



Solve Logic Puzzles

In Lesson 2-3, you used deductive reasoning to analyze the truth values of conditional statements. Now you will learn some methods for diagramming conditional statements to help you solve logic puzzles.

Use with Lesson 2-3

Activity 1

Bonnie, Cally, Daphne, and Fiona own a bird, cat, dog, and fish. No girl has a type of pet that begins with the same letter as her name. Bonnie is allergic to animal fur. Daphne feeds Fiona's bird when Fiona is away. Make a table to determine who owns which animal.

- 1 Since no girl has a type of pet that starts with the same letter as her name, place an X in each box along the diagonal of the table.

	Bird	Cat	Dog	Fish
Bonnie	X			
Cally		X		
Daphne			X	
Fiona				X

- 2 Bonnie cannot have a cat or dog because of her allergy. So she must own the fish, and no other girl can have the fish.

	Bird	Cat	Dog	Fish
Bonnie	X	X	X	✓
Cally		X		X
Daphne			X	X
Fiona				X

- 3 Fiona owns the bird, so place a check in Fiona's row, in the bird column. Place an X in the remaining boxes in the same column and row.

	Bird	Cat	Dog	Fish
Bonnie	X	X	X	✓
Cally	X	X		X
Daphne	X		X	X
Fiona	✓	X	X	X

- 4 Therefore, Daphne owns the cat, and Cally owns the dog.

	Bird	Cat	Dog	Fish
Bonnie	X	X	X	✓
Cally	X	X	✓	X
Daphne	X	✓	X	X
Fiona	✓	X	X	X

Try This

- After figuring out that Fiona owns the bird in Step 3, why can you place an X in every other box in that row and column?
- Ally, Emily, Misha, and Tracy go to a dance with Danny, Frank, Jude, and Kian. Ally and Frank are siblings. Jude and Kian are roommates. Misha does not know Kian. Emily goes with Kian's roommate. Tracy goes with Ally's brother. Who went to the dance with whom?

	Danny	Frank	Jude	Kian
Ally				
Emily				
Misha				
Tracy				