

MPSAS 12: Inventories

Sarawak State Government



Agenda



Day 1

Introduction

Accounting Principles

First Time Adoption of
MPSAS

Presentation of Financial
Statements

Day 2

Property, Plant and
Equipment

Intangible Assets

Day 3

Inventories

Agriculture

Investment Properties

Prepayments

Impairment of Asset

Day 4

Financial Instrument

Day 5

Investments

Grants, Provisions and
Contingencies

Commitments

Day 6

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Construction Contract

Employee Benefits

Borrowing Cost

Day 7

Public Private Partnership

Lease Accounting

Day 8

Policies, Estimates &
Errors

Events After Reporting

Related Party Disclosures

General Government
Sector

Trust Accounts and Trust
Fund



Components & elements of financial statements

COMPONENTS		MPSAS	
1	Statement of Financial Position	MPSAS 1	
2	Statement of Financial Performance	MPSAS 1	
3	Statement of Changes in Net Assets/Equity	MPSAS 1	
4	Cash Flow Statement	MPSAS 2	
5	Statement of Budget Performance	MPSAS 24	
6	Notes to the Financial Statements	Various MPSAS	

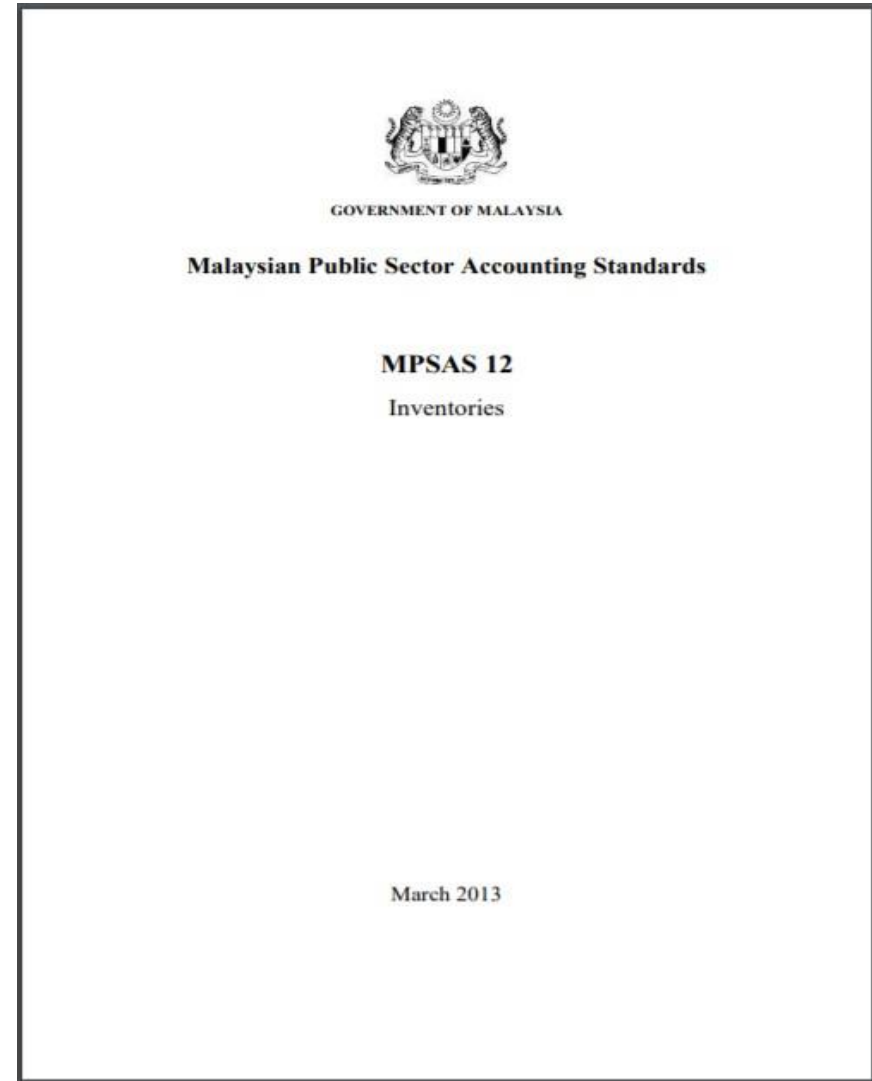
- Financial statement is to be prepared in accordance with the accounting principles

MPSAS 12 Inventories

Inventories are assets:

- In the form of materials or supplies to be consumed in the production process; or
- In the form of materials or supplies to be consumed or distributed in the rendering of services; or
- Held for sale or distribution in the ordinary course of business; or
- In the process of production for sale or distribution.

Effective Date : 1 January 2017



Example of Inventories



Inventories for State may include:

- Ammunition;
- Consumable stores;
- Maintenance materials;
- Spare parts for plant and equipment, other than those dealt with in the standards on Property, Plant and Equipment;
- Supplies held for sale;
- Agriculture produce (if material).

Inventory Capitalization Policy



* Inventories which have a value of RM500,000* or more per responsibility centre as at the end of preceding three (3) financial years shall be capitalised.

- Illustration:

PTJ	Yr 1 (RM)	Yr 2 (RM)	Yr 3 (RM)	Yr 4 (RM)	Pass/Fail in Yr 3	Pass/Fail in Yr 4
A	2M	1M	1M		Pass	N/A
B	0.3M	0.5M	0.5M	2M	Fail	Pass
C	0.2M	0.4M	0.4M	0.3M	Fail	Fail

- PTJ inventory A will carry on inventorising in their respective systems.
- Other non-PTJ inventory can continue to track their year end balances.

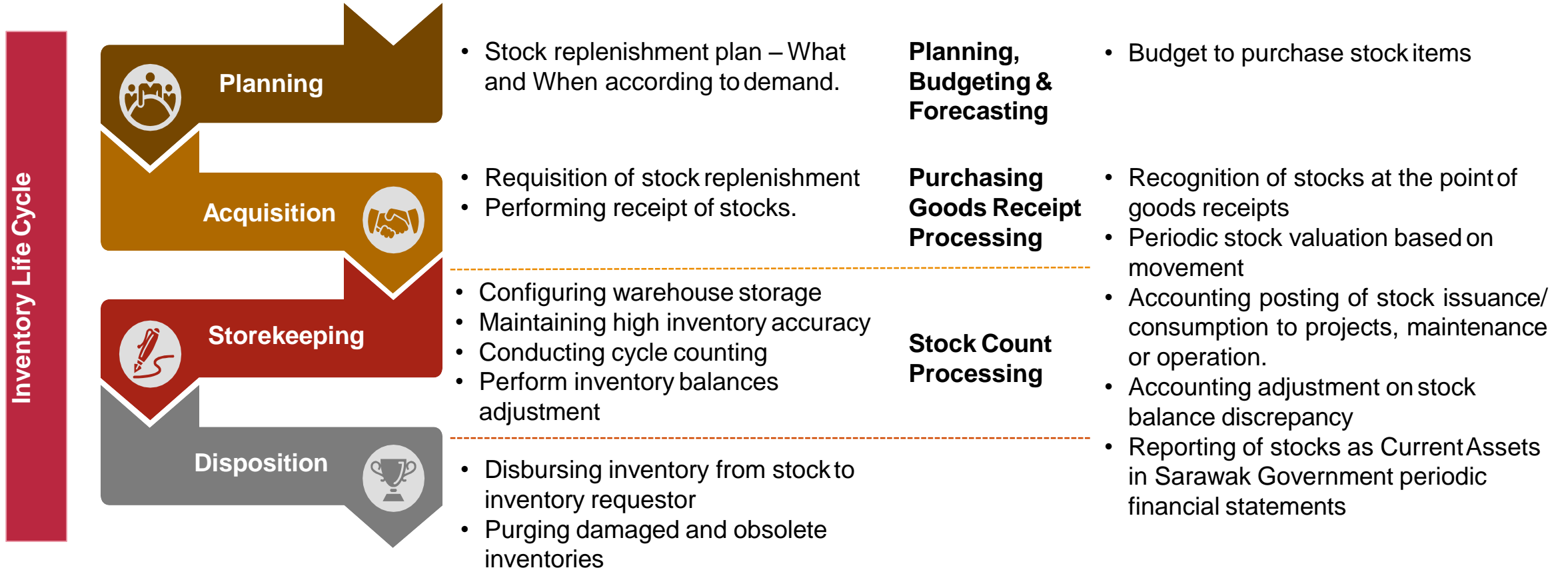
**the capitalisation threshold is subject to Treasury's policies*

Inventory Life Cycle



Inventory Management at Storage Location

Inventory Management at Finance/ Accounting Office

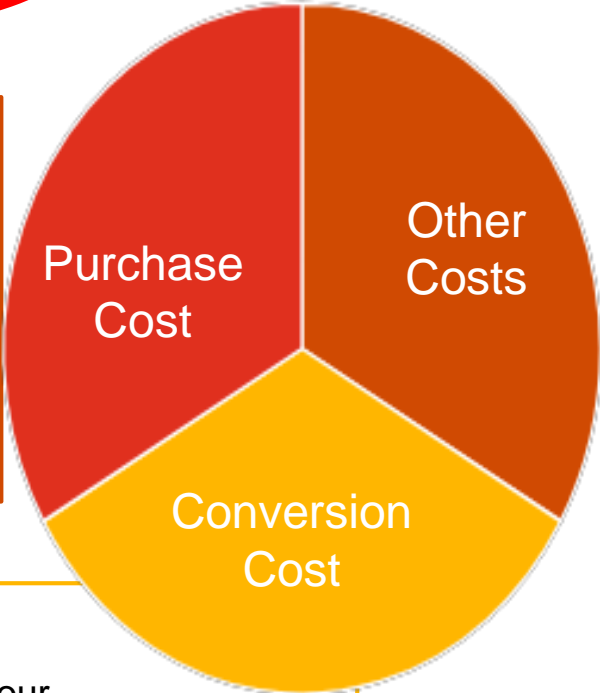


Measurement



Exchange transactions

Includes:
Purchase price
+ import duties and other taxes
+ handling costs attributable to the acquisition
- Minus trade discounts or rebates



Any other costs that are incurred in bringing the inventory to the present location and condition

Includes:
Direct costs, such as direct labour
+ fixed and variable production overheads incurred in converting materials into finished goods

Non-exchange transactions

Inventories shall be measured at fair value as at date of acquisition.



Some inventories must be kept in store for ageing before it can be used or distributed. Can storage costs be included in the cost of inventory?

Yes

Capitalisation of storage costs is allowed **only** if the storage is necessary in the production process prior to a further production stage. In this situation, the storage costs during the ageing process should be capitalised, because ageing is integral to making the finished product saleable.

The following costs should be excluded from cost of inventories and recognised as expenses as incurred:

- a. abnormal amounts of wasted materials, labour or other production costs;
- b. storage costs, unless those costs are necessary in the production process prior to a further production stage;
- c. administrative overheads that do not contribute to bringing inventories to their present location and condition;
- d. selling costs.



If State received inventories from donations, should it be capitalised? What is the measurement?

Yes

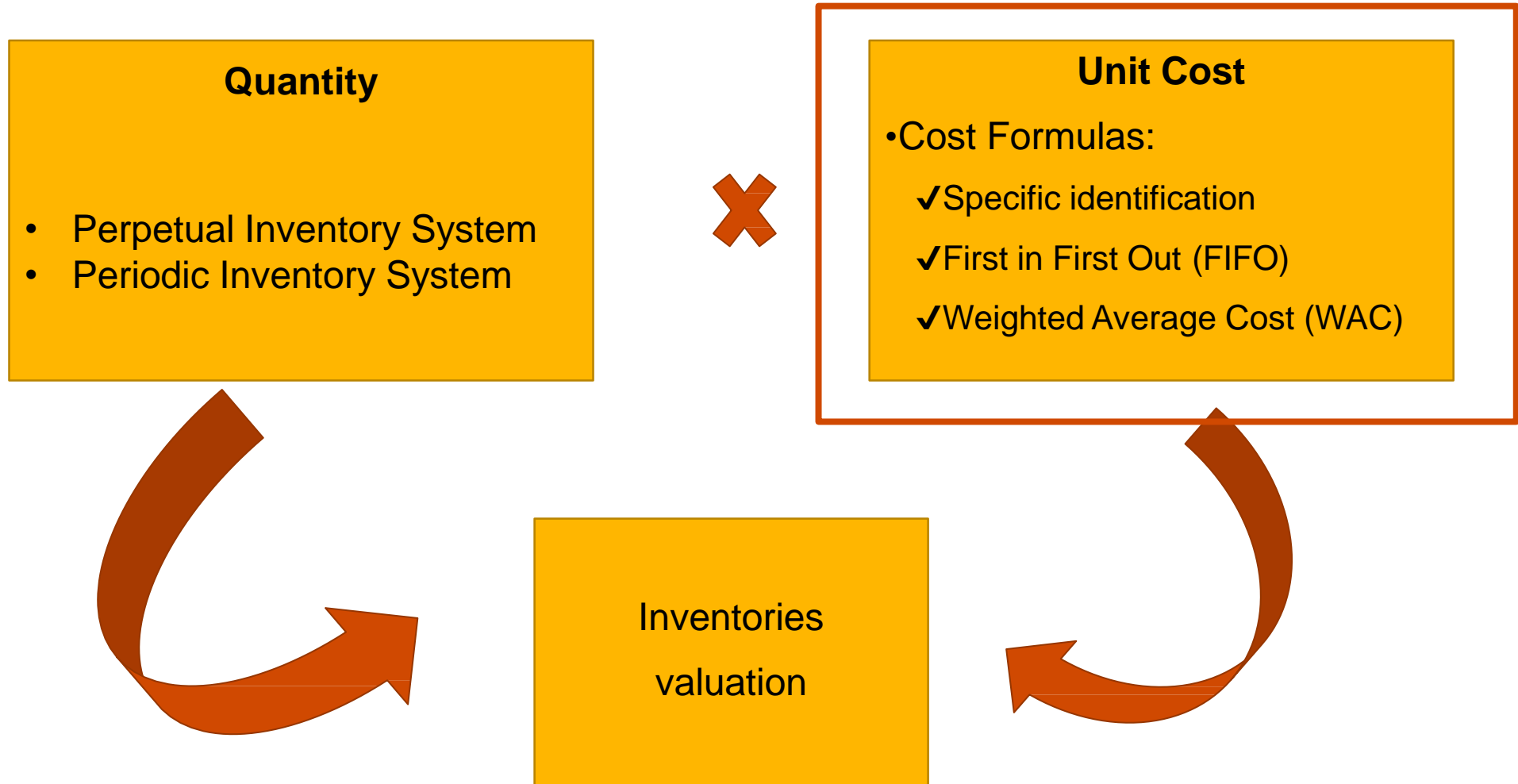
- Recognised as inventories and measured at fair value
- Same amount recognised as revenue



For agriculture produce: the fair value at the point of harvest is regarded as the cost of inventory. This will be covered in MPSAS 27- Agriculture.



What is the value of inventories?





Inventory Cost Formula

Interchangeable in nature:

Cost formulas:

FIFO	WAC
<u>First in First Out (FIFO)</u> Assumes that items that were purchased or produced first are sold first.	<u>Weighted Average Cost (WAC)</u> The cost of each item is determined from the weighted average of the cost of similar items at the beginning of a period and the cost of similar items acquired during the period

Non-interchangeable in nature:

Requires specific identification of individual costs for items that are not ordinarily interchangeable as well as for goods or services produced and segregated for specific projects



Cost Formula

Assessments

- A manufacturer of luxury yachts builds bespoke yachts according to its customers' specifications. The entity has the capacity to manufacture three yachts simultaneously in its dockyard.
- Basic raw materials that can be used interchangeably between all yachts undergoing manufacture are stored in the general storeroom.
- Materials specific to the manufacture of a particular yacht are stored in a separate storeroom dedicated to the storage of materials that are specific to that yacht.

What cost formula should the entity applied for the inventory?

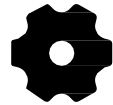




Cost Formula

Assessments (Answers)

Raw materials for all yachts



Using the first-in, first-out (FIFO) or weighted average cost formula

Specific material for a particular yacht



Using the specific identification method



Inventories valuation using all methods

Illustrative Example (Scenario 1)

- An entity has been purchasing inventories during the year.
- Assume that opening inventory on 1 March 2013 is nil.
- All inventories are finished goods and are of the same type.

	Quantity	Unit cost (RM)
Batch 1 received on 1 March 2019	2	3.00
Batch 2 received on 15 March 2019	4	4.50
On 25 March 2019, entity sold 5 units	(5)	
Closing inventory on 31 March 2019	1	

What is the cost of inventories using FIFO, weighted average cost valuation methods and specific identification?



Inventories valuation using all methods

Illustrative Example (Scenario 1)

1) FIFO

	Quantity	Unit cost (RM)
Batch 1 received on 1 March 2019	1 2	3.00
Batch 2 received on 15 March 2019	2 4	4.50
On 25 March 2019, entity sold 5 units	(5)	
Closing inventory on 31 March 2019	1	

All units of batch 1 are assumed consumed first and then 3 units from batch 2 are assumed consumed. One unit from batch 2 remains at cost of RM4.50.

	Quantity	Unit cost (RM)	Value (RM)
FIFO	1	4.50	4.50



Inventories valuation using all methods

Illustrative Example (Scenario 1)

2) Weighted average

	Quantity	Unit cost (RM)
Batch 1 received on 1 March 2019	2	3.00
Batch 2 received on 15 March 2019	4	4.50
On 25 March 2019, entity sold 5 units	(5)	
Closing inventory on 31 March 2019	1	

$$\text{Weighted Average Cost (WAC)} = \frac{\text{Cost of goods available for sale}}{\text{Number of units available for sale}}$$

$$\begin{aligned}\text{Weighted Average Cost (WAC)} &= \frac{(2 \times \text{RM}3.00) + (4 \times \text{RM}4.50)}{4 + 2} \\ &= \text{RM } 4.00 \text{ per unit}\end{aligned}$$

	Quantity	Unit cost (RM)	Value (RM)
WAC	1	4.00	4.00



Inventories valuation using all methods

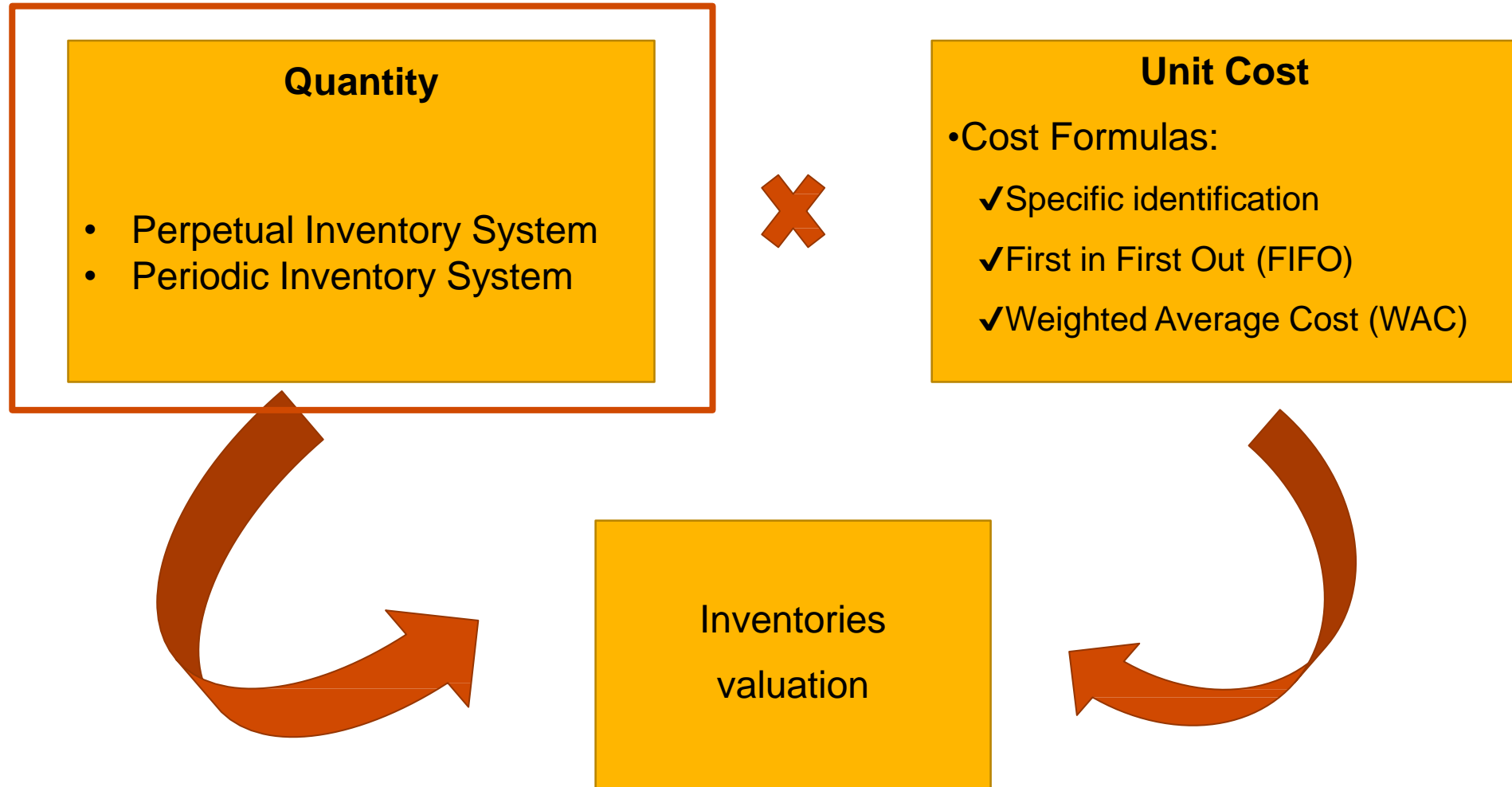
Illustrative Example (Scenario 1)

3. Specific identification

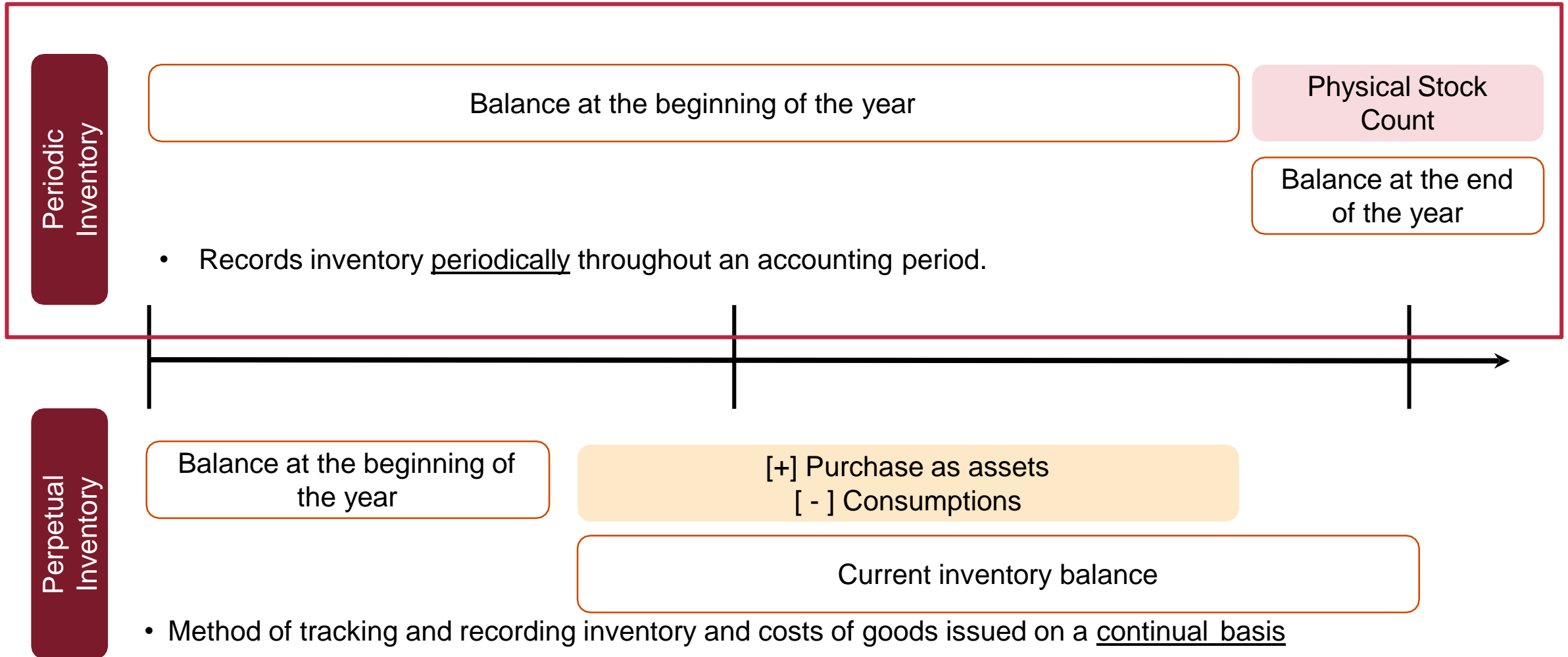
- Specification identification of costs means that specific costs are attributed to identified items of inventory. This is an appropriate treatment for items that are segregated for a specific project, regardless of whether they have been bought or produced.
- However, specific identification of costs is inappropriate when there are large numbers of items of inventory that are ordinarily interchangeable.



What is the value of inventories?



Comparison between Perpetual and Periodic Inventory





Purchase and issue of inventory under a periodic inventory system

Illustrative Example (Scenario 2)

- An entity purchases medical supplies in year 20X1 for RM50,000.
- Freight charges of RM500 are included on the invoice.
- Assuming the entity uses a periodic system, purchases and issues are recorded directly in the inventory account as they occur.
- Stock count as at year end of 20X1, the inventory held for consumption balance is RM 5,000
- In the next financial year (20X2), the entity purchases additional inventory held for consumption at RM 10,000.
- Stock count as at year end of 20X2, the inventory held for consumption balance is RM 8,000

1. How shall the entity record the journal entries for the purchases of medical supplies as part of inventory, if it is held for consumption
2. How shall the entity record the journal entries for the purchases of medical supplies as part of inventory, If it is held for resale
3. How shall the entity record the issuance of inventories
4. How shall the entity record the stock count for 20X1 and 20X2



Purchase and issue of inventory under a periodic inventory system

Illustrative Example (Scenario 2)

1) To record the purchase of inventories in year 20X1 (assuming inventories as held for consumption)

The purchase of consumable inventories is recorded as a debit to operating expenses.

DR/CR	Account description	Amount (RM)
DR	Operating expenses (medical supplies consumable)	50,000
DR	Operating expenses (freight charges)	500
CR	Account payable	50,500



Purchase and issue of inventory under a periodic inventory system

Illustrative Example (Scenario 2)

2) To record the purchase of inventories held for resale in year 20X1 (assuming inventories held for resale)

The purchase of inventories held for resale is recorded as a debit to cost of goods sold. The total cost of inventories will include the purchase price and freight charges (RM50,000 + RM500 = RM50,500)

DR/CR	Account description	Amount (RM)
DR	Cost of goods sold	50,500
CR	Account payable	50,500



Purchase and issue of inventory under a periodic inventory system

Illustrative Example (Scenario 2)

3) To record the issuance of inventories

No entry will be recorded for the issuance of inventories using periodic inventory method.



Purchase and issue of inventory under a periodic inventory system

Illustrative Example (Scenario 2)

4) To adjust consumable inventory balance after an inventory count at year end of 20X1, inventory balance determined to be RM5,000

The ending balance of inventory is recorded as an asset while the opening balance is removed. The operating expense is reduced to reflect inventory items previously expensed but not actually consumed.

DR/CR	Account description	Amount (RM)
DR	Inventories held for consumption (BS)	5,000
CR	Operating expenses	5,000



Purchase and issue of inventory under a periodic inventory system

Illustrative Example (Scenario 2)

5) In the next financial year (20X2), the entity purchases additional inventory held for consumption, which amounts to RM10,000.

Note: The opening balance for 20X2 amounts to RM5,000

The purchase of inventory held for consumption is debited as operating expense in year 20X2.

DR/CR	Account description	Amount (RM)
DR	Operating expenses	10,000
CR	Account payable	10,000

Similarly, should the purchase be for inventory held for resale instead, the purchase is debited as cost of goods sold.



Purchase and issue of inventory under a periodic inventory system

Illustrative Example (Scenario 2)

6) At the end of 20X2, an inventory count is conducted. The inventory balance is determined to be **RM8,000**.

Note: The opening balance for 20X2 amounts to RM5,000

The closing balance of the inventory which amounts to RM8,000, is recorded by debiting inventory held for consumption and reversing part of operating expense previously recognised. The opening inventory balance for 20X2 needs to be reversed out.

DR/CR	Account description	Amount (RM)
DR	Inventories held for consumption	8,000
CR	Operating expenses	3,000
CR	Inventories held for consumption	5,000



Purchase and issue of inventory under a perpetual inventory system

Illustrative Example (Scenario 3)

- An entity purchases medical supplies in year 20X1 for RM50,000.
- Freight charges of RM500 are included on the invoice.
- Assuming the entity uses a perpetual system, purchases and issues are recorded directly in the inventory account as they occur.
- Assuming RM10,000 inventory issued for internal consumptions.
- Alternatively, assuming RM 10,000 inventory sold to third party.

1. How shall the entity record the journal entries for the purchases of medical supplies as part of inventory?
2. How shall the entity record the issuance of inventories for internal consumptions?
3. How shall the entity records the issuance of inventories for sale?



Purchase and issue of inventory under a perpetual inventory system

Illustrative Example (Scenario 3)

1) To record the purchase of consumable inventories

The purchase of medical supplies is recorded as a debit to inventories. Delivery cost should be capitalised as part of the cost of the inventories. The treatment to inventories held for consumption and inventories held for resale are the same under perpetual inventory system.

DR/CR	Account description	Amount (RM)
DR	Inventories held for consumption	50,500
CR	Account payable	50,500



Purchase and issue of inventory under a perpetual inventory system

Illustrative Example (Scenario 3)

2) To record the issuance of RM10,000 from inventory held for consumption

When inventories held for consumption are issued for daily consumption, the inventory held for consumption account is reduced and the offsetting entry would be a debit of operating expense.

DR/CR	Account description	Amount (RM)
DR	Operating expenses	10,000
CR	Inventories held for consumption	10,000



Purchase and issue of inventory under a perpetual inventory system

Illustrative Example (Scenario 3)

3) To record the issuance of RM10,000 from inventory held for resale

When inventories held for resale are issued for resale to third party, the inventory held for resale account is reduced and the offsetting entry would be a debit of cost of goods sold.

DR/CR	Account description	Amount (RM)
DR	Cost of goods sold	10,000
CR	Inventories held for resale	10,000



Inventories valuation using cost formulas

Exercise

- An entity sells fibre cables. It measures the cost of inventories using the FIFO method. The following movements in inventory occurred in 20X5.

Date	Description	Units	Total Cost (RM)	Cost per unit (RM)
1 January	Opening balance	1,000	10,000	10
2 February	Sold	(200)	?	?
25 February	Purchased	400	6,000	15
2 March	Purchased	200	4,000	20
25 March	Sold	(900)	?	?
Closing inventories		500		

1. What is the cost of inventories sold and cost of inventory at the end of the period?
2. Assuming the same fact pattern as above. The entity allocates the cost of inventories by using the weighted average cost formula calculated at the end of the period (i.e. the periodic method)
3. Assuming the same fact pattern as above. The entity allocates the cost of inventories by using the weighted average cost formula calculated as each additional shipment is received (i.e. the perpetual method)



Inventories valuation using cost formulas

Exercise (Answer)

1) To record cost of inventories sold and cost of inventory at year end for FIFO

Date	Description	Units	Total Cost (RM)	Cost per unit (RM)	Cost of inventories sold (RM)
1 January	Opening balance	1,000	10,000	10	
2 February	Sold	(200)	?	?	(200 X RM10)= 2,000
25 February	Purchased	400	6,000	15	
2 March	Purchased	200	4,000	20	
25 March	Sold	(900)	?	?	(800 XRM10)+(100X15) = 9,500
Closing inventories		500			11,500

$$\begin{aligned}\text{Cost of inventory at year end} &= (200 \times \text{RM}20) + (300 \times \text{RM}15) \\ &= \text{RM}8,500\end{aligned}$$



Inventories valuation using cost formulas

Exercise (Answer)

- 2) To record cost of inventories sold and cost of inventory at year end for inventory calculated using WAC on periodic basis

$$\text{Weighted Average Cost (WAC)} = \frac{\text{Cost of goods available for sale}}{\text{Number of units available for sale}}$$

Date	Description	Units	Total Cost (RM)	Cost per unit (RM)
1 January	Opening balance	1,000	10,000	10
25 February	Purchased	400	6,000	15
2 March	Purchased	200	4,000	20
Total goods available for sale		1,600	20,000	(RM20,000/1,600) = RM12.5 per unit
2 February	Sold	(200)	?	?
25 March	Sold	(900)	?	?
Closing Inventories		500		

$$\begin{aligned} \text{Cost of inventory sold} &= (1,100 \times \text{RM}12.5) \\ &= \text{RM}13,750 \end{aligned}$$

$$\begin{aligned} \text{Cost of inventory at year end} &= (500 \times \text{RM}12.5) \\ &= \text{RM}6,250 \end{aligned}$$



Inventories valuation using cost formulas

Exercise (Answer)

- 3) To record cost of inventories sold and cost of inventory at year end for inventory calculated using WAC on perpetual basis

Date	Description	Units	Cost per unit (RM)	Total Cost (RM)	Cost of inventories sold (RM)
1 January	Opening balance	1,000	10	10,000	
2 February	Sold	(200)			2,000 (200XRM10)
	Balance	800	10	8,000	
25 February	Purchased	400	15	6,000	
2 March	Purchased	200	20	4,000	
	Average Price	1,400	WAC: 12.86	18,000	
25 March	Sold	(900)	?		11,574 (900X12.86)
Closing inventories		500			

$$\begin{aligned}\text{Cost of inventory sold} &= \text{RM}2,000 + \text{RM}11,574 \\ &= \text{RM}13,574\end{aligned}$$

$$\begin{aligned}\text{Cost of inventory at year end} &= (500 \times \text{RM}12.86) \\ &= \text{RM } 6,430\end{aligned}$$



Subsequent measurement – Write down of Inventory

Inventory should be held at the lower of:

Cost and Net realizable value	⑦	for inventories held for sale
Cost and Current replacement cost	⑦	for inventories <u>not</u> held for sale

Cost may **not be recoverable** if:

- The inventory is damaged, lost or stolen;
- It has become wholly or partially obsolete;
- It is overpriced (market sale price < cost);
- Estimated cost of completion or estimated cost to be incurred on sale/distribution increased

Such **loss in value** must be recognized as **an expense** in the period a loss incurs as a **write-down of inventories**.

Expense Recognition



MPSAS 12 requires inventories to be capitalized when acquired and expensed when:

- Consumed
- Distributed
- Sold

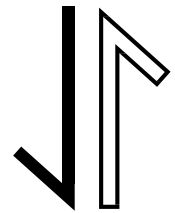


Subsequent measurement – Reversal of Write down



A new assessment is made of net realisable value in each subsequent period. The amount written down is reversed if :

- When the circumstances that previously caused inventories to be written down below cost no longer exist; or
- When there is clear evidence of an increase in net realisable value because of changed economic circumstances





Write down of inventory and reversal of write down

Illustrative Example (Scenario 4)

- An entity noted a slowdown in demand from its customer for its products which was reflected in reduced price.
- This indicated that the net realisable value may be below cost, i.e. cost of inventory is now written down to reflect the lower value. The reduction in value was quantified at RM2,000.
- Subsequent to that, the entity notices that the demand for that product rebounds due to promotional activities. Thus, the impairment loss previously recognised is reversed.

How shall the entity record the journal entries to take into account the write down?



Write down of inventory and reversal of write down

Illustrative Example (Scenario 4)

1) To record the write down

The inventory value must be written-down by creating an 'accumulated write down' account (contra account).

This balance will be netted off against the inventory balance in the statement of financial position.

DR/CR	Account description	Amount (RM)
DR	Inventory write down expense	2,000
CR	Accumulated write down	2,000



Write down of inventory and reversal of write down

Illustrative Example (Scenario 4)

2) To record the reversal of write down

When the write down previously recognised is reversed, the accumulated write down account previously recognised is debited and same expense account is reversed. The same entry applies when recognition and reversal of write down straddles over 2 financial years.

DR/CR	Account description	Amount (RM)
DR	Accumulated write down	2,000
CR	Inventory write down expense	2,000



Inventory Obsolescence: Write-off Required

Illustrative Example (Scenario 5)

- A physical count determined that items worth RM2,000 were obsolete.

How shall the entity record the journal entry for obsolescence?



Inventory Obsolescence: Write-off Required

Illustrative Example (Scenario 5)

1) To record inventory obsolescence

When inventory is determined to be obsolete, it should be written off. To record inventory obsolescence, the inventories account must be reduced by the amount of the obsolescence and a loss recorded. If the inventory was held for resale, the credit entry would be to the 'Inventory held for resale' account.

DR/CR	Account description	Amount (RM)
DR	Write-off on inventory	2,000
CR	Inventories held for resale	2,000



Transfer of Inventories Between Entities

Illustrative Example (Scenario 6)

- Health service entity is required to transfer medical supplies worth RM10,000 to defence service entity.

How shall the entity record the journal entries for inventory balance at the:

- (i) Transferring entity
- (ii) Receiving entity



Transfer of Inventories Between Entities

Illustrative Example (Scenario 6)

1) To record the reduction in inventory balance at the transferring entity i.e. health service entity

Health service entity transfers medical supplies to defence service entity, the inventory balance of health service entity is reduced by the amount transferred, which is RM10,000. As no consideration is received by health service entity, the reduction in inventory balance is recognised as “Transfer Out – Inventories”.

DR/CR	Account description	Amount (RM)
DR	Transfer out – inventories* (P&L)	10,000
CR	Inventories held for consumption	10,000



Transfer of Inventories Between Entities

Illustrative Example (Scenario 6)

2) To record the increase in inventory balance at the receiving entity i.e. defence service entity

When defence service entity receives the medical supplies transferred, the amount received is recognised as “Transfer In – Inventories”. The increase in inventory balance is recognised as a debit to inventory held for consumption.

DR/CR	Account description	Amount (RM)
DR	Inventories held for consumption	10,000
CR	Transfer in – inventories* (P&L)	10,000

*At the State statement of financial performance, transfer out – inventories (expense) and transfer in – inventories (revenue) for the transfer of inventories will be eliminated.

Disclosures

The State Government of Sarawak
Statement of Financial Position
As at 31 December 20X2



Statement of financial position As at 31 December, 20X2	Notes	20X2 RM'000	20X1 RM'000
Assets			
Current assets			
Cash and cash equivalents	3	XX	XX
Recoverable from taxes and transfers	4	XX	XX
Receivables	5	XX	XX
Inventories	6	XX	XX
Other receivables		XX	XX
Other current assets		XX	XX
Total current assets		XX	XX
Non-current assets			
Recoverable from taxes and transfers	4	XX	XX
Receivables	5	XX	XX
Investments in controlled entities	7	XX	XX
Investments in associates	8	XX	XX
Investments in joint ventures	9	XX	XX
Other financial assets	10	XX	XX
Property, plant and equipment	11	XX	XX
Investment properties	12	XX	XX
Intangible assets	13	XX	XX
Other receivables		XX	XX
Total non-current assets		XX	XX
Total assets		XX	XX

Disclosures (cont'd)



Note 2: Accounting Policies (continued)

(c) Summary of significant accounting policies (continued)

9. Inventories

Inventories are recorded at the lower of cost and net realisable value. Inventories held for distribution for public benefit purposes are recorded at the lower of cost and current replacement cost. Where inventories are acquired at no cost, or for nominal consideration, the cost is deemed to be the fair value at the date of acquisition.

Cost of purchased inventories, comprising all costs of purchase, costs of conversion, and other costs incurred in bringing the inventories to their present location and condition.

Costs are assigned to individual items of inventory on the basis of weighted average costs⁵.

⁵ To tailor accordingly depending on the choice of cost formula. MPSAS 12 allows the use of first-in-first-out ("FIFO") or weighted average cost formulas in assigning cost of inventories.

1

Accounting policies
(including cost formula
used)



Disclosures (cont'd)

Note 6: Inventories

	20X2 RM'000	20X1 RM'000
At cost		
Inventories held for sale	XX	XX
Other consumables	XX	XX
[Specify]	XX	XX
	XX	XX
At net realisable value		
Inventories held for sale	XX	XX
Other consumables	XX	XX
[Specify]	XX	XX
	XX	XX
At current replacement cost		
Other consumables	XX	XX
[Specify]	XX	XX
	XX	XX
Total inventories	XX	XX

2 Carrying amount of inventories and the carrying amount in classifications

3 Carrying amount of inventories carried at fair value less costs to sell

4 The amount of inventories recognised as an expense during the period

5 The amount of any write-down of inventories recognised as an expense in the period;

Amount of inventories recognised in the surplus or deficit as cost of goods sold during the financial year was RM [] (20X1: RM []). Write down of inventories during the year amounted to RM [] (20X1: RM []).