Year 5 into Year 6 mathematics:

Scaling up and scaling down

Key learning

Solve problems involving changing quantities for groups of different sizes. For example, scale down to decrease quantities in a recipe designed to feed six people. Use multiplication and division to solve problems.

Check that your child can:

- scale numbers up or down to solve problems;
- use multiplication and division to solve problems.

Notes for parents/carers

At home you can find practical opportunities for your child to practise scaling numbers up and down to solve problems. The kitchen is a good place to start. You could look at recipes for meals, or for making soft drinks or sauces. Model making also involves scaling of measurement, as do interpreting maps and making or using scaled drawings.

Activities

Look at the recipe for peanut butter biscuits. The recipe gives the amounts to make 36 biscuits. Discuss with your child how you could change the amounts so that the recipe could make 72 biscuits. What about 18 biscuits?

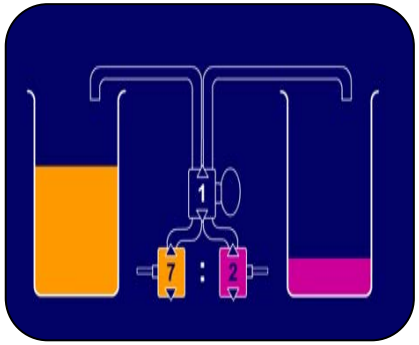
Try scaling up and down some other recipes. For example, if the recipe below is for six people, how would you make a pudding for three? What about for twelve or nine people?

Apple pudding

- 450g cooking apples
- 75g soft brown sugar
- 1 egg
- Grated rind of 1 lemon
- 80g self-raising flour
- 90g caster sugar
- 75g butter
- 120ml milk

Make use of opportunities to give your child practical experience of mathematics in the home and everyday life, such as:

- following recipes and changing them for different numbers of people;
- working out quantities of different parts to make diluted drinks, colours of paint or cement;
- comparing prices for single and multi-buy packs to decide which is better value.



It often helps to jot down words, numbers or pictures to solve a problem.

What do we know that will help us? How could we get started?

Solving problems…

Have a go at questions like these together:

- You earn one voucher for every three visits to the sports centre. How many visits must you make to get five vouchers?
- Katie uses ten tomatoes for every ½ litre of sauce. How many tomatoes does she need for one litre of sauce? How much sauce can she make from 30 tomatoes?
- There are 25ml of juice concentrate in every 100ml of a juice drink. How much concentrate is needed to make ½ litre of juice drink?
- Chicken must be cooked for 50 minutes for every kg. How long does it take to cook a 3kg chicken?
- The supermarket sells a 500ml bottle of squash for 69p and a 1.5 litre bottle for £1.99. Which is better value for money? How do you decide?

ICT Links

Use the Internet to find other recipes to practise scaling up or down. Let your child use the Ratio and Proportion ITP to experiment with mixing different quantities. This is available at http://www.standards.dfes.gov.uk/primaryframeworks/library/Mathematics/ICTResources/itps/

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