

Aims:

- To introduce students to the concept of a randomised controlled trial, and the terminology involved.
- For students to design and then participate in a simple RCT to test a claim.
- For students to evaluate their RCT.

Use:

- This lesson plan & accompanying PowerPoint has been used with students aged 11-13, but please do adapt it to suit different audiences.

Areas for extension:

- Discussion about cola ingredients that could support the claim
- Trial participation – how are trials recruited for? Why do people drop out?
- Ethical issues – is an RCT always best?
- Levels of evidence

Time	Content	Resources
Pre	<p>Label cups A/B/C according to the number of different types of cola you have.</p> <p>Pour cups of cola for the number of participants you expect in the session, with approximately equal numbers for each type of cola.</p> <p>Fill in the types of cola allocated to each group on the final slide of the PowerPoint.</p> <p>Prepare cards to give out as students enter the room (or get them to select a card) to allocate them to each 'treatment' group.</p>	<p>At least two different types of cola (ie diet/regular/caffeine free)</p> <p>Cups</p> <p>Permanent marker/ Stickers</p> <p>Allocation cards</p>
On entry	<p>Distribute allocation cards.</p> <p>Display Slide 1 – Coca Cola adverts from 1905</p>	<p>Allocation cards</p> <p>PowerPoint</p>
5 min	<p>Display Slide 2 – Discuss with students – what claim is being made?</p> <p>Display Slide 3 – How could the claim be tested?</p> <p>Display Slide 4 – What is it in the Coca Cola that could “make your brain clear and mind active until eleven”?</p>	PowerPoint
5 min	<p>Display Slide 5 – Give students a short time to discuss in pairs/groups how you could test the claim being made by the advert.</p> <p>Draw out suggestions for how they could test how clear the brain is!</p>	PowerPoint
10 min	<p>Display Slide 6 - Introduction to the trial</p> <p>Explain the outline of the trial, then give students Wordsearch 1 (face down) & display Slide 7.</p> <p>Students all turn the Wordsearch over at the same time and spend 5 minutes finding as many words as possible.</p> <p>At the end of the time, students count the number of words they have found – this could be recorded by individuals or centrally.</p>	<p>PowerPoint</p> <p>Wordsearch 1 for all students.</p> <p>Timer</p> <p>Optional worksheet to collate results.</p>
5 min	<p>Display Slide 8 – Types of RCT</p> <p>Discuss the types of trial and ask which students think is best?</p>	PowerPoint
5 min	<p>Display Slide 9 – Treatment allocation</p> <p>Discuss different options for allocating people to treatment groups, encourage students to identify that groups must be</p>	<p>PowerPoint</p> <p>Cups of Cola</p> <p>Wordsearch 2 (if</p>

	<p>comparable in order to judge the effect of the treatment.</p> <p>Display Slide 10 – ‘Treatment’</p> <p>Give out the cups of cola and ask the students to drink them at the same time.</p> <p>If you have time available, you may wish to complete a retest straight away, or just wait 10 minutes before retesting.</p>	<p>completing an immediate retest)</p>
5 min	<p>Display Slide 11 – Considering participant background</p> <p>Discuss with students factors that might affect how subjects perform in this trial.</p> <p>Display Slide 12 – Treatment group comparison</p> <p>Take a tally of how often people in each treatment group drink cola in a normal week, discuss with students why this may affect the results.</p>	<p>PowerPoint</p>
5 min	<p>Display Slide 13 – the purpose of trials</p> <p>Encourage students to consider the purpose of trials – whether it be to test claims or to justify actions. Opportunity to discuss bias of trials too, dependent on the group.</p>	<p>PowerPoint - could be updated to include more recent headlines including any type of trial.</p>
5 min	<p>Display Slide 14 – Retest</p> <p>Give students Wordsearch 2 (face down) – ask them to suggest why it is important that they have a similar test but not one identical to the previous test.</p> <p>Students all turn the Wordsearch over at the same time and spend 5 minutes finding as many words as possible.</p>	<p>Wordsearch 2 (or 3, if you have done an immediate retest)</p>
10 min	<p>Display Slide 15 – Results Analysis</p> <p>Students should individually find the difference and then percentage difference of their scores, then these values used in treatment groups to find the mean for each allocation group.</p> <p>Display Slide 16, revealing the type of cola that each group received. Discuss with students whether this was really a blinded trial and what else could have affected the outcome.</p> <p>Conclude with highlighting the flaws in this trial – could it really support or refute the original claim made?</p>	<p>Optional results analysis worksheet</p>