

Question: But there are many areas of concern in instruction, not just one, not just critical thinking, but communication skills, problem solving, creative thinking, collaborative learning, self-esteem, and so forth. How are districts to deal with the full array of needs?

Translate this page from English Print Page Change Text Size: T T T Critical Thinking: Critical thinking is essential to effective learning and productive living. Would you share your definition of critical thinking? First, since critical thinking can be defined in a number of different ways consistent with each other, we should not put a lot of weight on any one definition. Definitions are at best scaffolding for the mind. With this qualification in mind, here is a bit of scaffolding: Two things are crucial: To put it briefly, it is self-improvement in thinking through standards that assess thinking. Could you give me an example? Certainly, one of the most important distinctions that teachers need to routinely make, and which takes disciplined thinking to make, is that between reasoning and subjective reaction. Often, teachers are unclear about this basic difference. Many teachers are apt to take student writing or speech which is fluent and witty or glib and amusing as good thinking. They are often unclear about the constituents of good reasoning. Hence, even though a student may just be asserting things, not reasoning things out at all, if she is doing so with vivacity and flamboyance, teachers are apt to take this to be equivalent to good reasoning. This was made clear in a recent California state-wide writing assessment in which teachers and testers applauded a student essay, which they said illustrated "exceptional achievement" in reasoned evaluation, an essay that contained no reasoning at all, that was nothing more than one subjective reaction after another. Could this possibly be a rare mistake, not representative of teacher knowledge? Let me suggest a way in which you could begin to test my contention. Namely, "What intellectual standards does the program articulate and teach? And then when you explain what you mean, I think you will find that the person is not able to articulate any such standards. Thinking skills programs without intellectual standards are tailor-made for mis-instruction. For example, one of the major programs asks teachers to encourage students to make inferences and use analogies, but is silent about how to teach students to assess the inferences they make and the strengths and weaknesses of the analogies they use. This misses the point. The idea is not to help students to make more inferences but to make sound ones, not to help students to come up with more analogies but with more useful and insightful ones. What is the solution to this problem? How, as a practical matter, can we solve it? Well, not with more gimmicks or quick fixes. Not with more fluff for teachers. Only with quality long-term staff development that helps the teachers, over an extended period of time, over years not months, to work on their own thinking and come to terms with what intellectual standards are, why they are essential, and how to teach for them. The State Department in Hawaii has just such a long-term, quality, critical thinking program see " mentor program ". In addition, the National Council for Excellence in Critical Thinking Instruction is focused precisely on the articulation of standards for thinking. I am hopeful that eventually, through efforts such as these, we can move from the superficial to the substantial in fostering quality student thinking. The present level of instruction for thinking is very low indeed. But there are many areas of concern in instruction, not just one, not just critical thinking, but communication skills, problem solving, creative thinking, collaborative learning, self-esteem, and so forth. How are districts to deal with the full array of needs? How are they to do all of these rather than simply one, no matter how important that one may be? This is the key. Everything essential to education supports everything else essential to education. It is only when good things in education are viewed superficially and wrongly that they seem disconnected, a bunch of separate goals, a conglomeration of separate problems, like so many bee-bees in a bag. In fact, any well-conceived program in critical thinking requires the integration of all of the skills and abilities you mentioned above. Could you explain briefly why this is so? Consider critical thinking first. We think critically when we have at least one problem to solve. If there is no problem there is no point in thinking critically. The "opposite" is also true. Uncritical problem solving is unintelligible. There is no way to solve problems effectively unless one thinks critically about the nature of the problems and of how to go about solving them. Thinking our way through a problem to a

solution, then, is critical thinking, not something else. Furthermore, critical thinking, because it involves our working out afresh our own thinking on a subject, and because our own thinking is always a unique product of our self-structured experience, ideas, and reasoning, is intrinsically a new "creation", a new "making", a new set of cognitive and affective structures of some kind. And when it helps us to solve problems that we could not solve before, it is surely properly called "creative". The "making" and the "testing of that making" are intimately interconnected. In critical thinking we make and shape ideas and experiences so that they may be used to structure and solve problems, frame decisions, and, as the case may be, effectively communicate with others. The making, shaping, testing, structuring, solving, and communicating are not different activities of a fragmented mind but the same seamless whole viewed from different perspectives. How do communication skills fit in? All of us can engage in small talk, can share gossip. Where communication becomes part of our educational goal is in reading, writing, speaking and listening. These are the four modalities of communication which are essential to education and each of them is a mode of reasoning. Each of them involves problems. Each of them is shot through with critical thinking needs. Take the apparently simple matter of reading a book worth reading. The author has developed her thinking in the book, has taken some ideas and in some way represented those ideas in extended form. Our job as a reader is to translate the meaning of the author into meanings that we can understand. This is a complicated process requiring critical thinking every step along the way. What is the purpose for the book? What is the author trying to accomplish? What issues or problems are raised? What data, what experiences, what evidence are given? What concepts are used to organize this data, these experiences? How is the author thinking about the world? Is her thinking justified as far as we can see from our perspective? And how does she justify it from her perspective? How can we enter her perspective to appreciate what she has to say? All of these are the kinds of questions that a critical reader raises. And a critical reader in this sense is simply someone trying to come to terms with the text. So if one is an uncritical reader, writer, speaker, or listener, one is not a good reader, writer, speaker, or listener at all. To do any of these well is to think critically while doing so and, at one and the same time, to solve specific problems of communication, hence to effectively communicate. Communication, in short, is always a transaction between at least two logics. In reading, as I have said, there is the logic of the thinking of the author and the logic of the thinking of the reader. This entails disciplined intellectual work. How does it fit in? Healthy self-esteem emerges from a justified sense of self-worth, just as self-worth emerges from competence, ability, and genuine success. If one simply feels good about oneself for no good reason, then one is either arrogant which is surely not desirable or, alternatively, has a dangerous sense of misplaced confidence. Teenagers, for example, sometimes think so well of themselves that they operate under the illusion that they can safely drive while drunk or safely take drugs. They often feel much too highly of their own competence and powers and are much too unaware of their limitations. To accurately sort out genuine self-worth from a false sense of self-esteem requires, yes you guessed it, critical thinking. And finally, what about collaborative learning? Collaborative learning is desirable only if grounded in disciplined critical thinking. Without critical thinking, collaborative learning is likely to become collaborative mis-learning. It is collective bad thinking in which the bad thinking being shared becomes validated. Remember, gossip is a form of collaborative learning; peer group indoctrination is a form of collaborative learning; mass hysteria is a form of speed collaborative learning mass learning of a most undesirable kind. We learn prejudices collaboratively, social hates and fears collaboratively, stereotypes and narrowness of mind, collaboratively. So there are a lot of important educational goals deeply tied into critical thinking just as critical thinking is deeply tied into them. Basically the problem in the schools is that we separate things, treat them in isolation and mistreat them as a result. We end up with a superficial representation, then, of each of the individual things that is essential to education, rather than seeing how each important good thing helps inform all the others Question: What can teachers do to "kindle" this spark and keep it alive in education? Young children continually ask why. Why this and why that? And why this other thing?

Chapter 2 : Critical Thinking: Basic Questions & Answers

Critical thinking is a way of thinking in which you don't simply accept all arguments and conclusions you are exposed to but rather have an attitude involving questioning such argument and conclusions.

You must be able to correctly identify what the question is asking. Do not focus on background information that is not needed to answer the question. Are you feeling overwhelmed as you read these words? We are going to teach you a step-by-step method to choose the appropriate path. Choosing the right answer often involves choosing the best of several answers that have correct information. This may entail your correct analysis and interpretation of what the question is really asking. Critical thinking for the nurse involves the following: Step 1 Read each question carefully from the first word to the last word. Do not skim over the words or read them too quickly. Step 2 Look for hints in the wording of the question stem. Step 3 Step 3. A preschooler with a fractured femur is brought to the emergency room by her parents. We omitted the answer choices to make you focus on the question stem this time. The answer choices will be provided and discussed later in this chapter. Read the question stem carefully. Pay attention to the adjectives. Reword the question stem in your own words. Because you were able to reword the question, the fourth step is unnecessary. The following question illustrates this point. A construction worker is admitted to the hospital for treatment of active tuberculosis TB. The nurse teaches the client about TB. Which of the following statements by the client indicates to the nurse that further teaching is necessary? Again, just the question stem is given to encourage you to focus on rewording the question. We will discuss the answer choices for this question later in this chapter. Practice Question 3 Try rewording this test question. A woman admitted to the hospital in premature labor has been treated successfully. The client is to be sent home on an oral regimen of terbutaline. Which of the following statements by the client indicates to the nurse that the client understands the discharge teaching about the medication? Pay attention to the words client understands. You are looking for true information. Reword the question stem. Because you were able to reword this question, the fourth step is unnecessary.

Chapter 3 : Top Critical Thinking Quizzes, Trivia, Questions & Answers - ProProfs Quizzes

Are you a person with inquisitiveness, open mind, self confident to deal with any issues? Are you potential enough to analyse, interpret, evaluate and take a decision then logon to blog.quintoapp.com Critical thinking is objective analysis and evaluation to frame a judgement.

February 13, A job candidate who has good critical thinking skills is likely to be self-motivated and innovative. Here are some sample job interview questions that can help you determine how a candidate has used critical thinking in the past as well as motivations that may affect his or her current critical thinking skills. Behavioral Job Interview Questions These questions ask a candidate to describe previous experiences that demonstrate critical thinking ability. Describe an instance when you set a goal and met it. Give an example of a time when you were required to make a split-second decision. Tell me about a time when you took on a leadership role. Describe a time when you anticipated a problem and took measures to prevent it? These questions can help you discover whether or not your business environment will prove motivating for the candidate and also whether the applicant will be able to motivate other employees. Where do you see yourself in five years? What is your plan to get there? What role does your manager play in motivating your best performance at work? In the past, when you have struggled with motivation at work, how have you overcome it? Describe a project that you worked on where you went above and beyond what was expected. What was your role? What got you excited about that particular project? Describe a time when your work was criticized and how you handled the criticism. Share an idea or innovation that you implemented at a previous job. Tell me about your most difficult boss and how you dealt with him or her. What is your strategy for dealing with an upset customer? She is forced to think on the spot, allowing employers to evaluate how she handles pressure and whether she can think on her feet. Here are a few sample brainteasers that can be used to assess critical thinking. What is the angle between the hour hand and the minute hand of a clock at 6 p. Why is the sky blue? Describe the internet to somebody from the s. What was the last book you read, and what was the best part about it? What are your favorite job interview questions to ask? What do they tell you about the candidate? Share your insights with other small business owners in the comments below. About the Author Lauren Edmondson is a freelance marketing content writer. She earned a B. Her interests include reading, watching football, and spending time with family.

Chapter 4 : Human Physiology/Appendix 1: answers to review questions - Wikibooks, open books for an op

Use these sample critical-thinking interview questions to discover how candidates evaluate complex situations and if they can reach logical decisions. Why test candidates' critical-thinking skills Critical-thinking skills allow people to evaluate situations through reasoning to reach logical decisions.

Part of getting ready for an interview is formulating rough answers to some important questions, so when the time comes, you will have the right information at hand. Thinking about what an interviewer might ask can help you determine what assets you bring to a company and why they should hire you for the job. Your answer to the question of why you want a particular job should demonstrate a genuine interest in the company and the position. Include details that show the interviewer you have researched the organization and understand the full scope of what the position entails. Why Should We Hire You? Focus your answer on the assets you bring to the company. Point to the specific skills you have that are relevant to the position. Include information about how you fit with the organization, including your past employment that was in a similar vein. What Are Your Weaknesses? Answer any question about weaknesses in a way that minimizes the ones that are relevant to the position and demonstrates you are working toward improvement. For example, "I am taking a course on word processing to enhance my computer skills," or "I am improving my second language skills by working with a Spanish tutor. Being asked about strengths gives you an opportunity to identify the key benefits you bring to the organization. During an interview for a customer service job, you may want to emphasize your friendliness, ease with people, patience and professionalism. Tell Me About Yourself This question is meant to elicit an overview of your professional and job-related qualifications. As an opening question, it gives you the opportunity to highlight key points in your resume before the interviewer starts asking for detailed information about your background. What Are Your Goals? Answer a question about goals in a way that demonstrates you have both professional focus and that the position you are a candidate for fits in with your short- or long-term plan. For example, "I would like to learn as much as I can about this industry and eventually move into a management position. Regardless of why you left another job, cast them in the most positive light possible. If you have been laid off, you may say that you are using your recent layoff as a new opportunity to join a team at a different company. If you are currently employed, you may say you are seeking challenges in a new environment. This allows you to both point to past experience and demonstrate that you are not only qualified for the current position, but that you will gain personal enjoyment from it and will remain committed to the company. In an interview for a customer service position, you may say you were most satisfied when you were able to help clients find the products or services they were seeking. When talking about experience, link specific instances in your past working history with the skills required in the position. Be prepared to summarize in a few sentences the situation, your role and how it was successful for each example. Questions about salary can be tricky. Knowing the market rate for the position and industry is important. In order to make sure you are not excluded from the competition on this point, try to glean a number from the interviewer first. In what range do you typically pay someone with my background?

Chapter 5 : How to Ask Questions that Prompt Critical Thinking - UCD - CTAG

Use critical thinking to analyze their worldview in light of Scripture and consider how they claim to know what they know. Sometimes, people will appeal to some other expert when they don't have much expertise of their own.

We all make decisions every day – People follow basic logical process for making decisions. Are you a good decision maker? You have to realize that in reality different forms of decisions are ok for different cases. Here are some questions that can be asked: Can you tell about any past critical situation in which you had to make an immediate decision? What process do you follow for making decisions for these different circumstances and were you satisfied with the results? The examples that you give should show how resourcefulness and initiative you are. Many a times, we make decisions based on instinct having incomplete data. Using available info – Based his process on the information to hand. Analyzing – Knows how to break complex issues into components. Critical Thinking – Considers the outcomes of varying course of actions. Investigating – Can take conclusions from different sources of data. Acting – Can make decisions without complete info. Not afraid to take risks to come to a solution. Studying – Demonstrate a lesson learned ability in order to progress. At the end of your answer, it is a good time to tell that you are not always perfect. Do you always use established procedures to ensure that the correct action is taken? It is ok to tell that you to ask for advice and information when you are unable to get it by yourself as you are always looking for the best decision. You also have to talk about your ability to take hard decisions sometimes initiatives or creative ones independently if required. You seek for being practical when assessing multiple, complex or contradictory data in order to reach the right decision. Show that you understand Cause and Effect and during the decision-making process you are able to evaluate the relationship between short-term consequences and long-term gains. Critical Thinking Interview Questions Critical thinking is known as the high level of decision making process. The interviewer may ask you to define the meaning of critical thinking and to assess the importance of it to the decision making process. He may also present an issue and will want you to identify point of views, classify approaches or analyze a theory within this issue. He will want to observe your knowledge of using thought processes – taking an issue and structure your analysis in a balanced way. How to answer these questions: It is the best way to approach problem solving with a level of detachment that permits a thorough and balanced analysis. Critical thinkers take the time necessary to make excellent decisions rather than choosing to make fast, good-enough decisions. They seek first to understand and to find out what they do not know before reaching conclusions or judgment so as to make more effective decisions as a result. Critical thinking is questioning. Way of thinking or reasoning is always based on the information gathered. Have I checked facts and refreshed my data? Similar to the decision making questions, the interviewer may also want you to tell about any real challenging problem that you had experienced in your previous job trying to assess your performance. How do you go ahead when it comes to solving a problem? The interviewer will want to hear the logic that you use to solve a problem along with the outcome that you are able to achieve. Can you handle a position that requires anticipating and resolving issues frequently? Do you possess the quality of being decisive? It is recommended to tell a success story from your background. You can also how you narrow the options to make a decision, such as: Writing down ideas about possible causes Looking for related causes in order to group together symptoms of bigger problems Studying these groups of causes The real cause to the problem in question becomes readily apparent Devising a route to getting a resolution.

Chapter 6 : I dont get it! Critical thinking questions are whipping me. | allnurses

Critical Thinking Interview Questions Critical thinking is known as the high level of decision making process. The interviewer may ask you to define the meaning of critical thinking and to assess the importance of it to the decision making process.

Using available info - Based his process on the information to hand. Analyzing - Knows how to break complex issues into components. Critical Thinking - Considers the outcomes of varying course of actions. Investigating - Can take conclusions from different sources of data. Acting - Can make decisions without complete info. Not afraid to take risks to come to a solution. Studying - Demonstrate a lesson learned ability in order to progress. Candidate should show that they have the presence of mind and sensibility to judge any situation and make a decision independently, if required. You should hear that in critical situation candidate will seek advice and guidance to reach correct decision. You want to hear that the applicant does not like to delay decision-making, they can make quick decisions, and they can implement decisions in a timely manner. Candidate should show that they have patience and the good judgment to identify problems first, then prioritize, and plan well in solving problems. Most of the national assessment we have done thus far is based on lower-order learning and thinking. It has focused on what might be called surface knowledge. It has rewarded the kind of thinking that lends itself to multiple choice machine-graded assessments. We now recognize that the assessment of the future must focus on higher - not lower - order thinking; that it must assess more reasoning than recall; that it must assess authentic performances, students engaged in bona fide intellectual work. Our problem is in designing and implementing such assessment. In November of this last year, Gerald Nosich and I developed and presented, at the request of the Department of Education, a model for the national assessment of higher order thinking. It was clear from the commitments of the departments of Education, Labor, and Commerce that such an assessment is in the cards. What About Collaborative Learning? Collaborative learning is desirable only if grounded in disciplined critical thinking. Without critical thinking, collaborative learning is likely to become collaborative mis-learning. It is collective bad thinking in which the bad thinking being shared becomes validated. Remember, gossip is a form of collaborative learning; peer group indoctrination is a form of collaborative learning; mass hysteria is a form of speed collaborative learning mass learning of a most undesirable kind. We learn prejudices collaboratively; social hates and fears collaboratively, stereotypes and narrowness of mind, collaboratively. So there are a lot of important educational goals deeply tied into critical thinking just as critical thinking is deeply tied into them. Basically the problem in the schools is that we separate things, treat them in isolation and mistreat them as a result. We end up with a superficial representation, then, of each of the individual things that is essential to education, rather than seeing how each important good thing helps inform all the others. We have never had to face such a world before. Education has never before had to prepare students for such dynamic flux, unpredictability, and complexity for such ferment, tumult, and disarray. All of us can engage in small talk, can share gossip. Where communication becomes part of our educational goal is in reading, writing, speaking and listening. These are the four modalities of communication which are essential to education and each of them is a mode of reasoning. Each of them involves problems. Each of them is shot through with critical thinking needs. Take the apparently simple matter of reading a book worth reading. The author has developed her thinking in the book, has taken some ideas and in some way represented those ideas in extended form. Our job as a reader is to translate the meaning of the author into meanings that we can understand. Healthy self-esteem emerges from a justified sense of self-worth, just as self-worth emerges from competence, ability, and genuine success. If one simply feels good about oneself for no good reason, then one is either arrogant which is surely not desirable or, alternatively, has a dangerous sense of misplaced confidence. Teenagers, for example, sometimes think so well of themselves that they operate under the illusion that they can safely drive while drunk or safely take drugs. They often feel much too highly of their own competence and powers and are much too unaware of their limitations. To accurately sort out genuine self-worth from a false sense of self-esteem requires, yes you guessed it, critical thinking. This is the key. Everything essential to education supports everything else

essential to education. It is only when good things in education are viewed superficially and wrongly that they seem disconnected, a bunch of separate goals, a conglomeration of separate problems, like so many bee-bees in a bag. In fact, any well-conceived program in critical thinking requires the integration of all of the skills and abilities you mentioned above. Certainly, one of the most important distinctions that teachers need to routinely make, and which takes disciplined thinking to make, is that between reasoning and subjective reaction. Often, teachers are unclear about this basic difference. Many teachers are apt to take student writing or speech which is fluent and witty or glib and amusing as good thinking. They are often unclear about the constituents of good reasoning. Hence, even though a student may just be asserting things, not reasoning things out at all, if she is doing so with vivacity and flamboyance, teachers are apt to take this to be equivalent to good reasoning. First, since critical thinking can be defined in a number of different ways consistent with each other, we should not put a lot of weight on any one definition. Definitions are at best scaffolding for the mind. With this qualification in mind, here is a bit of scaffolding: Two things are crucial: Critical thinking is not just thinking, but thinking which entails self-improvement. This improvement comes from skill in using standards by which one appropriately assesses thinking. To put it briefly, it is self-improvement in thinking through standards that assess thinking. To think well is to impose discipline and restraint on our thinking-by means of intellectual standards - in order to raise our thinking to a level of "perfection" or quality that is not natural or likely in undisciplined, spontaneous thought. The dimension of critical thinking least understood is that of "intellectual standards. Candidate should understand the dynamics of change in any form of organization and be able to determine the problems of conflict and how they relate to the change. They should recognize the potential problems that may arise from a lack of attention and the inability or reluctance to change.

Chapter 7 : 7 Interview Brainteasers to Assess Critical Thinking

Before we dive into the lateral thinking questions, it's important to know exactly what lateral thinking is, and how it differs from critical thinking. While lateral thinking is certainly "critical," as a specific train of thought, it is not the same as what we call "critical thinking."

How would you describe. Comprehension Demonstrating understanding of facts and ideas by organising, comparing, translating, interpreting, giving descriptions and stating main ideas. How would you compare. Explain in your own words. What facts or ideas show. What evidence is there that? Application Solving problems by applying acquired knowledge, facts, techniques and rules in a different way. What examples can you find to. How would you show your understanding of. What approach would you use to What might have happened if. Analysis Examining and breaking information into parts by identifying motives or causes; making inferences and finding evidence to support generalisations. What inference can you make from. How would you classify. How would you categorise. Can you identify the difference parts Evaluation Presenting and defending opinions by making judgements about information, validity of ideas or quality of work based on a set of criteria. How would you compare? Which do you think is better?. Evaluate contribution of. What was the value or importance of. What would you have recommended if you had been? Compiling information together in a different way by combining elements in a new pattern or proposing alternative solutions. What might have happened if? Can you propose an alternative interpretation to that of. Is there a marmite solution [1] here? Exercise Use the question constructs to compose relevant questions for your own practice, include these in your example session plans.

Chapter 8 : Critical Thinking Answer Key - blog.quintoapp.com

Example Critical Thinking Questions For these example questions you can check your answers at the end of this document. These example questions will be easier.

Two questions to ask when determining the value of information are: If the answers to either of these critical thinking questions concern you then learn more about the information and its source. Sometimes you may get a bad feeling known as a red flag. This is a clear sign to dig deeper to find out about the information and its source s. Learning to trust and validate your intuition takes time, patience and practice. The laugh test is failed when you realize the information is so ridiculous that you know it has to be wrong. Critical thinking questions help open your mind to look at written and spoken information objectively. The information may be correct. Then again, it may be biased or wrong. By not taking information as fact, just because it has been written or spoken, you begin to discriminate information. This can lead to sound opinions and decisions about the information. Next, there is a need to continually question: Information and Information Sources Information can come from a wide array of sources. Books, magazines, newspapers, experts and the Internet are some primary sources. This begs the next questions: To help you find worthwhile information and sources ask the following critical thinking questions: Where are the best sources of information? Reliable sources can be found in books and articles from established experts, library resources and magazines and newspapers that you have strong confidence in. Try to verify information when it is important. Can the information be verified? Your objective is to find unrelated sources. It needs to noted that much information sometimes bad information is recopied in many locations today. Assumptions Assumptions about information are crucial. Assumptions are used instead of facts and data when they are unavailable, or time is limited. Wrong assumptions will lead you down the wrong path. Consequently, assumptions need to be questioned. Ask yourself these critical thinking questions: However, it will catch a good majority of them with practice. Interpretations and Implications Continually questioning how you are interpreting comprehending information is essential to critical thinking. Some of the land mines to critical thinking such as group think, intolerance or social conditioning can bias interpretations of information. If you are aware of land mines to critical thinking you can adjust your thinking as necessary. This will help to ensure you are interpreting information accurately and fairly. Asking a trusted colleague or friend about his or her interpretation of information is a good way to get a second opinion to help you to test the validity of your interpretation. Question the implications of choosing certain information. The more critical the issue, the more important the information, and the more time should be invested in verifying it. Conclusions There are several critical thinking questions that can help determine if conclusions drawn from critical thinking are valid. Do you have an interest in starting your own online Business?

Chapter 9 : Critical Thinking & Decision Making Interview Questions and Answers

5. Number crunchers. Q5. "How many potatoes (in kg) does McDonald's sell in a year in the UK?" There are hundreds of variations on this Oliver Wyman interview question, each assessing mental arithmetic and critical thinking.

E All of the above 9. The nervous systems main components are what? Explain what LTP does to enhance communication between two neurons, on the postsynaptic end. More receptors, such as AMPA receptors, are added and existing ones are sensitized via phosphorylation. Dendritic spine number and surface area is increased as well. Explain what LTP does to enhance communication between two neurons, on the presynaptic end. If the retrograde messenger theory is correct, presynaptic cells participate in the enhancement by increasing the probability of synaptic vesicle release. Please remember the retrograde messenger is theoretical, I just thought it should be included here Critical Thinking: Vision[edit] 1. Explain why you are normally unaware of your blind spot. Stare at a bright light for 10 seconds and then stare at a white sheet of paper. What do you observe and why? You should observe a negative afterimage. What is it that makes things "disappear" when you are staring at them at night, and how do you make them reappear? There are no rods in the fovea, so little light is picked up when you stare directly at the object. Name what rods are sensitive to and also what cones are sensitive to. Rods are more sensitive to lower light levels, but lack color-seeing ability. Cones work in brighter light and perceive color blue, green, red. Explain how Deadly Nightshade works Normally, the parasympathetic nervous system constricts the pupil as needed with acetylcholine. The atropine in nightshade is a competitive agonist on the same receptor as the one that accepts acetylcholine. Hearing[edit] 1. Explain how the pitch of sound is coded. How is the loudness of sound coded? What do the three semicircular canals in the inner ear enable us to do? How do they accomplish this? Each of the three fluid filled canals is on a different plane. Movement is detected on these planes when the fluid inside moves around, vibrating cilia on the cupula which sends it on to the brain. What does the eustachian tube do? What does the eustachian tube have to do with a middle ear infection? The eustachian tube is to keep pressure in the middle ear the same as atmospheric pressure. If the tube is blocked, the gases in the ear will diffuse back into the surrounding tissues and a vacuum will be made. Eventually, this will pull fluid in and if it becomes infected You have an ear infection. What is the advantage of having a oval window? Sound transduced from air to a more dense medium endolymph, in scala media where the organ of cortis is placed would be partially reflected and greatly weakened if not for the ossicular bones that transfer the vibration from membrana tympani trough malleus, incus and stapes to the foramen ovale where it puts the liquids of cochlea in motion. This motion is then transfered trough membrana vestibularis to membrana basilaris, which in turn puts the haircells in motion. This leads to a bending of the stereocills, fastened to membrana tectori, and as a result; a depolarization of the afferent sensory fibre receptor of n. The loss of energy in transduction is partially re-gained by the size of membr. Review Questions[edit] 1. Located under the hardest bone in the body, these control not only hearing but also a sense of gravity and motion: A The incus and the stapes B The pinna and the ear drum C the vestibular nerve and the semi circular canals D The eustachian tube and the stapes 2. The retina does the following; A allows vision in light and dark, using cones and rods B Gives depth perception using binocular vision C Contains the ciliary muscles that control the shape of the lens D Protects and supports the shape of the eye 3. When eating a piece of candy, I will use the following to sense that it is sweet A Fungiform papillae.