MazeFire Games: Student Guide

www.mazefire.com

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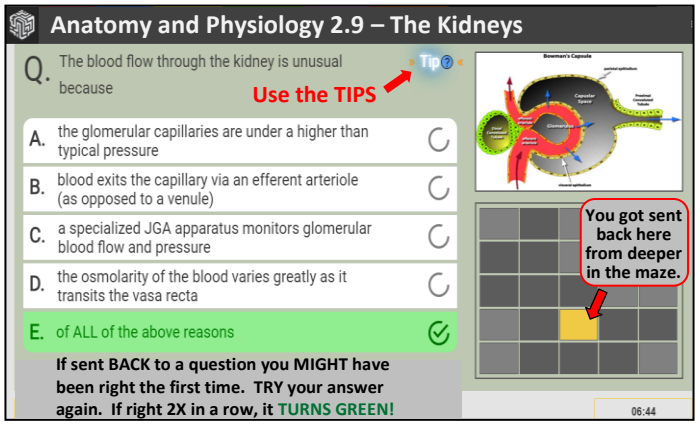
OVERVIEW: If you are a High School or College student, we want you to get the most out of our games: we want you to build *Knowledge Architectures* in your mind and get better in Science, Engineering, Medicine and Liberal Arts. Here you will find a summary of game mechanics and available help, along with study suggestions. We explain how MazeFire games can help students fill in knowledge gaps and fix misconceptions so that they can transition from "remembering" to "KNOWING".

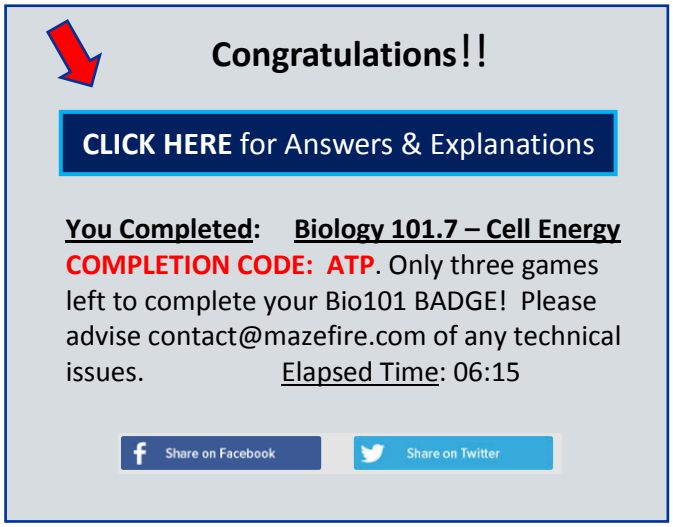
How to Play: The rules are simple, maze-based rules: correct answers *always* take you closer to the maze exit, while incorrect responses lead you further away. The maze exit could be in ANY room (box) in the maze-grid. Note that each question is a room/box and each answer a direction that leads to a new room/box somewhere in the grid. The graphic shows you where you've been, like Goldilocks' bread crumbs. Our Digital Maze games differ from other mazes is that your answer choices are *directions* within this *information space* (there is no option to choose physical directions). While the grid is technically a 2-dimensional mapping of a 5D information space, the main point is that you can successfully navigate mazes by correctly answering questions, i.e. by picking correct directions to move within the information space. It is fine to think of the grid as just an array of inter-connected rooms, but the real challenge, if you get stuck, is to THINK about what you do and do not know: this rouses your subconscious neural processors to help you acquire information and figure out the CORRECT answers. At the maze exit you'll get to see how you did and will be provided with all answers and explanations in the maze.



Maze Help: In the course of traversing a maze, players often end up back at a question they saw before and then they **make one crucial error:** if you see a question *again*, please do NOT assume you got it <u>wrong</u> the first time! You probably got it right and were sent BACK there from deeper in the maze: try your answer again and it will **TURN GREEN** if you are correct two times in a row! If going around in circles, that's not good (just like in a real maze or a city), and means that at least one of your answers is incorrect: question your assumptions! You will notice a few mile posts along the way (*half-way home* and *close to the exit*); the mileposts can reappear if you lose ground and then move forward once more. Within 2 minutes (in most mazes) there will be a TIP in every room, geared to that specific question and TIPS can greatly boost your progress. Some TIPs may suggest looking up a key word in the question (e.g. on Google, Wikipedia, etc.), but of course you can do this for any room in the maze--unless the teacher says not to! If all else fails, you might even look things up in your textbook. Maze images are yet another form of help as they often (but not always) offer useful clues. Collectively, all of this thinking and finding information, while applying it to solve the maze puzzle, adds to the knowledge content of your brain and, quite importantly, ensures robust knowledge integration, which you will reinforce by reading the Explanations.

Explanations Page. When you get to the Maze Exit, you'll see a **Completion Code** that you can send to your teacher. You'll also see a list of other mazes that you can still try in that category. Most importantly, make sure to click the EXPLANATIONS tab, so you can see all the answers and explanations, along with any incorrect choices that you made. [We have not yet implemented score-keeping, but once launched, we will offer STEM certifications and leaderboards]. It is worthwhile to skim the <u>Explanations Page</u> and especially note any

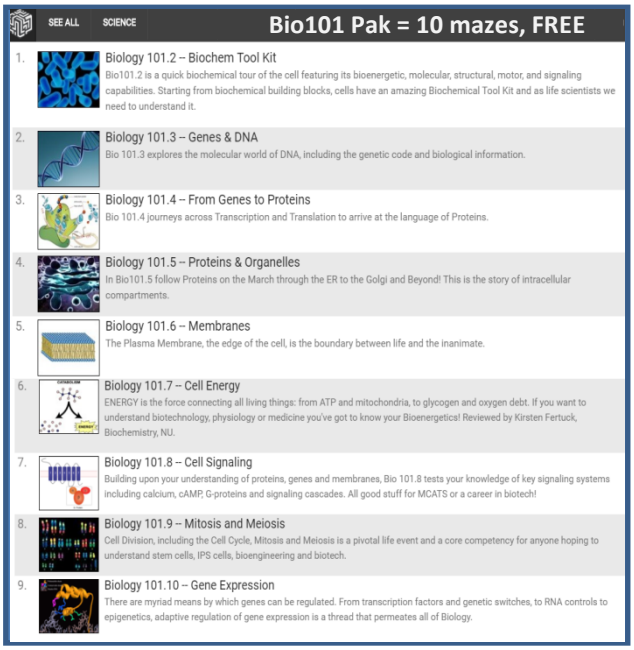
answers marked wrong. While these might have been guesses, they might also indicate Knowledge Gaps or perhaps misconceptions lurking deep within your neocortical circuitry! With some diligent perusal of the Explanations Page, you will be building a stronger knowledge foundation. You should focus on understanding both why the right answers are right AND why each wrong answer is wrong. By doing this, you will be strengthening and enriching numerous connections amongst the content-modules in your neocortex: your progression from "remembering" to "knowing" is a hallmark of cognitive advancement. This is a consequence of both the cognitive effort applied in navigating the maze proper, as well as your reinforcing your knowledge at the Maze Exit—great job!



Which SUBJECTS should I focus on? Our Semester Paks are most helpful when played during the course of a regular AP (high school) or college course, or if engaged in online learning such as a MOOC. If you are taking freshmen Bio or Chem, try our Bio101 and Chem101 Semester Paks--and encourage your teachers to look at them, because they are welcome to use our questions on your exams! One should, of course, play more basic games before tackling more advanced ones: Bio101 is good review for our Neurobiology and Microbiology Semester Paks and for other advanced courses that you may be taking. If you are trying to learn a subject on your own, it is a good idea to find a used textbook and test yourself on mazes each time you complete a chapter or two (Wikipedia and Google Scholar can help, but textbooks have the perspective and context needed to build robust Knowledge Architectures). And if you get stuck, we are happy to help: just email your questions to professor@mazefire.com. From a most general perspective, if you are studying or working in the *Life Sciences*, you might like to peruse all of our Life Science content from Neurobiology and Pharmacology to Anatomy and Physiology II. This is a lot to take on, but in the long term ALL knowledge reinforcement and extension is good for you! It is good to know MORE than your competitors and as Charles Darwin once said, "It's a dog-eat-dog world out there and I've got milk-bone underwear". Or that might have been Norm from *Cheers*. In any case, do skim the ALL MAZES tab, because we are constantly growing our collection in all kinds of interesting academic, technical and recreational directions. Note: *OpenStax* offers FREE textbooks.

Costs AND Registration: You do NOT have to register—most of our games are click-n-play, making it easy for you to jump on MazeFire from any device and do some quick review or explore a new subject. This ALSO MEANS that your teacher can just click on a game and you can play with your friends in class (which means LESS time listening to your teacher lecture!)—so tell your teachers about MazeFire games today! One advantage to registering is that MazeFire keeps track of which games you have played in a collection and offers the remaining ones. Later on we will have badges, certifications and leaderboards for registered users.

While most of our games are free, as of this writing we have several 3$ Semester Paks and one $10 Semester Pak. We have debated *one-year* vs. *two-year* access for purchased Semester Paks and we welcome your input on this point (and pricing generally), so please send your thoughts on this topic to contact@mazefire.com as it will help our 2-year advocates make their case.



Study Strategies: Peer-to-peer learning is a *Cognition Multiplier* in that when two or three students work together, everyone (usually) will have something to contribute, and if your group gets stuck, you can divide and conquer to figure things out. Playing maze games together is also fun--either collaboratively or to see who can get the maze *completion code* fastest [every Maze Exit page has a maze-specific completion code]. As your exams grow near, the maze's you've completed can be a good refresher/retest and here's a SECRET: in most mazes, if you choose [A] (an incorrect answer) in the starting room, that puts you on a parallel forward branch path. This lets you play a fresh set of questions (which you might not have encountered earlier) up to the final room in the maze. Of course, you can also see all the Q&A/explanations at the maze exit, so there are multiple options to self-test yourself on any given maze topic. For some nuanced reasons, a pure "scramble" function is not an ideal feature, but MazeFire is working on a simple Play-19 feature where you can run through all rooms sequentially (i.e. omitting the maze aspect of the game).

Cognitive Enhancement: Students are often puzzled by our not giving them the correct answer as soon as they attempt to answer a question. In regards to game mechanics, if we told students they were making the right or wrong choice at each juncture, this would cease being a maze/game—it would just be another online quiz (boring!). But there are MORE compelling reasons to try learning within this environment. Your brain has 20 billion neocortical processors (neurons) working away all the time to understand new info, reconcile it with stuff you already know, and build useful connections in your brain/mind. This takes TIME, and the time you spend wandering the maze, lost and alone (cue melodramatic music), is actually giving your 20 billion subconscious processors TIME to figure things out. We do not really know how your brain filters new knowledge and integrates it into the vast array of old neuronal connections/networks (that constitutes your life's memory and knowledge), but we do know that attention, reflection and "figuring things out" is quite useful, indeed extremely useful if in a state of heightened motivation. You can ask your teacher or professor: is it a GOOD thing for me to think about what I do and do not know? 98% will say yes. They will agree that the act of using TIPS and images and looking stuff up to solve the maze puzzle, while reviewing the explanations at the maze exit, will all help students to build more robust and better connected Knowledge Architectures in their brains. And THAT is the ultimate goal of MazeFire.com.

Here at MazeFire, we are happy to help you with our games and to trouble-shoot any technical issues you might encounter. Our games should work on most or all current devices; but the game experience is currently a little better on a tablet or computer. If you ever get stuck, you are welcome to ping us (we are teachers too) and if you find things that are confusing or incorrect, we would GREATLY appreciate your feedback and will award VIP Memberships to players who alert us of problems! Thanks very much for trying our games.

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