

Instructions

In Perplexors, we have devised a worksheet that is simplicity itself. In our research, we have discovered that the biggest obstacle anyone doing logic problems has to overcome is keeping track of the information given by the clues. Other logic workbooks require the solver to work with or create a matrix and use “X’s” and “O’s” to keep track of information. This works, but we have found that it does not work very well for most children. Instead, we have discovered that if you list all the possibilities in any category and simply cross off the eliminated possibilities as you get them from the clues, you see the information organizing itself in front of your eyes. Suddenly, all is revealed clearly and the solver can concentrate on thinking. When an answer is known for sure, you circle it and cross off that answer everywhere else, and also cross off any remaining possibilities in that particular category. The best way to learn the method is to work one or two puzzles yourself. Get out a pencil and use the “cross out” and “circle” technique on the sample puzzle below.

CAT COUNTRY

Bill, Bob and Bel owned cats with three different names. Their names were Tabby, Flabby and Crabby. The cats wore three different colored collars. Their collars were red, yellow and blue. The cats suffered from three different afflictions: fleas, hairballs and depression. Based on the clues, match the owners with their cat’s names, their collar colors and their afflictions.

THE CLUES

1. Flabby and Crabby were not depressed.
2. Bill and Bob did not own Tabby.
3. The cat in red was depressed.
4. Bob’s cat did not wear blue or have fleas.
5. Flabby had fleas.

Bill	Bob	Bel
Tabby	Tabby	Tabby
Flabby	Flabby	Flabby
Crabby	Crabby	Crabby
red collar	red collar	red collar
yellow collar	yellow collar	yellow collar
blue collar	blue collar	blue collar
fleas	fleas	fleas
hairballs	hairballs	hairballs
depression	depression	depression

Bill	Bob	Bel
Tabby	Tabby	Tabby
Flabby	Flabby	Flabby
Crabby	Crabby	Crabby
red collar	red collar	red collar
yellow collar	yellow collar	yellow collar
blue collar	blue collar	blue collar
fleas	fleas	fleas
hairballs	hairballs	hairballs
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THE CAT COUNTRY SOLUTION

Bill, Bob and Bel owned cats with three different names. Their names were Tabby, Flabby and Crabby. The cats wore three different colored collars. Their collars were red, yellow and blue. The cats suffered from three different afflictions: fleas, hairballs and depression. Based on the clues, match the owners with their cat's names, their collar colors and their afflictions

CLUE #1 is useless until you have done the work on clue #2. Often, when doing logic problems, you have to go back to previous clues.

CLUE #2 allows you to cross off Tabby under both Bill and Bob. This means Tabby must belong to Bel. Circle Tabby under Bel and cross off Flabby and Crabby under Bel. Now we can refer back to clue #1 and we should see that Tabby had to be the cat suffering depression. Circle depression under Bel and cross off fleas and hairballs under Bel. We also cross off depression under Bill and Bob.

CLUE #3 tells us that the cat suffering depression wore red. We know that Bel's cat was depressed, so we circle red under Bel. We cross off yellow and blue under Bel. We cross off red under Bill and Bob.

CLUE #4 tells us to cross off blue and fleas under Bob. After crossing off blue under Bob, we see that yellow is the only remaining possibility under Bob, so we circle it and cross off yellow under Bill, leaving blue to be circled under Bill as the only possible choice. If we look now, we should see that hairballs is the only remaining choice under Bob, so we circle hairballs under Bob. We then cross off hairballs under Bill and circle fleas under Bill by using the process of elimination.

Clue #5 tells us that the cat suffering from fleas was Flabby. We know Bill's cat had fleas so we circle Flabby under Bill and cross off Crabby under Bill. We cross off Flabby under Bob and circle Crabby under Bob to finish the puzzle.

As you can see from the above step-by-step solution of the logic puzzle above, there is an enormous amount of thinking required for even the simplest of puzzles. This is the virtue of logic problems and the reason why our circle and cross out technique is so effective.

1

Three Pirate Race

THE STORY

Three fearsome pirates got into a discussion one day about whose boat was the fastest. Captain Kidd got so tired of hearing them go on and on about their boats that he decided to conduct a boat race among the three pirates. The three pirates were Captain Boatwright, Captain Flash and Captain Shipley. Their ships were named the Thor, the Cyclone and the Viking. Based on the clues, match the pirates with their boats and their order of finish.

THE CLUES

1. The boat that did not finish 2nd or 3rd was piloted by Captain Flash.
2. Captain Boatwright finished ahead of the Thor.
3. Captain Flash finished just in front of the Viking.

Captain Boatwright	Captain Flash	Captain Shipley
Thor	Thor	Thor
Cyclone	Cyclone	Cyclone
Viking	Viking	Viking
1st place	1st place	1st place
2nd place	2nd place	2nd place
3rd place	3rd place	3rd place

2

The Mad Chemist

THE STORY

Mortimer, the mad chemist, developed potions to make people invisible, to grow noses, to turn people green and to shrink brains. He put the potions in a blue bottle, a red bottle, a green jar and a yellow jar, and he named the potions X5, X10, X15 and X17. However, Mortimer forgot to label the bottles and jars and did not know what potion was in which bottles and jars. Based on the clues, match the different potions with the correct jar or bottle and with their correct names.

THE CLUES

1. The invisibility potion was in a bottle.
2. The nose-growing potion was in a jar.
3. The red bottle did not have the turning-green potion or the invisibility potion.
4. The potion in the yellow jar did not grow noses.
5. The number in the name of the potion in the red bottle was exactly twice as large as the number in the name of the potion in the yellow jar.
6. The invisibility potion did not have the largest number in its name.

Invisibility	Nose-growing	Turn-green	Brain-shrinking
blue bottle	blue bottle	blue bottle	blue bottle
red bottle	red bottle	red bottle	red bottle
green jar	green jar	green jar	green jar
yellow jar	yellow jar	yellow jar	yellow jar
X5	X5	X5	X5
X10	X10	X10	X10
X15	X15	X15	X15
X17	X17	X17	X17

3

Rocket Science Test

THE STORY

Melba, Tulla, Bart, Hal and Kirstie received the five highest grades on their rocket science test. They scored 99%, 97%, 95%, 94% and 91%. As a special reward for doing so well, they hoped that their parents would give them each an extravagant present. The gifts they wanted were a private jet, an Olympic-sized swimming pool, one million dollars, a chauffeur-driven limousine and a basketball court. Based on the clues, match the children with their test scores and the presents they wanted.

THE CLUES

1. Melba scored higher than Hal and Tulla.
2. Tulla's score was higher than only one student.
3. Bart scored higher than most of the students, but he did not have the highest score.
4. Melba did not have the highest score.
5. The highest-scoring student wanted a reward that one could ride in.
6. The student with the lowest score wanted a present he could learn to swim in.
7. The student who scored 97% wanted a gift that he could enjoy at 30,000 feet!
8. The reward Melba wanted was not in cash.

Melba	Tulla	Bart	Hal	Kirstie
99%	99%	99%	99%	99%
97%	97%	97%	97%	97%
95%	95%	95%	95%	95%
94%	94%	94%	94%	94%
91%	91%	91%	91%	91%
jet	jet	jet	jet	jet
pool	pool	pool	pool	pool
\$1 million				
limousine	limousine	limousine	limousine	limousine
basketball court				

Birthday Children

THE STORY

Five children all celebrated their birthdays at the same time. There were two boys named Sam and Pat, and three girls named Joan, Constantine and Annette. The presents they wanted were a bit strange, but then, so were the children. They wanted a fruit bat, a xylophone, a living clam, a clarinet and a gumball machine. For their birthday feast they wanted pizza, pork chops, spinach, beets and sauerkraut. Based on the clues, match the birthday children with their gifts and their favorite foods.

THE CLUES

1. No one wanted a present that rhymed with his or her name.
2. The boys did not like music and musical instruments.
3. The girls did not like animals or any living creatures.
4. Joan did not want a gumball machine.
5. The boys liked foods that started with the same letter.
6. Joan and Constantine liked foods that started with the letter "P."
7. The child who wanted a living clam loved sauerkraut.
8. The child who wanted a clarinet disliked pork chops.

Sam	Pat	Joan	Constantine	Annette
fruit bat	fruit bat	fruit bat	fruit bat	fruit bat
xylophone	xylophone	xylophone	xylophone	xylophone
clam	clam	clam	clam	clam
clarinet	clarinet	clarinet	clarinet	clarinet
machine	machine	machine	machine	machine
pizza	pizza	pizza	pizza	pizza
pork chops	pork chops	pork chops	pork chops	pork chops
spinach	spinach	spinach	spinach	spinach
beets	beets	beets	beets	beets
sauerkraut	sauerkraut	sauerkraut	sauerkraut	sauerkraut

Solutions to Puzzles

1. Three Pirate Race

Captain Boatwright	Captain Flash	Captain Shipley
Viking	Cyclone	Thor
2nd place	1st place	3rd place

2. The Mad Chemist

Invisibility	Nose-growing	Turn-green	Brain-shrinking
Potion blue bottle	Potion green jar	Potion yellow jar	Potion red bottle
X15	X17	X5	X10

3. Rocket Science Test

Melba	Tulla	Bart	Hal	Kirstie
95%	94%	97%	91%	99%
basketball court	\$1million	jet	pool	limousine

4. Birthday Children

Sam	Pat	Joan	Constantine	Annette
fruit bat	clam	clarinet	xylophone	machine
spinach	sauerkraut	pizza	pork chops	beets