



Neural Network

(Let's learn how computers work like our brains)

Introduction and Greetings :

Good afternoon everyone, my name is _____. I'm here with CEAMLS and today we will learn about Neural Networks. Who can tell me what is a neural network?

Student Responses: Listen to feedback.

Explain:

Neural networks are like super smart brains made of computer code! They help computers learn and make decisions, just like how our brains learn from our experience to solve problems and make choices. This video will explain it further. Play Video!

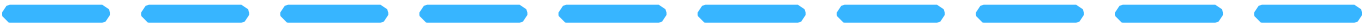


Activity 1. Become a Neural Network

Our network has 5 players, arranged in three layers,(depending on the students available). 1st layer is two. 2nd layer is two. 3rd layer is

one.

- **Input Layer:** (They see the photo). This layer gets two cards. They will write ONE word that best describes the photo on each card. They will then give ONE card to each player in the hidden layer.
- **Hidden Layer:** (They process data and give the best suggestions). They will read the cards received from the input layer. Then synthesize the information to give the output layer the best option. They will give ONE card to the last player.
- **Output layer:** (Interprets the suggestions to predict the likely outcome.) Read the cards given by the hidden layer. Then make an educated guess to deduce what is the picture.
- **Evaluate:** Show the picture. Then discuss. Talk about what went right/wrong.



Activity 2. Test Your Knowledge

Set up monitor. Have computer set to Kahoot game beforehand
PLAY Neural Networks Kahoots for grades 3-5.

If time permits/students want more, play Kahoots for grades 6-8.



Activity 3. Create a physical Neural Network

Visual Aid - Show students the bucket of straws with connectors.

Explain: Straws are bonds. Star-shaped pieces are nodes.

Let students attempt to build a neural network.

Learning Objectives

1. **Understanding Neural Networks:** - Analogy: Your brain is like a puzzle solver with billions of neurons. - Neural networks are digital brains made of layers of virtual neurons.
2. **Examples:** - In gaming: Neural networks predict your next move. In image recognition: They learn to differentiate between cats and

dogs. - In video suggestions: They learn your preferences and suggest similar content.

3. **Learning Ability**:- Neural networks can learn on their own, like humans. - They become smarter over time by processing new information.