

A TEACHER REFLECTS



Spreadsheets from Scratch?!

One of the reasons I really liked the final project was due to the mathematically significant what-if questions the students asked. They asked a wide range of questions that would result in changes on their spreadsheets, such as raising the price for adults to \$10 and children to \$8, paying the employees one-half of their salary, and decreasing the building costs by \$300 per day. Because students had to use the work that they had already created for other parts of the project, I had students hold all of their work and turn it in at the completion of the phase. However, I did have a checklist so I could check for misconceptions and completion at various points as students were working on the final project.

My students had difficulty in the beginning of this phase. Because it was the first time they had to organize a spreadsheet from scratch, we had to come back together and talk about this. Students were simply going to put three columns on their spreadsheet and label them profit, income, and expenses. I started off the class discussion with, “Well, what do you need to figure out your profit?” Then I followed up by asking, “What do you need to figure out your income? expenses?” I asked students to tell me what all the elements were in this North Mall Cinema scenario that contributed to income and expenses. Students knew that profit, income, and expenses were crucial, but forgot to enter a formula for them.

In order to enter a formula, they needed other cells that gave them more information. I was fairly certain they were simply going to go through the Information About North Mall Cinema by hand or calculator. Why? Because of what they would formerly say to themselves: These are my expenses, so I’ll add them up on paper and put them on the spreadsheet. Students were not allowing the spreadsheet to be a tool that was designed to do just that. After this class discussion, students put their heads together and came up with spreadsheets that had other columns.

Some of my students would try to use the “fill down” command and get the same answer. They knew it didn’t make sense but didn’t understand why this was happening. I would click on the cell, point to the formula bar, and show students that they didn’t put a formula in. I would then point out that “fill down” only works if they put a formula in.

In this last phase particularly, I found that group cooperation was very important since students had to work together on computers. This was a positive experience for students and for me because the computer was of high interest to the students. Students were very proud of their projects and so were their parents, who shared their enthusiasm with me!

	A	B	C	D
1	total revenue	270	450	630
2	total profit	120	170	230
3	total income	150	200	270
4	total expenses	150	280	400
5	total revenue	270	450	630
6	total profit	120	170	230
7	total income	150	200	270
8	total expenses	150	280	400
9	TOTAL REVENUE	270	450	630
10				
11				
12	total revenue	270	450	630
13	total profit	120	170	230
14	total income	150	200	270
15	total expenses	150	280	400
16	total revenue	270	450	630
17				
18	total revenue	270	450	630
19	total profit	120	170	230
20				
21	total revenue	270	450	630
22	total profit	120	170	230
23				
24	total revenue	270	450	630
25				
26				
27				
28				
29				
30				
31				
32	total revenue = total price * total quantity			
33	total profit = total revenue - total expenses			
34	total income = total revenue - total expenses			