

Creative and Scientific Thinking

Prepared by Prof. Shereen Taie

CRE252

Information Technology Department

Lecture 8



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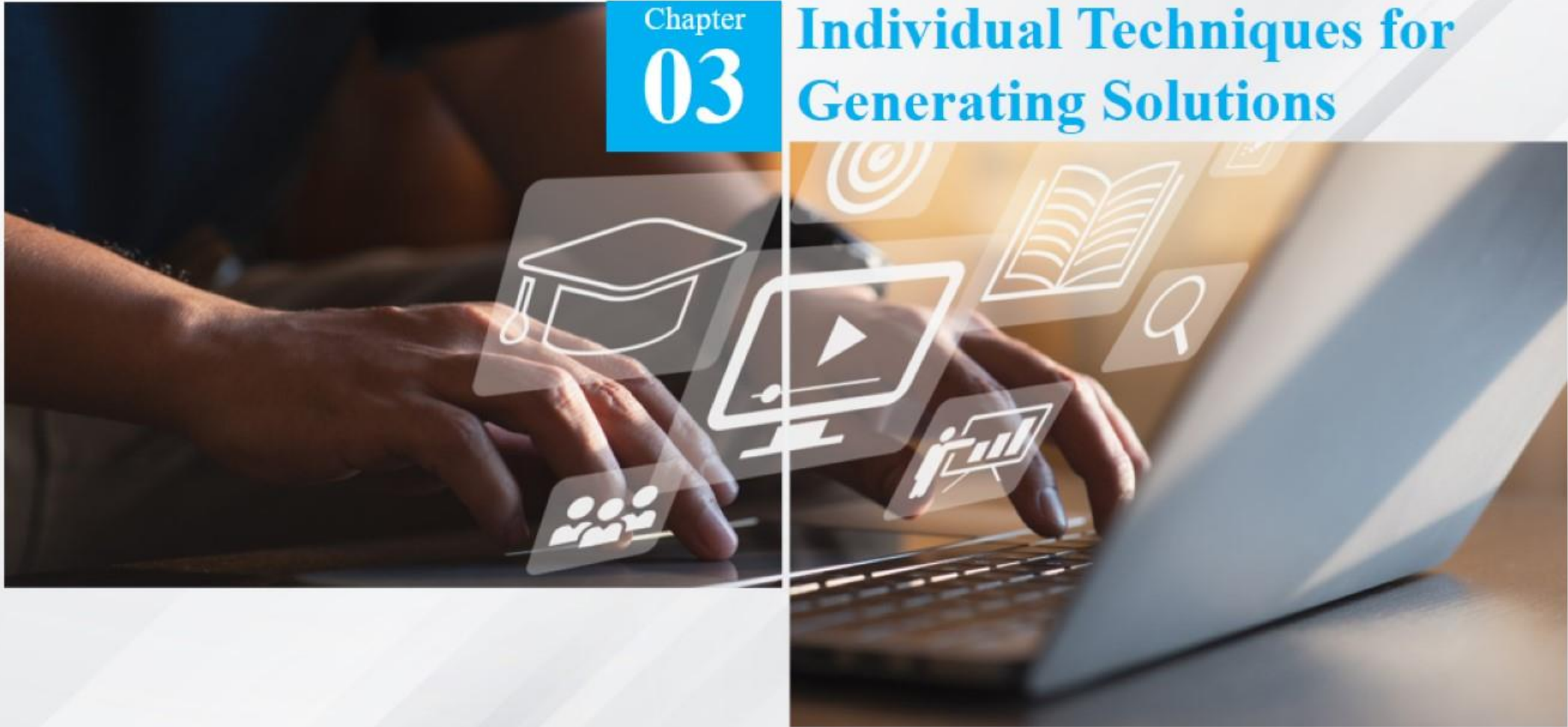
Learning Objectives:

- **Individual Techniques for Generating Solutions**
- **Group Techniques for Generating Solutions**
- **Alternative solutions**

Chapter

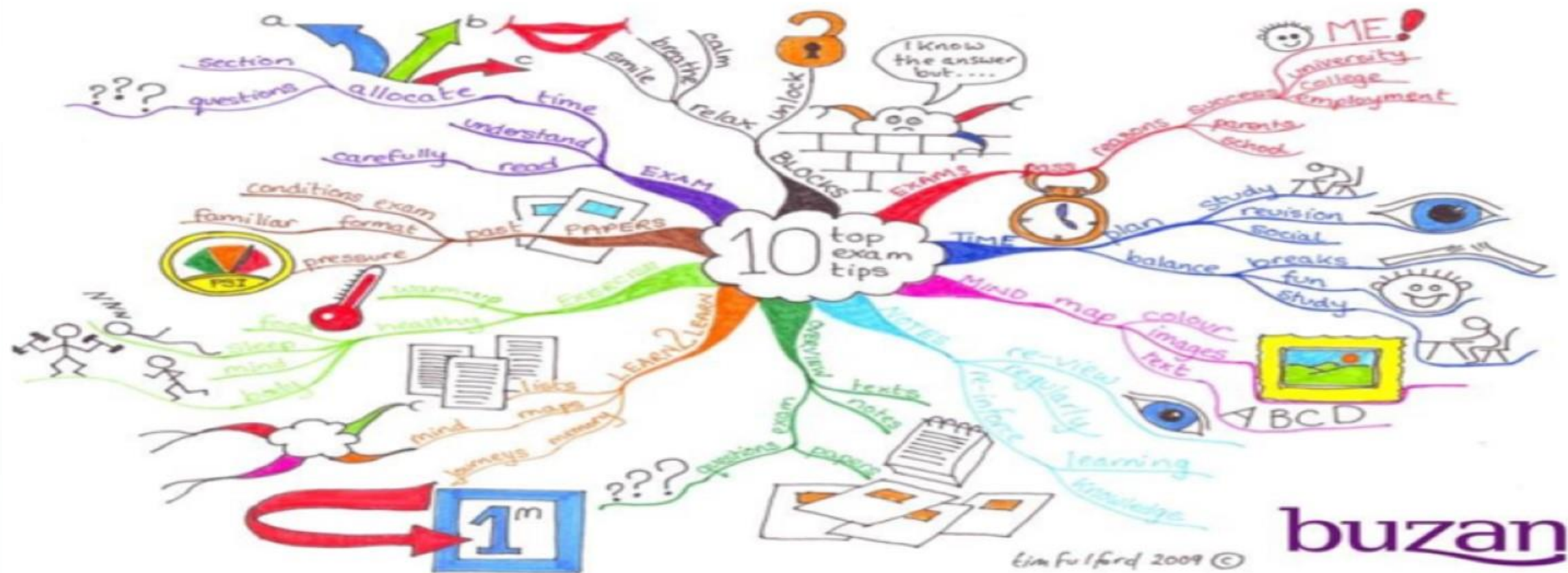
03

Individual Techniques for Generating Solutions

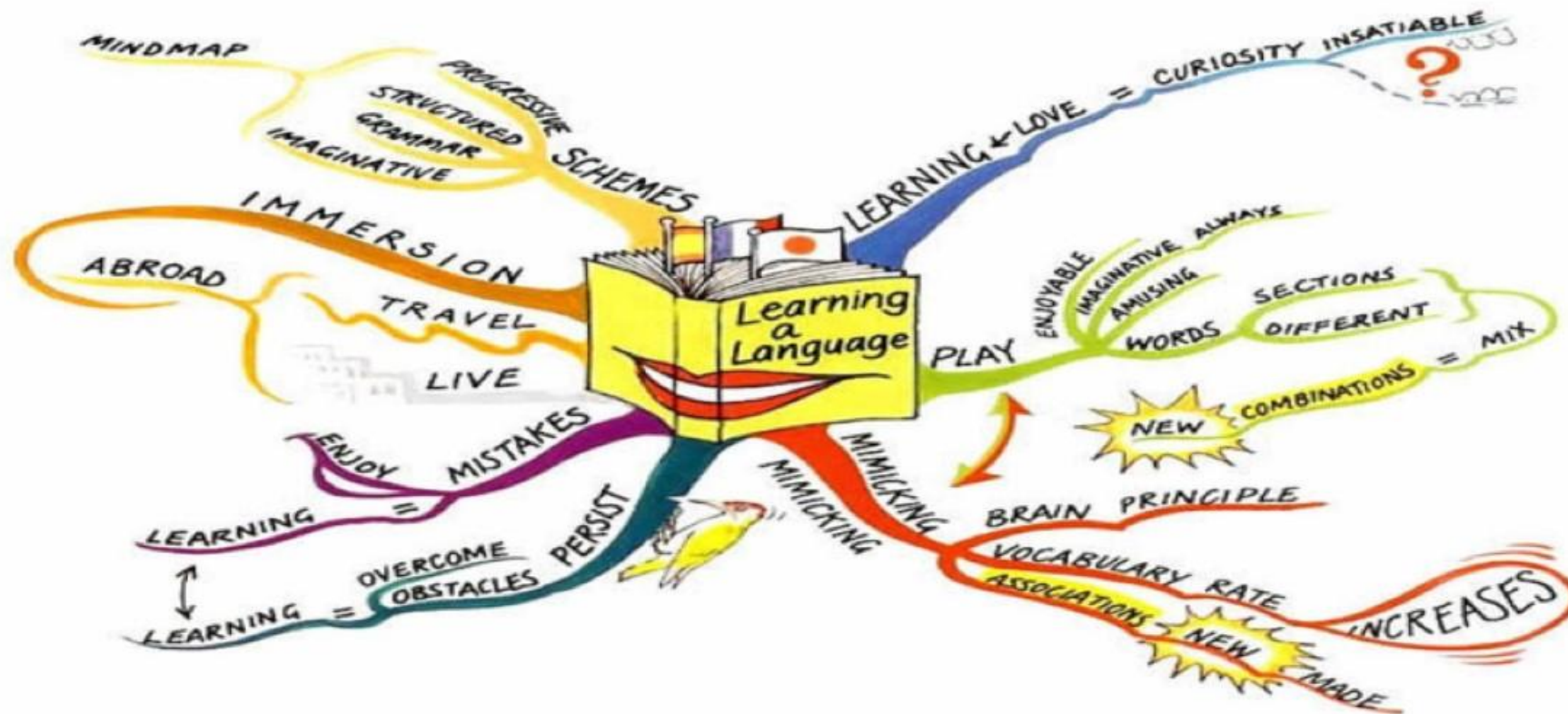


Why Mind Map?

- Organize thoughts when brainstorming
- Effective method of taking notes
- Harnesses the full range of skills– word, image, number, logic, rhythm, color and spatial awareness
- Aid creativity, memory, and specifically the recall of information.







Mind Maps Use:



Lines



Color

Symbols



Images



WORDS

7 Steps: Mind Mapping

1. Start
2. Main idea
3. Use colors throughout
4. Connect main branches

7 Steps: Mind Mapping

5. Curved branches

6. Use one keyword

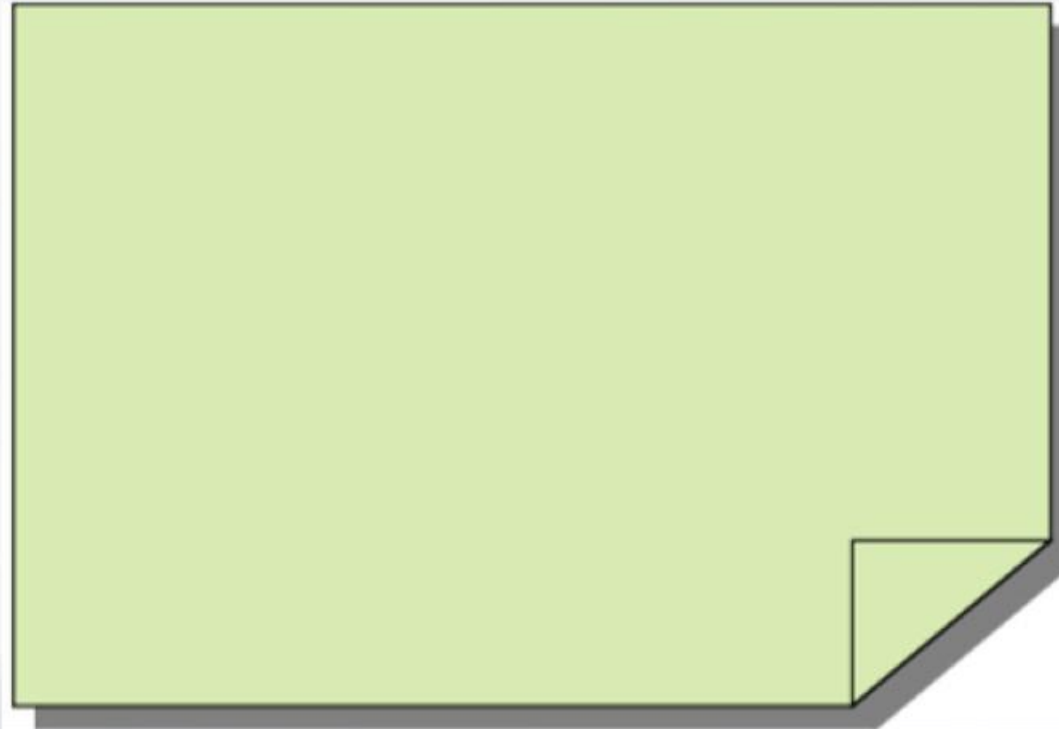
7. Use images

7 Steps: Mind Mapping:

1. Start in the center of a **blank** page turned sideways.
- Give your brain freedom to spread out in all directions

7 Steps: Mind Mapping:

1. Start in the center of a **blank** page turned sideways.



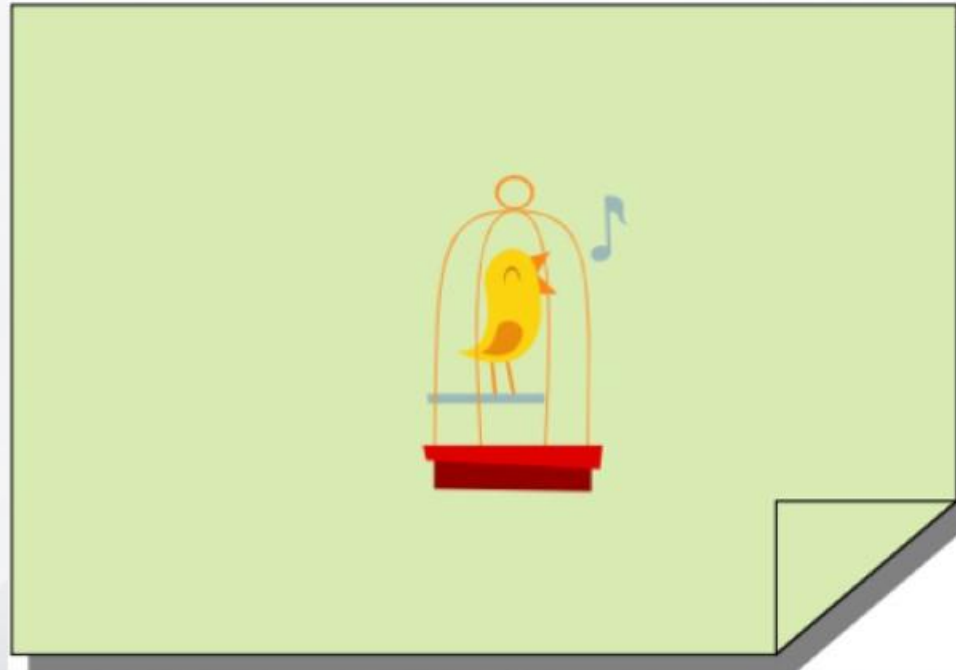
7 Steps: Mind Mapping:

2. Use an image or picture for your **main** idea.

An image helps your imagination. It is more interesting and keeps your focused helping you to concentrate.

7 Steps: Mind Mapping:

2. Use an image or picture for your **main** idea.



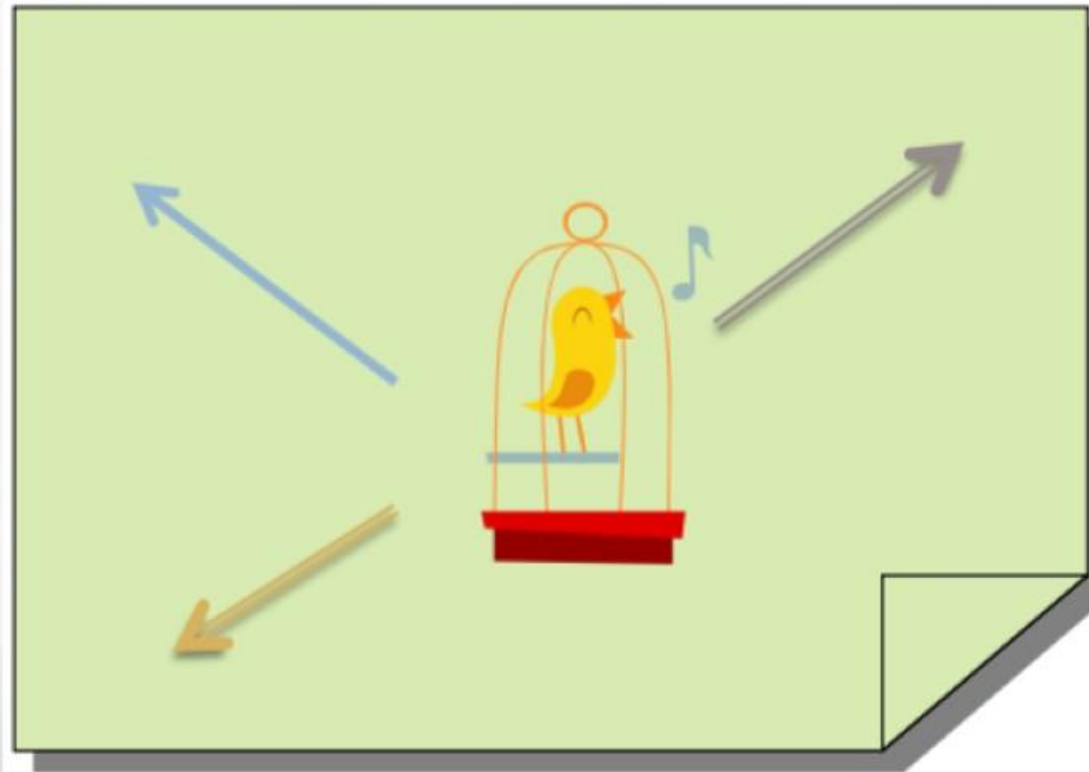
7 Steps: Mind Mapping:

3. Use colors throughout.

- Colors are as exciting to your Brain as are images.
- Color will add energy to your creative thinking.

7 Steps: Mind Mapping:

3. Use colors throughout.



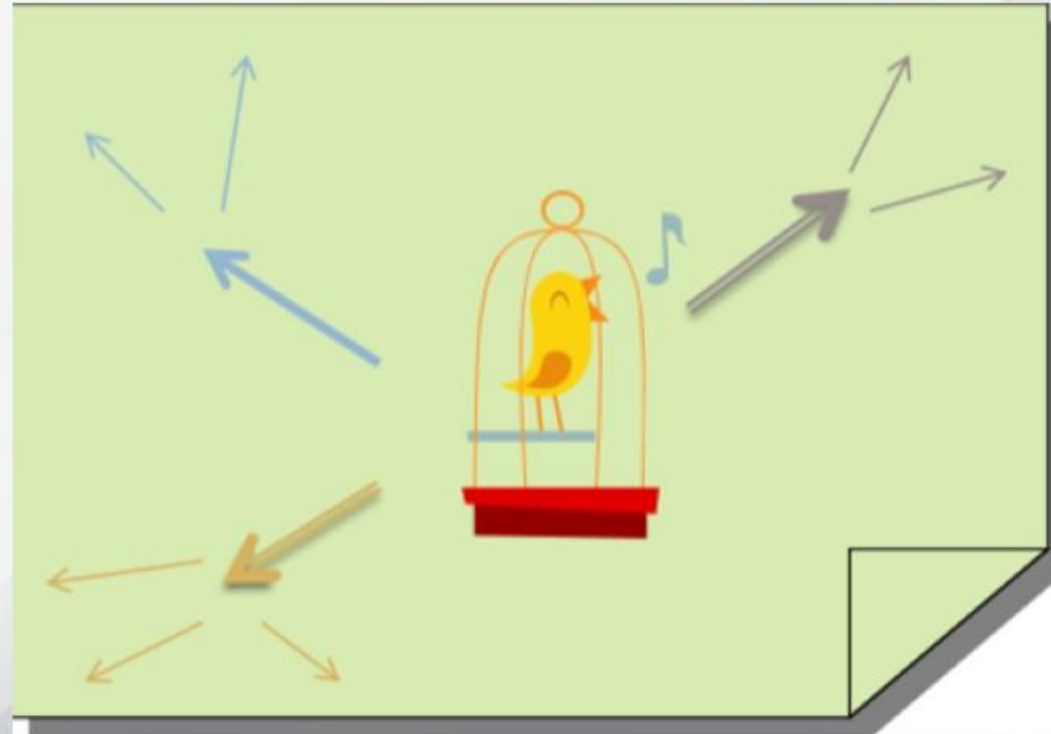
7 Steps: Mind Mapping:

4. Connect your main branches to the central image etc.

- Your brain works by association. It likes to link two (or three, or four) things together.

7 Steps: Mind Mapping:

4. Connect your main branches to the central image etc.



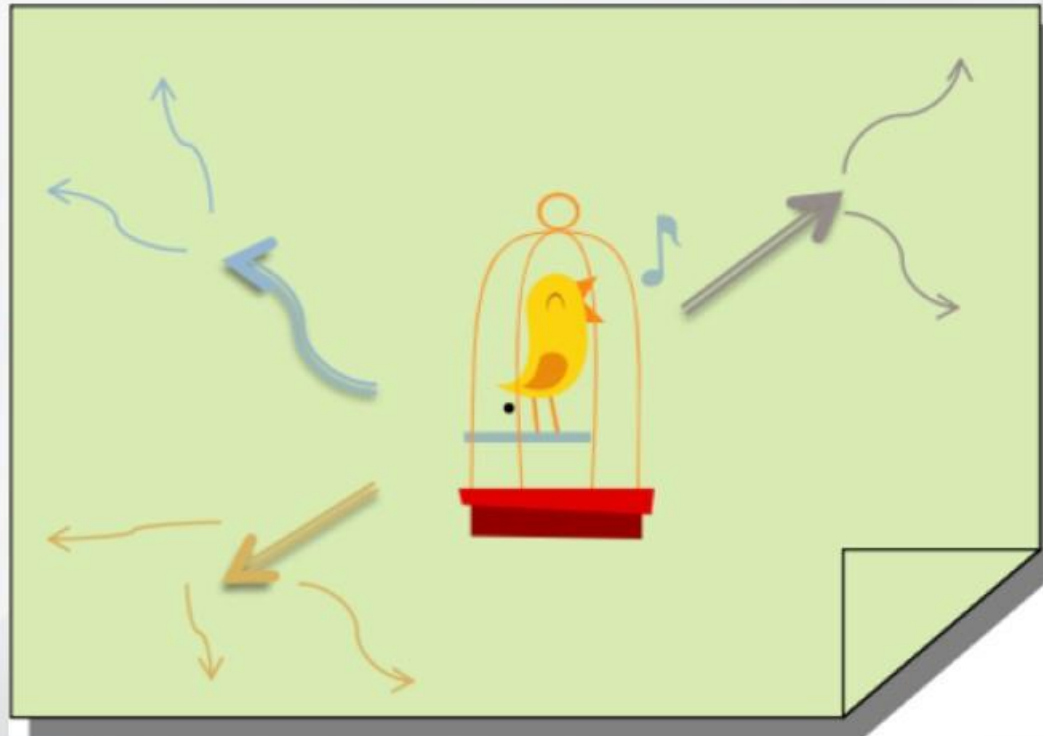
7 Steps: Mind Mapping:

5. Make your branches curved instead of straight lined.

 - Having nothing but straight lines is **boring** to your brain.

7 Steps: Mind Mapping:

5. Make your branches curved instead of straight lined.



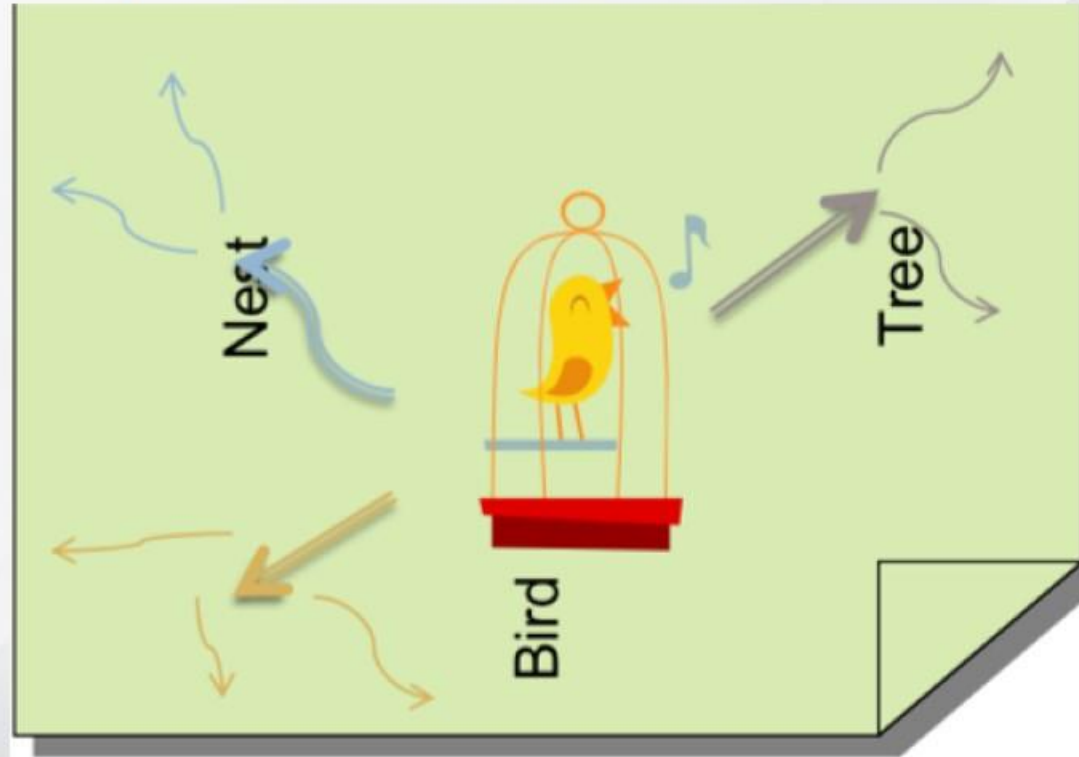
7 Steps: Mind Mapping:

6. Use one key word per line

- Single words give your Mind Map more power and **flexibility**.

7 Steps: Mind Mapping:

6. Use one key word per line



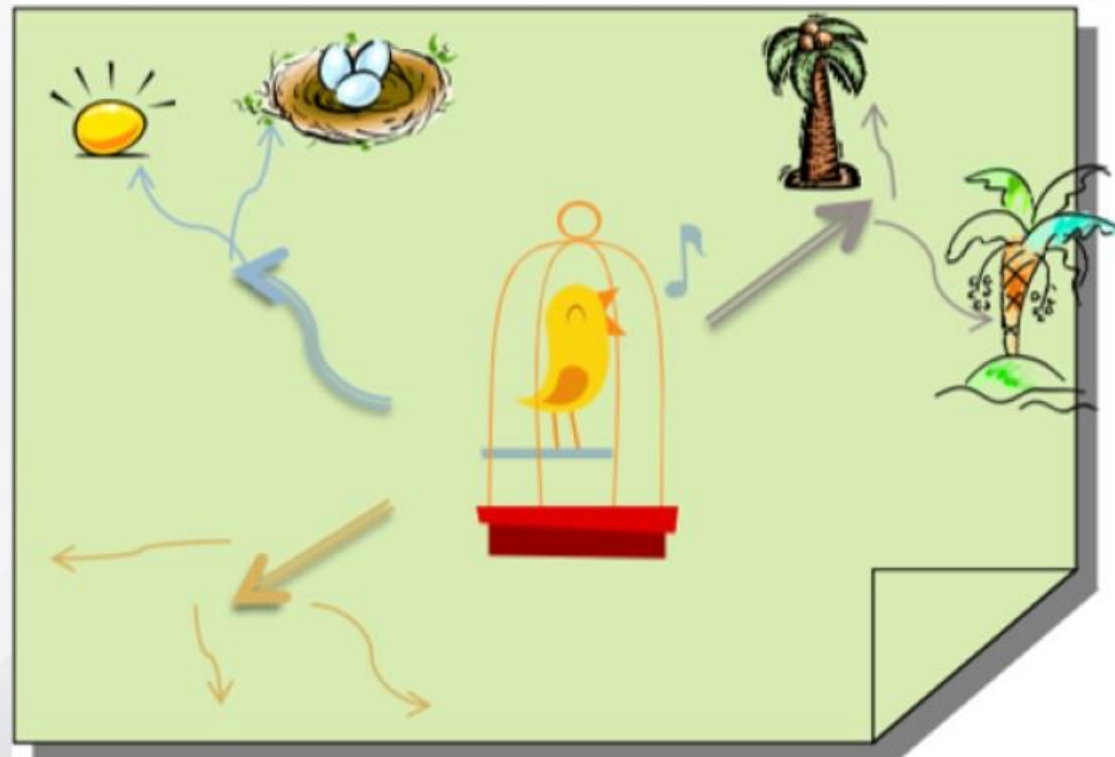
7 Steps: Mind Mapping:

7. Use images **throughout**

- Each image, like the central image, is worth a thousand words!

7 Steps: Mind Mapping:

7. Use images throughout





Chapter
03

Group Techniques for Generating Solutions



Brainstorming:

- Is a group creativity technique designed to generate a large number of ideas for the solution to a problem



4. Evaluate the Alternative solutions.

When you have come up with at least a dozen wild and crazy ideas – now is the time to constructively evaluate each one:

Recognize that there is a problem

Identify the problem

Generate alternative solutions

Evaluate the alternative solutions

Choose among the alternative solutions

Implement the chosen solution

Choose a Follow Up Date to Evaluate

4. Evaluate the Alternative solutions.

- ❑ This is the time to suggest both the **strengths** and the **weaknesses** of each idea.
- ❑ What are the **risks**?

Recognize that there is a problem

Identify the problem

Generate alternative solutions

Evaluate the alternative solutions

Choose among the alternative solutions

Implement the chosen solution

Choose a Follow Up Date to Evaluate

4. Evaluate the Alternative solutions.

- ❑ Are **costs** in keeping with the **benefits**?
- ❑ Will the solution **create** new **problems**?
- ❑ Which will provide the **optimum** solution?

Recognize that there is a problem

Identify the problem

Generate alternative solutions

Evaluate the alternative solutions

Choose among the alternative solutions

Implement the chosen solution

Choose a Follow Up Date to Evaluate

5.Choosing Among Alternative Solutions

- ❑ How **practical** is the idea?
- ❑ Is it **realistic**?
- ❑ How **cost-effective** is it?

Recognize that there is a problem

Identify the problem

Generate alternative solutions

Evaluate the alternative solutions

Choose among the alternative solutions

Implement the chosen solution

Choose a Follow Up Date to Evaluate

5.Choosing Among Alternative Solutions

- ❑ Can it be **easily implemented** by a limited number of individuals, or does it require that large numbers of other people be convinced that it is a good idea? Will they be easy to convince?

Recognize that there is a problem

Identify the problem

Generate alternative solutions

Evaluate the alternative solutions

Choose among the alternative solutions

Implement the chosen solution

Choose a Follow Up Date to Evaluate

5.Choosing Among Alternative Solutions

- Is the **idea consistent** with the directions already undertaken by the organization?

Recognize that there is a problem

Identify the problem

Generate alternative solutions

Evaluate the alternative solutions

Choose among the alternative solutions

Implement the chosen solution

Choose a Follow Up Date to Evaluate

6. Implement the Chosen Solution

- ❑ What **resources** are **needed**?
- ❑ Who else within the organization **needs** to **approve** the solution to the problem, and what will it take to win their approval?

Recognize that there is a problem

Identify the problem

Generate alternative solutions

Evaluate the alternative solutions

Choose among the alternative solutions

Implement the chosen solution

Choose a Follow Up Date to Evaluate

6. Implement the Chosen Solution

- ❑ What are the **steps** in implementation?
- ❑ **When** will the various phases of implementation take place?
- ❑ How will the **results** be **reported** and **verified**?

Recognize that there is a problem

Identify the problem

Generate alternative solutions

Evaluate the alternative solutions

Choose among the alternative solutions

Implement the chosen solution

Choose a Follow Up Date to Evaluate

7. Choose a Follow Up Date to Evaluate

- ❑ **Test** the **solution** against the desired **results**.
- ❑ This is very important! To make sure the chosen solution has solved the conflict to everyone's satisfaction, set a **date to evaluate** how the solution is working.

Recognize that there is a problem

Identify the problem

Generate alternative solutions

Evaluate the alternative solutions

Choose among the alternative solutions

Implement the chosen solution

Choose a Follow Up Date to Evaluate

7. Choose a Follow Up Date to Evaluate

- ❑ Let's say the **solution isn't working**, now is not the time to blame. Now is the time to go back and modify your solution or return to **Step #5** and choose another solution to try.

Recognize that there is a problem

Identify the problem

Generate alternative solutions

Evaluate the alternative solutions

Choose among the alternative solutions

Implement the chosen solution

Choose a Follow Up Date to Evaluate

7. Choose a Follow Up Date to Evaluate

- ❑ Now that you have **selected another solution** be sure to set another new follow up date to evaluate your progress.

Recognize that there is a problem

Identify the problem

Generate alternative solutions

Evaluate the alternative solutions

Choose among the alternative solutions

Implement the chosen solution

Choose a Follow Up Date to Evaluate

Decision Making

WHY DO WE NEED TO MAKE GOOD DECISIONS?

- ❑ To achieve your goals.
- ❑ To avoid mistakes.



“No one makes the right decision every time. But by developing your decision-making skills, you can **increase your success rate!**”

Chapter

04

Decision Making Definition



Decision Making Definition

- Is a task you perform when there are different things you can do and you pick one of them.





Thank You