

Using Paper Airplanes to Introduce Cost Accounting

Monte Swain, Brigham Young University

Cost Accounting Topics Introduced

- Labor, materials and overhead costs
- Indirect costs and overhead cost allocation
- Inventory (balance sheet) costs versus Cost of Goods Sold (income statement)
- Equivalent units of production and Process Costing
- Flow of costs through the General Ledger
- Absorption costing

Teaching Plan

1. Divide the class into seven-person teams: four folders, one raw materials warehouse supervisor, one accountant, and one quality control expert who will fly the planes.¹
2. Provide some general accounting data: Sales price per plane (\$10), cost per sheet of paper (\$1), cost per employee per production period (\$10), overhead costs per production period (\$100). Note that every plane built and successfully flown is a sale.
3. Round 1 – students build paper airplanes. At end of production period, ask each team in the class to report on cost per plane, total revenue, and total profit. Each team puts their figures on the board, and we discuss these numbers as a class. There will be a lot of variety!
4. At this point, students should conclude that we need to separately account for ending WIP inventory versus COGS
5. Round 2 – Clear off the WIP from Round 1. Students again build planes. Again, each team computes cost per unit and total profit, and records it on the board.
6. Work through one or two team's solution with the class. Take questions.
7. Now note that there is WIP in front of the production crew, and discuss beginning WIP. Set up the t-accounts for cost accounting on the board.
8. Round 3 – Starting with beginning WIP, students again build planes, and partnerships perform and report on accounting.
9. Discussion should resolve all questions about process costing at this point
10. Round 4 – Now announce that there is a limit to market demand (which is realistic). Only 10 planes can be sold. However, the goal is to maximize profit (provide a good reward incentive – food!). Have the students start building their planes.
11. Assuming that teams don't immediately understand that they can absorb costs now to the accumulating finished goods and increase income, stop the production

¹ This is probably the maximum number in a team. A minimal four-person team would have a supervisor/accountant and three folders, and the third folder also serving as the QC expert.

at some point to briefly discuss. Point out that there is only a sales ceiling. There is not a ceiling on production. Offer more paper to teams who need it (a lot more paper!). When the light dawns on the students (at least on some students), turn on the production line again and watch the folded (crumbled?) planes start amassing in finished goods inventory in front of some teams.

12. At end, with everyone “getting it” and laughing at the results, quickly introduce absorption costing. Note that a number of topics have now been introduced to the students, and that much of the course will focus on the specifics of these topics. Encourage the students to remember the overall principles and “big picture” of these various cost accounting topics.