## 3D Arrays - Example

- To define a 3D array which holds prices for ice-creams:

```
const int Flavors = 12,
          Sizes = 3,
          Conetypes = 2;
float Prices[Flavors][Sizes][Conetypes];
```



## 3D Arrays - Example

- To address individual elements

```
cout << Prices[8][2][1];
        // price of flavor 9, size 3, conetype 2.

Price[10][0][1] = 4;
        // price of flavor 11, size 1, conetype 2.
```



## 3D Arrays – Example (cont …)

- If you wish to loop through higher dimensional arrays displaying or setting all elements, then you require a loops for each dimension.
- For 2D arrays, you need 2 nested loops.



## 3D Arrays – Example (cont …)

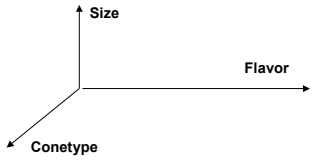
- For 3D arrays, you need 3 nested loops:

```
for(int f = 0; f < Flavors; f++)
   for(int s = 0; s < Sizes; s++)
      for(int c = 0; c < Conetypes; c++)
         Price[f][s][c] = 5;
                  // loop thru' 12*3*2 (72) times
```



## 3D Arrays – Example (cont …)

- It is easy to visualize the array in three dimensions:






## Greater than 3D arrays

- You may declare and use greater than 3D arrays, but these are hard to visualise at first.
- In business, you may well be dealing with 7 dimension, 10 dimension, or higher arrays.
- Just think as each of the elements of the array as having more than three attributes which describes it uniquely.