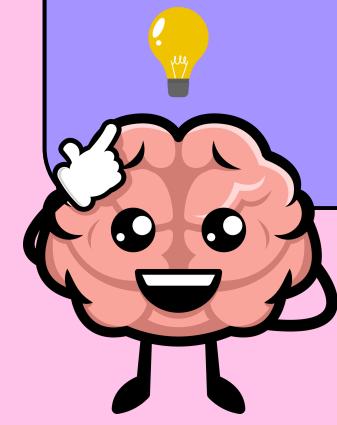
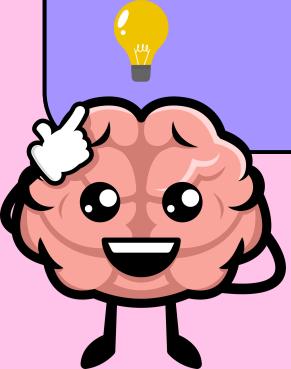


Using Listing Outcomes, Tree Diagrams, and Table or grid of Outcomes.

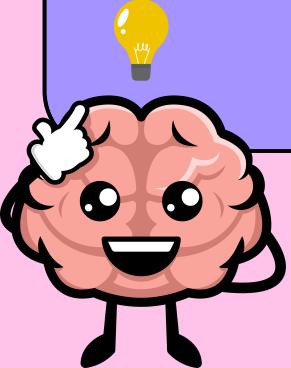


In dealing with probability, every experiment has a set of possible outcomes called a sample space.

A sample space is a list of all the possible outcomes in an experiment or activity. We can identify sample spaces in different ways, such as using lists, tree diagrams, or tables.



1. Listing Outcomes is a method of writing down all possible results in a sample space. It involves simply listing each possible outcome. By listing or counting all the possible outcomes, we can calculate the probability of any specific event happening.

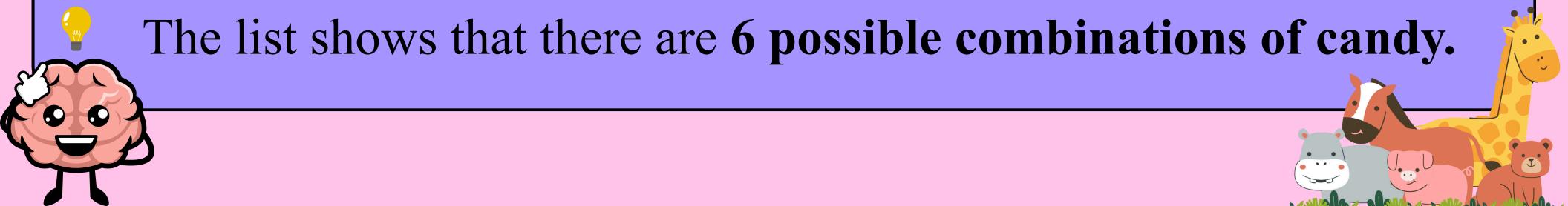


Example 1: Sarah has five types of candies: chocolate, caramel, gummy bears, and lollipops. She wants to eat two types of candy. What are the possible pairs of candies she can choose?

Possible Combinations:

- Chocolate, Caramel
- Chocolate, Gummy bears
- Chocolate, Lollipops
- Caramel, Gummy bears
- Caramel, Lollipops
- Gummy bears, Lollipops

The list shows that there are **6 possible combinations of candy.**



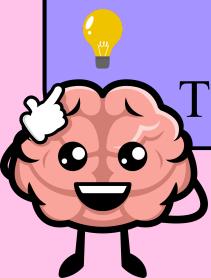
Example 2: Emily goes to a restaurant. She chooses one type of pasta and one type of sauce. The table below shows what the restaurant offers.

Pasta	Sauce
Spaghetti Linguine	Marinara Alfredo Pesto Bolognese

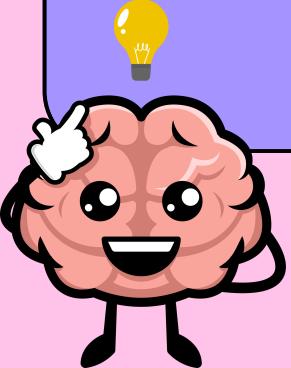
Write down all the possible combinations of drink and snack that Emily can order.

- Spaghetti, Marina
- Spaghetti, Alfredo
- Spaghetti, Pesto
- Spaghetti, Bolognese
- Linguine, Marina
- Linguine, Alfredo
- Linguine, Pesto
- Linguine, Bolognese

The list shows that there are 8 possible combinations.

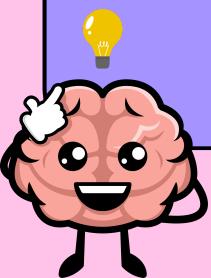


2. A Tree Diagram is a tool or drawing made with "lines" that shows the different possible "paths" for the outcomes, helping to visualize all the possibilities.



Example 1: How many snack combinations can you make with one food choice and one fruit choice?

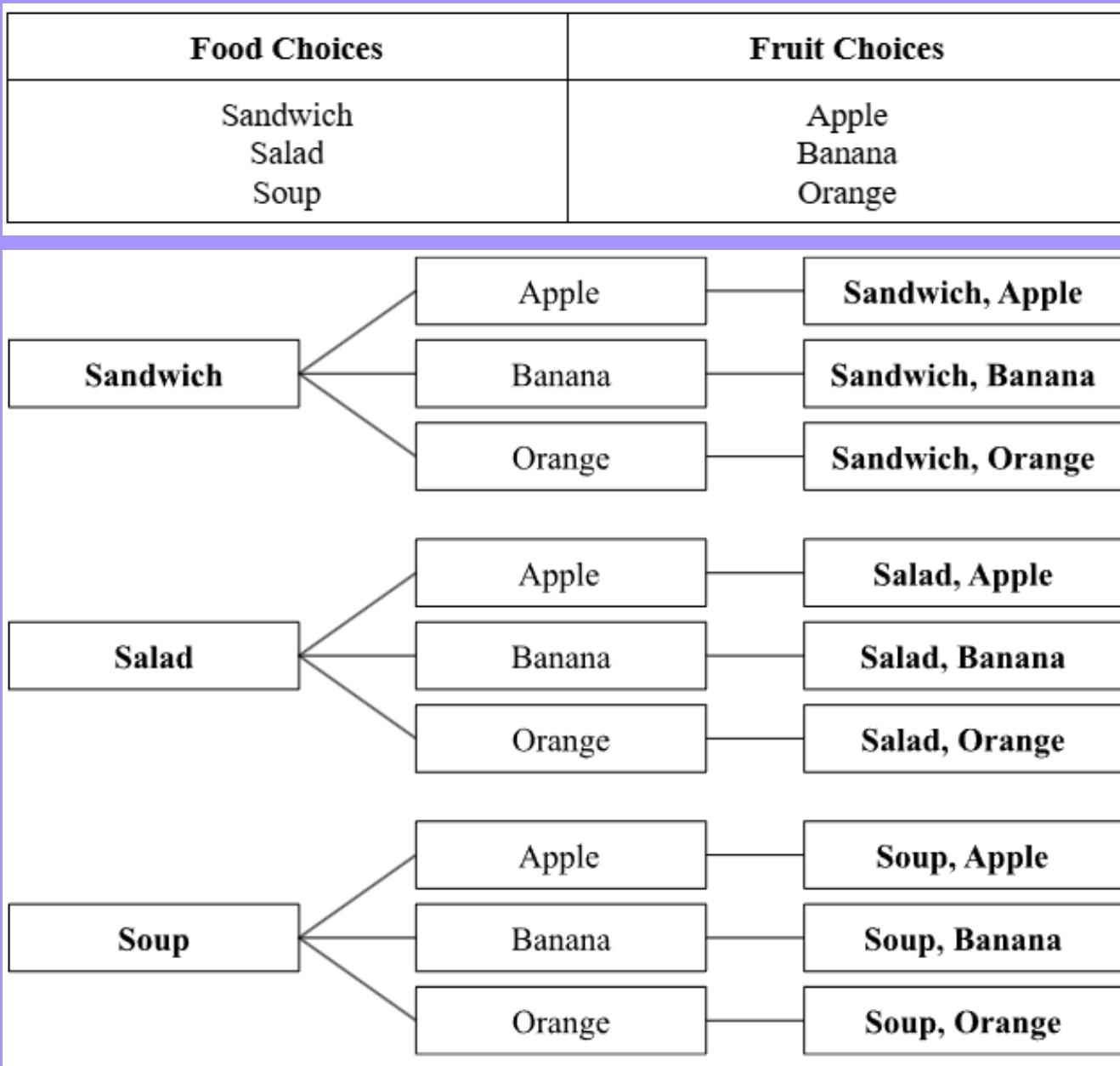
Food Choices	Fruit Choices
Sandwich Salad Soup	Apple Banana Orange



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Solution:

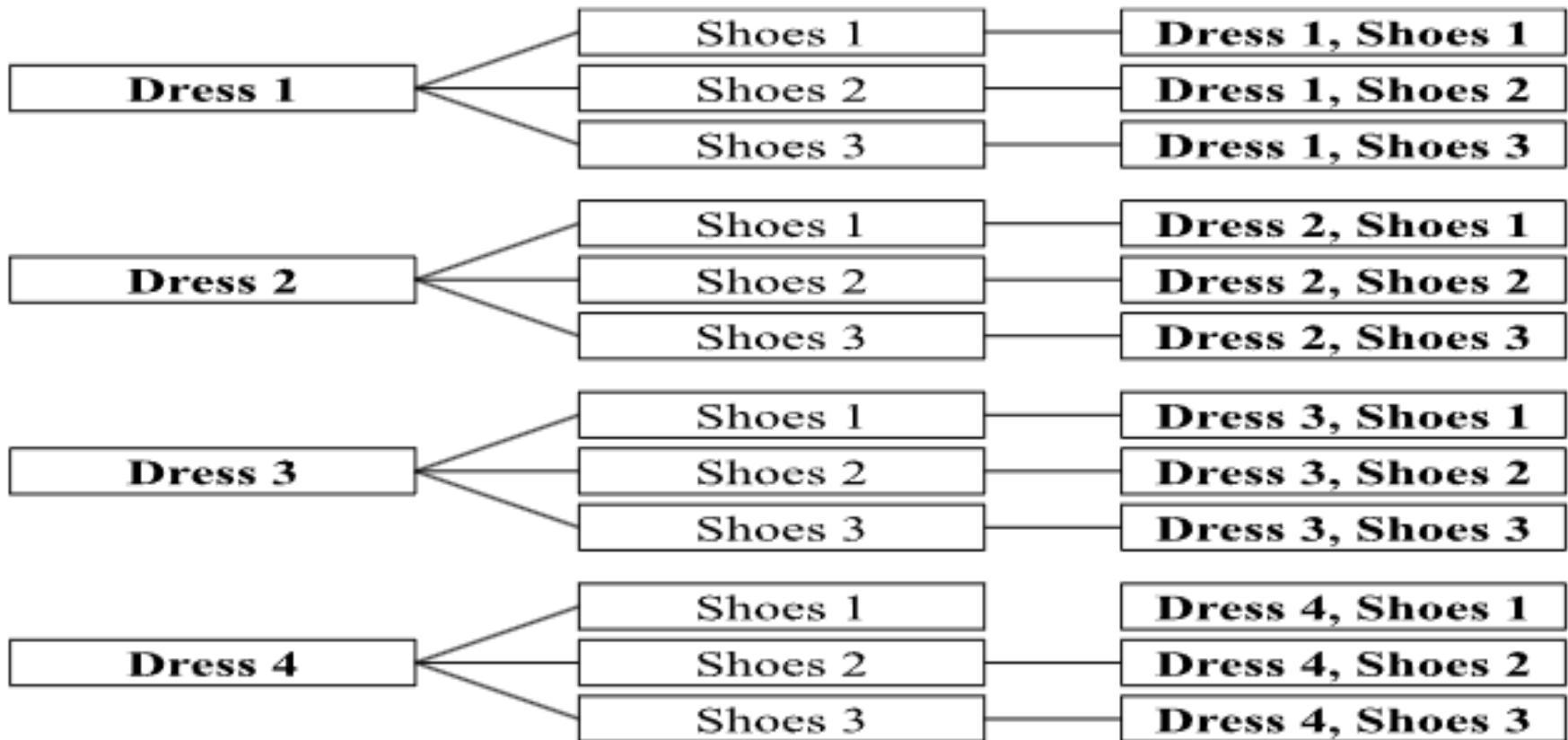


Based on the tree diagram, there are **9 possible outcomes**.



Example 2: Josephine is getting ready for a trip. She has 4 new dresses and 3 pairs of shoes in her closet. How many different combinations of dresses and shoes can she wear?

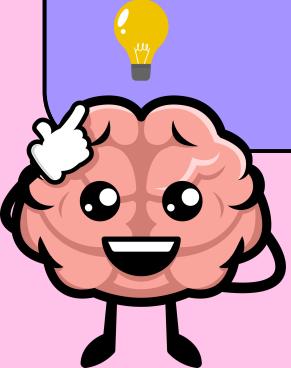
Solution:



Based on the tree diagram, there are **12 possible combinations of dress and shoes.**



3. A Table or Grid of Outcomes is a chart where the first row and the first column list the items that need to be combined.

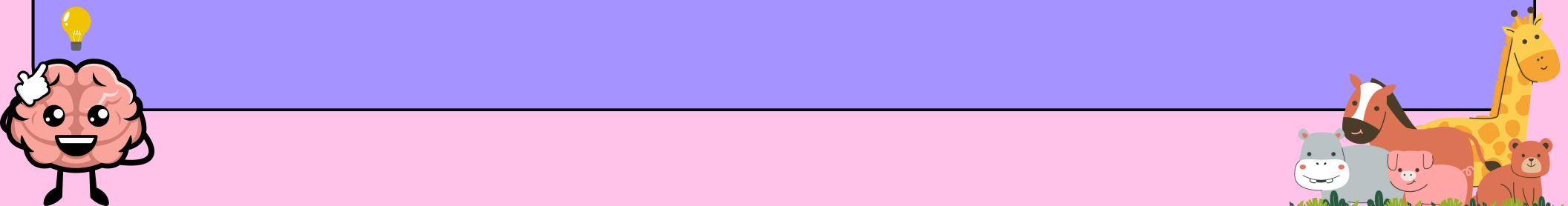


Example 1: A teacher is selecting a student and a volunteer to represent the class. The boy is chosen from Alex, Brian, and Charlie. The girl is chosen from Emma, Grace, Hannah, and Isla.

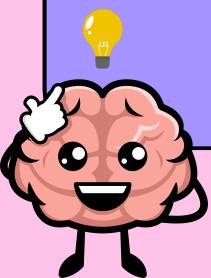
Solution:

Boy \ Girls	Emma	Grace	Hannah	Isla
Alex	Alex, Emma	Alex, Grace	Alex, Hannah	Alex, Isla
Brian	Brian, Emma	Brian, Grace	Brian, Hannah	Brian, Isla
Charlie	Charlie, Emma	Charlie, Grace	Charlie, Hannah	Charlie, Isla

Based on the table or grid above, there are **12 possible outcomes**.



Example 2: Jetty wants to attend a birthday party. She has these outfits in her closet. How many possible combinations of outfits can she wear?



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Solution:

Tops \ Bottoms	Jeans	Purple Skirt	Blue Skirt
Plaid Jacket	Plaid Jacket + Jeans	Plaid Jacket + Purple Skirt	Plaid Jacket + Blue Skirt
Pink Hoodie	Pink Hoodie + Jeans	Pink Hoodie + Purple Skirt	Pink Hoodie + Blue Skirt
Yellow Sweater	Yellow Sweater + Jeans	Yellow Sweater + Purple Skirt	Yellow Sweater + Blue Skirt

Based on the table or grid above, there are **9 possible combinations of outfits that Jetty can wear.**

