

Resources

- Calculator
- Ipad
- Dictionary

Tuning in

Discuss - Do you think that maths is an important skill for farmers? Brainstorm the jobs and decisions that farmers make that require mathematical skills.

Whole class introduction

The business of farming does not involve only the physical planting and harvesting of a crop. Farmers undertake many roles and being a good business manager is important to ensure a successful enterprise. Mathematical skill and knowledge is used daily in farming enterprises.

Mathematics on the farm

What types of things on farms do farmers measure using mathematics? What questions do farmers ask that mathematics can be used to answer? The Sleepy River farm map reflects the types of land use activities that may take place in a mixed farming enterprise. Use the map on the last page, reference materials and a calculator to answer the following farming problems.

1. Discuss and define the following farming terminology.

- Grazing

- Horticulture

- Remnant vegetation

- Plantation

- Hay

- Dam

- Boundary fence

- Livestock

- Lambing percentage

- Salt scald

2. The farmer owns 126 cows, 400 sheep and 40 pigs. How much livestock does he own altogether?

3. The farmer wants to evenly split his cows into two paddocks. How many in each paddock?

4. It is lambing time and $\frac{3}{4}$ of the 400 ewes are due to lamb.
- If every sheep has a lamb, how many lambs will there be?

 - If 15 of the ewes have twins, how many lambs will there be in total?

5. They produced 60 bins of cauliflowers worth \$400/bin. How much were the cauliflowers worth?

6. They hire four workers to help cut the cauliflowers. It takes three days and each worker is paid \$26/hr to work an eight hour day. What is the wages bill?

7. The grapes need to be transported 120km to the nearest winery. They are charged \$6.60/km by the trucking company. How much did they pay?

8. In August the farmer received the following rainfall and recorded it on the calendar.
- What was his total rainfall? _____
 - What is the average daily rainfall for the month? _____

1	2	3	4	5	6	7
	9mm		2mm	14mm		
8	9	10	11	12	13	14
		14mm	11mm			
15	16	17	18	19	20	21
	1mm			5mm	27mm	4mm
22	23	24	25	26	27	28
	14mm		2mm	5mm		
29	30	31				
	10mm	8mm				

9. The hay paddock is 68ha and needs 80kg of fertiliser per hectare to grow a good crop.

a. How much fertiliser is needed for the whole paddock?

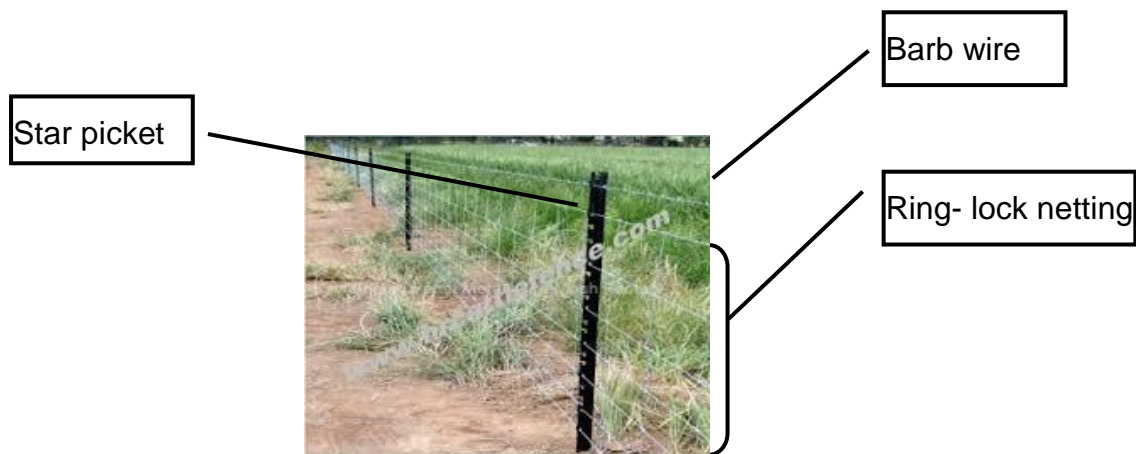
b. If fertiliser costs \$690/t. How much is the total cost?

10. The farmer needs to pipe water from the dam in the NW paddock to the NE paddock to fill a drinking trough for livestock. How much pipe does he need to buy if the scale is 1cm=100m?

11. The farmer is going to fence off the creek line to protect it from damage caused by stock. The scale on the map is 1cm = 100m. Work out the quantity of materials needed to build a fence similar to the one below. It needs a top barb wire, ring-lock netting and a star picket every 15m.

a. How many meters of fencing needs to be completed?

b. Use the table below to work out the approximate costs of the fencing work.



<i>Materials</i>	<i>Number required</i>	<i>Item price</i>	<i>Total Cost</i>
<i>1.2m high ring-lock netting (200m roll)</i>		<i>\$181/200m</i>	
<i>Star picket post (1 needed every 15m)</i>		<i>\$4.90 each</i>	
<i>Barb wire (500m roll).</i>		<i>\$180/500m</i>	

Map – Sleepy River Farm

Extension question– Can you work out the cost of replacing the boundary fences of Sleepy River farm?

