Ten thoughts about manipulatives from Judy Hornigold - https://judyhornigold.co.uk/

1. **Let the children play with them first.**
   It is important that the children have the opportunity to notice patterns and to discover connections for themselves. For example, when using Cuisenaire rods for the first time most children will end up setting them out in order from shortest to tallest.
2. **Use a variety of manipulatives**.
   I was once at a school that described themselves as a Numicon school, and this resource, excellent as it is, was overused. The children were becoming reliant on it. We all 'see' maths in different ways, so provide a wide variety.
3. **Remember that manipulatives are objects to think with.**
   Initially children will use them for counting but we want them to progress into using them in a way that will deepen their understanding of a concept rather than as a crutch.
4. **Be flexible in their use**
   Different manipulatives can be suited to different concepts but don't be afraid to let children explore and find their own ways of using them.
5. **Dispel the myth that manipulatives are for the children who can't do maths**
   Make sure that the children are not thinking of the manipulatives as being 'babyish' or something that only the struggling children need.
6. **Don't spend too much money**
   Some of the simplest manipulatives can also be the most effective. Strips and squares of paper, two-coloured counters and ten frames printed on card or made from egg boxes are incredibly versatile and can cover both primary and secondary content
7. **Make use of the virtual manipulatives**
   If you don't have the resources to hand or if you are teaching remotely then these can be a life saver. www.mathsbot.com is excellent and completely free.
8. **Be aware of the distinction between proportionate and non-proportionate manipulatives**
   Base ten materials are proportionate since the 10 rod is ten times the size of the 1 cube and the 100 flat is ten times the size of the 10 rod etc. Whereas, coins are non-proportionate, as are place value counters, since their size is not proportionate to their value. Younger children need to work with proportionate materials first.
9. **Same colour, same size, same shape**.
   This is a bit of a mantra of mine when working with young children. Whilst is may be exciting to learn to count with a box of farmyard animals, all that variation can distract from the maths. When we want to focus on a numerical difference (eg between 2 and 3) then the only difference needs to be that numerical quantity, everything else should be the same.
10. **Make them a natural part of every lesson**
    Always have a variety of manipulatives on every table in every lesson. That way they will become part of a normal way of working as much as have a pencil and a rubber to hand.