

Approach: Team

Year: 8

Focus: Problem solving

Resources: 20 \$100 notes (play), calculator, 4 rulers, wallet box, 1 team answer sheet, 4 individual answer sheets

Questions / instructions:

Imagine your school has just won ten million dollars and you've been chosen to go and collect it. The ten million dollars is in \$100 notes. Before you go, your team has to decide how many cardboard boxes you will need to pack the money into.

Hand students the wallet box and the play money.

Here is some play money and a box like the one you will use for packing the money. As a team, plan how you can work out how many boxes you will need. Make sure that everyone has something to do. You can have a few minutes to discuss it and write down your plan. Then tell me what you have decided.

Hand out team answer sheet. Allow time.



Plan for working out how many boxes are needed for the money.	
Things to do	Who will do them

[Wallet box = plain cardboard carton, 432mm x 330mm x 254mm.]

	% responses
1. Now tell me what you have planned to do.	y8
Allocation of activities:	
each person has something to do	60
some people are allocated tasks	11
Measuring money:	
all dimensions	23
measuring length of \$100 notes (approximately 15 cm)	69
measuring width of \$100 notes (approximately 7 cm)	63
measuring thickness of wad of \$100 notes (approximately 2mm for 20 notes)	76
Measuring box:	
all dimensions	17
measuring length of box (approximately 42cm)	79
measuring width of box (approximately 32cm)	73
measuring depth of box (approximately 25cm)	93
Determining efficient arrangement of stacks of notes in box:	
25cm vertical stacks, in 2x6 layout	16
six 42cm horizontal rows, plus 4cm vertical stacks in 2x6 layout	4
some arrangement of money on bottom of box	52
calculating how many \$100 notes fit into box (about 300cm, about 30,000 notes, eg. 12 stacks of about 2500 notes)	41
calculating how many \$100 notes up \$10,000,000 (100,000)	49
Number of boxes needed:	
4 boxes (or 3.x boxes)	8
on right track but computational error	41

	% responses
As a team, try to work out how many boxes you will need for your school's ten million dollars.	y8
When you have finished I would like you to tell me what you found out.	
Hand students calculator, rulers and four individual answer sheets. Allow time.	
2. Explain to me what you found out.	
3. Did you have to make any adjustments to your plan?	
Description of investigation:	
clear, coherent account of investigation	14
some but not all steps described	31
vague description	37
Total score:	
9-10	18
7-8	33
5-6	24
3-4	13
0-2	12

Commentary:
This task requires many steps and multiple calculations. Some groups performed quite well on the task, but many struggled.