

Take the broken practical approach

Education in Chemistry

May 2021

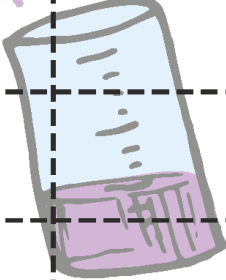
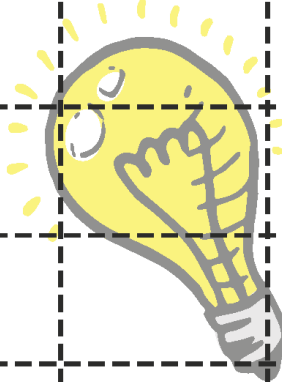
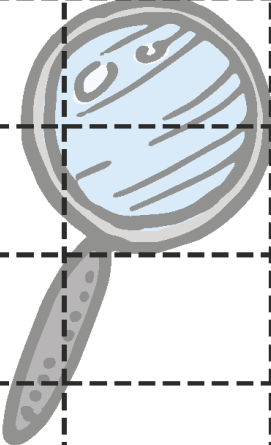
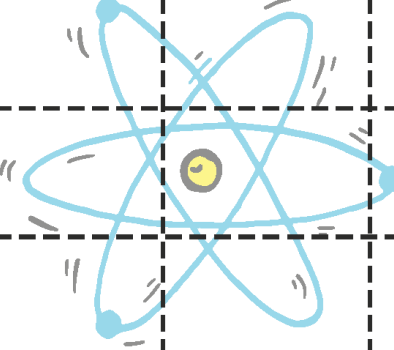
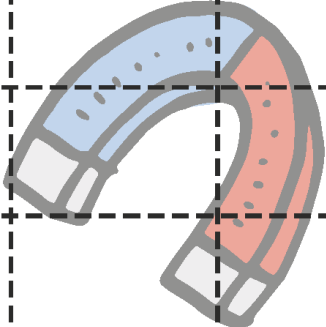
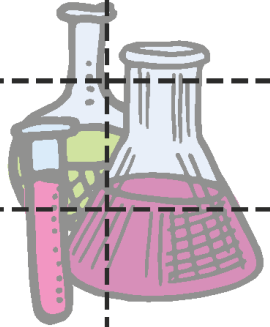
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When developing and assessing students' learning from the practical work they are doing, rather than just their ability to follow recipe-style instructions, you can use the broken practical approach. This switches recall questions about doing the practical work for more challenging, in-depth questions exploring the learning from the practical.

You can use the broken practical matrix overleaf to construct your questions. Use the questioning words from the left-hand column and the verbs from the header row to construct your questions. This significantly changes the level and challenge of the question, investigating students' learning, not simply their ability to follow instructions. To find out how much students really understand, use questions from the bottom right of the matrix.

Below are some example questions you could use with students who have completed the chromatography of ink practical.

Recall questions based on recipe-style practical	Broken practical questions
Where did you draw the pencil line?	Why should the line be drawn with a pencil? What might you use if you didn't have a pencil?
When did you take the paper out of the solvent?	How would your chromatogram look different if you took it out of the solvent earlier or later?
Which ink had the most parts to it?	How could you improve the accuracy of your Rf value calculations?

	IS? DOES? PRESENT	HAS? DID? WAS? PAST	CAN? POSSIBILITY	SHOULD? OPINION	WOULD? COULD? PROBABILITY	WILL? PREDICTION	MIGHT? IMAGINATION
WHAT? EVENT							
WHERE? PLACE							
WHEN? TIME							
WHICH? CHOICE							
WHO? PERSON							
WHY? REASON							
HOW? MEANING							

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