Appendix

4A

FIFO Method

LEARNING OBJECTIVES

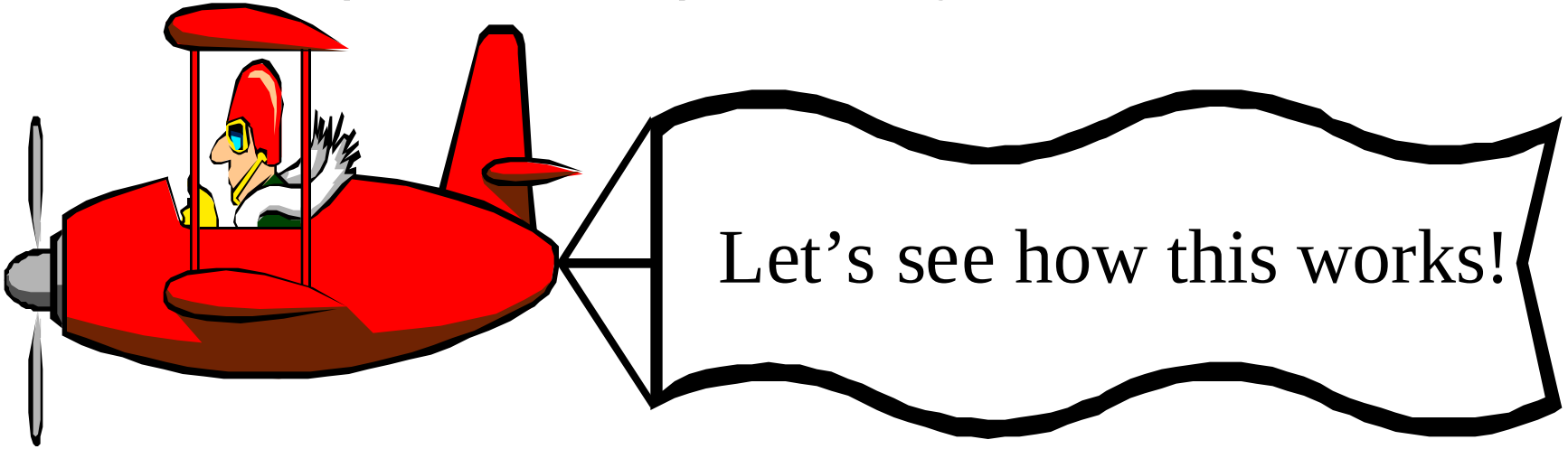
After studying this chapter, you should be able to:

1. (Appendix 4A) Compute the equivalent units of production for a period by the FIFO method.
2. (Appendix 4A) Prepare a quantity schedule for a period by the FIFO method.
3. (Appendix 4A) Compute the costs per equivalent unit for a period by the FIFO method.
4. (Appendix 4A) Prepare a cost reconciliation for a period by the FIFO method.
5. (Appendix 4B) Compute the cost of lost units or shrinkage.

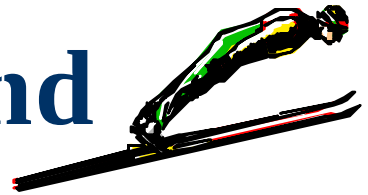
Equivalent Units of Production – FIFO Method

The FIFO method . . .

- Separates work done in prior period from work done in current period.
- Treats units and costs from prior period and current period independently.



Equivalent Units of Production Comparison: Double Diamond



Weighted Average Method:

Beginning WIP

5,000 units started

200 units 30% complete	4,600 units started and completed	400 units 25% complete

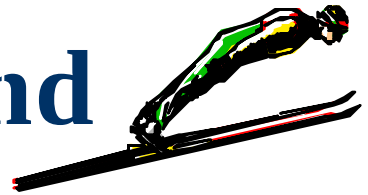
Equivalent units of production:

Units completed and transferred to next department

WIP, ending _____

Equivalent units of production _____

Equivalent Units of Production Comparison: Double Diamond



Weighted Average Method:

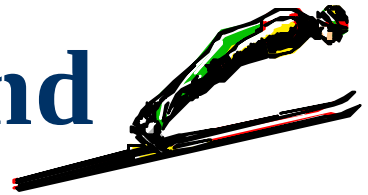
Beginning WIP

5,000 units started

200 units 30% complete	4,600 units started and completed	400 units 25% complete

Equivalent units of production:	
Units completed and transferred to next department	4,800
WIP, ending	_____
Equivalent units of production	_____

Equivalent Units of Production Comparison: Double Diamond



Weighted Average Method:

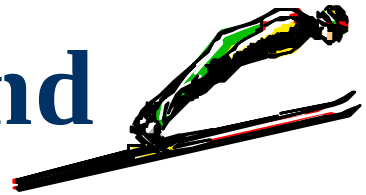
Beginning WIP

5,000 units started

200 units 30% complete	4,600 units started and completed	400 units 25% complete

Equivalent units of production:	
Units completed and transferred to next department	4,800
WIP, ending: 400 units @25%	100
Equivalent units of production	4,900

Equivalent Units of Production Comparison: Double Diamond



FIFO:

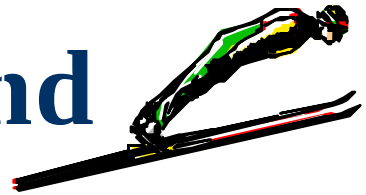
Beginning WIP

5,000 units started

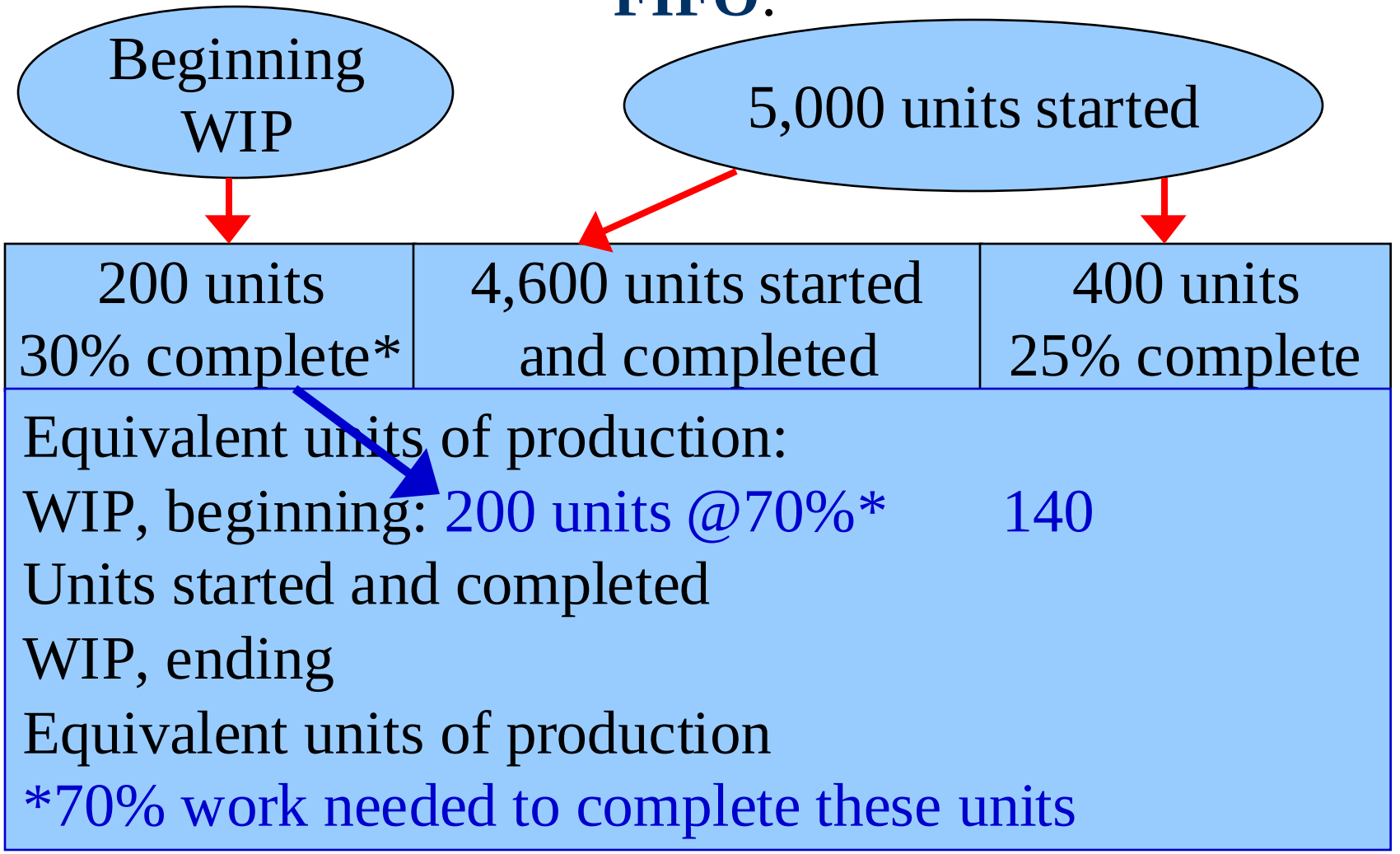
200 units 30% complete	4,600 units started and completed	400 units 25% complete

Equivalent units of production:
WIP, beginning
Units started and completed
WIP, ending
Equivalent units of production

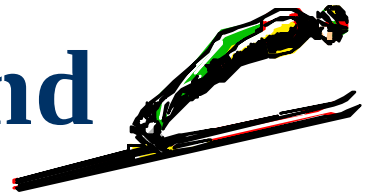
Equivalent Units of Production Comparison: Double Diamond



FIFO:



Equivalent Units of Production Comparison: Double Diamond



FIFO:

Beginning WIP

5,000 units started

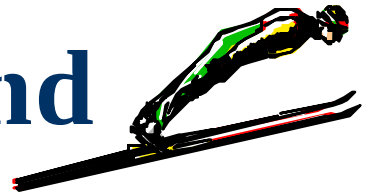
200 units 30% complete*	4,600 units started and completed	400 units 25% complete

Equivalent units of production:

WIP, beginning: 200 units @70%*	140
Units started and completed	4,600
WIP, ending	
Equivalent units of production	

*70% work needed to complete these units

Equivalent Units of Production Comparison: Double Diamond



FIFO:

Beginning WIP

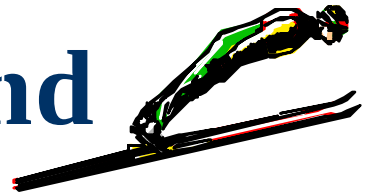
5,000 units started

200 units 30% complete*	4,600 units started and completed	400 units 25% complete

Equivalent units of production:	
WIP, beginning: 200 units @70%*	140
Units started and completed	4,600
WIP, ending: 400 units @25%	100
Equivalent units of production	

*70% work needed to complete these units

Equivalent Units of Production Comparison: Double Diamond



FIFO:

200 units 30% complete*	4,600 units started and completed	400 units 25% complete

Equivalent units of production:	
WIP, beginning: 200 units @70%*	140
Units started and completed	4,600
WIP, ending: 400 units @25%	100
Equivalent units of production	4,840

*70% work needed to complete these units

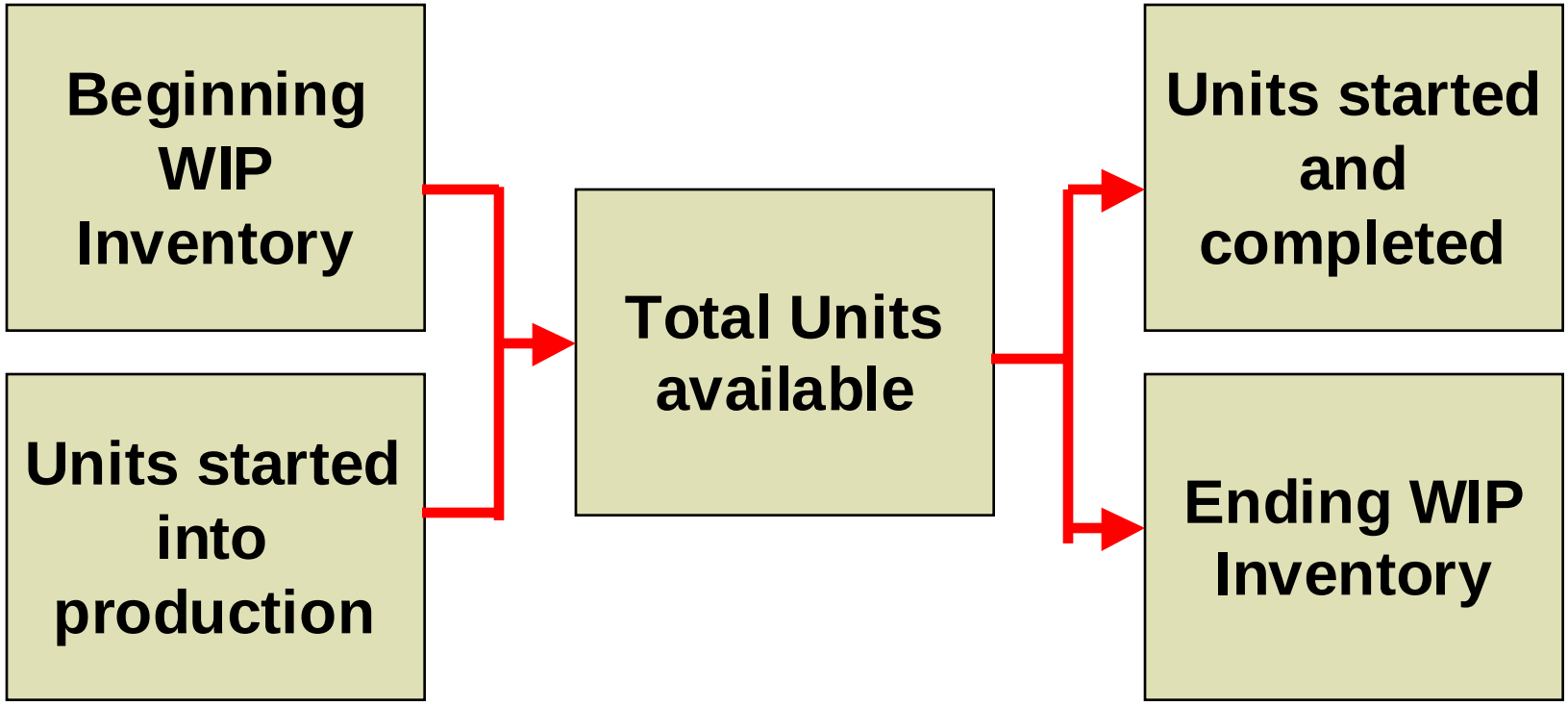
FIFO Example

Smith Company reported the following activity in Department A for the month of June:

		Percent Completed	
	Units	Materials	Conversion
Work in process, June 1	300	40%	20%
Units started into production in June	6,000		
Units completed and transferred out of Department A during June	5,400		
Work in process, June 30	900	60%	30%

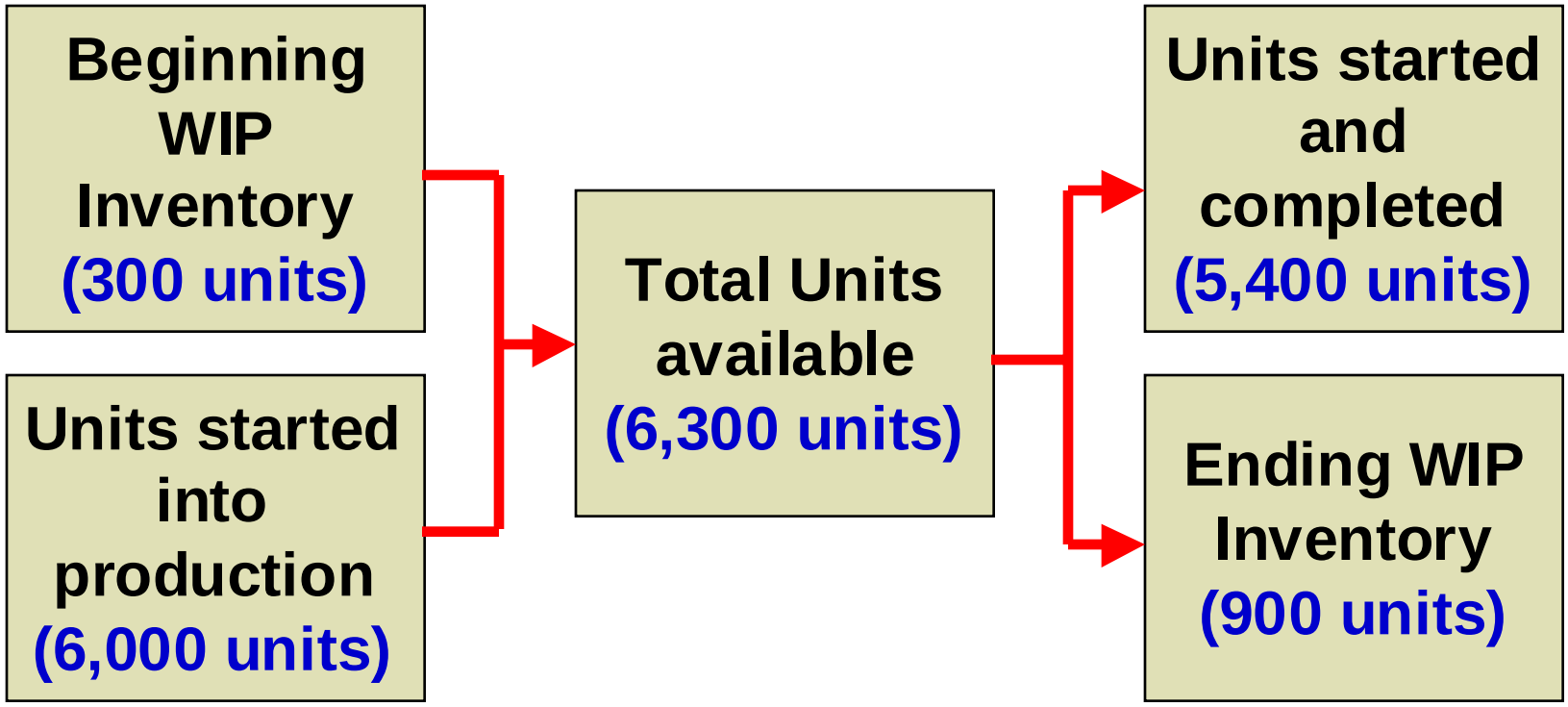
FIFO Example

Equivalent units of production is based on:



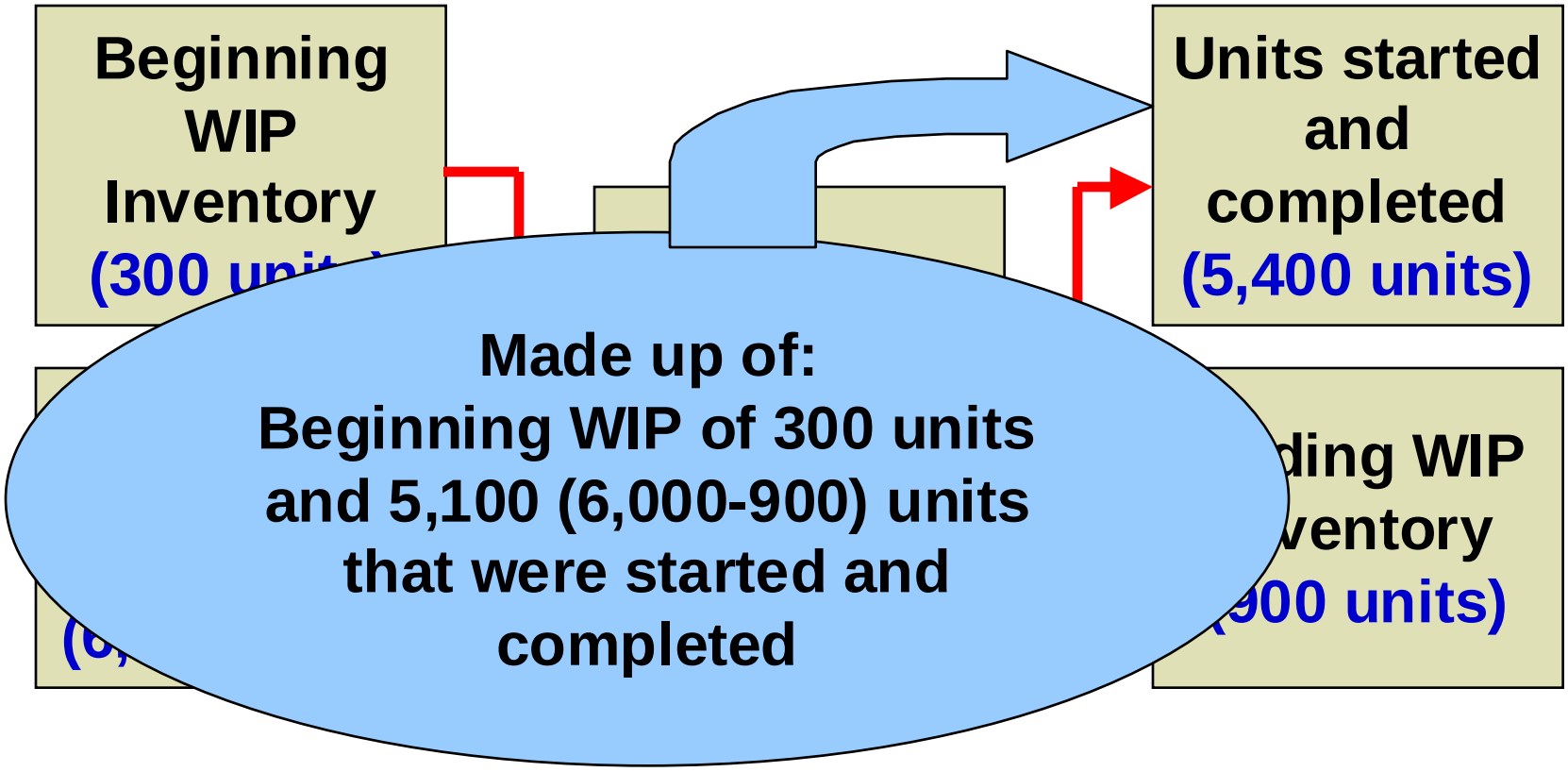
FIFO Example

For Smith Company:



FIFO Example

For Smith Company:



FIFO Example

Equivalent units are calculated as follows:

	Materials	Conversion
Work in process, June 1:		
300 units @60% to complete	**180**	
Units started and completed		
Work in process, June 30:		
Equivalent units of Production in Department A during June		

FIFO Example

Equivalent units are calculated as follows:

	Materials	Conversion
Work in process, June 1:		
300 units @60% to complete	180	
300 units @80% to complete		240
Units started and completed		
Work in process, June 30:		
Equivalent units of Production in Department A during June		

FIFO Example

Equivalent units are calculated as follows:

	Materials	Conversion
Work in process, June 1:		
300 units @60% to complete	180	
300 units @80% to complete		240
Units started and completed	5,100	5,100
Work in process, June 30:		
Equivalent units of Production in Department A during June		

FIFO Example

Equivalent units are calculated as follows:

	Materials	Conversion
Work in process, June 1:		
300 units @60% to complete	180	
300 units @80% to complete		240
Units started and completed	5,100	5,100
Work in process, June 30:		
900 units @ 60% complete	540	
Equivalent units of Production in Department A during June		

FIFO Example

Equivalent units are calculated as follows:

	Materials	Conversion
Work in process, June 1:		
300 units @60% to complete	180	
300 units @80% to complete		240
Units started and completed	5,100	5,100
Work in process, June 30:		
900 units @ 60% complete	540	
900 units @ 30% complete		270
Equivalent units of Production in Department A during June		

FIFO Example

Equivalent units are calculated as follows:

	Materials	Conversion
Work in process, June 1:		
300 units @60% to complete	180	
300 units @80% to complete		240
Units started and completed	5,100	5,100
Work in process, June 30:		
900 units @ 60% complete	540	
900 units @ 30% complete		270
Equivalent units of Production in Department A during June	5,820	5,610

FIFO Example

Materials

6,000 Units Started

Beginning Work in Process 300 Units 40% Complete	5,100 Units Started and Completed	Ending Work in Process 900 Units 60% Complete

300 x 60% → **180 Equivalent Units**

5,100 Units Started and Completed

540 Equivalent Units ← **900 × 60%**

5,820 Equivalent units of production

FIFO Example

Conversion

6,000 Units Started

Beginning Work in Process 300 Units 20% Complete	5,100 Units Started and Completed	Ending Work in Process 900 Units 30% Complete

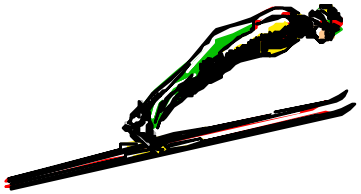
300 x 80% → **240 Equivalent Units**

5,100 Units Started and Completed

270 Equivalent Units ← 900 × 30%

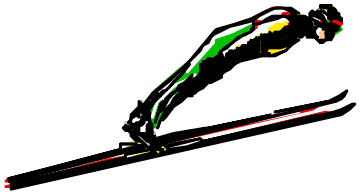
5,610 Equivalent units of production

Production Report Example



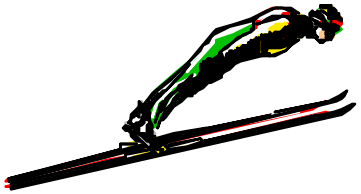
- Double Diamond Skis uses process costing to determine unit costs in its Shaping and Milling Department.
- Double Diamond uses the **FIFO** cost procedure.
- Using the following information for the month of May, let's prepare a production report for Shaping and Milling.

Production Report Example



		Cost
Work in process, May 1:	**200 units**	
Materials:	**50% complete.**	**$ 3,000**
Conversion:	**30% complete.**	**1,000**
Units started into production in May:		**5,000**
Units completed and transferred out in May:		**4,800**
Costs added to production in May		
Materials cost		**$ 74,000**
Conversion cost		**70,000**
Work in process, May 31:	**400 units**	
Materials	**40% complete.**	
Conversion	**25% complete.**	

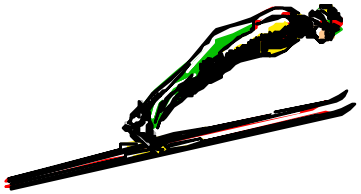
Production Report Example



Section 1: Quantity Schedule with Equivalent Units

		Equivalent units	
		Materials	Conversion
Units to be accounted for:			
Work in process, May 1	200		
Started into production	5,000		
Total units	5,200		
Units accounted for as follows:			
Beginning WIP (to complete)	200		
200 units @50%		100	
200 units @70%			140
Completed and transferred	4,600	4,600	4,600
Ending WIP, May 31	400		
400 units @40%		160	
400 units @25%			100
	5,200	4,860	4,840

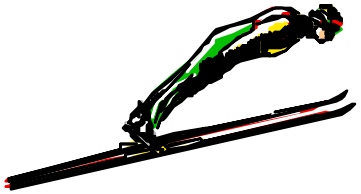
Production Report Example`



Section 2: Compute cost per equivalent unit

	Total Cost	Materials	Conversion
Cost to be accounted for:			
Work in process, May 1	$ 4,000		
Costs added in the Shipping and Milling Department	144,000	$ 74,000	$ 70,000
Total cost	$148,000		
Equivalent units		4,860	4,840

Production Report Example`

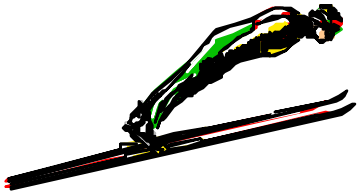


S… …r equivalent unit

Only the cost associated with current production is allocated to materials and conversion

		Materials	…nversion
Cost to …			
Work in process, …	$ 4,000		
Costs added in the Shipping and Milling Department	144,000	$ 74,000	$ 70,000
Total cost	$148,000		
Equivalent units		4,860	4,840

Production Report Example`

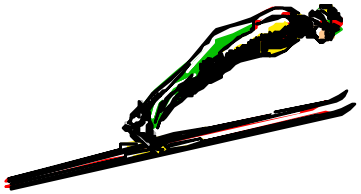


Section 2: Compute cost per equivalent unit

	Total Cost	Materials	Conversion
Cost to be accounted for:			
Work in process, May 1	$ 4,000		
Costs added in the Shipping and Milling Department	144,000	$ 74,000	$ 70,000
Total cost	$148,000		
Equivalent units		4,860	4,840
Cost per equivalent unit		15.226	

$74,000 ÷ 4,860 units = $15.226 (rounded)

Production Report Example



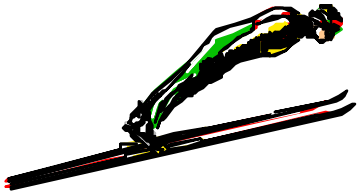
Section 2: Compute cost per equivalent unit

	Total Cost	Materials	Conversion
Cost to be accounted for:			
Work in process, May 1	$ 4,000		
Costs added in the Shipping and Milling Department	144,000	74,000	70,000
Total cost	$148,000		
Equivalent units		4,860	4,840
Cost per equivalent unit		$ 15.226	$ 14.463

Total cost per equivalent unit = $15.226 + $14.463 = $29.689

$70,000 ÷ 4,840 units = $14.463 (rounded)

Production Report Example

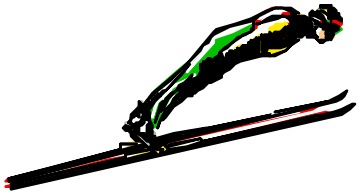


Section 3: Cost Reconciliation

Start with cost of WIP from last month

	Total Cost	Equivalent Units	
		Materials	Conversion
Cost accounted for as follows:			
Work in process, May 1:			
Cost in beg. WIP	4,000		
Materials	1,523	100	
Conversion	2,025		140
Transferred out during May	136,570	4,600	4,600
Total cost transferred	144,118		
Work in process, May 31:			
Materials	2,436	160	
Conversion	1,446		100
Total work in process, May 31	3,882		
Total cost accounted for	148,000		

Production Report Example

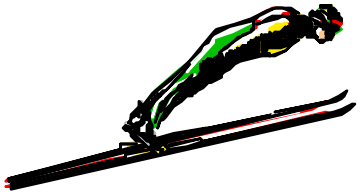


Section 3: Cost Reconciliation

100 units x $15.226

	Total Cost	Equivalent Units	
		Materials	Conversion
Cost accounted for as follows:			
Work in process, May 1:			
Cost in beg. WIP	4,000		
Materials	1,523	100	
Conversion	2,025		140
Transferred out during May	136,570	4,600	4,600
Total cost transferred	144,118		
Work in process, May 31:			
Materials	2,436	160	
Conversion	1,446		100
Total work in process, May 31	3,882		
Total cost accounted for	148,000		

Production Report Example

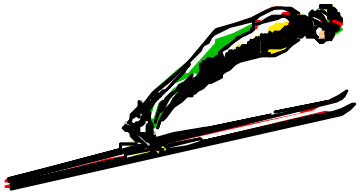


Section 3: Cost Reconciliation

140 units x $14.463

	Total Cost	Equivalent Units: Materials	Equivalent Units: Conversion
Cost accounted for as follows:			
Work in process, May 1:			
Cost in beg. WIP	4,000		
Materials	1,523	100	
Conversion	2,025		140
Transferred out during May	136,570	4,600	4,600
Total cost transferred	144,118		
Work in process, May 31:			
Materials	2,436	160	
Conversion	1,446		100
Total work in process, May 31	3,882		
Total cost accounted for	148,000		

Production Report Example

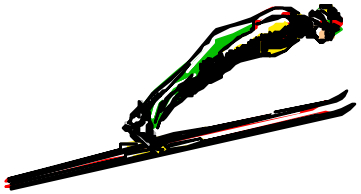


Section 3: Cost Reconciliation

4,600 units x $29.689

	Total Cost	Equivalent Units	
		Materials	Conversion
Cost accounted for as follows:			
Work in process, May 1:			
Cost in beg. WIP	4,000		
Materials	1,523	100	
Conversion	2,025		140
Transferred out during May	136,570	4,600	4,600
Total cost transferred	144,118		
Work in process, May 31:			
Materials	2,436	160	
Conversion	1,446		100
Total work in process, May 31	3,882		
Total cost accounted for	148,000		

Production Report Example

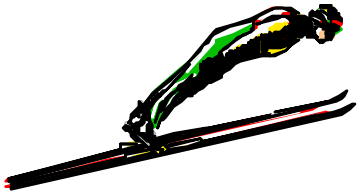


Section 3: Cost Reconciliation

This represents all of the total costs transferred out

	Total Cost	Equivalent Units	
		Materials	Conversion
ows:			
Work in process, May 1:			
Cost in beg. WIP	4,000		
Materials	1,523	100	
Conversion	2,025		140
Transferred out during May	136,570	4,600	4,600
Total cost transferred	144,118		
Work in process, May 31:			
Materials	2,436	160	
Conversion	1,446		100
Total work in process, May 31	3,882		
Total cost accounted for	148,000		

Production Report Example

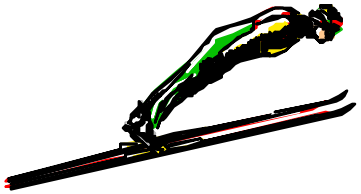


Section 3: Cost Reconciliation

160 units x $15.226

	Total Cost	Equivalent Units	
		Materials	Conversion
Cost accounted for as follows:			
Work in process, May 1:			
Cost in beg. WIP	4,000		
Materials	1,523	100	
Conversion	2,025		140
Transferred out during May	136,570	4,600	4,600
Total cost transferred	144,118		
Work in process, May 31:			
Materials	2,436	160	
Conversion	1,446		100
Total work in process, May 31	3,882		
Total cost accounted for	148,000		

Production Report Example

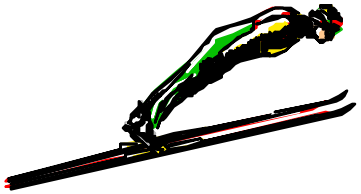


Section 3: Cost Reconciliation

100 units x $14.463

	Total Cost	Equivalent Units: Materials	Equivalent Units: Conversion
Cost accounted for as follows:			
Work in process, May 1:			
Cost in beg. WIP	4,000		
Materials	1,523	100	
Conversion	2,025		140
Transferred out during May	136,570	4,600	4,600
Total cost transferred	144,118		
Work in process, May 31:			
Materials	2,436	160	
Conversion	1,446		100
Total work in process, May 31	3,882		
Total cost accounted for	148,000		

Production Report Example

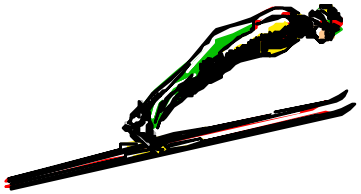


Section 3: Cost Reconciliation

Total cost of ending work in process

	Total Cost	Equivalent Units	
		Materials	Conversion
Cost accounted for as follows:			
Work in process, May 1:			
Cost in beg. WIP	4,000		
Materials	1,523	100	
Conversion	2,025		140
Transferred out during May	136,570	4,600	4,600
Total cost transferred	144,118		
Work in process, May 31:			
Materials	2,436	160	
Conversion	1,446		100
Total work in process, May 31	3,882		
Total cost accounted for	148,000		

Production Report Example



Section 3: Cost Reconciliation

Must agree to section called "Cost to be accounted for"

	Total Cost	Equivalent Units	
		Materials	Conversion
ows:			
Work in process, May 1:			
Cost in beg. WIP	4,000		
Materials	1,523	100	
Conversion	2,025		140
Transferred out during May	136,570	4,600	4,600
Total cost transferred	144,118		
Work in process, May 31:			
Materials	2,436	160	
Conversion	1,446		100
Total work in process, May 31	3,882		
Total cost accounted for	148,000		

End of Chapter 4 - Appendix