

Working with Wool

You need

★ a calculator

★ a classmate

TECHNOLOGY

New Zealanders have a long history of developing new shearing techniques and wool handling equipment. In the early days, pressing wool into bales was a lot of work. Today, wool pressing can be done with the pull of a lever or the touch of a button!

Activity One

Addison's mum, Emily, set a women's world record for shearing lambs (648 lambs in 9 hours).

1. Approximately how long did it take Emily to shear each lamb?
2. For the record to be valid, the average mass of wool taken from each lamb had to be at least 0.9 kilograms (kg). The wool from Emily's lambs weighed 712 kg. Show that this was enough.
3. The wool is packed in bales that weigh about 175 kg.
 - a. Approximately how many bales can be made from the wool that Emily shored?
 - b. Approximately how many lambs were shorn to make one bale?



Activity Two

In 1899, the workers on Kip's great-grandfather's farm made bales by pressing the wool with their feet. It took about 30 minutes to press one bale of 16 fleeces.



1. Kip's father Jim uses a press that was made in 1921. He wants to buy a new press. Jim finds two presses advertised online. He is working out how efficient they are compared with his current press. Use a table to organise the wool press information below:

Jim's wool press

32 fleeces per bale
15 minutes per bale

Alec's wool press

40 fleeces per bale
10 minutes per bale

Tracey's wool press

50 fleeces per bale
6 minutes per bale

Farmer	Minutes per bale	Bales per hour	Fleeces per bale	Fleeces per hour
Kip's great-grandfather	30	2	16	32
Jim				
Alec				
Tracey				



2. Last year, Jim had 4 000 sheep. Estimate how long it would have taken each farmer to bale the wool from this number of sheep. Write down your calculations.

Activity Three

Farmers send their wool to a wool store. Exporters purchase the wool and arrange for it to be packed in larger bales that are then transported by shipping containers around the world.

A 20 foot (ft) shipping container measures approximately 2.35 m x 2.4 m x 5.9 m. They are used to carry loads of up to 22 000 kg.

1. Export bales vary in size and weight. How many export bales that measure 0.75 m x 0.75 m x 1.35 m would fit in a 20 ft shipping container?
2. If the bales each weigh 480 kg, could the container carry this many? Discuss your reasoning with a classmate.



Focus

Making estimates