

# **Making Learning Engaging Through Interactive Games**

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Hello. In this session, we are going to see a very popular tool for puzzle game design. And we'll also go through the benefits of using puzzle games in classrooms and trainings. So what are puzzle games? There are so many varieties of puzzle games. The most popular ones include crosswords, word searches, acrostics, jumble words, to add a few more, mazes, and you have those picture puzzles and many many more. I mean there are so many variants of that so it's the category or genre of puzzles that make our minds think creatively and kind of give us a nudge to inculcate the art of problem solving in a fun-filled way now.

Where are puzzle games used? Well, you can technically use it for any subject, any topic because almost all topics include new terminologies. Terminologies is one trigger for using a puzzle game, particularly when the learners are unfamiliar and new to the subject. This is a very classic case of introducing them or probably revising them at the end of the class in a very fun-filled way. They act as great revision tools and help in revision and recall.

Now there are many, many free tools as well as paid tools to create puzzles. We'll probably go through one very very common and popular one today and it's a free tool. It helps in getting started quickly as long as you have access to a laptop and a basic internet connection. You don't even have to create an account in this case. It's that simple.

There are some, a lot of tools insist on creating accounts and this doesn't even insist on that. You can go inside and straight away started creating puzzles. Let's walk through a couple of them and maybe after that you'll be able to navigate on your own. So the tool we are going to talk about is Discovery Education's Puzzle Maker. As you can see the website link given below, it's puzzlemaker.

discoveryeducation.com. Once you go to the website, you will find a whole bunch of items on the top. As you can see in the orange color, you have word search, crisscross is

nothing but crossword, you have double puzzles, fallen phrases, math squares, mazes and many others. We'll probably go through the design of a few of them and then once you're familiar, you'll be able to navigate and play around and create your own.

Let's start with word search. As you can see the highlighted portion of the menu. Go to the word search icon and click on it. You will be taken to a screen like this where you are supposed to enter a title for your puzzle depending on the topic and the subject you can choose an appropriate title and the step two is to enter the size of the word search puzzle number of characters across and down. You can maybe do a 8 by 8 or a 10 by 10 or the standard size given is 15 by 15.

To begin with, I would suggest to keep it within the 15 by 15. Although this tool talks about huge puzzles like up to 40 by 40 letters, it's not a good idea to start with large puzzles because it can get a bit overwhelming. Always start simple and easy and gradually increase the size depending on the appetite of your learners. So 15 by 15 may not be a bad start. Then step three involves choosing, we have an ability to provide some configuration options, whether the words get repeated, the letters get repeated, or they have to be used uniquely or they need to be shared frequently.

Let's say you have a bunch of words and this puzzle maker will try to create the word puzzle in such a way depending on your preferences. If it has to be unique, even if there are two letters that repeat across words, it will try not to have a sharing pattern. If it is occasional letter sharing then the same letter will be shared across a few words and as much as possible it will try to repeat it across maximum number of words. I would say the middle option is the best. It's better to share letters so that it acts as a clue but not share it too often so that it doesn't make it cramped.

So let's go with the default option. Step four is specifying whether we want it in the form of a image or a HTML. We'll go with the image. And the options that are there, we'll start with these options and you can explore the other options once you are comfortable with the existing default options. The fifth again, for simplicity, it's best to maintain it as all uppercase letters.

It also makes it readable, particularly when we do a word puzzle. If it's a document or a book, we may need a mixture of uppercase and lowercase. But if it's a word puzzle, it's better we retain it as all uppercase letters. Also, the other thing is sometimes not necessarily in this tool, but let's say in some kinds of fonts, the capital I and the small l may look very similar. And we want to avoid all those confusions.

So better to keep it all caps for better readability and avoiding all confusion. Now here,

you need to fill in the words for the topic of your choice let's say you're doing it on science you enter on a particular topic like let's say matter. You enter the corresponding words let's say solids liquids gases and associated words or if you're doing on a different topic like let's say mathematics you enter and let's say it's geometry you enter the different shapes like let us say quadrilateral, hexagon, pentagon, whatever be your subject and topic and the new terminologies that you are planning to test them on, you can enter them. And Finally, you click on the create the puzzle option, create my puzzle option at the end. So in this case, what I have done is I've shown a sample where the capitals of a few major countries are listed like New Delhi, London, Paris, Bangkok, Seoul, Boston, Moscow, not necessarily capitals I would say, they are probably popular cities across the world.

This can be used in a geography class for general awareness and once you enter this data, you click on create my puzzle. The moment you click on the puzzle, the word search gets built. As you can see the grid, the words that we have specified are available in the grid that needs to be found out by the learner. Now you find five options, show answer, print puzzle, copy puzzle, copy answer and rebuild puzzle. Let's go through some of the key ones.

The first one is of course, Let's look at this rebuild puzzle because that's an interesting thing. Sometimes what might happen is you might want to create the same puzzle but give multiple copies of it. Although the puzzle is built of the same set of words. This is because it helps to have different patterns. Let's say there are multiple students and although students are encouraged to solve them together.

Sometimes if you want them to solve it all alone each one might find a different pattern. So it helps to generate some three four different sets of the same word puzzle. So let's see what happens when we click on the rebuild puzzle but before that let's see the screen it starts with W P I M and ends with NOVZ. The moment you click on Rebuild Puzzle, the puzzle gets rearranged and the letters starting are LDHH and it ends in SGAM. So, the 6-7 words that we specified are still available here but they have been rearranged.

So, it's a different puzzle for the same set of words. This is a very simple but very powerful feature. Now the next thing that we are all interested is where are the answers. So click on the show the answer and it starts showing the answers as you can see. London appears in the first column top to bottom.

Then Paris appears from top right to bottom left a few columns into the, probably it appears in the seventh column and goes in the direction of, I would say, west, southwest probably. And then you have Bangkok in the completely reverse direction, completely

going west. It's written the other way. And then you have Boston again going from bottom up, as you can see in the last but one column. Then you have Moscow going the other way, which is probably southeastern direction.

It starts in the second column. And then you have New Delhi once again starting in the second column, going southwest, then finally you have Seoul going northeast. If you see it's in the last row and goes up. Now if you remember the preferences we had set, we wanted some of the letters to be shared and that's exactly what you get to see.

This doesn't look too cramped. Not every letter, not every word is shared, sharing a letter. But some words are sharing some letters. So it makes the job a little easy and it doesn't look too cramped. Now, the remaining three options in the word search puzzle are printing the puzzle, which prints it to a PDF file, which can be later printed and given. You can copy the image of the puzzle and you can just copy the answers for reference.

So these are some very flexible options given by this tool. Very convenient and makes the life of the teacher very very easy. So that's as far as your word search is concerned. Now you can of course explore the other options that we had mentioned in the beginning once you get comfortable and play around with it and feel free to choose that option which you find it really convenient and easy and that which suits your teaching needs. Moving on we will now go to the crossword crossword is called crisscross and go to the home screen choose crisscross and click on it.

Once again you're taken to the crossword building screen. Here, once again, you give a title for your puzzle and then start entering the words and clues. Now I forgot to mention in the word search itself, but it is there in almost all the puzzle builders. You can fill it with sample data. If you don't know exactly how you're going to populate the data, it offers a sample example.

It is very convenient. Now, for crossword, I thought we will do a different subject completely. So far, we have been using subjects like science, social studies, maths, etc. Let me use it in the context of commerce and accounting. Accounting and commerce also have a lot of terminologies and these are some very basic terminologies that a student gets introduced in the accounts class. What are assets, liabilities, revenue, expenses, equity, income statement? So these are some of the terminologies that an account student starts learning in the first year.

So, I've given the title as accounting terminologies and I have started giving the words followed by the clues. That's how one needs to specify. In each line, we need to specify the word, which is the crossword word to be guessed, followed by the clue. And then,

once again, you go ahead and click on generate crossword and just like that it generates a crossword in no time. It hardly takes about 10 to 20 seconds at the max or even probably less and sometimes to generate the crossword or any word puzzle for that matter.

Once again you have the standard five options. We'll not go through all of these since we have seen it in the word puzzle builder but essentially you can make use of the same options and what we'll do now is Just click on show answer just to ensure that the words we have encountered, we had entered are showing up right. So you find that you find assets, liabilities, revenue, expenses, equity and income. Now one thing if you note, we had specified the word as income statement and there is a space between income and statement. Which means income is treated as the word.

So you need to make sure that those words with two parts to it are specified continuously. Income statement should have been specified as incomestatement and not income space statement. Moving on, there is a third category of puzzle, which is the double puzzle. Now, what's special about it? Let's continue to explore double puzzle.

Once again, very simple screen. Enter your title, enter the puzzle words. As a demo, this time let's do geometric shapes like polygons and shapes. Again, enter your clues. Just need to enter the clues in terms of the words. Triangle, quadrilateral, pentagon, hexagon, circle and rhombus is what I have entered.

And in step 3, this is really the differing piece from the first two puzzles. You can enter a final word or a phrase for your puzzle. I have kept it very simple. Geometrical shapes. You can make it longer geometrical shapes are fun to deal with or anything that you feel is relevant to the topic being explained and now you click on generate the double puzzle you will find the words jumbled here.

As you see the words are jumbled the six words that you we entered are now appearing in a jumbled fashion, we need to unjumble them, that's the first part of the puzzle and once we get the first part right, we need to get the second part which is what we had specified as geometric shapes. You can see those numbers, small numbers that are there in the boxes, these act as clues once we unjumble, we can use them to incorporate and try and guess the main word. So, let me click on show the answer and here you find the unjumbled words are triangle, quadrilateral as we had specified and the other shapes. The final word we had specified was geometrical shapes. If you see the small letter, small numbers you can get 8 from under the letter I in the triangle and 14 from the letter A.

So if you go down in the geometrical shapes you have you can fill I in the place where it shows 8 and A appears in 14 and so on and so forth. So, it becomes very easy and a lot of

letters get filled in when you try to solve this puzzle and it helps in finding out the final clue easily. Now, there are other puzzles also that the discovery puzzle maker supports and you can explore them all and they all have very simple instructions. Try them out and use them in your classes.