1. Appendix 4A: FIFO method (slide 1: title slide)
   1. FIFO vs. weighted-average method
      1. The FIFO method (generally considered more accurate than the weighted-average method) differs from the weighted-average method in two ways:

2

* + - 1. The computation of equivalent units.
      2. The way in which the costs of beginning inventory are treated.
  1. Equivalent units − FIFO method

*Learning Objective 6: Compute the equivalent units of production using the FIFO method.*

3

* + 1. Let’s revisit the Smith Company example that was used to illustrate the weighted-average method.
       1. Assume the following activity, as shown on the slide, is reported in the Assembly Department for the month of June.

4

* + - 1. The first step is to determine the equivalent units needed to complete beginning work in process inventory (180 units for materials and 240 units for conversion).

5

* + - 1. The second step is to add the units started and completed during the period (5,100 units for materials and conversion).

6

* + - 1. The third step is to add the equivalent units in ending work in process inventory (540 units for materials and 270 units for conversion).

7

* + - * 1. This calculation results in 5,820 and 5,610 equivalent units of materials and conversion, respectively.
      1. A different visual depiction of the calculation of equivalent units with respect to materials is as follows.

8

* + - 1. A different visual depiction of the calculation of equivalent units with respect to conversion is as follows.

9

* 1. Comparing equivalent units of production under the weighted-average and FIFO methods
     1. The FIFO method removes the equivalent units that were already in beginning inventory from the equivalent units as defined using the weighted-average method. Thus, the FIFO method isolates the equivalent units due to work performed during the current period. This can be illustrated using the Smith Company example as follows:

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* + - 1. The equivalent units of material produced per the weighted-average method (5,940 units) minus the equivalent units of material in beginning inventory (120 units) equals the equivalent units of production per the FIFO method (5,820 units).
      2. The equivalent units of conversion per the weighted-average method (5,670 units) minus the equivalent units of conversion in beginning inventory (60 units) equals the equivalent units of production per the FIFO method (5,610 units).

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*Helpful Hint: The only difference in the equivalent unit calculations between the weighted-average and FIFO methods is that the equivalent units in beginning inventory are included in the weighted-average method. Emphasize again that under the weighted-average method, the costs already in beginning inventory will be added to the costs incurred during the period to arrive at unit costs. To be consistent, equivalent units already in beginning inventory must be added to the equivalent units for work performed during the period.*

* 1. Cost per equivalent unit − FIFO method

*Learning Objective 7: Compute the cost per equivalent unit using the FIFO method.*

11

* + 1. Recall the following facts with respect to Smith Company’s Assembly Department.

12

* + 1. The formula for computing the cost per equivalent units is as shown.

13

* + - 1. The cost per equivalent unit for materials ($20.3816) and conversion ($14.4617) is computed as shown.

14

* 1. Applying Costs—FIFO Method

*Learning Objective 8: Assign costs to units using the FIFO method.*

15

* + 1. Computing the cost of ending work in process inventory.
       1. The first step is to record the equivalent units of production in ending work in process inventory (540 units for materials and 270 units for conversion).

16

* + - 1. The second step is to record the cost per equivalent unit ($20.3816 for materials and $14.4617 for conversion).

17

* + - 1. The third step is to compute the cost of ending work in process inventory ($11,006 for materials, $3,905 for conversion, and $14,911 in total).

18

* + 1. Computing the cost of units transferred out
       1. The first component of the computation is to record the cost in beginning work in process inventory ($6,119 for materials, $3,920 for conversion, and $10,039 in total)

19

* + - 1. The second component of the computation is to compute the cost to complete the units in beginning work in process inventory.
         1. The first step is to record the equivalent units of production required to complete the units in beginning inventory (180 units for materials and 240 units for conversion).

20

* + - * 1. The second step is to record the cost per equivalent unit ($20.3816 for materials and $14.4617 for conversion).

20

* + - * 1. The third step is to compute the cost to complete the units in beginning work in process inventory ($3,669 for materials, $3,471 for conversion, and a total of $7,140).
      1. The third component of the computation is to compute the cost of units started and completed this period.
         1. The first step is to record the units started and completed this period (5,100 units for materials and conversion).
         2. The second step is to record the cost per equivalent unit ($20.3816 for materials and $14.4617 for conversion).

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* + - * 1. The third step is to compute the cost of units started and completed during this period ($103,946 for materials, $73,755 for conversion, and $177,701 in total).
      1. The final computation is to compute the total cost of units transferred out ($194,880).

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*Learning Objective 9: Prepare a cost reconciliation report using the FIFO method.*

23

* + 1. Reconciling costs
       1. Computing the costs to be accounted for:

24

* + - * 1. The first step is to record the cost of beginning work in process as shown earlier ($10,039).
        2. The second step is to record the costs added to production during the period as shown earlier ($199,751).
        3. The third step is to sum these two costs ($209,790).
      1. Computing the costs accounted for:
         1. The first step is to record the cost of ending work in process inventory ($14,911).
         2. The second step is to record the cost of units transferred out ($194,880).

25

* + - * 1. The third step is to sum these two costs ($209,791).
      1. Notice the two totals agree indicating that all costs have been accounted for ($1 rounding error).
    1. A comparison of costing methods
       1. In most situations, the weighted-average and FIFO methods will produce very similar unit costs, particularly in a lean production environment.

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* + - 1. From a cost control standpoint, the FIFO method is superior to the weighted-average method because it does not mix costs of the current period with costs of the prior period.

*Helpful Hint: Remind students that the only difference between the FIFO and weighted-average approaches is the treatment of units in beginning inventory and the costs of beginning inventory. In essence, the weighted-average approach simply combines the units in beginning inventory and the costs of beginning inventory with all other units and all costs incurred during the period. The FIFO method segregates the beginning inventory. Providing that the number of units transferred out is at least as large as the number of units in beginning inventory, the costs already in beginning inventory are simply transferred out under the FIFO method.*