



## Pavlov's Dog: Lesson Plan

Topic	
Classical conditioning, a learning process discovered by Russian physiologist Ivan Pavlov, occurs when an environmental stimulus which is <i>not</i> biologically-wired to get a certain response is repeatedly paired with a natural stimulus that <i>is</i> biologically-wired to get a response. After several repetitions of first presenting the environmental stimulus and then the natural stimulus to an animal, that organism will now give a response even when <i>only</i> presented with the environmental stimulus.	
Possible subjects/classes	Time needed
Psychology, Neurobiology, Politics, Government, Economics/Marketing	30-45 minutes
Video link:	
<a href="https://academy4sc.org/topic/pavlovs-dog-experiment-for-whom-the-bell-tolls/">https://academy4sc.org/topic/pavlovs-dog-experiment-for-whom-the-bell-tolls/</a>	
Objective: <i>What will students know/be able to do at the end of class?</i>	
Students will be able to... <ul style="list-style-type: none"><li>• Define unconditioned stimulus, unconditioned response, neutral stimulus, conditioned stimulus, and conditioned response.</li><li>• Explain the separate stages of classical conditioning.</li><li>• Identify real-life situations where classical conditioning is occurring.</li></ul>	
Key Concepts & Vocabulary	
Conditioned, innate, association	
Materials Needed	
Worksheet	
Before you watch	



**Turn & Talk:** Do you think that every person's habits, talents, personality, and likes and dislikes, are simply innate, or are these traits the result of his/her upbringing and environment? Turn to a partner, share your answer and explain your thinking.

#### While you watch

Complete the *Matching Activity* on the Worksheet.

#### After you watch/discussion questions

1. Let's say that you want to train your dog to salivate whenever you clap your hands. Explain the steps of how you might do this – be sure to mention what the unconditioned stimulus, unconditioned response, conditioned stimulus, and conditioned response are!
2. Now you want to train your dog to cower whenever you clap your hands. Explain the steps of how you might do this – be sure to mention what the unconditioned stimulus, unconditioned response, conditioned stimulus, and conditioned response are!
3. What is one possible real-life application of classical conditioning?

#### Activity Ideas

- Work in pairs to design a classical conditioning experiment that could be tested out at home or school.
- Individually complete the Worksheet and discuss answers in small groups or as a class.
- Brainstorm in groups how classical conditioning could be used in order to make the world a better place. Take notes and share ideas with other groups.

#### Sources/places to learn more

1. Bichler, O., et al. "Pavlov's Dog Associative Learning Demonstrated on Synaptic-Like Organic Transistors." *Neural Computation*, vol. 25, no. 2, Sept. 2012, pp. 549–66. *MIT Press Journals*, doi:[10.1162/NECO\\_a\\_00377](https://doi.org/10.1162/NECO_a_00377).
2. Krugman, Herbert E. "Pavlov's Dog and the Future of Consumer Psychology." *Journal of Advertising Research*, 1 Nov. 1994, <https://link.galegroup.com/apps/doc/A16684544/AONE?sid=lms>.



3. Rehman, Ibraheem, et al. "Classical Conditioning." *StatPearls*, StatPearls Publishing, 2019. *PubMed*, <http://www.ncbi.nlm.nih.gov/books/NBK470326/>.
4. Schultz, Wolfram. "Behavioral Theories and the Neurophysiology of Reward." *Annual Review of Psychology*, vol. 57, no. 1, 2006, pp. 87–115. *Annual Reviews*, doi:[10.1146/annurev.psych.56.091103.070229](https://doi.org/10.1146/annurev.psych.56.091103.070229).