

Dispensing Who needs what?

Cheryl	600mg	rifampicin
Nina	250mg	penicillin V
Wayne	200mg	ethambutol
Ali	100mg	amitriptyline
Arundhati	150mg	dapsone

3



1



4



½



2



Nurses have to take great care when dispensing drugs. To help her concentration, other staff must not speak to the nurse while she is dispensing.

Drugs Chart	
drug	pill strength
tetracycline (T)	250 and 150 mg
sulphadimidine (S)	500 and 250 mg
penicillin V (P)	250 mg
ethambutol (E)	400 mg
rifampicin (R)	300 mg
dapsone (D)	50 mg
amitriptyline (A)	50, 25, 15 and 5 mg
aspirin	300, 100 and 50 mg

Who has which pot of pills?



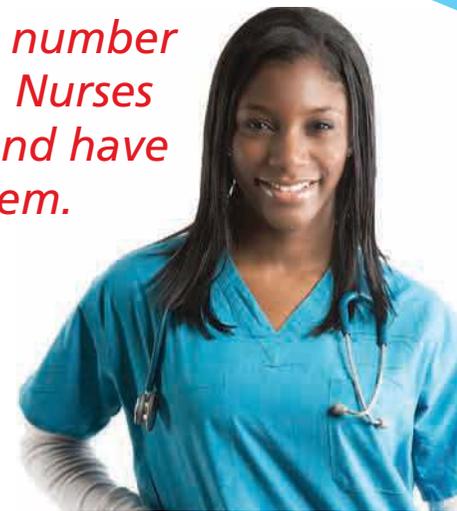
How many pills do these patients need?

Gurdeep	200mg	ethambutol
Hannah	600mg	ethambutol
Amrit	900mg	rifampicin
Maeve	150mg	rifampicin
Molly	450mg	rifampicin
Usha	0.5g	penicillin V
Munif	1g	penicillin V



Dispensing Different strengths

Some drugs come in a number of different strengths. Nurses have these available and have to choose between them.



Guidelines

- Pills cannot accurately be broken into smaller pieces than ½ – and this is avoided if possible.
- Different strengths are not mixed in a given dosage.
- Patients are not given more than four pills at any one time.

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tetracycline (T)	250 and 150 mg
sulphadimidine (S)	500 and 250 mg
penicillin V (P)	250 mg
ethambutol (E)	400 mg
rifampicin (R)	300 mg
dapsone (D)	50 mg
amitriptyline (A)	50, 25, 15 and 5 mg
aspirin	300, 100 and 50 mg



Decide the pills these patients should be given.

Suresh	100mg	aspirin
Mike	200mg	amitriptyline
Nima	400mg	aspirin
Colin	225mg	tetracycline
Abdul	0.15g	amitriptyline
Anna	0.9g	aspirin

Ning	375mg	sulphadimidine
Jane	75mg	aspirin
Clive	0.5g	tetracycline
Aisha	30mg	amitriptyline
Elena	75mg	amitriptyline
Magda	1.5g	sulphadimidine



Dispensing Sort them out cut-out cards



Nurses have to take great care when dispensing drugs. They must distinguish between things that look quite alike.



Sort the cards into weights and volumes. There are six identical pairs. Find the odd ones out.

55cl

55ml

5500mg

5.5l

0.055l

0.055g

5.5g

55mg

550mg

5.5cl

0.55l

0.55g

550cl

55g

Dispensing



Topic

An understanding of place value is vital for nurses working in hospitals. Fatalities occur through the inaccurate dispensing of drugs by weight or by volume. This topic takes this context to motivate some problem solving related to multiplication, division and place value.

Mathematical activities

Who needs what?

Different strengths

Sort them out

Planning for teaching

The names of the drugs are realistic and the sort of doses mirror what might occur on a hospital ward. Pupils need to work in pairs or small groups for these activities as no pre-determined method of solution is offered – they will need to verbalise and try out ideas together. Initially, when working with **Who needs what?**, pupils' ideas are likely to be intuitive. Encourage them to think about how they have worked out their answers and to explain this to a neighbouring pair. Eventually they may express their thinking as a word formula. Nurses often use the formula

$$\frac{\text{what you want}}{\text{what you have}}$$

Different strengths introduces some of the constraints used in dispensing practice. Encourage the pupils to think about why each of these constraints makes sense with patients in the ward. The final activity, **Sort them out**, is a card sorting activity where pupils have to convert between grams and milligrams and between litres and centilitres including the use of decimals. A useful discussion, also needing pupils to focus on place value, is to consider the question: with which ones could a nurse easily make a mistake? You may want to have some weights and some containers to exemplify the various amounts once the matchings have been completed.



Dispensing

Careers link-up

Everyone knows about doctors and nurses but there are 350 different careers in National Health Service (NHS). The [stepintothens](#) website helps young people find out what sort of career might suit them by answering some questions. The careers link-up focuses on [Career Mapper – Step Into The NHS – NHS Careers](#) website and then the different careers suggested can be explored.

The [Careers in the Pharmaceutical Industry – ABPI](#) (Association of British Pharmaceutical Industry) website has subject and course guides as well as case studies.



Want to know more?

Contact STEM Subject Choice and Careers
info@careersinstem.co.uk

The Centre for Science Education
 Sheffield Hallam University
 City Campus, Howard Street
 Sheffield S1 1WB

Tel: 0114 225 4870

or for more information on careers go to Maths careers at www.mathscareers.org.uk/
 or Future Morph at www.futuremorph.org/

A Department for Education initiative to promote subject choice and careers in Science, Technology, Engineering and Maths (STEM) delivered by the Centre for Science Education at Sheffield Hallam University and Babcock.

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