# Equations and Identities

This is an activity that intends to focus attention on distinguishing between algebraic statements of truth (identities) and equations in x. Learners are given cards such as, for example below. On each card is an equation in x. Some of these are identities, and are ‘Always true’ (e.g. 2x + 3x = 5x). Some can be solved for x and are ‘Sometimes true’ (e.g. x + 2 = 5) and some are incorrect and ‘Never true’ (e.g. x + 3 = x). In the classroom activity, students place the cards on a poster in one of three columns labelled ‘Always true’, ‘Sometimes true’ and ‘Never true’.

## Introduction

Give each learner a mini-whiteboard, pen and wipe. Learners will use the mini whiteboards in the introduction to show you what they think.

Draw three columns on the board: “Always true”, “Sometimes true” and “Never true”.

Discuss the yellow cards one by one, place them in the appropriate columns and write an explanation for each card. For each card ask the learners to write on their mini whiteboards where they think the card should go and use their responses to help you decide where you should direct your questions.

## Card sorting activity

Put the learners into groups. Each group should have

* one set of cards (green)
* a large sheet of paper
* glue or prestik.

Ask the groups to divide their paper into three columns labelled “Always true”, “Sometimes true” and “Never true”.

Explain that they should place the green cards in the same way as you showed them on the board.

Allow them enough time to do the activity.

Try not to tell them the answers, just listen to what they are saying. This will help you choose which groups you give the big cards to (for the discussion).

## Discussion

Hand out the big cards to different groups.

Ask the groups to come up one by one to place the cards in the appropriate columns and add their explanations.

## More card sorting activity

If time allows, ask the learners to sort the orange cards, again holding a class discussion after most of the class has placed their cards.