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Learning Document for Physics Game

Our game, tentatively titled Balance, is a physics puzzle simulator whose purpose is to demonstrate basic principles of physics. Our first release will have multiple puzzles based on concepts in kinematics , gravity and potential energy. It will include puzzles about similar systems with friction, momentum transfer and springs. Kinematics will be taught as a platformer game, where the player will try to navigate a ball to a certain position. Additional concepts will be added to this base, dividing the game into worlds with overall concepts, and levels within those worlds with puzzles. For example, a friction world will have the same goal of getting the ball to the other side, but there will be surfaces that will have different effects on the ball as it passes over them. For each new concept introduced, there will be a brief demonstration using game objects, that shows what the new feature is all about. Passing all the levels in a world should make it reasonable to conclude that the player understands the concepts introduced in the world. We will also include short prediction games, following the completion of a world, so that the player can confirm that they understand what the game is trying to teach.