**Understanding ratios**

**What was the workplace issue?**

Mixing 2-stroke fuel to specified ratios for chainsaws and other equipment used in the forest and forest products industry can be an issue. Inaccurate or incorrect fuel mixtures will damage motors destroying the equipment

**What was the impact of the issue on the workplace?**

Equipment can be easily damaged if 2-stroke fuel is mixed incorrectly. There is also a lot of time wasted while workers get advice about how the fuel should be mixed.

Workplaces get around the issue of mixing ratios by marking a container with a line, and giving the instruction to “fill to here with oil” and then “fill to here with petrol”. But too often the container with the mark gets lost or damaged, and workers don’t know what to do.

**What was the foundation skills gap?**

Understanding the concept of ratios and measuring specified amounts of liquid.

This gap is covered by ACSF Numeracy level 3 and 4.

**What was a possible solution?**

The workplace needed to ensure that workers use standard measuring containers to mix fuel to specified ratios, rather than the container with the marks. That way, if the container was lost it could be easily replaced by another standard measuring container.

Workers undertook training to practise measuring set amounts of liquid in different containers, and mixing different ratios, while the language of ratios was reinforced.

*“I constantly reinforce throughout my training sessions what a ratio is – you know, one part of one thing mixed with several parts of another,’ says Brian, an industry trainer. “One litre of petrol mixed with 20ml of oil, is a mix of 50:1, one litre of petrol to 200ml of oil is a mix of 5:1 – it’s important to use the words so that people get familiar with what’s going on. Then we talk about stronger and weaker and those sort of concepts.”*

**How did the solution change practices?**

Instructions for mixing fuel were then always written in measurements, so no matter what container was being used, workers could measure the ratios.

This resulted in equipment not being damaged, less time being wasted, and workers having the numeracy skills required for the job task.

**Resources**

Activity – Ratios

Links:

[Growing Skills: A guide for trainers to address foundation skills in the forest and forest products industry.](http://www.forestworks.com.au/skills-standards/resources/find-a-resource)

[Building Strength with Numeracy](file:///C%3A%5CUsers%5Cslockhart%5CDownloads%5Cat%20http%3A%5Cvalbec.org.au%5Cbuilding-strength-with-numeracy%5Cindex.htm)