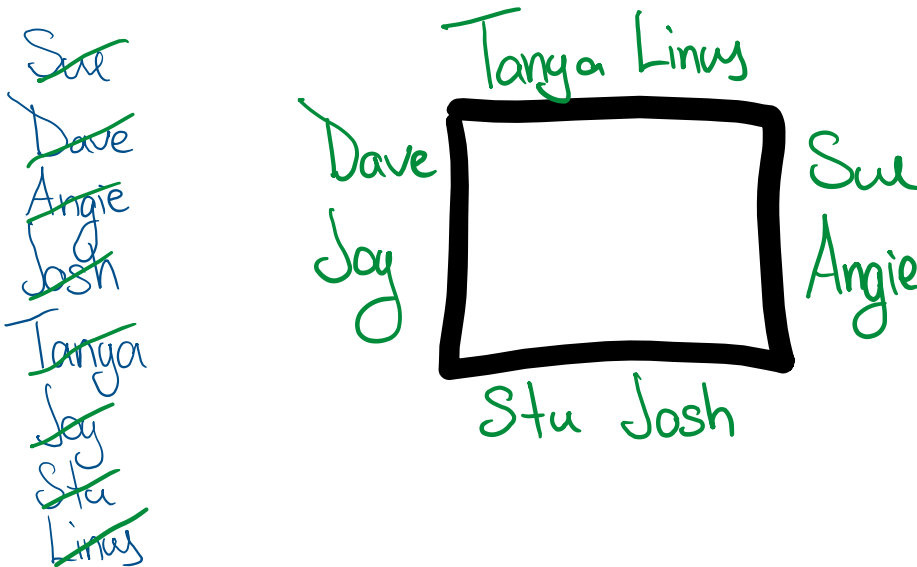


1.6: Reasoning to Solve Problems

Solving problems using inductive reasoning, deductive reasoning and common sense😊

Involves solving a simpler problem, observing patterns, and drawing logical conclusions	Involves using known facts or assumptions in an argument that is then used to draw a logical conclusion
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Ex: Sue signed up for games at her school's fun night. Seven other people were assigned to her group, making up four pairs of partners. The other members of her group were Dave, Angie, Josh, Tanya, Joy, Stu, and Linus. When the games started, Dave and his partner were to the left of Stu. Across from Dave was Sue, who was to the right of Josh. Dave's brother's partner, Tanya, was across from Stu. Joy was not on Stu's right. Name the four pairs of partners.



What type of reasoning was used?

Deductive, used known facts to draw a conclusion.

Ex: Bob, Kurt, and Morty are football players. One is a quarterback, one is a receiver, and one is a kicker. The kicker, who is the shortest of the three, is not married. Bob, who is Kurt's father-in-law, is taller than the receiver. Who plays which position?



Bob can't be receiver
b/c taller than

Kurt = R

Bob = QB

Morty = K

	QB	R	K
Bob	✓	X	X
Kurt	X	✓	X
Morty	X	X	✓

Bob has child → implies marriage

Bob is dad to Kurt's spouse

only kicker option left.

Ex: Use the information and the chart below to determine the record age for each animal.

- a. The sea anemone lives longer than 85 years.
- b. The two-legged animal lives 62 years.
- c. The tortoise lives longer than the elephant and the ostrich.
- d. The goldfish has the shortest life.
- e. The blue whale did not live as long as the ostrich.
- f. The tortoise lives longer than the sea anemone.

	41	45	62	81	90	152
Elephant	X	X	X	✓	X	X
Blue Whale	X	✓	X	X	X	X
Goldfish	✓	X	X	X	X	X
Ostrich	X	X	✓	X	X	X
Sea Anemone	X	X	X	X	✓	X
Tortoise	X	X	X	X	X	✓