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Dividing fractions: a pedagogical technique.

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Summary: When dividing one fraction by a second fraction, invert, that is, flip the second fraction, then multiply it by the first fraction. To multiply fractions, simply multiply across the denominators, and multiply across the numerators to get the resultant fraction. So by inverting the division of fractions it is turned into an easy multiplication of fractions problem. The author received a phone call from a primary school teacher who was teaching this method to her Year 6 class. She had been asked a question, one that she had never before been asked. An inquisitive 12 year old was not happy to just accept the methodology taught; he wanted to know why “flip” the second fraction over. The author teaches a bridging mathematics course at university and hardly ever has had anyone ask “why” – why invert a fraction and then multiply? – so it is not surprising that this young teacher has not encountered the question before. Knowing why certain mathematical actions are performed rather than just rote learning will lead to deep understanding. In practice, the authors finds that explaining “why” cements that deep understanding. The author went over two reasons with the colleague and the answers may be of interest. The two reasons are presented in this article. The first explanation would be suitable for younger students learning fractions. (ERIC)

Classification: F40

Keywords: fractions; multiplication; mathematical concepts; concept formation