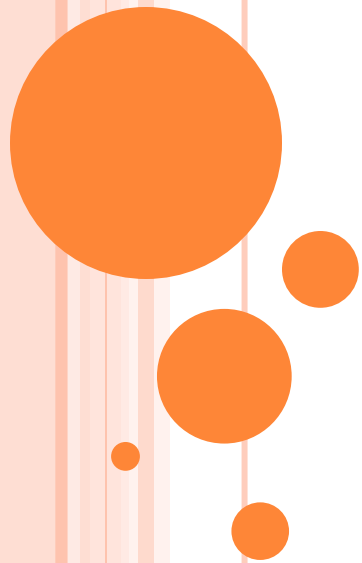# Lecture 6 and 7: Problem Solving Steps and Techniques

WHY DO WE NEED PROBLEM SOLVING?

- To be in <u>control</u> of what happens and to <u>avoid</u> bad decisions.

PROBLEM-SOLVING STEPS

1. Recognize that <u>there</u> is a problem

2. <u>Identify</u> the problem

3. Generate <u>alternative</u> <u>solutions</u>

4. <u>Evaluate</u> the alternative solutions

5. <u>Choose</u> among the alternative solutions

6. <u>Implement</u> the chosen solution

7. Choose a <u>Follow</u> Up Date to Evaluate

Problem-Solving Steps: 1-Recognize that <u>there</u> is a problem

1-Recognize that <u>there</u> is a problem

Recognize that <u>there</u> is a problem

Identify the problem

Generate <u>alternative</u> <u>solutions</u>

<u>Evaluate</u> the alternative solutions

<u>Choose</u> among the alternative solutions

<u>Implement</u> the chosen solution

Choose a <u>Follow</u> Up Date to Evaluate

Something is wrong

1.Techniques for Recognizing Problems

* Comparison against others

* Monitor for weak signals

* Comparison of current performance with objectives or past performance

* Listing complaints

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

2.IDENTIFY THE PROBLEM: ASK **WHO**?

Who – what – when – where – why - How

* Who **<u>says</u>** that this is a problem?

* Who **<u>caused</u>** or is causing the problem?

* Whom does it or will it **<u>affect</u>**?

* Who has **<u>done</u>** something about the problem(tried to solve it)?

Recognize that <u>there</u> is a problem

<u>Identify</u> the problem

Generate <u>alternative</u> <u>solutions</u>

<u>Evaluate</u> the alternative solutions

<u>Choose</u> among the alternative solutions

<u>Implement</u> the chosen solution

Choose a <u>Follow</u> Up Date to Evaluate

IDENTIFY THE PROBLEM: ASK **WHAT**?

- What **happened** or will happen?

- What are the **symptoms**?

- What are the **consequences** to others?

- What **circumstances** surround the occurrence of the problem?

- What is not **functioning** as desired?

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

Who – what – when – where – why - How

IDENTIFY THE PROBLEM: ASK WHEN?

✖ When did it or will it happen?

✖ When did it first occur?

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

Who – what – when – where – why - How

IDENTIFY THE PROBLEM: ASK WHERE?

- ✖ Where is the problem **occurring**?

- ✖ Where did it or will it **have** an **impact**?

Recognize that <u>there</u> is a problem

<u>Identify</u> the problem

Generate <u>alternative</u> <u>solutions</u>

<u>Evaluate</u> the alternative solutions

<u>Choose</u> among the alternative solutions

<u>Implement</u> the chosen solution

Choose a <u>Follow</u> Up Date to Evaluate

Who – what – when – where – why - How

IDENTIFY THE PROBLEM: ASK WHY?

- Why is this a **problem**?

- Why did it or will it **occur**?

- Why was nothing done to **prevent** the problem from occurring?

- Why is a **response** needed now?

Recognize that <u>there</u> is a problem

<u>Identify</u> the problem

Generate <u>alternative</u> <u>solutions</u>

<u>Evaluate</u> the alternative solutions

<u>Choose</u> among the alternative solutions

<u>Implement</u> the chosen solution

Choose a <u>Follow</u> Up Date to Evaluate

Who – what – when – where – why - How

IDENTIFY THE PROBLEM: ASK HOW?

- How should the process be **working**?

- How are others **dealing** with this or similar problems?

Recognize that <u>there</u> is a problem

Identify the problem

Generate <u>alternative</u> <u>solutions</u>

<u>Evaluate</u> the alternative solutions

<u>Choose</u> among the alternative solutions

<u>Implement</u> the chosen solution

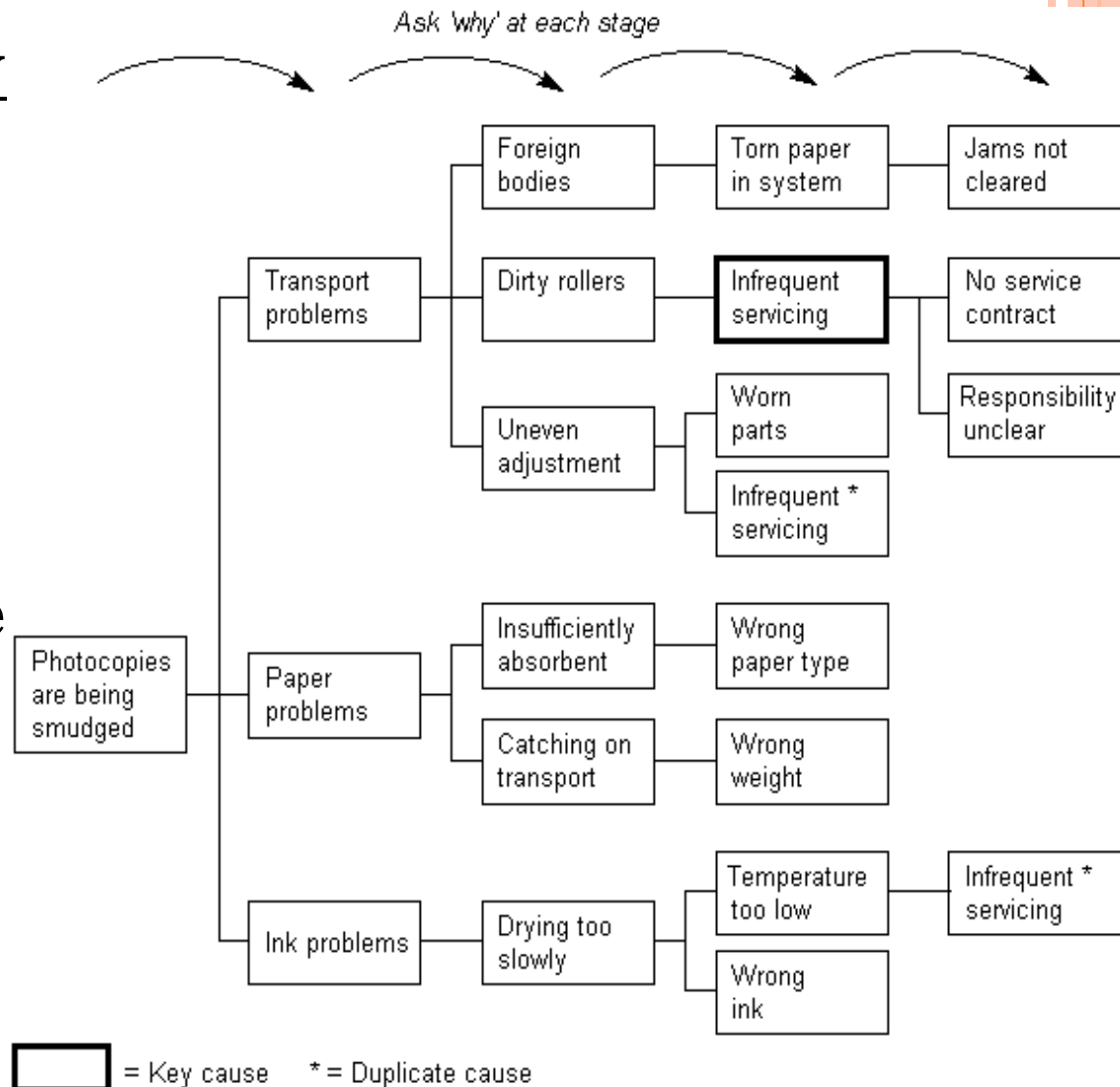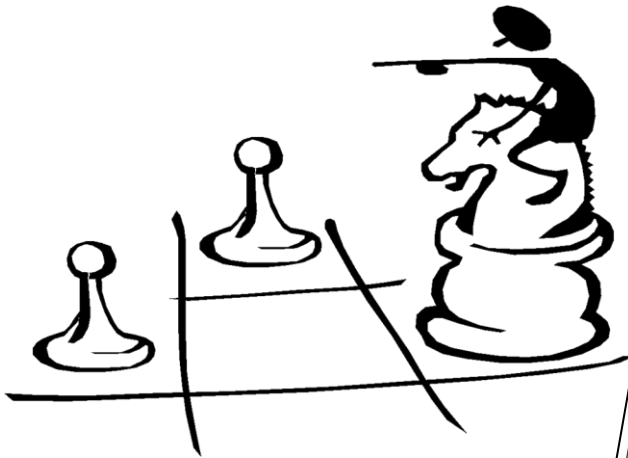Choose a <u>Follow</u> Up Date to Evaluate

Who – what – when – where – why - How

Creating Why-Why Diagram

- a Tree Diagram where each child statement is determined simply by asking 'why' the parent occurs

Ask 'why' at each stage

	Foreign bodies	Torn paper in system	Jams not cleared

Transport problems → Foreign bodies → Torn paper in system → Jams not cleared

Dirty rollers → Infrequent servicing → No service contract / Responsibility unclear

Uneven adjustment → Worn parts / Infrequent * servicing

Photocopies are being smudged

Paper problems → Insufficiently absorbent → Wrong paper type

Catching on transport → Wrong weight

Ink problems → Drying too slowly → Temperature too low → Infrequent * servicing

Wrong ink

□ = Key cause   * = Duplicate cause

PROBLEM STATEMENT

➤ Problem Statement is the end result of problem **identification**.

➤ **Brief**, **clear**, to-the-point identification of the specific problem to be addressed, including the key **rationale** for why it should be solved.

Recognize that <u>there</u> is a problem

<u>Identify</u> the problem

Generate <u>alternative</u> <u>solutions</u>

<u>Evaluate</u> the alternative solutions

<u>Choose</u> among the alternative solutions

<u>Implement</u> the chosen solution

Choose a <u>Follow</u> Up Date to Evaluate

QUESTIONS

* What are the Problem-Solving Steps
* What are the techniques for Recognizing Problems
* What questions to ask yourself to identify the Problem
* What are the Final Questions for the Problem Identification
* What are the Techniques for Identifying the Problem

14

3-Problem Solving: THINK OF SOLUTIONS

THINK OF SOLUTIONS

Recognize that <u>there</u> is a problem

<u>Identify</u> the problem

Generate <u>alternative</u> <u>solutions</u>

<u>Evaluate</u> the alternative solutions

<u>Choose</u> among the alternative solutions

<u>Implement</u> the chosen solution

Choose a <u>Follow</u> Up Date to Evaluate

3.Generate Alternative solutions

➢ Generate **ideas**.

➢ Do not eliminate any possible solutions until several have been discussed.

QUESTIONS TO ENCOURAGE IDEAS

1. What if…?

2. How can we improve…?

3. How will the Optimist Member and/or the community benefit?

4. Are we forgetting anything?

5. What's the next step?

6. What can we do better…?

7. What do you think about…?

8. What should we add?

9. What should we eliminate?

10. What other ideas do you have...?

17

Lecture 7

Techniques to Generate ideas

✖ Individual Techniques for Generating Solutions (Mindmapping)

✖ Group Techniques for Generating Solutions (BrainStorming)

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

Individual Techniques for Generating Solutions

> **Mind mapping**

  ♀ a **diagram** used to represent words, ideas, tasks or other items **linked** to and arranged radially around a central key word or idea

❑ Definition : A visual picture of a group of ideas, concepts or issues.

❑ Purpose :

  ♀ Unblock our thinking.

  ♀ See an entire idea or several ideas on one sheet of paper.

  ♀ See how ideas relate to one another.

  ♀ Look at things in a new and different way.

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
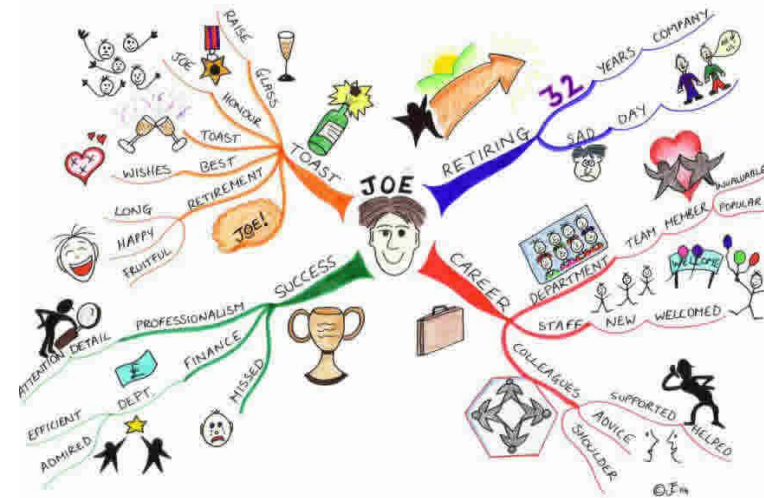
WHY MIND MAP?

➢ **Organize** <u>thoughts</u> when brainstorming

➢ Effective method of <u>**taking notes**</u>

➢ Harnesses the full range of <u>**skills**</u> – word, image, number, logic, rhythm, color and spatial awareness

➢ Aid <u>**creativity**</u>, memory, and specifically the recall of information
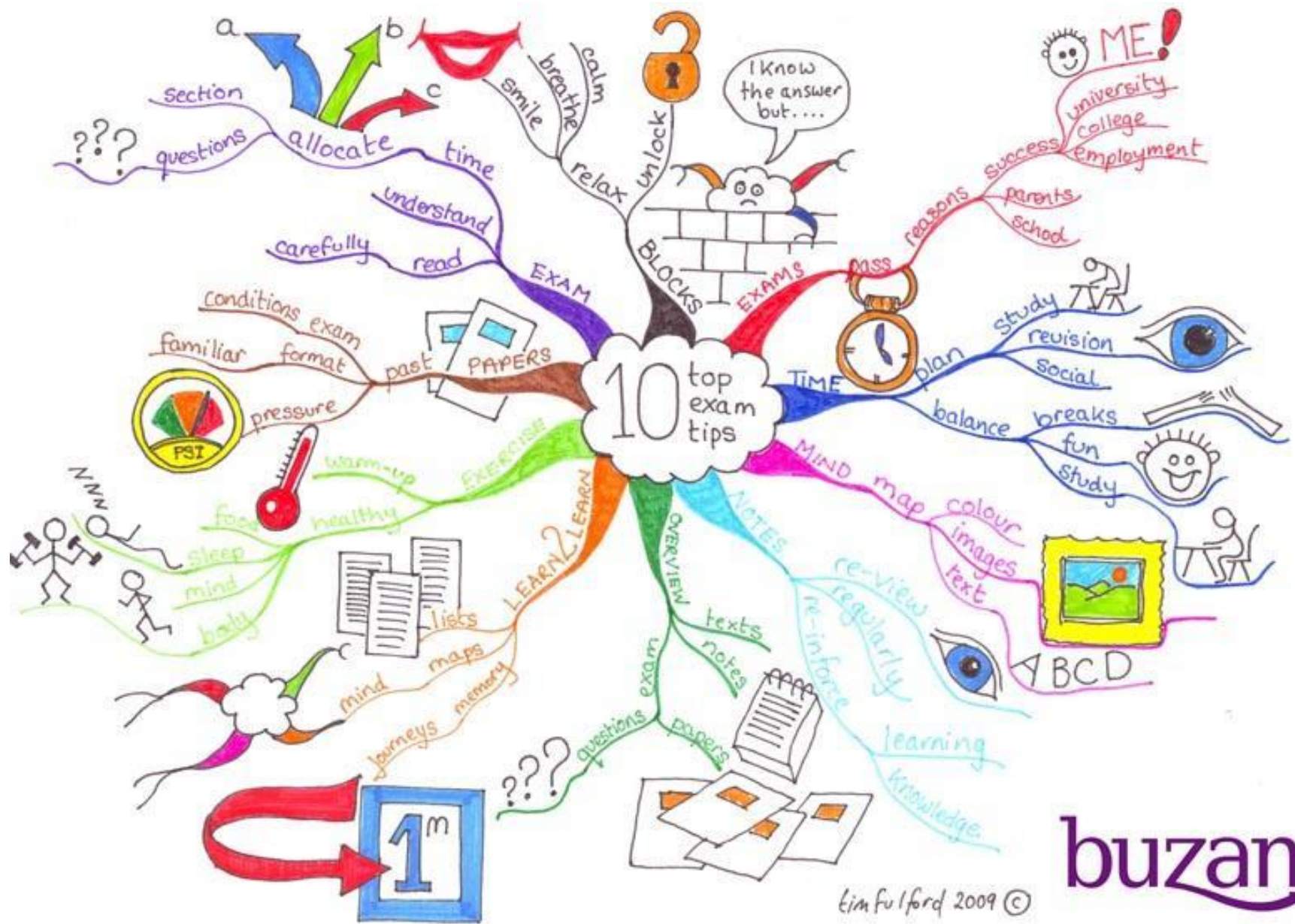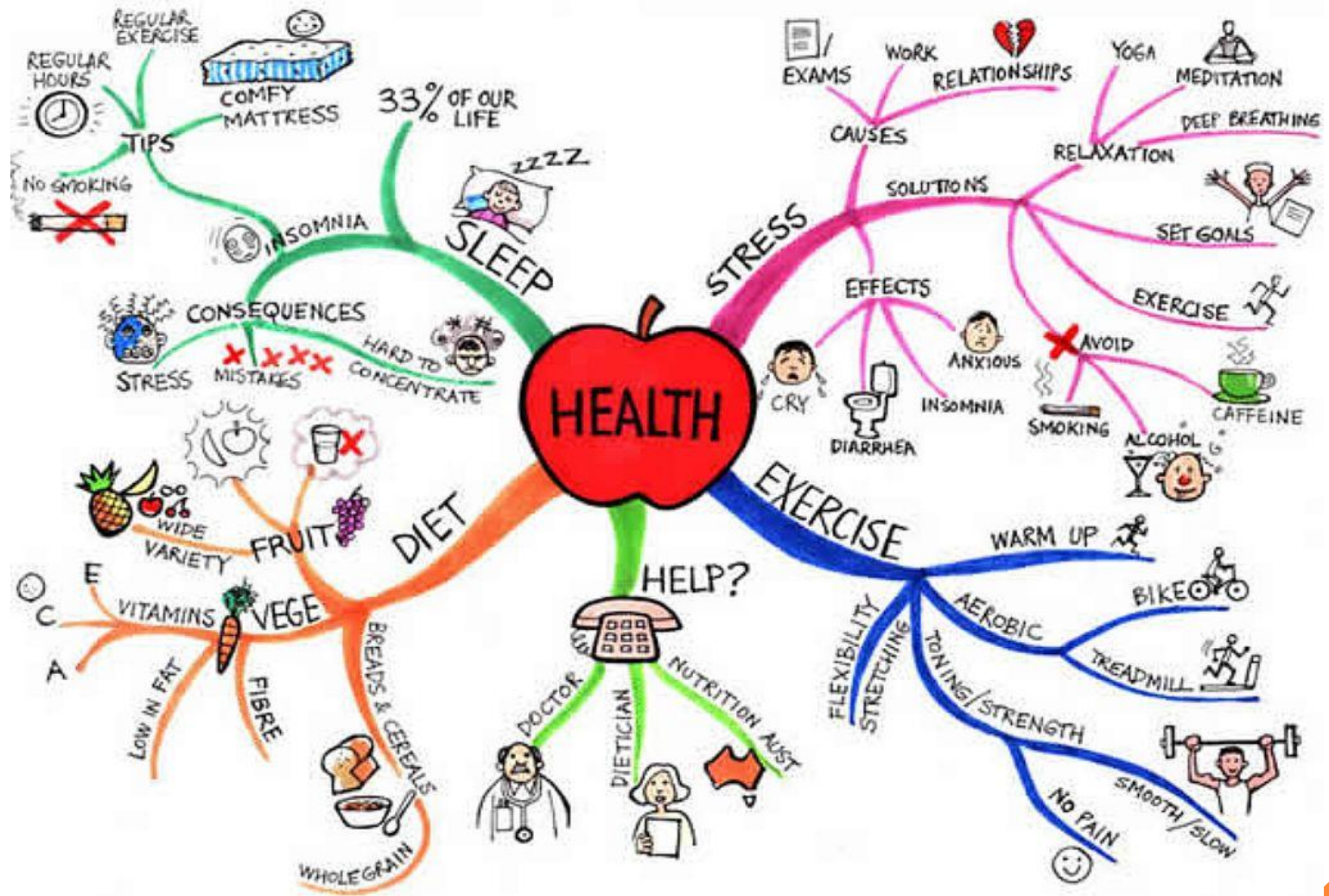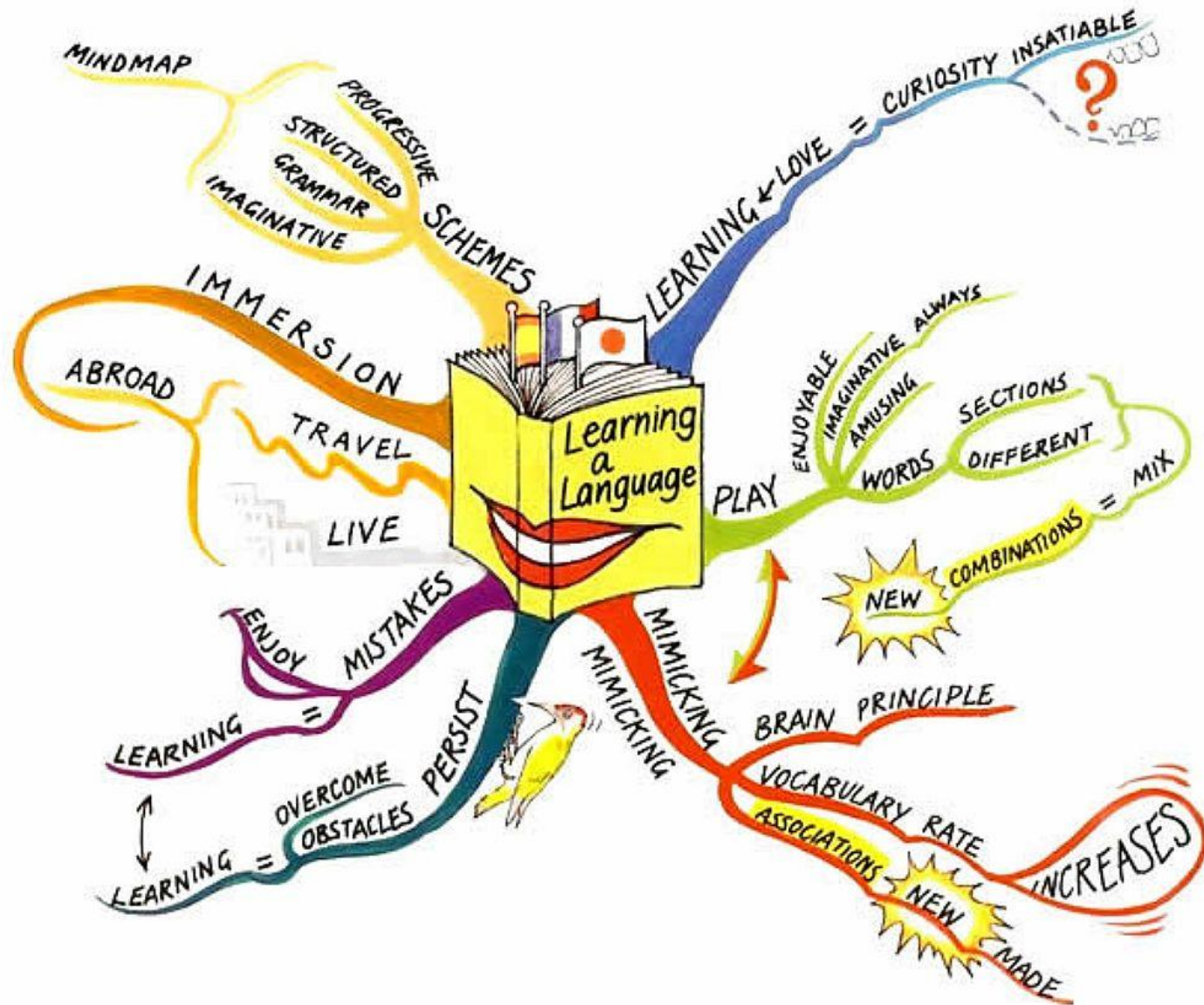
MIND MAPS USE:

Lines

Color

Symbols

Images

WORDS

MIND MAPPING :7 STEPS

1. Start in the center of a **<u>blank</u>** page turned sideways.

  - Give your brain freedom to spread out in all directions
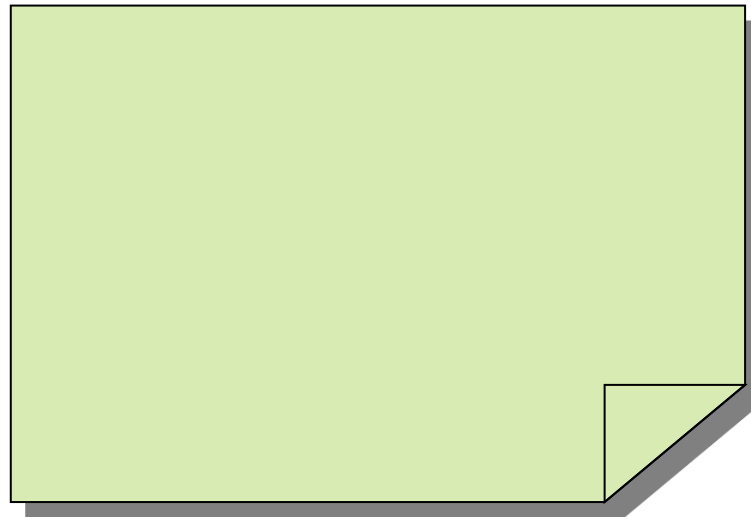
MIND MAPPING :7 STEPS

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**.
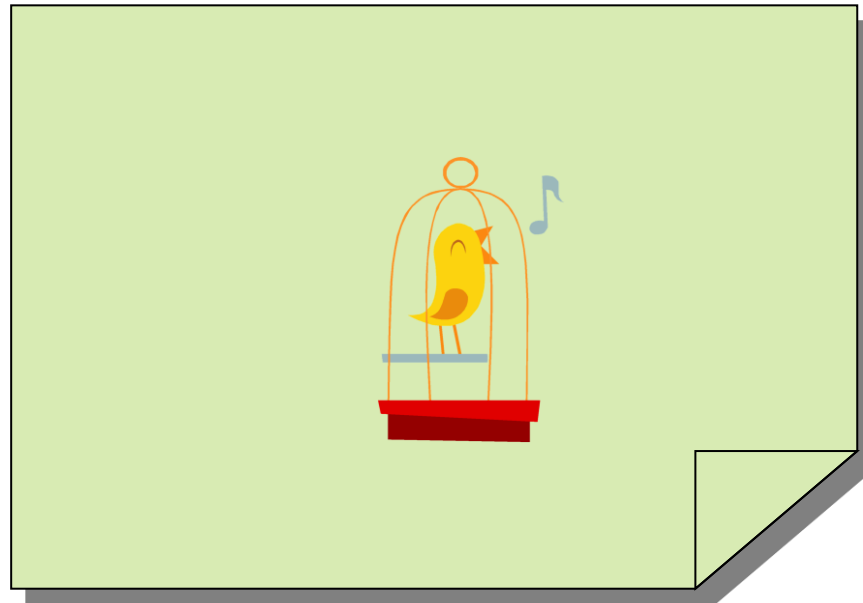
MIND MAPPING :7 STEPS

3. Use colors throughout.

- Colors are as **<u>exciting</u>** to your Brain as are images. Color will add energy to your creative thinking.
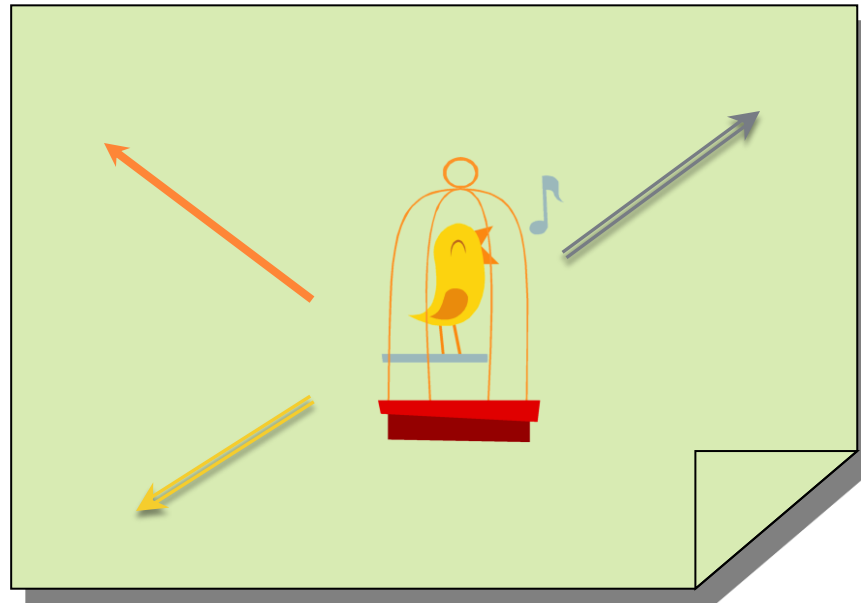
MIND MAPPING :7 STEPS

4. Connect your main <u>branches</u> to the central image etc.

- Your brain works by association. It likes to link two (or three, or four) things together.
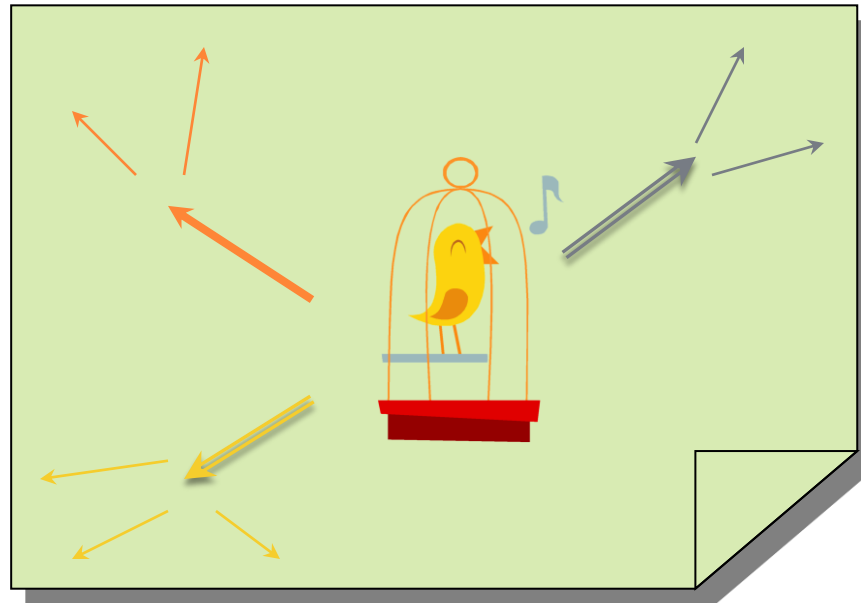
MIND MAPPING :7 STEPS

5. Make your branches <u>curved</u> instead of straight lined.

  ⟑ Having nothing but straight lines is boring to your brain.

MIND MAPPING :7 STEPS

6. Use **one** key word per line
  - Single words give your Mind Map more power and **flexibility**.

MIND MAPPING :7 STEPS

7. Use images **throughout**

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

How to Twitter

IQ matrix

Guidelines
- Do
  - Update — Excessively
  - Tweet — Every
  - Read
  - Reply
  - Don't
    - Toot — Your Horn
    - Spam
    - Curse
    - Follow — Everyone
    - Sell — over
  - Marketing
    - Name — Company / Personal / Branded
    - Strategy
    - Twitter
    - Select — Niche / Industry / Your / People — in
    - Follow

Branding
- Twitter
  - Create — Profile — with
    - Avatar
    - Name — Branded
    - Background
    - USP
    - Logo — inc — Links — to — Website
  - Tweet — at
    - Times
    - Peek
    - Others
    - Helping — Consistently
    - Showcasing
    - Expertise
    - Encouraging — Participation
    - Contributions — to — Community
    - Future — Product — Releases
    - Blog — Posts

Writing
- Be
  - Catching — Eye
  - Simple
  - Valuable — Words — Key
  - Concise
  - Clear — Targeting
- Provide — Call to Action!
- Must
  - Ask — for — ReTweets
  - Utilize — #hashtags — @ Sign
    - Codes — Shorthand
    - Tweets — Categorize — to
  - Fundamentals
  - Services — Pictures — Using
    - TwitPic.com
    - TwitrPic.com
    - URL — Shortening
      - twurl
      - bit.ly
      - tinyurl

Content
- Monetize
  - Let's Make MONEY!
  - Sharing — by
    - Deals
    - Sponsorship
    - Arranging
  - Promotions
  - Links
  - Affiliate — Sensitive — Time / Money / Saving
  - Products — Purchase — to — Opportunities
  - eBooks
- Share
  - Stories
  - Metaphors
  - Inspiring
  - Quotes
  - Quality — Content — that — is — Being
    - Considerate
    - Personal
    - Original
    - Promotional
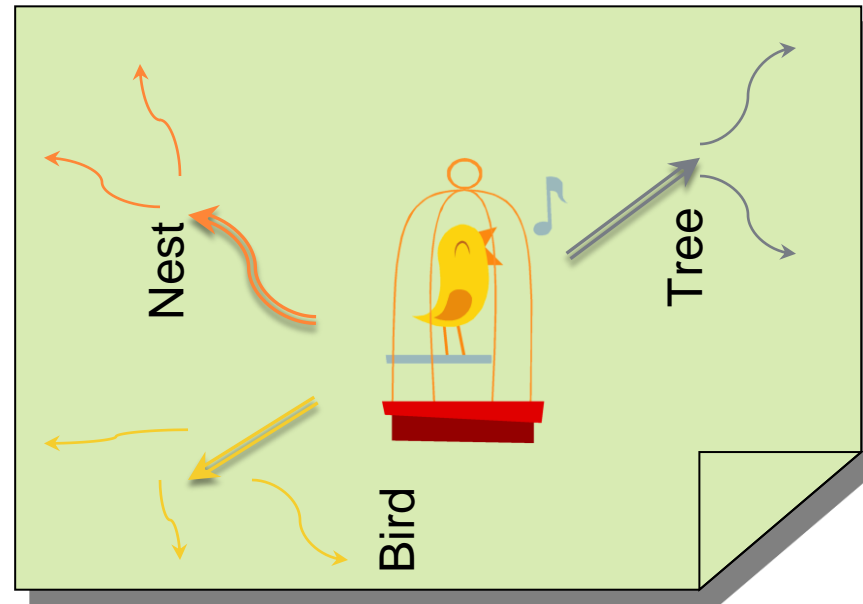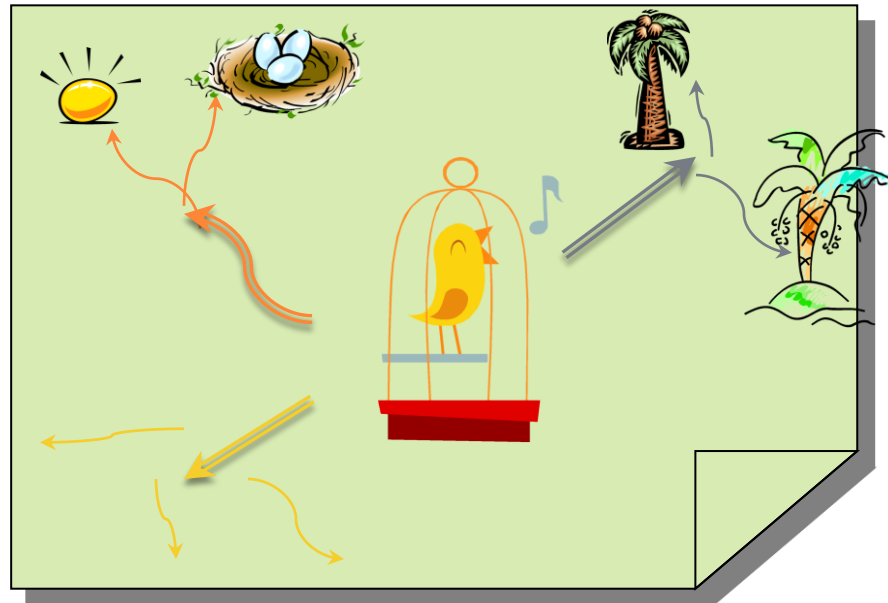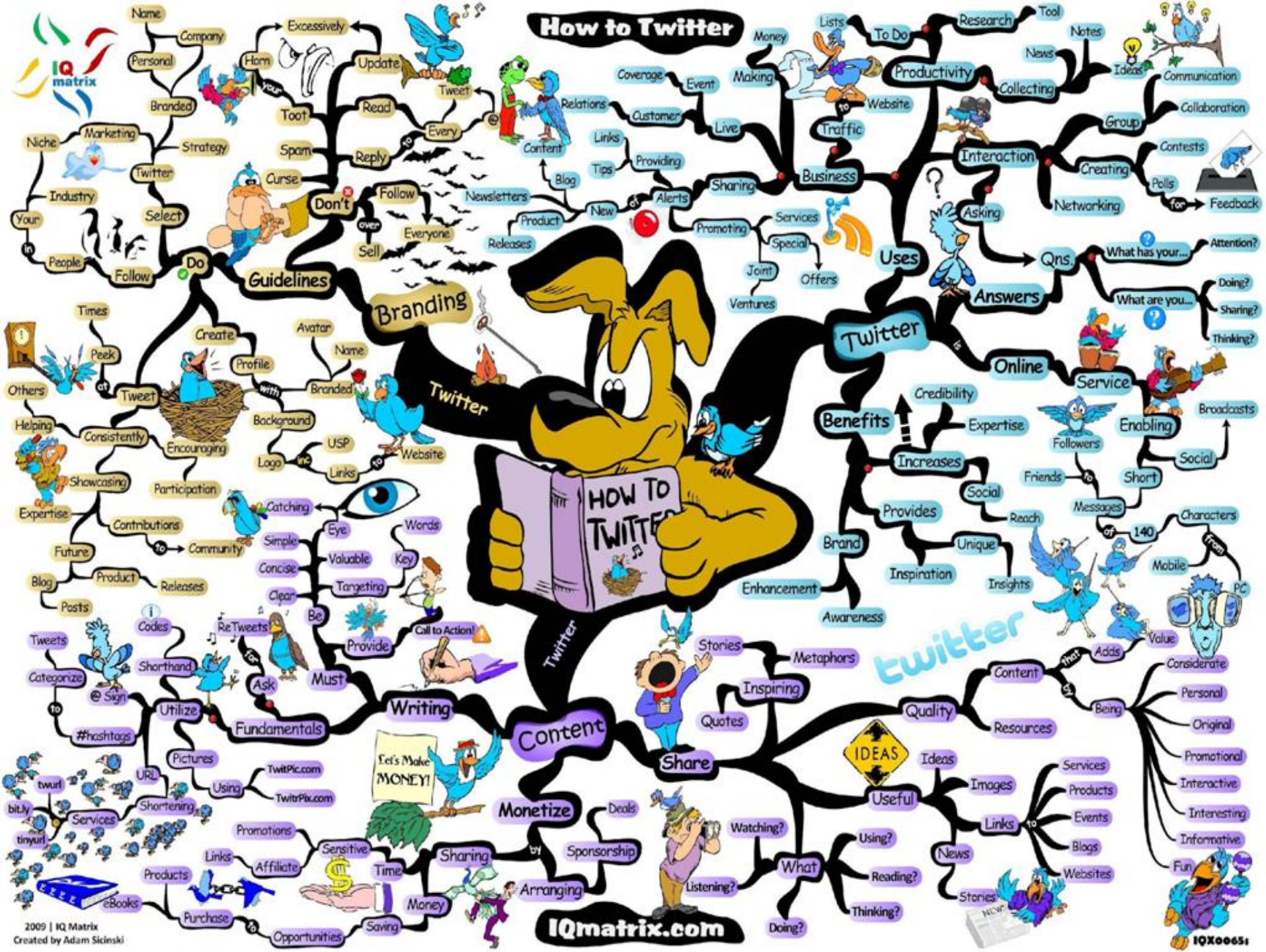   - Interactive
    - Interesting
    - Informative
    - Fun
  - Resources
  - IDEAS — Ideas — that — Adds — Value
  - Useful
    - Images
    - Links — to
      - Services
      - Products
      - Events
      - Blogs
      - Websites
    - News
    - Stories
  - What
    - Watching?
    - Using?
    - Reading?
    - Thinking?
    - Listening?
    - Doing?

Business
- Content
  - Relations — Customer
  - Coverage — Event
  - Live
  - Sharing
    - Links
    - Tips — Providing
    - Blog
    - Newsletters
    - Product — Releases
  - New — of — Alerts
  - Promoting
    - Services
    - Special
    - Joint — Ventures — Offers
- Making — Money — Website — to — Traffic

Uses
- Productivity
  - To Do — Lists
  - Research — Tool
  - News — Notes
  - Ideas — Collecting
  - Communication
  - Collaboration
  - Group — Creating
    - Contests
    - Polls — for — Feedback
  - Interaction — Networking
  - Asking
  - Qns. — What has your... — Attention?
  - Answers — What are you... — Doing? / Sharing? / Thinking?

Twitter — is — Online
- Benefits
  - Credibility
  - Expertise
  - Increases — Social
  - Provides
  - Brand — Reach
  - Unique — Insights
  - Inspiration
  - Enhancement
  - Awareness
- Service
  - Enabling — Broadcasts
  - Followers — Social
  - Friends — to — Short
  - Messages — of — 140 — Characters — from
    - Mobile
    - PC

twitter

2009 | IQ Matrix
Created by Adam Sicinski

IQmatrix.com

IQX0065i

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:

- This is the time to suggest *both* the strengths and the weaknesses of each idea.

- What are the risks?

- Are costs in keeping with the benefits?

- Will the solution create new problems?

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?

➤ 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?

➤ 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?

➢ 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.

➤ 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.

➤ 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 Evalua

QUESTIONS

- How to evaluate the Alternative solutions.
- How to Choose Among Alternative Solutions
- How to implement the Chosen Solution