Choosing which Average

Choosing which average (mode or median) to use can be difficult.

You may work out the mode and find it is right at one end of the range of numbers and therefore not typical of the set of data. Alternatively you may have 2 top scoring numbers and therefore no mode.

You may work out a median and get a half number where you need whole number answers. E.g. In this class on average we have 2.5 children in the family.

The mode is used sometimes when there are lots of numbers that give the same score.
E.g.   3, 5, 4, 3, 2, 4, 3, 2, 1, 5, 3, 4, 2, 3, 4, 3, 5.

The median is used sometimes when we have a larger range of values and very few give the same score.
E.g.   34, 45, 32, 29, 33, 36, 41, 37, 45, 30, 42.

C.   For each of the following sets of data,
      a).   i).   State which would be the better average to use for that data.
             ii).   From this, calculate the average.
      b).   Find the range of the data.

1).   The number of bottles of milk delivered to my street.
    2, 4, 1, 2, 5, 3, 2, 4, 1, 2, 4, 2, 3, 2, 4.

2).   The percentage a group scored in a maths examination.
    47, 68, 35, 93, 75, 63, 82, 74, 81, 63.

3).   The number of goals the hockey team let in this season.
    2, 3, 4, 0, 2, 1, 3, 1, 2, 1, 4, 0, 4, 2, 1, 2, 4, 2, 3, 0, 0, 3.

4).   The weight of a group of pupils, in kilograms.
    64, 38, 72, 53, 48, 38, 65, 49, 46, 55, 37.

5).   The height of a group of Star Trek fans, in centimetres.
    163, 148, 157, 138, 154, 172, 133, 142, 135, 165, 145.

6).   The number of tracks on each of my Compact Discs.
    12, 13, 11, 12, 8, 14, 10, 9, 11, 12, 9, 10, 14, 10, 9, 10, 11, 12, 13.

7).   The scores out of 10 a group got in a quick mental test.
    10, 9, 7, 10, 7, 8, 10, 6, 10, 7, 5, 8, 9, 7, 7, 8, 10.

8).   The number of children in each family in a class.
    1, 3, 2, 3, 2, 4, 2, 1, 2, 5, 3, 3, 2, 2, 1, 2, 3, 2, 5, 2.

9).   The number of situps a group could do in 60 seconds.
    17, 37, 23, 14, 41, 29, 31, 35, 17, 43, 54, 39, 35.

10).   The number of chips served on a plate.
    37, 32, 28, 42, 29, 39, 26, 34, 35, 28, 39, 34.

11).   The time a group of athletes take to run the 400 metres (in seconds).
    53, 64, 67, 51, 49, 58, 57, 62, 60, 69, 54, 58, 69.

12).   The number of chocolate buttons in a packet.
    31, 32, 33, 31, 30, 31, 31, 30, 32, 33, 34, 31, 32, 30.

13).   The number of pupils recently absent from class.
    4, 3, 0, 1, 4, 3, 2, 4, 1, 1, 0, 2, 2, 1, 0, 4, 0, 2, 1, 1, 2.

14).   The number of kilometres a lorry driver drove each journey.
    42, 106, 58, 74, 93, 72, 56, 98, 84, 73, 85, 42, 91.

15).   The percentage scored by a group of pupils in a history test.
    74, 36, 84, 93, 72, 72, 81, 56, 74, 68, 79, 83.