

This is another idea which requires students to have access to packs of playing cards and was demonstrated to me by Tania Milnes, a PGCE student.

- Turn over a card.
- Whatever the face value of this card is, add further cards up to make 13.
- Place these cards into a pile with all the cards face down.
- Repeat this until all the cards have been used.
- If there are any remaining cards (because a pile adding to 13 cannot be made) put these cards to one side.

For example, if a nine is turned over a further four cards are added to make a pile; the nine is then placed on top of pile 1 *face down*.

If the next card is a five, then eight more cards are counted from the pack and these, together with the five, make pile 2 (again the five is placed *face down* on top of this pile).

Continue this until all the cards have been used. There may be some remainder cards at the end (see below).

Court cards count as 11 for a Jack, 12 for a Queen and 13 for a King. So, if a King is turned over then no more cards are added to this particular pile because the total is already 13.

- Ask someone to choose three of the piles and put these to one side.
- Gather all the other piles together with the remainder cards into a 'stack'.
- Ask someone else to choose one of the three piles and put this to one side.
- Turn over the top card on each of the other two piles.
- Add together the face value of these two cards and call this *f*.

- From the stack count out the same number of cards as the face value (*f*).
- Exclaim that the 'magic' number is ten and count a further ten cards from the stack.

The number of cards now left in the stack will be the value of the *face down* card on top of the chosen pile.

The question is, why does it work?