

Discussion Problems

Step 5: Imperial Measures

National Curriculum Objectives:

Mathematics Year 6: (6M5) [Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places](#)

Mathematics Year 6: (6M9) [Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate](#)

About this resource:

This resource has been designed for pupils who understand the concepts within [this step](#). It provides pupils with more opportunities to enhance their reasoning and problem solving skills through more challenging problems. Pupils can work in pairs or small groups to discuss with each other about how best to tackle the problem, as there is often more than one answer or more than one way to work through the problem.

There may be various answers for each problem. Where this is the case, we have provided one example answer to guide discussion.

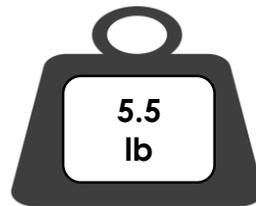
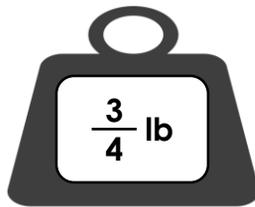
We recommend self or peer marking using the answer page provided to promote discussion and self-correction.

More [Year 6 Converting Units](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Imperial Measures

1. Matt is trying to balance some scales with the weights shown below.



Explore the different combinations of weights you could use to make the scales balance. You must use a minimum of 4 different weights, but can use each weight more than once.

DP

2. Four children are measuring their heights.



Emma

My height, in whole inches, is greater than 63 inches but less than 163cm.

My height is $\frac{3}{4}$ of the height of Emma's.



Mike

My height is 110% of Mike's height.

My height is at least 2 inches more than Mike's, but at least 5cm less than Emma's.



Rachael



Kim

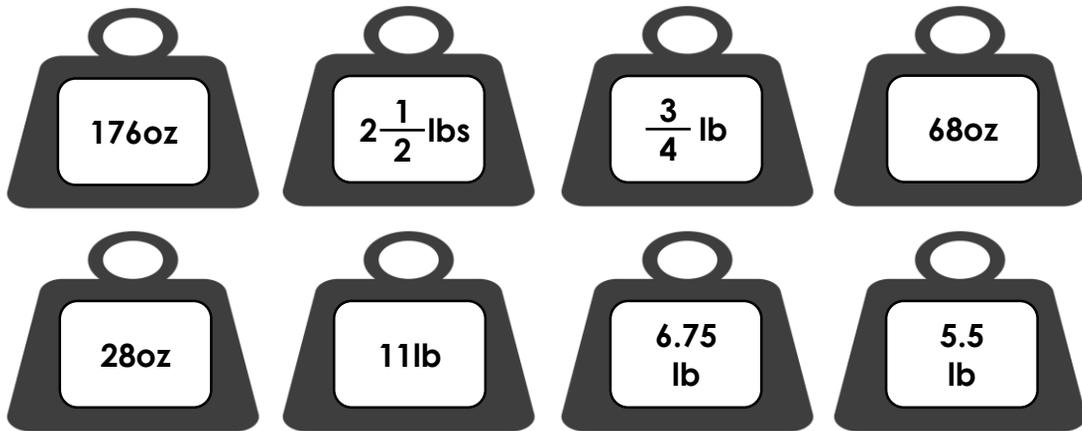
Write the heights of the children in both centimetres and inches.

Now measure your own height! How do you compare to Emma, Mike, Rachael and Kim? Write some statements using imperial measurements which compare your height to theirs.

DP

Imperial Measures

1. Matt is trying to balance some scales with the weights shown below.



Explore the different combinations of weights you could use to make the scales balance. You must use a minimum of 4 different weights, but can use each weight more than once.

Various answers, for example:

$2 \times 2 \frac{1}{2}$ lb is the same as $2 \times \frac{3}{4}$ lb and $2 \times 28\text{oz}$ added together.

DP

2. Four children are measuring their heights.



Emma

My height, in whole inches, is greater than 63 inches but less than 163cm.

My height is $\frac{3}{4}$ of the height of Emma's.



Mike

My height is 110% of Mike's height.

My height is at least 2 inches more than Mike's, but at least 5cm less than Emma's.



Rachael



Kim

Write the heights of the children in both centimetres and inches.

Emma – 162.56cm, 64 inches; Mike – 121.92cm, 48 inches; Rachael – 134.112cm, 52.8 inches, Kim – various answers, for example: 127cm, 50 inches.

Now measure your own height! How do you compare to Emma, Mike, Rachael and Kim? Write some statements using imperial measurements which compare your height to theirs.

Various answers, for example: 137.16cm, 54 inches > Kim's height.

DP