Name: MinecraftEDU – “Division Farms”                            Rating (Out of 21): 15

Platform: Web based (PC) - <http://services.minecraftedu.com/worlds/node/41>

Gaming Category: Puzzle, simulation

Age Level: 7-12

Cost: The world is free to load with your MinecraftEDU launcher

Interaction Level:  Single Player ⧠    Multiplayer (Offline) ⧠    Multiplayer (Online) ⧠     Massive Multiplayer (Online) ⧠

Controls Used: Keyboard ⧠     Mouse ⧠     Game Controller ⧠     Touch Screen ⧠     Voice activated ⧠     Other ⧠

Learning Goals: The learning goals for this are to have students practice their division skills using interactive manipulatives. They figure out how to help a farmer plant rows of pumpkins so that they are equal, plant rows of flowers in equal rows and milk cows so that each cow is milked the same amount. This is definitely a game for the younger grades. I would say grades 3-6.

Learning Principles: Exploration: trying to solve the given questions by exploring different ways to get to the correct answer. Observational learning / trial and error: the student is able to look at what they have done and try to see if they have found the correct answer. This world is basically learning math with manipulatives but the manipulatives are interactive.

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| **Categories** | **Level 0** | **Level 1** | **Level 2** | **Level 3** |
| **Relevance****Presents materials in a way relevant to learners, their needs and their learning styles; ensures that instructional units are relevant to one another and connect to one or more PLOs.** | **Little stimulus for learning.** | **Limited educational focus, some irrelevant content.** | **Learning objectives are defined, interest is created.** | **Game is relevant to learners, and challenges are adequate for learning.** |
| **Embedding****Assesses how closely the academic content is coupled with the fantasy/story content where fantasy refers to the narrative structure, storylines, player experience, dramatic structure, fictive elements, etc.** | **Learning content disrupts play.** | **Learning is exogenous to fantasy context.** | **Includes intellectual challenges and problems.** | **Content is endogenous to fantasy and fully involves learner.** |
| **Transfer****How the player can use previous knowledge in other areas and a change in behaviour is evident** | **No levels of challenge mapped to objectives.** | **Levels of challenge are too similar, some useful content.** | **Easy progress through levels through active problem solving. Higher level knowledge should be transferable.** | **Authentic real life situations and after action reviews.** |
| **Adaptation****A change in behaviour as a consequence of transfer** | **Fails to engage in interactive, unstructured information.** | **Builds upon existing cognitive structures, engages in cognitive conflict.** | **Learners are encouraged to go beyond given information. Old schemas are identified and adapted to new situations.** | **Learning becomes an active process that integrates prior knowledge.** |
| **Immersion****The player is intellectually invested in the context of the game, and is able to reach a state of flow.** | **No formative feedback, little active participation.** | **Elements of play are not in sync with learning objectives, players do not feel fully interactive.** | **Learners are involved cognitively, physically and emotionally.** | **Favours belief creation and includes opportunities for reciprocal action.** |
| **Naturalization****The development of habitual and spontaneous use of information derived within the game that can be applied to real world problems and experiences.** | **Little opportunity for mastery of facts and skills.** | **Replay is encouraged to improve speed of processing.** | **Encourages synthesis of elements and judgments.** | **Learners become efficient content users and spontaneously use acquired knowledge.** |
| **Customization****Offers complete flexibility to alter content and settings to meet student needs.** | **No options to adjust in game settings to meet student’s abilities.** | **Some options available to adjust difficulty settings.** | **Options to change difficulty settings, and personalize in game environment to student’s preferences are available.** | **Users have complete flexibility in altering in game content to provide an optimal learning experience.** |

Order of Categories: We have not included in our rubric a specific ordering of categories, as everyone may rank the levels of importance differently based on what they are wanting to accomplish by using a certain game .  If one was to use the weighting as outlined in the Retain Model than the following would apply:  “The final aspect of the rubric is the weighting of each aspect. Gunter and colleagues have ordered the aspects by importance. From least to most important, they are: Relevance, Immersion, Embedding, Adaption, Transfer and Naturalisation. Thus if a game fulfils Level 1 of transfer it is worth five points (1\*5), Level 2 ten points (2\*5) etc. Since relevance is seen as a less essential aspect of serious game design, this would mean if a game fulfilled Level 1 requirements would be worth one point (1\*1), Level 2 two points (2\*1) and so on.

Each serious game or game design could be assessed using this framework, and if the game fulfils Level 3 at every aspect it would be awarded a maximum of 63 points. Based on these scores the most appropriate game would be selected for use, or constructed.” (Ulicsak, M. & Wright, M. pg 60)

Adapted from:

* Breuer, Johannes and Gary Bente, Why so serious? On the Relation of Serious Games and Learning, Eludamos. Journal for Computer Game Culture. 2010; 4 (1), p. 7-24 [HTML](http://www.eludamos.org/index.php/eludamos/article/viewArticle/vol4no1-2/146) ([*Open access*](http://edutechwiki.unige.ch/en/Open_content))
* Gunter, G.A., Kenny, R.F. & Vick, E.H., 2008. Taking educational games seriously: using the RETAIN model to design endogenous fantasy into standalone educational games. *Educational Technology Research And Development*, 56 (5-6), 511-537. [HTML](http://www.springerlink.com/content/n48153w225r37144/fulltext.html) ([*Access restricted*](http://edutechwiki.unige.ch/en/Access_restricted_document)) - [PDF](http://hrast.pef.uni-lj.si/docs/research/SELEAG/game_evaluation.pdf)

References:

* EduTech Wiki. (23 January 2014). *Serious Game*. Retreived from <http://edutechwiki.unige.ch/en/Serious_game>
* Ulicsak, M. & Wright, M. (2010). Games in Education: Serious Games. Bristol, Futurelab. Retrieved from http://media.futurelab.org.uk/resources/documents/lit\_reviews/Serious-Games\_Review.pdf