

Billy Goat's Pen

Approach: Station

Level: Year 8

Resources: Video, model fence (12 flexible linked 'gates'), marker pen, ruler, graph answer sheet (wall ruled in).

Questions/instructions

Watch the video about a farmer who wants to make a pen for the family's billy goat.

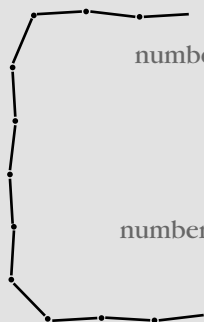
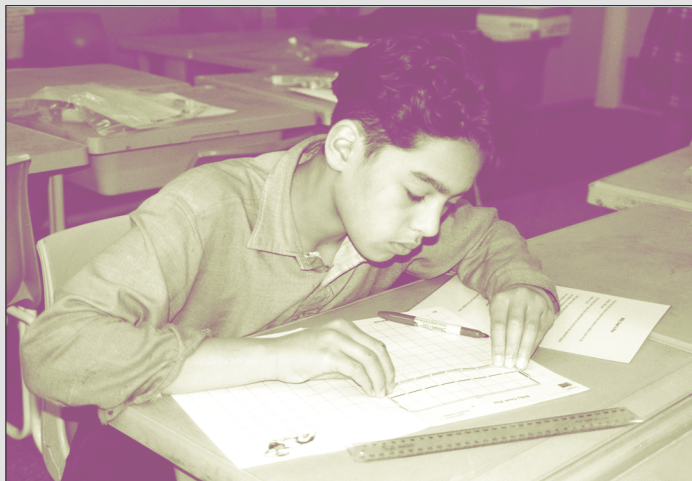
The farmer drew a plan that looked like the one on the squared paper. Look at it now.

1. Draw plans to show **all** of the different ways that the pen could be made.

The pen:

- must use all of the 12 pieces of fence.
- must have 3 sides of fencing and use the wall for the fourth side.
- must be a square or an oblong.

Draw your plans on the answer sheet.



number of correct shapes: 4

3

2

1

0

number of incorrect shapes: 0

1

2

<2

% responses

y8

9

23

30

21

17

58

25

7

10

2. Each piece of the real fence is 2 metres long. If the farmer built the pen shown on the plan, what would the area of the pen be? Write your answer inside the pen.

✓64

32

16

% responses

y8

9

9

10

3. Put a **BIG** tick inside the pen that has the largest area.

largest valid pen

43

largest pen (not valid)

8

Commentary

Few year 8 students managed all components of this task well. Some components were handled poorly by most students.