

Psychology Packet

State Standards: BH1.a: Individual cognition, perception, and behavior

SS.BH1.a.h

Analyze biological and environmental factors that influence a person's cognition, perception, and behavior.

Explain the interaction of biology and experience (i.e., nature and nurture) and its influence on behavior.

Skills Addressed:

Analysis (explain why & how biological and environmental factors influence behaviors, thinking, and our sense of reality)

Reviewing Material: Neurons, the Brain, memory and cognition, sleep, senses and perception.

Directions:

Complete the assignments in any order following the direction for each. There are additional digital resources listed at the end of this packet to take your learning further. The digital resources are extra!

What's Wrong With This Person?

Directions: Provide a brief explanation that addresses the question or statement at the end of each scenario. This will help to show how the brain impacts behavior and cognition.

1. Liz is a high school tennis player. She started to lose weight rapidly during the season. She couldn't control her emotions and acted out on them, never holding back. She started to have problems sleeping and she was always grouchy. She has always been an excellent student, but is having trouble concentrating on anything for very long. It appears that this could be a classic case of anorexia. New studies are researching the role this part of the brain might play in this eating disorder.
2. Mrs. Johnson took her husband to see a doctor immediately after being in the car with him for one day. He repeatedly ran red lights and drove right past the building he was supposed to drop her off. He had been there several times. Lately, he has had trouble recognizing his colleagues at work. In addition, Mrs. Johnson noticed that when one of his favorite songs came on the radio, he told her to turn off the annoying sound. After many tests, the doctor told Mrs. Johnson her husband had a brain tumor and it already started to spread. Where did the tumor start and what other part has it started to affect?
3. Peter lives in the northern part of Alaska. He is starting to feel like a statistic. Everyone says in the winter when the sun barely rises, that Alaska has the highest depression and suicide rate. The more it snows and remains dark, the more Peter feels down in the dumps. How could the bad weather be affecting Peter's brain?
4. Sasha has tried every diet in the book. Cutting portions has not worked because she finds herself constantly hungry. Her weight gain has been depressing her and her mom has gotten very worried. She also consumes large quantities of water. What part of the brain might be responsible for Sasha's behavior?
5. Mr. Murphy has suffered a stroke and has the following symptoms. If he is given a puzzle to do, he can do it, but will do the same puzzle the next day without showing any signs of having done the puzzle previously. He remembers almost everything prior to the stroke, but nothing since the stroke. What part of Murphy's brain has been damaged by the stroke?
6. Susie has suffered brain damage in an accident. She works in an ice cream shop. Unlike before the accident, when something goes wrong in the store, she has no idea how to resolve the dilemma. Her favorite type of ice cream has always been chocolate chip, yet now she can never decide what flavor she wants to eat on her break. Susie's coworkers have also noticed that she just doesn't seem like her herself. Where did Susie suffer the brain damage?

7. As a result of a surgical procedure, Fred's career as a violinist is over. He finds that he can no longer compose music. When he tries to play, he gets confused because he can't retain what he hears. To top it all off, his manager/girlfriend just dumped him because he was not treating her right. Where did Fred suffer the brain damage?

8. Lately, Mary has not been sleeping well. It seems like she hears everything at night. Even the faintest noises, such as the refrigerator humming and the toilet down the hall flushing, wake her up. If she does fall asleep, she has an awful time getting up. Mary is desperate for some rest. What part of her brain is not functioning efficiently?

Valerie is a dancer. She has been dancing for years, but one day at a late night rehearsal, her partner became tired and accidentally dropped her on her head. Now, Valerie has problems dancing. She knows the correct steps she must make, but she feels as if her legs and arms are numbed and paralyzed. What area of her brain was damaged by her fall?

9. Jon has a very strong fear of spiders. One day while lying in bed, spider fell on his head. Jon quickly jumped out of bed as a result of his fear. However, the spider still managed to bite him. Jon darted toward the door, and within seconds he collapsed to the ground. When his mother rushed into the room to ask what was wrong, he was unable to understand her question. He saw her mouth move, but was unable to make sense of the words. What area(s) of the brain did the poison affect?

10. It is believed that Jim, because of extensive use of drugs, has developed a chemical imbalance in his brain. In past months, his right arm will twitch uncontrollably for 15 minutes at a time. After the twitching stops, he feels extremely weak. These episodes occur several times a day. One day, he was found lying on the floor of his room having a grand mal seizure (his entire body was shaking uncontrollably) and he was completely unaware of everything happening. What area(s) of the brain has this chemical imbalance occurred? What chemical is likely involved?

Practice Multiple Choice Questions on The Brain

1. Jeremy was accidentally struck in the base of his brain by a baseball bat. His heart and breathing stopped immediately. The blow probably struck Jeremy's:

- a. Medulla. b. Amygdala. c. temporal lobe. d. Hippocampus.

2. The ____ directs incoming messages from all of a person's senses except for the sense of ____.

- a. limbic system; sight b. hypothalamus; hearing c. cerebellum; taste d. thalamus; smell

3. Which component of the limbic system plays an essential role in the formation of new memories?

- a. Amygdala b. Hippocampus c. hypothalamus d. thalamus

4. To demonstrate that brain stimulation can make a rat violently aggressive, Professor Brown should electrically stimulate the rat's:

- a. Amygdala. b. Cerebellum. c. medulla. d. reticular formation.

5. The corpus callosum is a band of neural fibers that:

- a. controls the glands and muscles of the internal organs.
b. directs the muscle movements involved in speech.
c. enables the left hemisphere to control the right side of the body.
d. transmits information between the cerebral hemispheres.

6. Michelle had a lobotomy (a surgical technique) in which her entire frontal lobe was removed. Michelle will likely have difficulties in:

- a. her visual processing. c. voluntary movements.
b. planning and judgment. d. registering body sensation.

7. The surgical removal of a large tumor from Allen's occipital lobes results in extensive loss of brain tissue. Allen is most likely to suffer some loss of:

- a. language comprehension. b. muscular coordination. c. speaking ability. d. vision.

8. The current popular idea that some people are right-brained and some are left-brained:

- a. has no basis in psychological research.
b. is an exaggeration of research on hemispheric differences.
c. is completely accurate according to psychological research.
d. makes no sense because the brain is one thing, not divided into two left and right parts.

9. A patient with damage to Broca's area of the brain would probably have difficulty:

- a. expressing thoughts in spoken language.
- b. expressing thoughts in written language.
- c. recognizing a family member's face.
- d. understanding what someone else says.

10. Due to uncontrollable seizures, Michael had his corpus callosum cut. He is being tested at a local university by Dr. Gazzaniga. In the test, Michael is shown a picture of a baseball in his left visual field. Based on studies, which of the following should Michael be able to do?

- a. verbalize that he saw a baseball and write out the word "baseball" with his right hand
- b. not be able to verbalize that he saw a baseball, but be able to write out the word "baseball" with his left hand
- c. verbalize that he saw a baseball and write out the word "baseball" with his left hand
- d. not be able to verbalize that he saw a baseball, but be able to write out the word "baseball" with his right hand

Personality Test

Directions: This is a personality test, it will help you understand why you act the way that you do and how your personality is structured. Please follow the instructions below, scoring and results are on the next page.

In the table below, for each statement 1-50 mark how much you agree with on the scale 1-5, where 1=disagree, 2=slightly disagree, 3=neutral, 4=slightly agree and 5=agree, in the box to the left of it.

Test

Rating	I...	Rating	I...
_____	1. Am the life of the party.	_____	26. Have little to say.
_____	2. Feel little concern for others.	_____	27. Have a soft heart.
_____	3. Am always prepared.	_____	28. Often forget to put things back in their proper place.
_____	4. Get stressed out easily.	_____	29. Get upset easily.
_____	5. Have a rich vocabulary.	_____	30. Do not have a good imagination.
_____	6. Don't talk a lot.	_____	31. Talk to a lot of different people at parties.
_____	7. Am interested in people.	_____	32. Am not really interested in others.
_____	8. Leave my belongings around.	_____	33. Like order.
_____	9. Am relaxed most of the time.	_____	34. Change my mood a lot.
_____	10. Have difficulty understanding abstract ideas.	_____	35. Am quick to understand things.
_____	11. Feel comfortable around people.	_____	36. Don't like to draw attention to myself.
_____	12. Insult people.	_____	37. Take time out for others.
_____	13. Pay attention to details.	_____	38. Shirk my duties.
_____	14. Worry about things.	_____	39. Have frequent mood swings.
_____	15. Have a vivid imagination.	_____	40. Use difficult words.
_____	16. Keep in the background.	_____	41. Don't mind being the center of attention.
_____	17. Sympathize with others' feelings.	_____	42. Feel others' emotions.
_____	18. Make a mess of things.	_____	43. Follow a schedule.
_____	19. Seldom feel blue.	_____	44. Get irritated easily.
_____	20. Am not interested in abstract ideas .	_____	45. Spend time reflecting on things.
_____	21. Start conversations.	_____	46. Am quiet around strangers.

_____ 22. Am not interested in other people's problems. _____ 47. Make people feel at ease.

_____ 23. Get chores done right away. _____ 48. Am exacting in my work.

_____ 24. Am easily disturbed. _____ 49. Often feel blue.

_____ 25. Have excellent ideas. _____ 50. Am full of ideas.

$E = 20 + (1) \text{ ____ } - (6) \text{ ____ } + (11) \text{ ____ } - (16) \text{ ____ } + (21) \text{ ____ } - (26) \text{ ____ } + (31) \text{ ____ } - (36) \text{ ____ } + (41) \text{ ____ } - (46) \text{ ____ } = \text{ ____ }$

$A = 14 - (2) \text{ ____ } + (7) \text{ ____ } - (12) \text{ ____ } + (17) \text{ ____ } - (22) \text{ ____ } + (27) \text{ ____ } - (32) \text{ ____ } + (37) \text{ ____ } + (42) \text{ ____ } + (47) \text{ ____ } = \text{ ____ }$

$C = 14 + (3) \text{ ____ } - (8) \text{ ____ } + (13) \text{ ____ } - (18) \text{ ____ } + (23) \text{ ____ } - (28) \text{ ____ } + (33) \text{ ____ } - (38) \text{ ____ } + (43) \text{ ____ } + (48) \text{ ____ } = \text{ ____ }$

$N = 38 - (4) \text{ ____ } + (9) \text{ ____ } - (14) \text{ ____ } + (19) \text{ ____ } - (24) \text{ ____ } - (29) \text{ ____ } - (34) \text{ ____ } - (39) \text{ ____ } - (44) \text{ ____ } - (49) \text{ ____ } = \text{ ____ }$

$O = 8 + (5) \text{ ____ } - (10) \text{ ____ } + (15) \text{ ____ } - (20) \text{ ____ } + (25) \text{ ____ } - (30) \text{ ____ } + (35) \text{ ____ } + (40) \text{ ____ } + (45) \text{ ____ } + (50) \text{ ____ } = \text{ ____ }$

The scores you calculate should be between zero and forty. Below is a description of each trait.

- Extroversion (E) is the personality trait of seeking fulfillment from sources outside the self or in community. High scorers tend to be very social while low scorers prefer to work on their projects alone.
- Agreeableness (A) reflects much individuals adjust their behavior to suit others. High scorers are typically polite and like people. Low scorers tend to 'tell it like it is'.
- Conscientiousness (C) is the personality trait of being honest and hardworking. High scorers tend to follow rules and prefer clean homes. Low scorers may be messy and cheat others.
- Neuroticism (N) is the personality trait of being emotional.
- Openness to Experience (O) is the personality trait of seeking new experience and intellectual pursuits. High scores may day dream a lot. Low scorers may be very down to earth.

Closure Questions

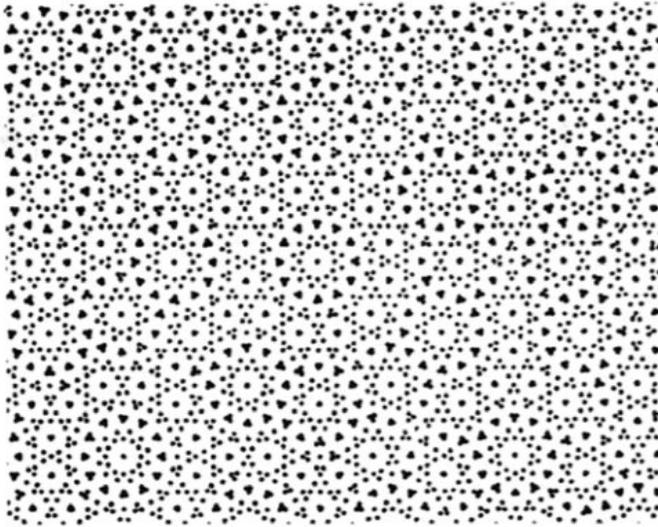
1. After you have found your personality type, how do you now understand how our biological make-up plays a role in how we see ourselves?

2. How do you now understand how our environment (the people and things around you) plays a role in how we see ourselves?

Perceptual Organization

Purpose: Gestalt principles of perceptual organization are easy to demonstrate by looking at the following visual illusions and images that force us to organize material according to the principles of proximity, similarity, closure, and continuity.

Perceptual Organization



1. Stare at the above image for a few minutes. What images/patterns do you see?

The variety of small elements can be organized in a variety of ways. Our organization of elements into various patterns demonstrates that perception is an active, constructive process. What is an advantage to our perception being “active”?

2A, What two words do you see in the image below? (hint, the words have the same amount of letters.) Why do some people see only one word and others see two? What does this say about how the environment shapes our perception?



Name _____ Date _____ Block _____

The Brain Fact or Falsehood

Fact or Falsehood?

Read each statement and circle *T* if you believe it is true and *F* if you believe it is false.

1. If you have damage to your frontal lobe, you are unable to survive. T F
2. Almost all sensory information is first sent to one place in the brain—the thalamus—before it is processed. T F
3. The primary purpose of the wrinkles in the brain's cortex is to allow for more brain tissue to fit in the skull. T F
4. Language is controlled by one big region in the right hemisphere of the brain, meaning right-handed people are better at public speaking. T F
5. Brain surgeons found that splitting the brain in two helped reduce seizures in epilepsy patients. T F

Answer the following questions:

1. There are two false statements above. Identify which are false and explain why they are wrong.
2. Pick one of the four lobes of the brain (Frontal, Temporal, Occipital, and Parietal), and explain how it guides our actions.

Remote Associates Test (RAT)

Directions: This test is designed to help you see creativity. In this test you are presented with three words and asked to find a fourth word which is related to all three. Write this word in the space to the right. (The answers can be asked for by emailing your teacher.)

For example, what word do you think is related to these three?

paint doll cat

The answer in this case is “house”: house paint, doll house, and house cat.

1. call pay line 1 _____
2. end burning blue 2 _____
3. man hot sure 3 _____
4. stick hair ball 4 _____
5. blue cake cottage 5 _____
6. man wheel high 6 _____
7. motion poke down 7 _____
8. stool powder ball 8 _____
9. line birthday surprise 9 _____
10. wood liquor luck 10 _____
11. house village golf 11 _____
12. plan show walker 12 _____
13. key wall precious 13 _____
14. bell iron tender 14 _____
15. water pen soda 15 _____
16. base snow dance 16 _____
17. steady cart slow 17 _____

18. up book charge 18 _____
19. tin writer my 19 _____
20. leg arm person 20 _____
21. weight pipe pencil 21 _____
22. spin tip shape 22 _____
23. sharp thumb tie 23 _____
24. out band night 24 _____
25. cool house fat 25 _____
26. back short light 26 _____
27. man order air 27 _____
28. bath up gum 28 _____
29. ball out jack 29 _____
30. up deep rear 30 _____

Name _____

Date _____

Block _____

An At-Home Short-Term Memory Experiment

In the following demonstration, look at the list of words below for two minutes. Memorize as many words as you can in this amount of time. Next, turn off your computer monitor (or turn your paper over) and get out another sheet of paper. Give yourself two minutes to write down as many words from the list as you can.

Nine	Swap	Cell	Ring	Lust
Plugs	Lamp	Apple	Table	Sway
Army	Bank	Fire	Hold	Worm
Clock	Horse	Color	Baby	Sword
Desk	Hold	Find	Bird	Rock

Checking Your Results

How many words did you get correct? _____

Despite having two minutes to memorize the words, you may find it surprisingly difficult to later recall even a handful of words.

This experiment demonstrates some of the limitations of short-term memory. According to researcher George A. Miller, the typical storage capacity for short-term memory is seven plus or minus two items. However, memory rehearsal strategies, such as chunking, can significantly increase memorization and recall.

Now try this. Use those words in a story. Don't write the story, just repeat the fictional story in your head.

Now, how many words can you recall? _____

You should have been able to recall more words than you did the first time?

What does this second strategy tell us about our memory capacity?

Optical Illusions, Our Brain and Perception



Look carefully at the Hermann Grid. Notice how the gray dots in the center of each intersection seem to appear and fade out. Those dots are not really present. That's our brain interpreting visual stimuli.

Read the following web article published by ABC News and answer the questions at the end.

Oct. 13, 2009— -- Look at an optical illusion and you may think you're seeing things -- such as a curved line that's actually straight, or a moving object that's standing still. You wonder if your [eyes](#) are playing tricks on you.

It's not your eyes. An illusion is proof that you don't always see what you think you do -- because of the way your brain and your entire visual system perceive and interpret an image.

Visual illusions occur due to properties of the visual areas of the brain as they receive and process information. In other words, your perception of an illusion has more to do with how your brain works -- and less to do with the optics of your eye.

An illusion is "a mismatch between the immediate visual impression and the actual properties of the object," said Michael Bach, a vision scientist and professor of neurobiophysics at the University of Freiburg Eye Hospital in Freiburg, Germany, who studies illusions and has a [large collection of them on a Web site](#).

Everything that enters the senses needs to be interpreted through the brain -- and these interpretations occasionally go wrong, Bach told ABCNews.com. Illusions, he said, may serve as a test bed to determine whether scientists understand vision

Do Dreams Affect How Well We Sleep?

Directions: Read the short article and answer the following questions in the space

(This content was created by the National Sleep Foundation)

Whether you remember them or not, dreams are a normal part of sleep. Everyone dreams for a total of about two hours per night, and dreams can occur during any stage of sleep, although they're most vivid during the REM phase. If you've ever woken up from a happy dream feeling relaxed and rested—or a scary one feeling on edge—you might have wondered whether the content of your shut-eye reveries can make a difference in your overall sleep quality. Here's what's really going on:

Scary Dreams Linger into the Next Day

Dreams can be positive or negative, and there's no question that nightmares have ramifications that last even after you wake up. Falling back asleep after awakening from a nightmare is tough, and those scary images can affect your mood and behavior the next day, causing the equivalent of a bad-dream hangover.

Dreams Don't Change Sleep Structure

Despite how it may feel, though, disturbing dreams don't always have a significant effect on your sleep architecture, meaning they won't necessarily change how much time you spend in the different stages of sleep or the number of times you awaken. What they can change: How long it takes to fall asleep at night and how challenging it is for your body to switch between non-REM and REM stages of sleep, which may leave you feeling less rested.

Does Good Sleep Equal Happy Dreams?

The relationship between dream quality and sleep quality could be likened to the old chicken-and-egg scenario: No one is sure which comes first. Research shows that good sleepers often describe their dreams as being more pleasant and joyful, while people who suffer from insomnia tend to have fewer positive emotions associated with their dreams, but whether or not a happy or sad dream means you'll sleep better or worse still isn't clear.

Dreams Reflect Reality

Dream content often relates back to what's happening in your waking life. If you're experiencing low stress and plenty of satisfaction in your day-to-day life, you may have more positive dreams. By contrast, if you're depressed or anxious during the day, you may have more unpleasant dreams and compromised sleep quality at night.

The good news is that while you cannot control your dreams directly, you can work on improving your state of mind during the day. This, in turn, may help improve the quality of your dreams—and perhaps sleep—at night.

Name _____ Date _____ Block _____

How Does Nature vs. Nurture Affect Your Child?

Directions: Read the short article below and complete the prompt that follows it. (Source: Psychology Today)

What is Nature vs. Nurture?

Let's take a look at what nature and nurture are before we start looking at which one is going to have the most impact on your child. Nature is the way that your child is born. It looks at things like their genetic makeup and the function of their brain. These are things that you and they have no control over because it's formed in them. This means things like green eyes and blonde hair, but it also means things like any special needs or even whether they seem like they're happy or sad. No one knows why these things are, but the child is just 'born that way.'

Nurture looks at the things that you do, and others do when it comes to raising your child. Things in the environment that affect the way your child is raised are going to reflect the nurture component. The specific culture that you bring your child up in is going to shape them differently from a child who is raised in a different culture. This includes the way you interact with your child or where they go to school. The friends they have, the teachers they have, all of these things affect the nurture of your child.

What Does More?

The great debate is what has the biggest influence on any given child? Does their nature win out and the child will turn out a certain way no matter what kind of influence is put on them from the outside? Or does their nurture win out and the child could turn out differently based on a different environment no matter what their genetics and their internal aspects might say? No one seems to know for sure, but it has sparked a debate amongst many different psychologists who are looking for the answers.

The Argument for Nature

Many believe that nature always wins out in the end, and no matter what you do, there are things about your child that just will not change. Just like you can't change their eye color from green to blue (at least not permanently), you can't change a child who is intrinsically happy all the time for no apparent reason to make them different. You can't take a child who has inherited anger problems and make them less angry or violent, even if you take their stressors away.

These individuals tend to look at psychopaths and say that it doesn't matter how they were raised, there was something in them that just couldn't be changed. Some famous serial killers have come out of the worst of the worst situations, but even more of them have come out of completely normal households that never understood the strange behaviors that their sons and daughters were committing and even did everything they possibly could to change them.

Nature believers say that there was absolutely nothing that those parents could have done to prevent their child from developing the way that they did. Even the ones who seemed to do everything right and always treated their child very well couldn't stop the child from becoming a killer. It was just built into their nature, and nothing about the nurture around them was going to stop it from happening. It makes a strong case, but there are others as well.

The Argument for Nurture

On the other hand, some say that the nurture of a child will always win out. They say that there are always things that could be done differently and that can change the outcome for a child, if you let it. These individuals have their case studies and their examples to take a look at as well. This is why it's difficult to tell who is actually in the right when it comes to this debate.

Those who argue for nurture say that some children enter into the foster system or the adoption system and seem to be headed down the wrong track, but end up with a completely new family and seem to turn their life around

entirely. They look at children who are doing well in school and have excellent families backing them up who suddenly make new friends and veer off in an entirely different direction.

Nurture believers say that the influence of outside forces can sidetrack absolutely anyone. A child who seems to be extremely bright but makes the wrong friends could go down a completely different path. A child who seems not to care about anything at all around them could get a new family or a new school and suddenly be on the path to amazing things. They look at a range of different individuals who have gone from either path to the next as their examples.

Prompt:

Choose which argument you agree with more, nature or nurture. Identify AND explain three pieces of evidence that supports your argument choice. Use the space below to write your answer.

DRINKING SODA AS AN ADOLESCENT MAY DAMAGE MEMORY

In 2013, the average American drank about eight 12-ounce cans of soda per week. Soda also has high amounts of sugar, which can lead to many health issues. **As you read this article, think about the following: what effect does sugar have on our memory?**

(Source: Newsweek 2014)

When adolescent rats were fed liquid with sugar concentrations similar to common soft drinks, they were less able to perform tasks that required spatial memory.

"We looked at markers of inflammation in the hippocampus, which is responsible for the memory process, and found increased markers of inflammation," Scott Kanoski, the lead author of the study and a behavioral neuroscientist at the University of Southern California, told Newsweek. He explained that the amount of sugar the rats drank would probably be above the average amount human adolescents would consume, but "certainly not an outrageous amount."

Studies have linked eating sugar and carbohydrates a raft of maladies, like obesity and diabetes, as well as one which linked it to reduced brain function in the elderly. But this study isolated sugar as consumed specifically in a beverage, and focused on adolescents, whose hippocampus is still developing.

"[O]ur findings reveal that consuming sugar-sweetened drinks is also interfering with our brain's ability to function normally and remember critical information about our environment, at least when consumed in excess before adulthood," Kanoski explained in a statement. The full study is currently under peer review and is expected to be published within the next few months.

Closure Question:

Many cities and states are considering passing a soda tax, which would make sugary drinks (e.g., Coke, Pepsi) more expensive for people to buy. Do you think this is a good idea? Why or why not?

Operant Conditioning

qr.go.page.link/JzdH8

Name _____

Block _____



Directions: Refer to the attached article and or video to inform your understanding of Operant Conditioning.

For each incident describe the type of operant conditioning taking place: Positive Reinforcement, Negative Reinforcement, Negative Punishment or Positive Punishment.

Then predict what impact the conditioning will have - will it lead to a good or poor outcome, and why?

1. A mother and her little boy go to the grocery store. The little boy wants a candy bar, but the mother says, "no".
The little boy then throws a temper tantrum, and the mother decides to buy the candy in order to shut her son up.

2. It is observed that there are far too many tardy students at Heritage High School. In order to reduce this a new program is started. Any student who goes the entire day without a tardy is entered into a daily lottery. The winner receives a \$50 gift card.

3. The principal of Wesley High School is stressed out over the violent incidents that repeatedly occur at school. The principal decides to use alcohol as a way of forgetting these troubles.

4. The police department is fed up with motorists speeding down Monroe Dr. They begin issuing citations to anyone going more than 2 miles over the speed limit in an effort to get people to slow down.

5. A parent is distressed at his son's behavior at school. The child is constantly being referred to the office for his disruptive and disrespectful behavior. The parent then promises the child \$20 for every week he goes without a discipline referral, and \$5 for weeks when he only gets one.

6. A parent is determined for his children to do well in school, so they can have more opportunity than he did. For every grade his children receive on a report card, other than an "A", the child is grounded for a week.

Operant conditioning is a method of learning that occurs through rewards and punishments for behavior. Through operant conditioning, an association is made between a behavior and a consequence for that behavior.¹

For example, when a lab rat presses a blue button, he receives a food pellet as a reward, but when he presses the red button he receives a mild electric shock. As a result, he learns to press the blue button but avoid the red button.

But operant conditioning is not just something that takes place in experimental settings while training lab animals; it also plays a powerful role in everyday learning. Reinforcement and punishment take place almost every day in natural settings as well as in more structured settings such as the classroom or therapy sessions.

The History of Operant Conditioning

Operant conditioning was coined by behaviorist B.F. Skinner. As a behaviorist, Skinner believed that it was not really necessary to look at internal thoughts and motivations in order to explain behavior. Instead, he suggested, we should look only at the external, observable causes of human behavior.

Through the first part of the 20th-century, behaviorism had become a major force within psychology. The ideas of John B. Watson dominated this school of thought early on. Watson focused on the principles of classical conditioning, once famously suggesting that he could take any person regardless of their background and train them to be anything he chose.

Skinner's theory is predicated on operant behavior:

Operant behaviors, Those behaviors under our conscious control. Some may occur spontaneously and others purposely, but it is the consequences of these actions that then influence whether or not they occur again in the future. Our actions on the environment and the consequences of that action make up an important part of the learning process.

Components of Operant Conditioning

There are several key concepts in operant conditioning.

Reinforcement in Operant Conditioning

Reinforcement is any event that strengthens or increases the behavior it follows. There are two kinds of reinforcers:

1. **Positive reinforcers** are favorable events or outcomes that are presented after the behavior. In situations that reflect positive reinforcement, a response or behavior is strengthened by the addition of something, such

as praise or a direct reward. For example, if you do a good job at work and your manager gives you a bonus.

2. **Negative reinforcers** involve the removal of unfavorable events or outcomes after the display of a behavior. In these situations, a response is strengthened by the removal of something considered unpleasant. For example, if your child starts to scream in the middle of the grocery store, but stops once you hand him a treat, you will be more likely to hand him a treat the next time he starts to scream. Your action led to the removal of the unpleasant condition (the child screaming), negatively reinforcing your behavior.

In both of these cases of reinforcement, the behavior increases.

Reinforcement in Conditioning Behavior

Punishment in Operant Conditioning

Punishment is the presentation of an adverse event or outcome that causes a decrease in the behavior it follows. There are two kinds of punishment:

1. **Positive punishment**, sometimes referred to as punishment by application, presents an unfavorable event or outcome in order to weaken the response it follows. Spanking for misbehavior is an example of punishment by application.
2. **Negative punishment**, also known as punishment by removal, occurs when a favorable event or outcome is removed after a behavior occurs. Taking away a child's video game following misbehavior is an example of negative punishment.

Additional Digital Resources for Extra Enrichment:

1. To Sleep, Perchance to Dream: Crash Course Psychology #9
<https://www.youtube.com/watch?v=rMHus-0wFSo>
Watch and summarize what Hank Green, the narrator, has to say about sleep.

2. Remembering and Forgetting: Crash Course Psychology #14
<https://www.youtube.com/watch?v=HVWbrNls-Kw>
How does Hank Green describe how we remember things?

3. Sensation and Perception: Crash Course Psychology #5
<https://www.youtube.com/watch?v=unWnZvXJH2o>
Describe how Hank Green connects sensation and perception.

4. Watch ANY Brain Games episodes and provide a summary of them. These can be watched on Netflix, Hulu, Disney +, and Amazon Prime.

5. Watch "The Teenage Brain Explained"
<https://www.youtube.com/watch?v=hiduiTq1ei8>
Describe the many changes the teenage brain is undergoing.

6. Watch "Brain Memory In Brain Full Documentary 2016 720p"
<https://www.youtube.com/watch?v=b7tv7lqPo4g>
Write about the three most important ideas you learned from this documentary.