

Cover Letter

We would like to start off by thanking all the teachers for their comments and insight. Please find below the gist of the comments and our responses.

Grade Level Change

“In your description of the money center I assume you are making the vocabulary a lot simpler. Change the order to Budget, Money spent (added), budget left, reward, and then savings. It seems a little more natural to me to organize it something like a checkbook or ledger where younger students can make the connection to subtraction. You may want to use smaller amounts as thousands may not be sensible to young children with a limited sense of place value.”

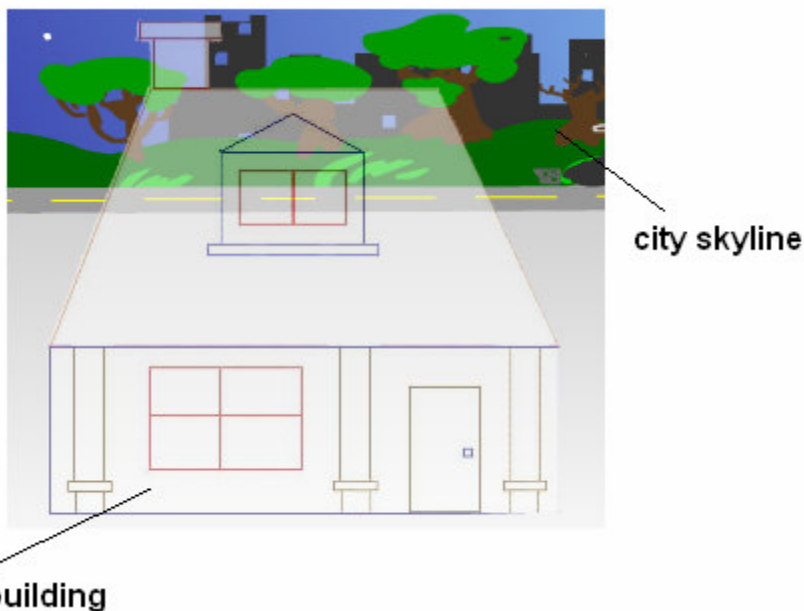
We changed the order of the wording in the description of the money center. This change will be implemented in the demo if time permits. We may not make the change, as our demo is a loose representation of the real thing.

The description of the money center was changed to the following:

The Total Budget is the total amount of money allotted to the player for a given project. Budget Spent is the total money spent to date on the project. Total Budget minus Budget Spent gives us Budget Left. The Total Savings is the total amount of income the player has accumulated from past projects. The reward amount correlates to the monies given to the player by the mayor upon completion of a project. When a shape is purchased, the total cost of the transaction is deducted from the budget amount.

I like the level one idea with the Ghost Building idea. What exactly are they covering with the shapes? Is there some type of color coding that will tell them what to cover or are they doing the entire building? If it is the entire structure they are building I assume there is some type of feature to enlarge or shrink the shapes? This brings in a whole other complexity to the program.

In all levels the user will try to match specific shapes with the ghosted image. Our application auto-fits shapes selected from the shop not to scale with those in the ghosted image. This feature is not currently installed in the demo, however. See the picture below as an example of our ghosted images:



About time, rather than have time be a built in feature have it be optional at all levels. As students get better with completing the building let them opt to race against themselves. Maybe include an additional reward if they can beat a certain time. Setting a punitive time factor in may discourage the student from taking their time and getting it right. This would especially be true of young children. For the most part timed tests (like the old mad minutes of my day) are discouraged for the younger child.

We have decided to make time limits optional in all levels. The change was made in the Level Description and Game Highlights section. This will allow teachers to use the application in a classroom setting without having to worry about issues such as synchronizing game play between all players. It will also relieve the time stress off of a novice student so that he or she has more time to interact with and learn from the application.

Teacher 4: APPENDIX FEEDBACK

I am going to start off by reiterating that I don't think most first or second graders could handle this game. For the game to truly be meaningful to them they must be able to understand the geometry, read the information in the shop, and deal with money in the thousands. I don't believe that they can do that at the targeted age group. My suggestion would be to field test whatever working model you have on kids at a variety of ages. See who can handle the complexities of the game, especially as you go through the levels. I went to the NCTM Standards and see a stronger correlation to 3-5 than K-2.

Grades 3-5 Expectations:

In grades 3-5 all students should:

-- predict and describe the results of sliding, flipping, and turning two-dimensional

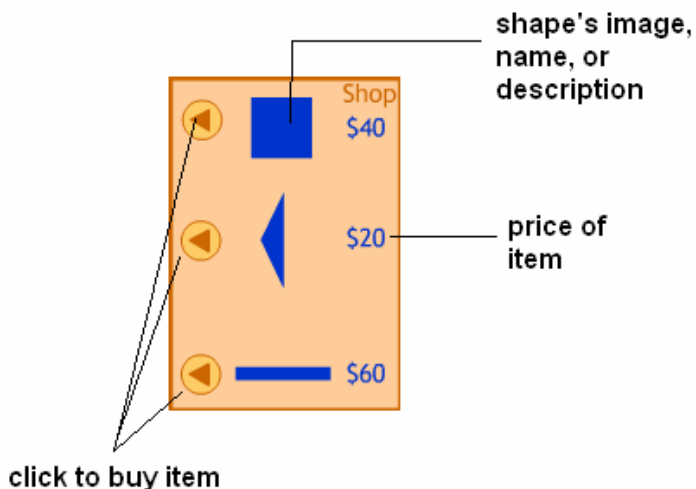
shapes;

- describe a motion or a series of motions that will show that two shapes are congruent;
- identify and describe line and rotational symmetry in two- and three-dimensional shapes and designs.

We have decided to change our target market to Grades 3-5. Thank you for every ones comments regarding this. In the end we decided that the teachers were correct in that the NCTM standards for grades 3-5 are not above our game. Students flip (reflect) and turn (rotate) shapes in order to fit the pieces correctly into the structures. The second point of congruency is used when students combine smaller shapes in substitution of larger ones. The third point of symmetry is analyzed when students perform flips (reflections). When performing a flip they must know where the symmetry line is to predict the effect.

The shop looks straight forward. Maybe make selection buttons more colorful. I wonder if some students will just pick the square as it appears to be larger? Setting the buildings against a skyline makes it visually appealing as do the characters.

Please see a screenshot of the shop below. We believe the background colors are conducive to the student picking the right shape. We are looking into changing the size of the shapes so that they are more proportional to each other.



"A player may distinguish him/herself in skill and comprehension by using a greater number of pieces."

Something to consider when building: efficiency is a major component, but so is aesthetics. A house layered with tiny little pieces may look like a patch job.

Using the most pieces to complete the project is part of assessing the student's geometric skills. He/she should be able to ascertain that two small squares are equal to one big square. He/she is rewarded if he/she makes this assertion, as smaller shapes cost less than bigger ones. In the end the finished project will look the same. This may be in contradiction to real world construction but we believe we can take some liberties to better test a student's geometric skill level.

Teacher 3: FLASH DEMO: At this point the ghost image in the Flash demo seems to have pieces that don't match the three available shapes. Is this just because it's still not really developed?

Yes, the latest version of the flash demo will solve all these problems.

APPENDIX FEEDBACK: At one point you state, "perform geometric operations" - I think using "rotating" and "reflecting" would be more accurate.

We added rotating and reflecting in parenthesis.

I wonder if the 1/2 refund could be made more complex at higher levels. I understand that at level one you may want to keep that idea simple but realistically I don't think a restocking fee would be that expensive. It might be interesting to use 1/4 or 1/3 or 1/8 instead?

We have decided to change the restocking fee to

Level 1 = 1/4

Level 2 = 1/3

Level 3 = 3/5

This will challenge the student to make decision with his/her money while dealing with more complex fractions as the level goes up.

As I look at your drawing for Level One, I view 5 different sizes of rectangles, 1 size of parallelogram, 1 size of square, and 1 size of triangle for a total of 9 shapes. Will children have to choose from those different sizes? Will they be to scale as you choose in the workshop or will they enlarge in some way?

The shapes will auto-fit the shapes found on the ghosted image. Although our demo does not reflect this feature, this is our intent for the actual application. Thus if a square from the shop is selected to fill the area of a larger square in the ghosted image, it will auto-fit into the ghosted image when dragged to that location.

I'm not convinced that the mockup of the ghost image of the second level is more complex than the first level. How did you decide to include the shapes you have? Is the number of shapes the complexity part?

There are more shapes, and more of an opportunity to for students to buy smaller shapes and substitute them for bigger ones (and get a bonus in their score). The structures as a whole are more complicated and the player has to reflect and rotate the shapes more and more as the levels increase.

Thank you,

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