

## Activity 3.2 – scaffolding in questions

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**Here is an example of a question in the SAMs as it might have been written with scaffolding in place.**

1.00 g of a pure component of cinnamon oil, Q, is burned in an excess of oxygen.

1.636 cm<sup>3</sup> of carbon dioxide and 0.545 g of water are the only products formed.  
[Molar volume = 24.0 dm<sup>3</sup> mol<sup>-1</sup>]

- (a) Calculate the masses of carbon and hydrogen in the sample of Q. (2)
- (b) Calculate the mass of oxygen in the sample of Q. (1)
- (c) Calculate the amounts, in moles, of each element in the sample of Q. (1)
- (d) Hence calculate the empirical formula of Q. (2)

**Here is the question as it appears in the SAMs.**

1.00 g of a pure component of cinnamon oil, Q, is burned in an excess of oxygen.

1.636 cm<sup>3</sup> of carbon dioxide and 0.545 g of water are the only products formed.  
[Molar volume = 24.0 dm<sup>3</sup> mol<sup>-1</sup>]

Calculate the empirical formula of Q. (6)

- ❖ **Compare the demands of the two versions.**
- ❖ **How can you prepare your students for this sort of unscaffolded question?**