What is included in inventory costs?

- Purchase price (includes duties, non-recoverable sales taxes, transport)
- Conversion costs (direct labour, direct variable overhead, fixed overheads)
- Any other costs spent to bring the inventory to the present condition and location (interest, costs to design products)

- Inventory costs are record **net of rebates** and discounts

What's Included in Inventory Costs (absorption costing = both fxd and variable costs included in inventory)

- Allocation of fixed and variable OH (amortization, maintaining factory building, utilities, etc.)
- Storage costs **necessary** to the production process(cheese, vine)
- Amortization of intangible assets - i.e. development costs (i.e. spent time developing a new product that you are now selling)
- **Borrowing costs** if inventory takes time to get ready for use and sale (ASPE and IFRS)
  - The cost of inventories that are ready for their intended use or sale when acquired does not include interest costs.

- **Wasted materials, labour, or other production processes**
  - Normal waste - Included in inventory
  - Abnormal Waste - Expensed

Inventory Valuation Methods:

- Not determined based on actual physical flow b/c only **(1) FIFO, (2) Weighted Average Cost (WAC), or (3) Specific Identification (SI)** are allowed
  - FIFO - Oldest stuff sold first(COGS); new stuff remains in ending inventory
  - WAC = (Beg. Inventory cost + Purchases cost to date)/(quantity of inventory in Beg Inv. + Quantity of purchases to date)
    - You then allocate this to the EI and COGS
  - SI - COGS = actual inventory sold; EI = actual inventory remaining

- LIFO is no longer allowed under ASPE and IFRS

- The cost of inventories of items that are **not ordinarily interchangeable** (i.e. the same) and **goods or services produced and segregated for specific projects** are costed using **specific identification** of their individual costs. SAME FOR IFRS.
  - If you have inventory for specific projects **<u>or</u>** they are different from all others you need to use specific identification
  - Example: Custom-made goods, homes, etc…

- **Interchangeable inventories** are costed using **FIFO or WAC**

- Inventories with similar nature and use should use the same cost formula; this means that one set of inventories can be costed using FIFO, while another set (with a different nature and use) is costed using WAC (i.e. assuming that these inventories are interchangeable)

Lower of cost and NRV - ***you can reverse under both IFRS and ASPE***

- NRV = Net Realizable Value = amount you can sell the inventory for under normal course of business, net of cost to sell
- NRV is an **entity specific value**, so for example if you entered into a forward contract to sell your inventory below your current cost, you need to write down your inventory
- You should test inventory on an **item-by-item basis rather than grouping everything;** but there are times when grouping is appropriate, for example, if you are testing the NRV for the exact same products or if you have two inventories that are sold together.

- **Indications of impairment**
  - Obsolescence - this is especially true with high tech products (watch out for these on cases!)
  - Damaged products (recalls, defects)
  - Products sitting in inventory for too long (i.e. longer than normal inventory cycle)
  - Perishable Items (food products)
  - Economic factors (i.e. recession)

- **Inventory write-down reversal**
  - The amount of any reversal of any write-down of inventories, arising from an increase in net realizable value, shall be recognized as a reduction in the amount of inventories recognized as an expense (cost of sales) in the period in which the reversal occurs.

- **Writing down Raw Material Inventory:**
  - Write down to NRV (usually the replacement cost) only If you can't sell the finished goods at a profit

- **By-products:**
  - By-products = secondary products you get from producing a certain product
  - Allocate costs to the main product and the by-product on a "rational and consistent basis"
  - When the by-product is **immaterial,** you can measure the by-product at the NRV and subtract it from the total product cost to value the main product.

- You can pool the entire costs to produce the main product and the by-product, and allocate the entire cost to the main product and the by-product using the selling price of main and by-products (most common way to handle by-product costing).
- Other basis: allowed as long as rational and consistent
  - Weight - acceptable (careful not to overvalue inventory)
    - Example: You produce chicken breasts; but in the process, you have by-products like wings and legs.
    - Step 1: You take the total costs to make the breasts and the by-products (wings and legs)
    - Step 2: Allocate this by the weight of the parts (breast, wings, and legs)
    - Step 3: Remember once you allocate; you need to see if the cost < NRV; if not you may have a write down

Allocating Fixed and Variable Production Overhead Costs to Inventory

Variable Production Overhead Costs:

- Variable production overheads are those indirect costs of production that vary directly, or nearly directly, with the volume of production, such as indirect materials and indirect labour
- Allocate these to inventory on the basis of **actual costs**

Fixed Production Overhead Costs (see ASPE 3031:14)

- Fixed production overheads are indirect costs of production that remain relatively constant regardless of the volume of production, such as:
  - depreciation and maintenance of factory buildings and equipment, and
  - the cost of factory management and administration.

- Fixed production overhead costs are allocated to inventory based on the **normal operating capacity** of the production facilities
  - You can use actual level of production only if it approximates the normal capacity
  - So if you have a season where capacity is very low; you'd still use the cost per unit of actual FC that corresponds to normal capacity
  - **Unallocated overheads** are recognized as an expense in the period in which they are incurred
  - In periods of **abnormally high production**, the amount of fixed overhead allocated to each unit of production is decreased so that inventories are not measured above cost.
    - This happens when actual production > normal capacity

See below for example…

Example of Fixed Production Overhead Allocation:

In the current year…

Opening Inventory = 0 units
Ending Inventory= 5,000 units
Sales=2,000 units
Total production = 5,000 + 2,000 = 7,000 units

Suppose actual FC (fixed cost) = $40,000

Suppose normal operating capacity = 8,000 units

Total FC/Normal Capacity = $40,000/8000 units = $5 per Unit

EI = 5000*$5=25,000
COGS = 2000*$5=10,000

Total allocated FC = 25,000 + 10,000 = 35,000

Expense = unallocated fixed costs = 40,000-35,000=5,000

Comparison to ASPE

- **IAS 2** Inventories is generally converged with **ASPE 3031**
- One difference is with **borrowing costs** – under ASPE can choose to capitalize borrowing costs relating to inventory that takes substantial time to get it ready for sale; whereas under IFRS borrowing costs for qualifying assets are capitalized.