

# Barriers to Reasoning

- 3- Framing and the Tendency to Avoid Loss  
How an issue is framed can significantly affect decisions and judgments.
- **Examples:**
- If you take chemotherapy, you'll lose your hair. (People will respond cautiously)
- If you take the medication for high blood pressure, you'll be OK. (People will go for it)

# Framing in the consumer world

Be aware of what people you don't know - know about you...

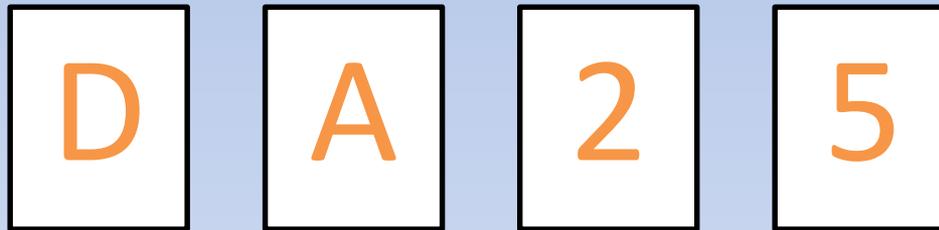


# Barriers to Reasoning

- 4- Confirmation Bias
- Paying attention to information that confirms one's own belief.
- **Examples:**
- A reporter who is writing an article on an important issue may only interview experts that support her or his views on the issue.
- One who believes in astrology will believe when the horoscope is "right" and ignore when it is "wrong."

Each card has a letter on one side and a number on the other. Which two cards should you turn over to decide whether the following statement is true:

"If there is a D on one side, there is always a 5 on the other."



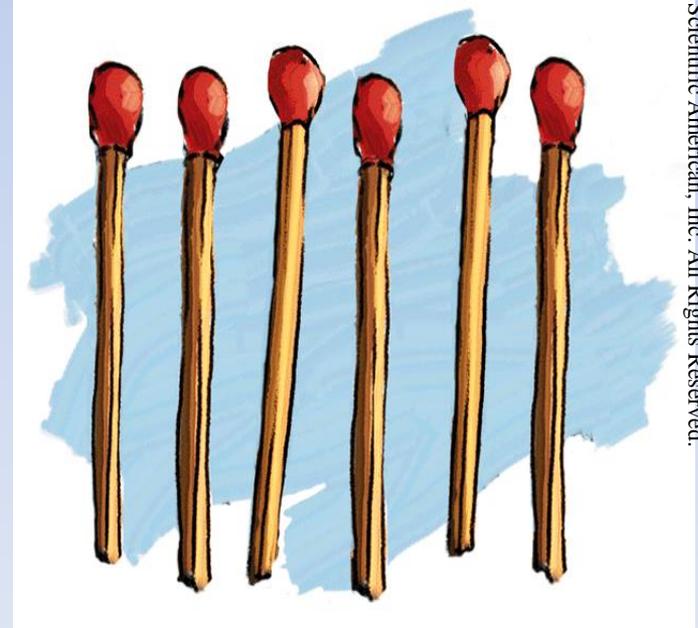
- People tend NOT to turn over the 2 card because of our bias against looking for information that will disprove our beliefs.

# Barriers to Reasoning

- 5- Fixation or Mental set
- An inability to see a problem from a fresh perspective.
- When a person approaches a problem one particular way, usually a way that has been successful in the past. (rigidity.)

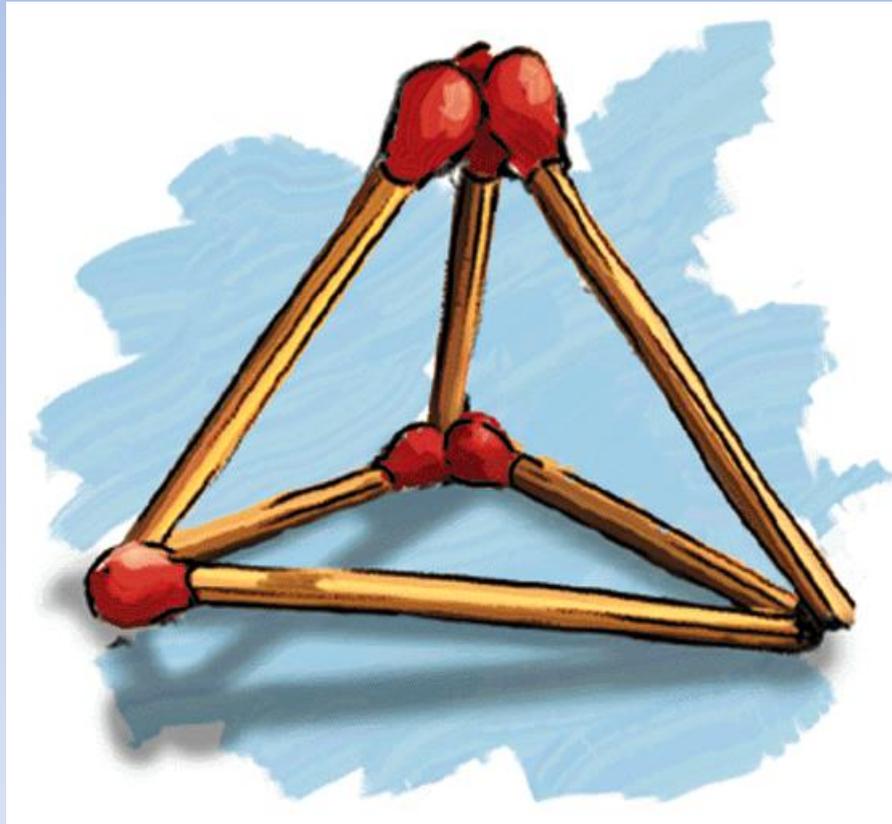
## The Matchstick

**Problem:** How would you arrange six matches to form four equilateral triangles?



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# The Matchstick Problem: Solution



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# The Mind Can Refuse to Make Connections

Q. How do you put a bear in a refrigerator?

A. Open the door, put the bear in, close the door.

Q. How do you put a lion in the refrigerator?

A. Open the door, take out the bear, put the lion in.

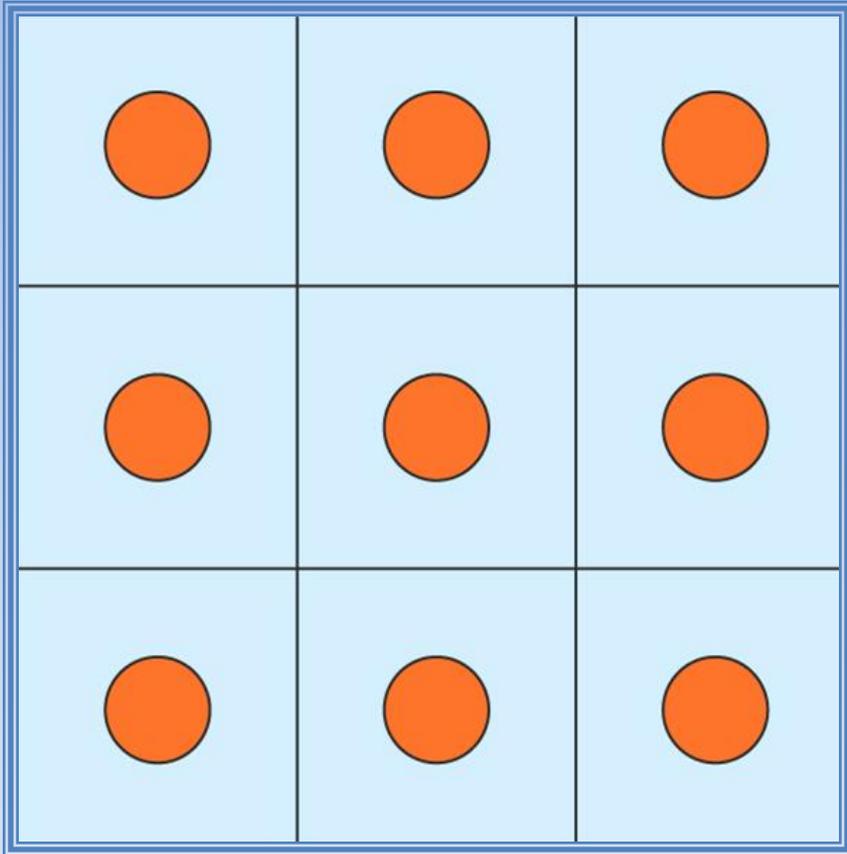
Q. Noah is hosting an animal conference. All animals but one attend. Which one?

A. The lion who is freezing his butt off in the refrigerator

Q. You want to cross a river that is inhabited by crocodiles. How do you do it?

A. Swim across - the crocs are at the conference.

# Mental Set

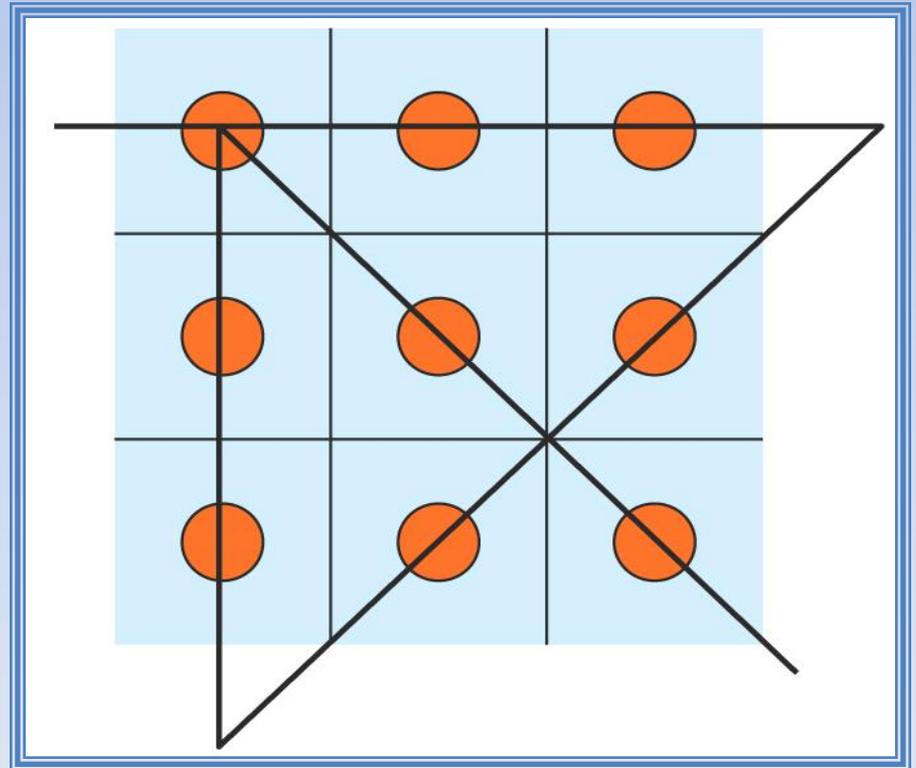


Using no more than four lines, can you connect all nine dots without lifting your pencil from the paper?

# (Mental Sets Continued)

Tendency to fall into established thought patterns. Most people will use solutions or past experience to try to solve new problems ( they think "what worked in the past is bound to work now").

- To overcome **mental sets** you must "think outside the box"—literally!



# Barriers to Reasoning

- 6- Biases Due to Functional Fixation
- Thinking of an object as only functioning in its usual way
- **Examples:**
- Ransacking the house for a screw driver when a dime would have turned the screw.

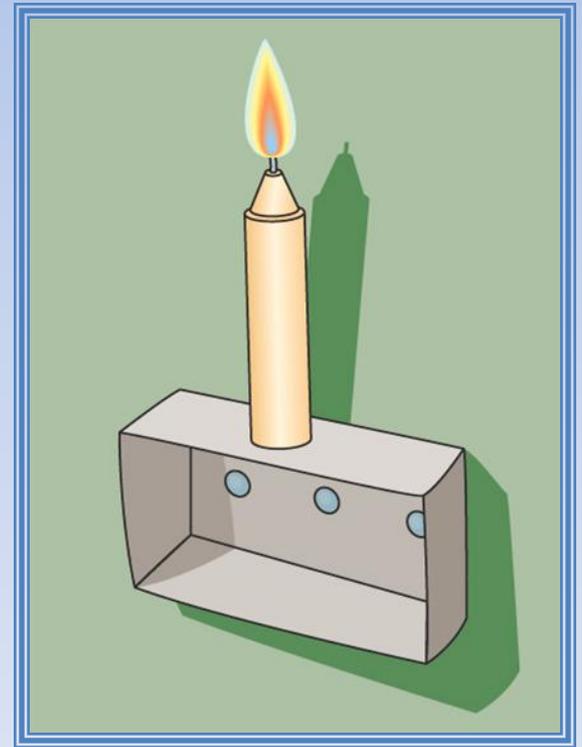


Can you use these supplies to mount the candle on the wall so that it can be lit in a normal way without toppling over?

# Thinking—Five Key Barriers to Problem Solving

(Functional Fixedness Continued)

- To overcome functional fixedness, you must think of the matchbox, tacks, and candle all functioning in new ways.



This person has overcome  
*functional fixedness*



# Barriers to Reasoning

- 7- Overconfidence
- The tendency to overestimate the accuracy of our beliefs and judgments. (one's ability to predict the future.)
- **Examples:**
- I knew you were going to have a divorce.

At a stock market, both the seller and the buyer may be confident about their decisions on a stock.



# Barriers to Reasoning

Premise 1: some communists are golfers

Premise 2: all golfers are Marxists

Conclusion: Some communists are Marxists

Agree?

Premise 1: Americans support free speech

Premise 2: Dictators are not Americans

Conclusion: Dictators do not support free speech

Agree?

Premise 1: Robins have feathers

Premise 2: Chickens are not robins

Conclusion: Chickens do not have feathers

Agree?

- 8- Belief Bias
- Tendency to accept any and all conclusions that fit in with our systems of belief, without challenge or any deep consideration.
- We evaluate the strength of the argument based on the believability of the conclusion.

# Barriers to Reasoning

- 9- Belief Perseverance
- Clinging to one's initial conception after the basis on which they were formed has been discredited.
- **Examples:**
  - You continue smoking even though research shows it is definitely connected to lung cancer.
  - You hear that Amy Gadala is talking smack about you, so you think that Amy is a jerk. Later you find out that she wasn't talking smack about you. You may find it hard to shake your feeling that Amy is a jerk.

# Belief Perseverance

All Cowboy fans who still believe that this is their year are suffering from belief perseverance.





# Insight - the "A-ha! Moment"

- Insight involves a sudden novel realization of a solution to a problem.
  - No real strategy is involved
1. Seemingly all possible problem-solving attempts have been exhausted and are unsuccessful.
  2. Ongoing attempts to solve an apparently unsolvable problem eventually end.
  3. A perfect solution to the problem is suddenly realized in a spontaneous way.

# Insight - the "A-ha! Moment"

What does this phrase mean?

you just me

Often fun, satisfying,  
and one of the reasons  
that people enjoy  
working on word jumbles  
and other mental  
puzzles (causes a  
pleasing excitement)



What does this  
phrase mean?

stood  
well  
view