



Pizza party patterns game (2+ players)

Type: Icebreaker (15–30 mins)

Activity overview:

In teams, creators explore unsupervised learning concepts (clustering and pattern recognition) through a fun pizza-topping sorting activity. Each team creates their own combinations of pizza toppings (these combinations represent clusters), name their pizzas humorously, then challenge other teams to guess the toppings for each pizza based on the pizza's name.

Materials:

- Printable pizza toppings list
 - Paper for recording pizza names and toppings
 - Pens or pencils
-

Gameplay structure:

Step 1: Decide pizza topping clusters (5–10 mins)

- Teams can be pairs or larger groups.
- Provide each team with a pizza toppings list handout.
- Without giving them any specific instructions, ask teams to create pizzas from the toppings. **You can use each topping only once!**
- In machine learning, these topping groupings would be called 'clusters'.

Step 2: Record clusters (5 mins)

- Teams record their pizza (cluster) names and list the toppings for each pizza.
- Have each team create funny or descriptive names for each of their pizzas (e.g. Dessert Disaster, Veggie Delight, Meat Lover's Dream).



Each name **must** somehow relate to the pizza topping cluster — **no random names!**

- Keep each team's list of topping clusters hidden from the other teams.

Step 3: Cluster guessing game (10 mins)

- Have teams exchange only the names of their pizzas along with **how many** toppings each pizza has (**without the details of what the toppings are**).
- Each team then tries to guess which toppings each pizza has based solely on its name and the number of toppings it is stated as having.
- Teams reveal their guesses, comparing them with the original clusters created by the other teams.

Step 4: Discussion and reflection (5–10 mins)

- Discuss the differences between original clusters and guessed clusters.
- Reflect on how and why creators selected clusters differently based on cluster names alone.
- Discuss how this illustrates unsupervised learning and the challenge of pattern recognition without explicit instructions.

Definitions:

Unsupervised learning is illustrated by the activity, where creators group pizza toppings into **clusters** and then try to guess other teams' clusters based on funny or descriptive names.

The activity highlights the challenge of **pattern recognition** (without explicit instructions or predefined categories), where patterns emerge based on the available data (in this case, the possible pizza toppings and the interpretations of the cluster names).



Example pizza topping clusters:

- **Dessert Disaster:** Chocolate, marshmallows, bananas
- **Veggie Delight:** Spinach, peppers, mushrooms
- **Meat Lover's Dream:** Pepperoni, chicken, sausage
- **Weird Wonders:** Pickles, pineapple, olives

Important rules for clustering

- Ensure each pizza has **at least 3** toppings.
- Encourage participants to think creatively when naming clusters. The aim is **not** to confuse the other team.
- Avoid overly obscure or difficult-to-understand cluster names to keep the activity enjoyable.

Leader tips:

Emphasise that there is no single correct answer, highlighting how unsupervised learning lets creators find patterns differently depending on interpretation.

Pizza toppings:

 Pepperoni	 Pineapple	 Chocolate	 Pickles
 Marshmallows	 Spinach	 Aubergine	 Bananas
 Mushrooms	 Olives	 Chicken	 Strawberries
 Carrots	 Grapes	 Sausage	 Tomatoes
 Spicy chilli	 Sweetcorn	 Anchovies	 Basil
 Onion	 BBQ sauce	 Broccoli	 Tuna
 Cheese	 Garlic	 Avocado	 Honey

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Rules:

- You can use each topping only **once**: it can't be on more than one pizza.
- Your pizza (cluster) names **must** relate to your toppings. **No random names!**