



# Comenius European Thinking Skills Project

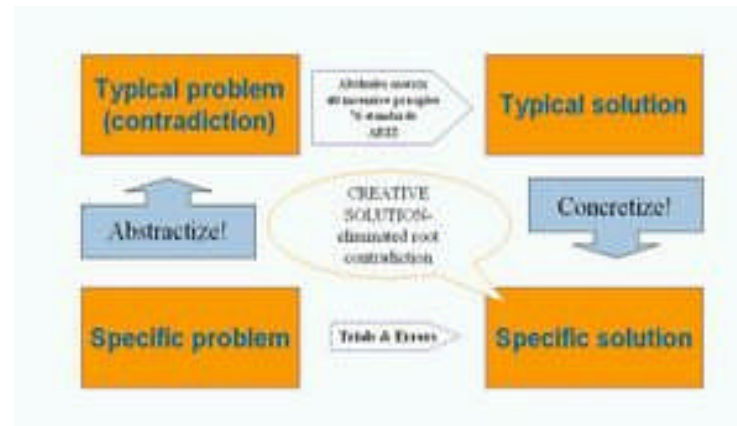
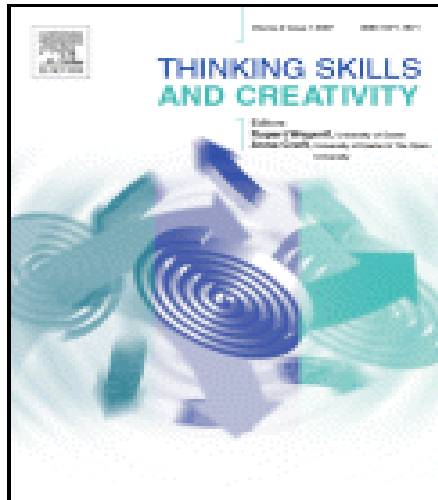
An overview of the tools & techniques

# Comenius Project

(Think Fresh)

- To help teachers, education managers and lecturers to become better thinkers
- To experiment and explore thinking tools to improve thinking skills across EC
- To build up experience and knowledge of thinking skills
- To transform existing tools and concepts into workable formats and develop supporting didactical material
- To create 'thinking organisations'

# The European Perspective



Thinking  
Approach

Sp<sup>o</sup>loG

авторский

BRITISH  
COUNCIL



# Thinking Skills

- **Teaching thinking outside of any domain**
  - Instrumental Enrichment (Feuerstein)
- **Teaching thinking in a subject domain**
  - Cognitive Acceleration CASE/CAME (Adey/Shayer)
- **Teaching thinking across domains**
  - Frames of Thinking (Schwartz & Parks, Bloom)
  - Parallel & Lateral Thinking (de Bono)
  - Philosophical Enquiry & De-briefing (Lipman & Leat)
  - Multiple Intelligences (Gardner)
  - Mind Mapping & Think on your Feet (Buzan & Spicer)

# Thinking Skills

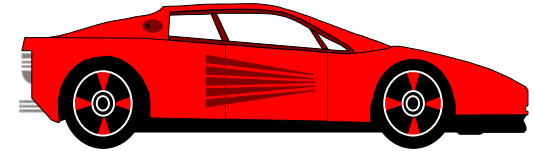
- Sequencing and ordering information
- Sorting, classifying & grouping
- Analysing, identifying relationships
- Comparing & contrasting
- Making predictions & hypothesising
- Drawing conclusions
- Distinguishing facts from opinion
- Bias and reliability

# Thinking Skills

- Generating ideas and concepts
- Cause and effect
- Defining & clarifying issues
- Goals and objectives
- Evaluating outcomes
- Planning & monitoring
- Making decisions
- Setting priorities
- Reflecting

# Methodology

*Thinking is mind operating skill*



- Literacy - words and language
- Numeracy - working with number
- *Operacy - managing thinking about doing*

# Thinking

- Intelligence is not the same as thinking
- Thinking usually follows feeling
- Thinking is *deliberate* exploration
- Everyone can think new things
- We need to utilise all the brain's resources
- We need to recognise the 'intelligences'





The excellence of the brain arises directly from its ability to make, organise & use patterns....

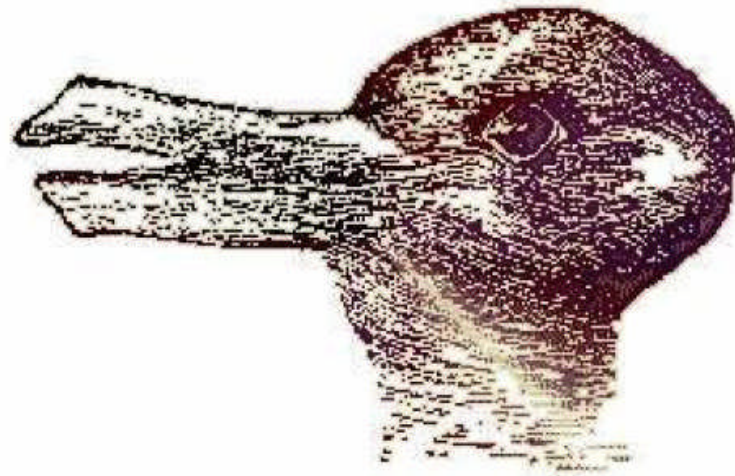
These patterns form our perceptions which are used to **see** ideas and make decisions

**Aoccdrnig to a rscheearch at Cmabrigde Uinervtisy, it deosn't mttar in waht oredr the ltteers in a wrod are, the olny iprmoetnt tihng is taht the frist and lsat ltteer be at the rghit pclae.**

**The rset can be a total mses and you can sitll raed it wouthit porbelm. Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod as a wlohe.**



*“90% of errors in thinking are errors in perception not judgement”  
David Perkins, Harvard*



**What do you see ?**

# Individual Exercise

Tear a hole in the paper of sufficient size to put the whole of your actual body through...

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# Frames of Thinking (Schwartz & Parkes, Bloom)

A structured 'infusion' approach – identify contexts across curriculum where particular thinking can be developed, eg:

- Reasoning in science
- Classification of landforms in geology
- Decision-making in politics
- Causal factors in history



# Frames of Thinking

- Information handling
- Critical thinking
- Creative thinking
- Problem-solving
- Planning and monitoring
- Making decisions

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# Information handling

- Acquisition
- Points of view
- Sorting
- Ordering
- Sequencing
- Classifying
- Comparing
- Contrasting

# Critical thinking

- Risk assessment
- Predictions
- Determining bias
- Reliability
- Cause & effect
- Questioning
- Challenging

# Creative thinking

- Generating new ideas
- Hypothesising
- Combining ideas
- Using analogies
- Concept extraction
- Lateral thinking

# Problem-solving

- Defining
- Re-defining
- Selecting options
- Finding variations
- Testing solutions
- Presenting proposals

# Making decisions

- Setting-out options
- Evaluating
- Choosing

# Group Exercise

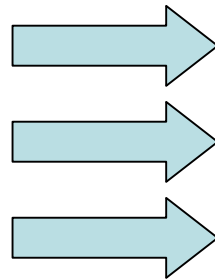
*Consider the 'average' supermarket*

Undertake a re-design of some physical aspect to enhance customer experience and add value



# Parallel Thinking (de Bono & CoRT)

- *Full colour thinking* but one colour at a time
- Different suggestions are laid down *together*



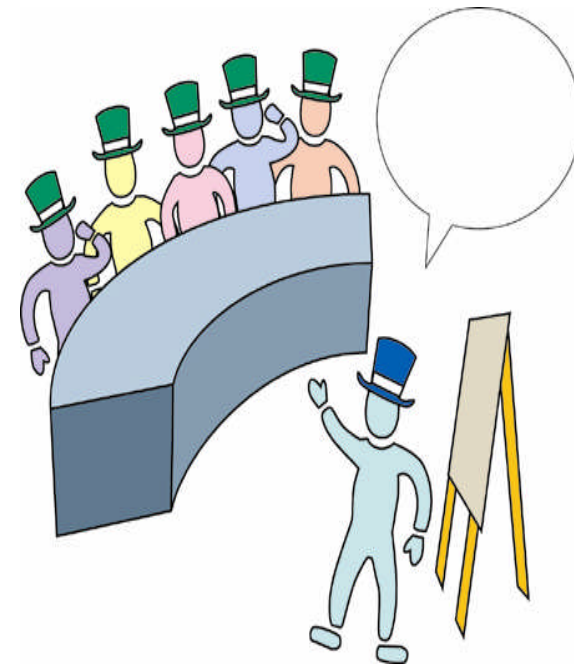
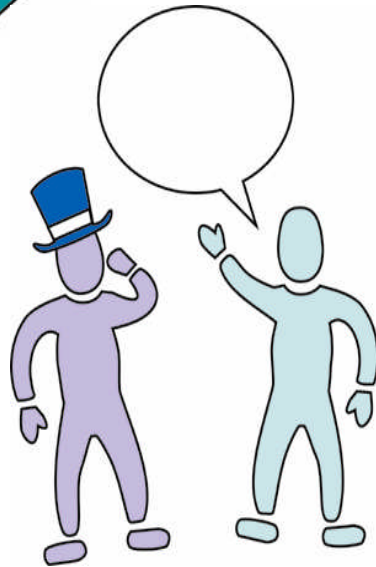
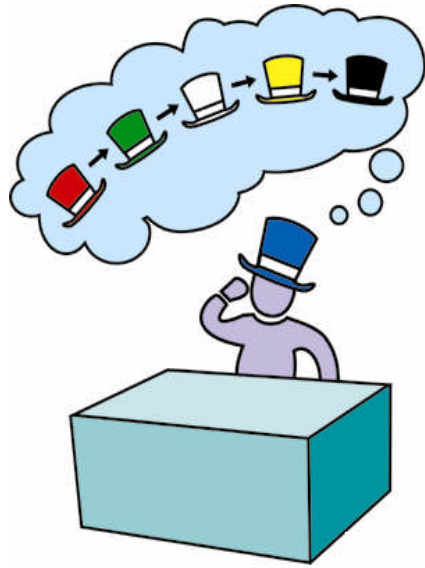
# Planning

- Setting objectives
- Assessing timescales
- Monitoring progress
- Meeting deadlines

# Thinking in hats.....



- Six 'notional' hats that can be put on and taken off easily to indicate a role or mode of thinking





# Six Thinking Hats

- White hat      -information and data
- Red hat      -emotion and intuition
- Black hat      -negative and caution
- Yellow hat      -benefits and positive
- Green hat      -possibilities & alternatives
- Blue hat      -overview and  
process

# Group Exercise

- 1. Making foods with high fat content illegal**
- 2. All cars must be painted yellow by law**
- 3. Everyone has to wear a small lie-detector**
- 4. A complete ban on cars in city centres**

Use the following sequence to evaluate:

(allow approximately 1 minute per hat)

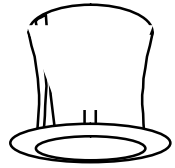




*Focus*”.....”



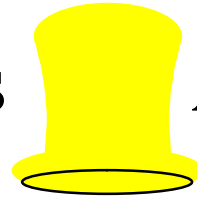
Feelings, intuitions



Information known, not known & needed



Disadvantages, risks



Advantages, benefits



Alternative ideas & possibilities



Review and discuss thinking





## Green Hat

- time and space for idea generation
- reflective not decisive
- divergent not convergent
- collaborative and constructive

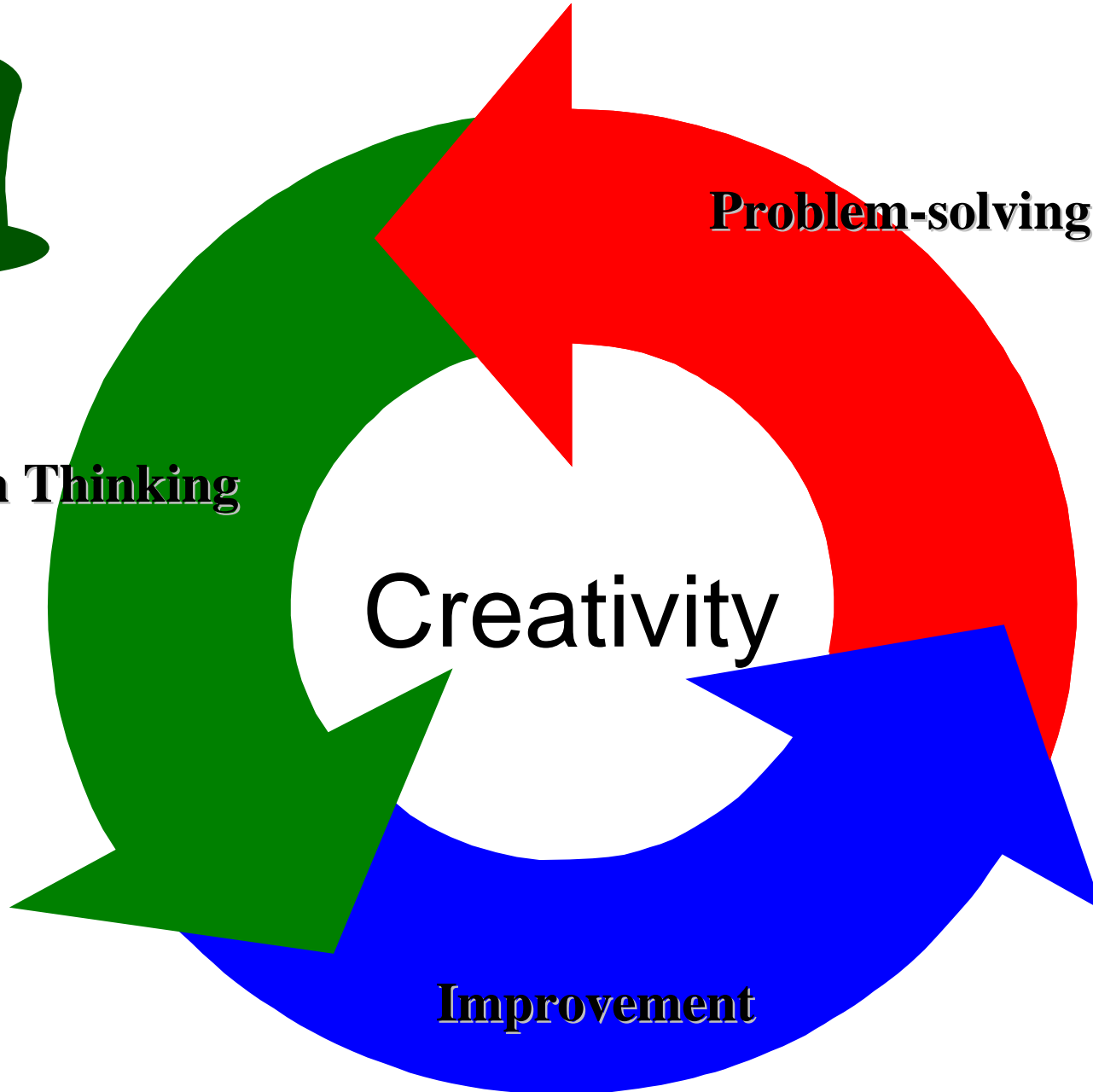


**Fresh Thinking**

**Creativity**

**Problem-solving**

**Improvement**



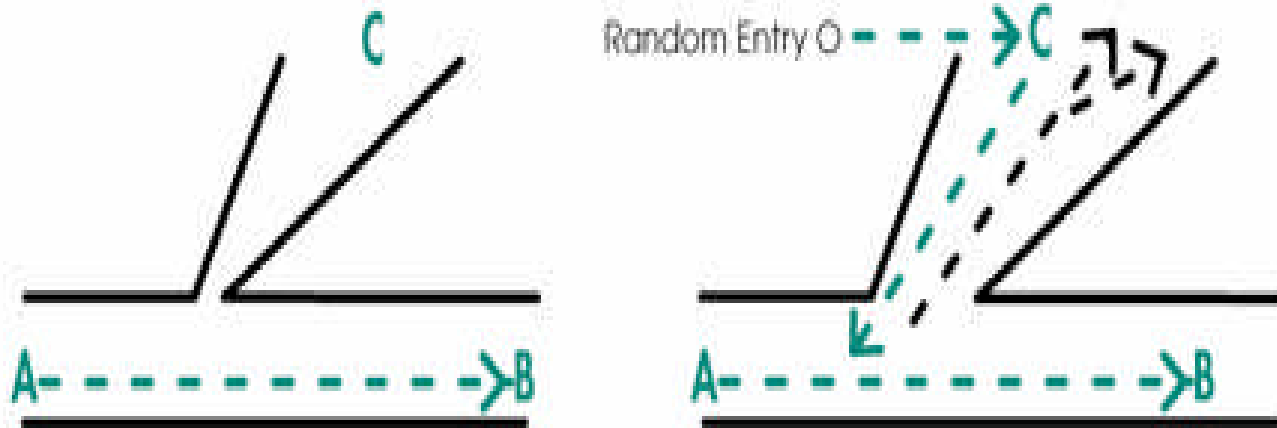


Green Hat

“New ideas on supermarket shopping”

# Lateral Thinking

To be creative or innovative we need to cut across thinking patterns to find alternative ideas in a deliberate and formal way - *lateral thinking* is a way of thinking that seeks to do just that....

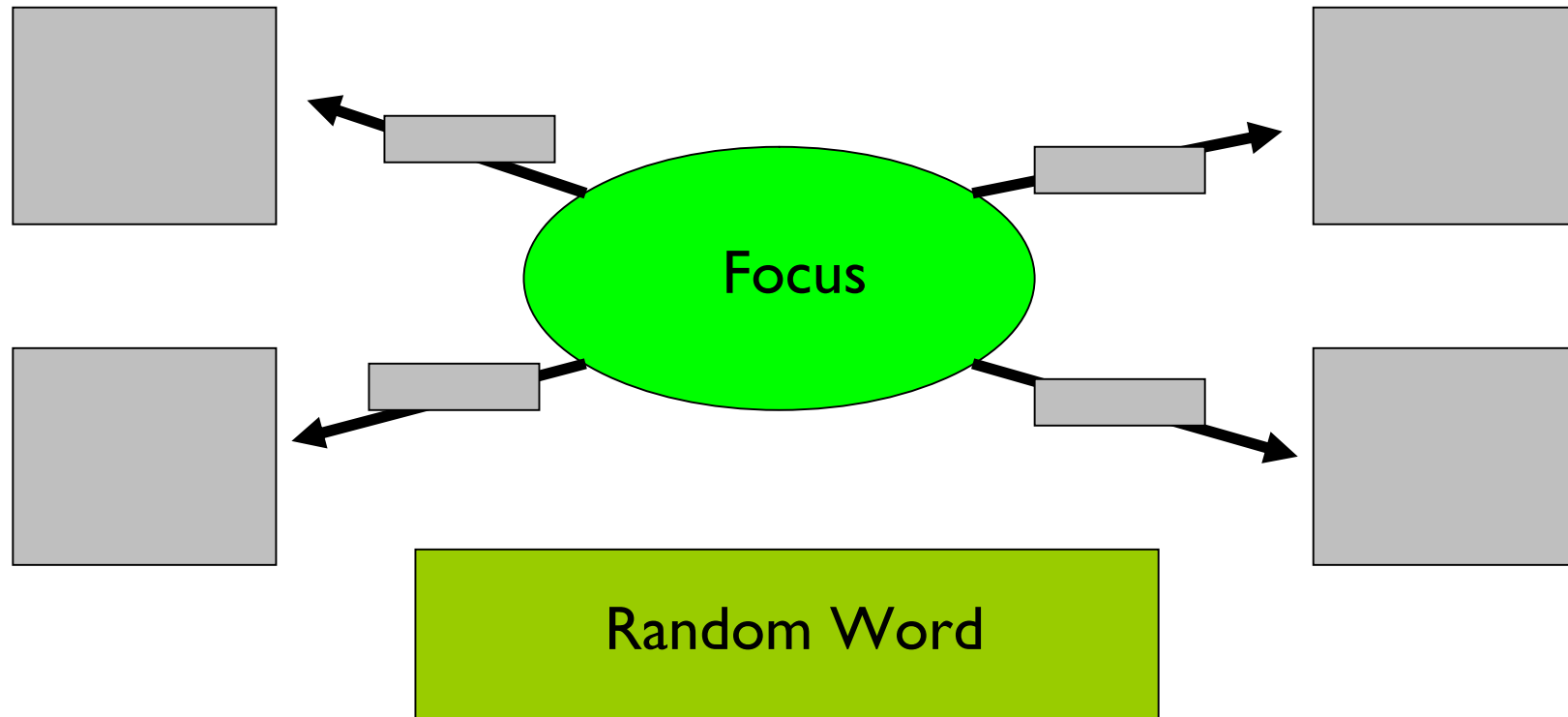




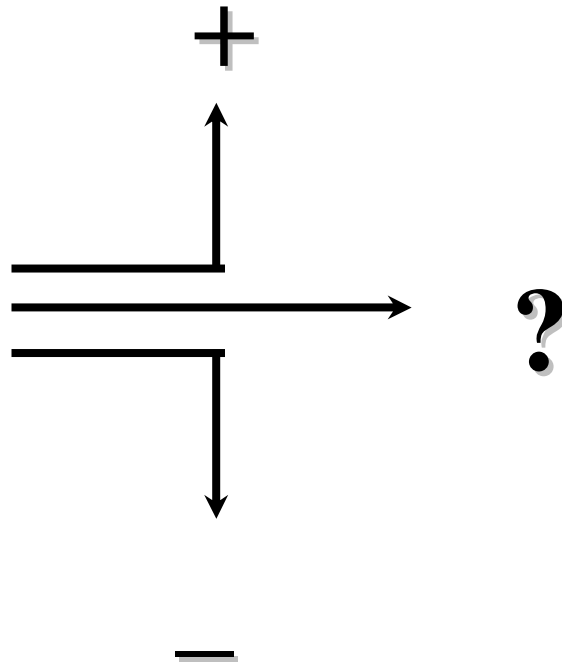
# Green Hat using Random Word

- Obtain random word
- Find attributes or associations with word
- Generate new ideas from the 'connections'

# Random Word Technique



P.M.I.



- Plus, Minus, Interesting

•

# CoRT Thinking

- CAF = Consider All Factors....we list all the likely factors and then.....
- FIP = Select the most important or relevant
- OPV = Other People's Views....we state other people's points of view
- C & S = Consequence & Sequel....we imagine what will happen step by step
- DOCA = Decisions, Outcomes, Channels, Actions



# Philosophical Enquiry



*Philosophical Enquiry provides an arena for discussion, for asking questions and for seeking possible answers. It provides the time and opportunity to think, talk and be listened to. It demonstrates the difference between disagreement and personal attack. It encourages respect for the ideas and opinions of others. It promotes constructive comment and collaborative thinking. M Lipman 1965*



# Pairs Exercise

- Select someone you do not know - interview them for 5 minutes
- Find out all you can in the time available – don't make notes
- Active listening = reflect back their facts and their feelings
- Summarise at end and thank them.....



# Group Exercise

Castaway: You and your group have been selected to live on a deserted island. What rules or laws would you have and why ?

(If necessary, use the *talking stick* provided...)

(CAF & FIP)

# De-Briefing (Leat)



"Can you explain why your group thought...?"

"Go on..."

"Say a bit more..."

"Why...?"

"I heard your group say something interesting.  
Can you explain it to the rest of us?"

# De-briefing

*This is very important and must not be squeezed out by time pressures. The purpose is to ask thinking groups to reflect upon how they went about their task. What thinking strategies did they employ ? What were the outcomes ? (DOCA)*

*Debriefing is the part of thinking that is often left out – usually referred to as ‘the talk at the end of the session’! In terms of skill development, this meta-cognition is important since students consolidate their learning and transfer it to other contexts...*

*David Leat*

# Thinking Together

Neil Mercer

Educational Dialogue Research Unit



# What is Thinking Together?

- A dialogue-based approach to the development of thinking
- It promotes use of language as a tool for thinking
- It integrates with many other thinking methods

*Ways people learn to think together shape the ways they think alone....*



# Talking is good for the brain

So say researchers **Neil Mercer, Lyn Dawes** and **Rupert Wegerif** after encouraging constructive debate among primary pupils



# Ground rules for talk

1. Everyone should have a chance to talk
2. Everyone's point should be considered
3. Each member of the group is asked:  
What do you think and why ?
4. Look and listen to the person talking

# Multiple Intelligence

“...there exists in everyone a multitude of intelligences, quite independent of each other; that each intelligence has its own strengths and constraints; that the mind is far from unencumbered at birth...”

**Howard Gardner**



# Multiple Intelligences

- **Verbal-Linguistic intelligence** ("word smart")
- **Logical-mathematical intelligence** ("number/reasoning smart")
- **Visual-Spatial intelligence** ("picture smart")
- **Bodily-Kinesthetic intelligence** ("body smart")
- **Musical-Rhythmic intelligence** ("music smart")
- **Inter-personal intelligence** ("people smart")
- **Intra-personal intelligence** ("self smart")
- **Naturalistic intelligence** ("nature smart")

# Multiple Intelligences

Provides eight different potential learning pathways. For example:

Teaching Economics - Law of Supply & Demand.

1. Read about it (verbal-linguistic)
2. Study formulae (logical-mathematical)
3. Show graphic chart (visual-spatial)
4. Observe law in foodchain (naturalist)
5. Human world of commerce (interpersonal)
6. Bodily food needs (bodily-kinesthetic)
7. In relation to personal dieting (intra-personal)
8. Listen to song (eg: Bob Dylan "Too much of Nothing" (musical-rhythmic)

# Individual Exercise

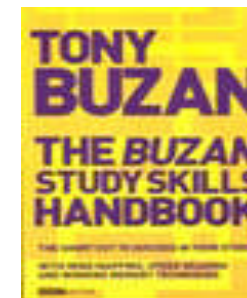
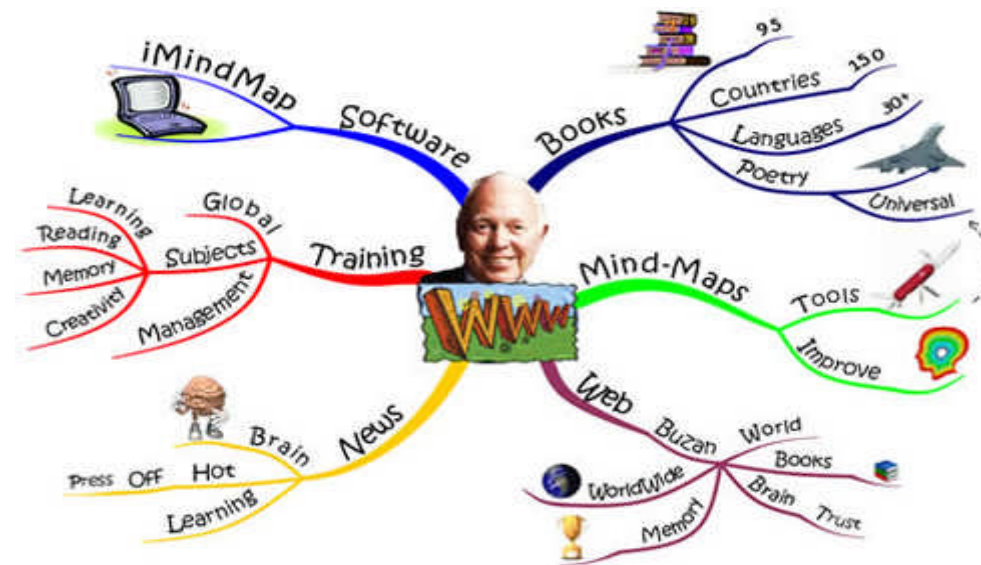
Put topic you are teaching (or interested in) in centre of blank page.

Draw eight straight lines like spokes radiating from the topic.

Label each line with a different 'intelligence'.

At the end of each line, devise a learning activity about your topic using that 'intelligence' .....

# Mind Mapping



# Mind Mapping

- Compatible with brain patterning
- Improves note taking and recording
- Visual presentation of information
- Easy to remember – quick to review
- Enhances recall
- Provides structure for problem-solving

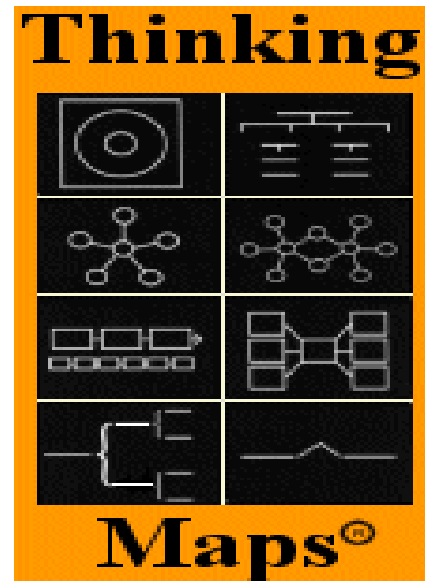
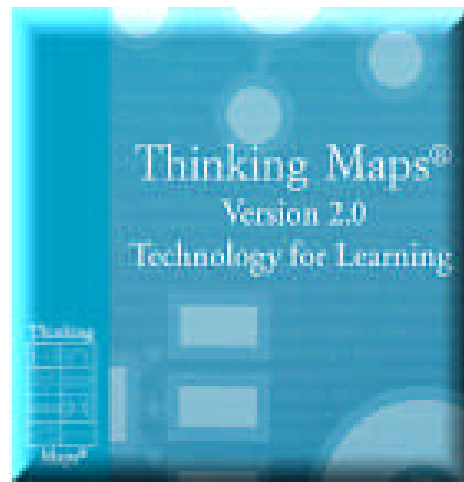


# Individual Exercise

Draw a mind map of your hobby, sport or pastime

Be prepared to explain it to someone else

# Thinking Maps



# MindLab Europe



# Think on your Feet

*Three **basic** plans to organise your thinking with*

- *Clarity*

- *Brevity*

- *Impact*

# Think on your Feet

- **CLOCK PLAN** – 3 points in *TIME*
- **GLOBE PLAN** – 3 points in *SPACE*
- **TRIANGLE PLAN** – 3 *ASPECTS* or *VIEWS*

# CLOCK PLAN



## *ACKNOWLEDGE*

1.

2.

3.

## *RECAP*

# GLOBE PLAN

## *ACKNOWLEDGE*

1.

2.

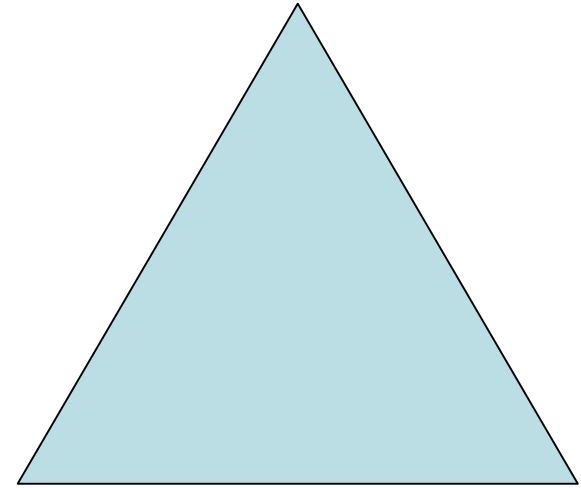
3.

## *RECAP*



# TRIANGLE PLAN

*ACKNOWLEDGE*



1.

2.

3.

*RECAP*



# Group Exercise

- List some topics of personal interest on a sheet of paper
- Take it in turns to ask each other simple questions about the topics
- Answer using one of the 3-point plans...

“The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn...”

**Alvin Toffler**

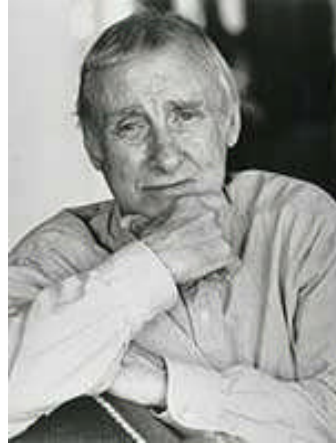
third most influential business leader after Bill Gates and Peter Drucker – also described in the Financial Times as the "world's most famous futurologist".

"I have been described as a lighthouse in the middle of a bog: brilliant but useless."

**Connor Cruise O'Brien.**

“..my father had a profound influence on me, he wanted me to have all the benefits of the education that he never had – so he sent me to a girl’s school !”

**Spike Milligan**



# Think Fresh 2



A new 2-year project

Beginning October 2007 in Copenhagen

6 new partners – Romania, Czech  
Republic, Hungary, Bulgaria, Latvia (?)

The Netherlands



King William I College



School for the Future

's-Hertogenbosch

Brussels



New Horizons...?