

What is science?: *Making our demarcation criteria explicit.*

Work in your groups of 4.

1. You are provided with
 - a) a set of cards (yellow) with the names of 'activities', and three 'place' cards: 'science' [blue?], 'not science' [red?], 'not sure' [green]
 - b) copies of a summary sheet
 - c) copies of a criteria sheet

Part a) 'sheep and goats'

Your task is to sort the cards into 3 groups –

- those labelled with activities your group consider to be scientific;
- those labelled with activities your group consider are not scientific;
- those labelled with activities your group either cannot agree about, or does not know about.

For each card:

i) discuss in your group what the activity labelled on the card is about and what it involves;

ii) try to decide whether it is an activity which you would agree is science, or would agree is not science, and place the card on the 'science' or 'not science' pile accordingly. Do not spend too long on any card at this stage. Any card that are not sure about, or cannot agree on, should be placed on the 'not sure' pile;

iii) when you have sorted all the cards, check you are still happy with all those included on the 'science' pile, and on all those included on the 'not science' pile;

iv) look again at any cards on the 'not sure' pile. See if you can make a decision to move any to the 'science' or 'not science' piles. Discuss any examples where you do not agree – and allow majority decisions on where these should be placed.

v) When you have completed sorting the cards, record you decisions on the summary sheet.

Part b) 'making your criteria *explicit*'

There are reasons for the decisions your group has made in sorting the cards. It is likely that some of these reasons are quite difficult to explain – but that is your next task.

Look at the way you have sorted the cards, and see if you can describe the *criterion* or *criteria* you have used to decide if something is science or not.

The challenge is to see if you can write out a clear enough explanation of how your group made its decisions, to allow another group to sort the cards the same way just by using your criterion/criteria.

Discuss this in your group, and see if you can produce a clear explanation of your demarcation criterion/criteria – record this on the criteria sheet.

When you are finished, ask one of the graduate teaching assistants to swap your criteria sheet with that from another group.

Part c) comparing with another group

Read through the criterion/criteria produced by the other group. As a group, re-sort your set of cards according to the other group's criterion/criteria. When you agree on the new sort, record it on a summary sheet.

Discussion questions:

Were there any differences between your group's own decisions about how to sort the cards, and the decisions you would make using the other group's criterion/criteria?

Who do you think has the final say on whether something is a science or not?

(If you think scientists should have the final say – who should decide who is, or is not, a scientist?)