

TEYL

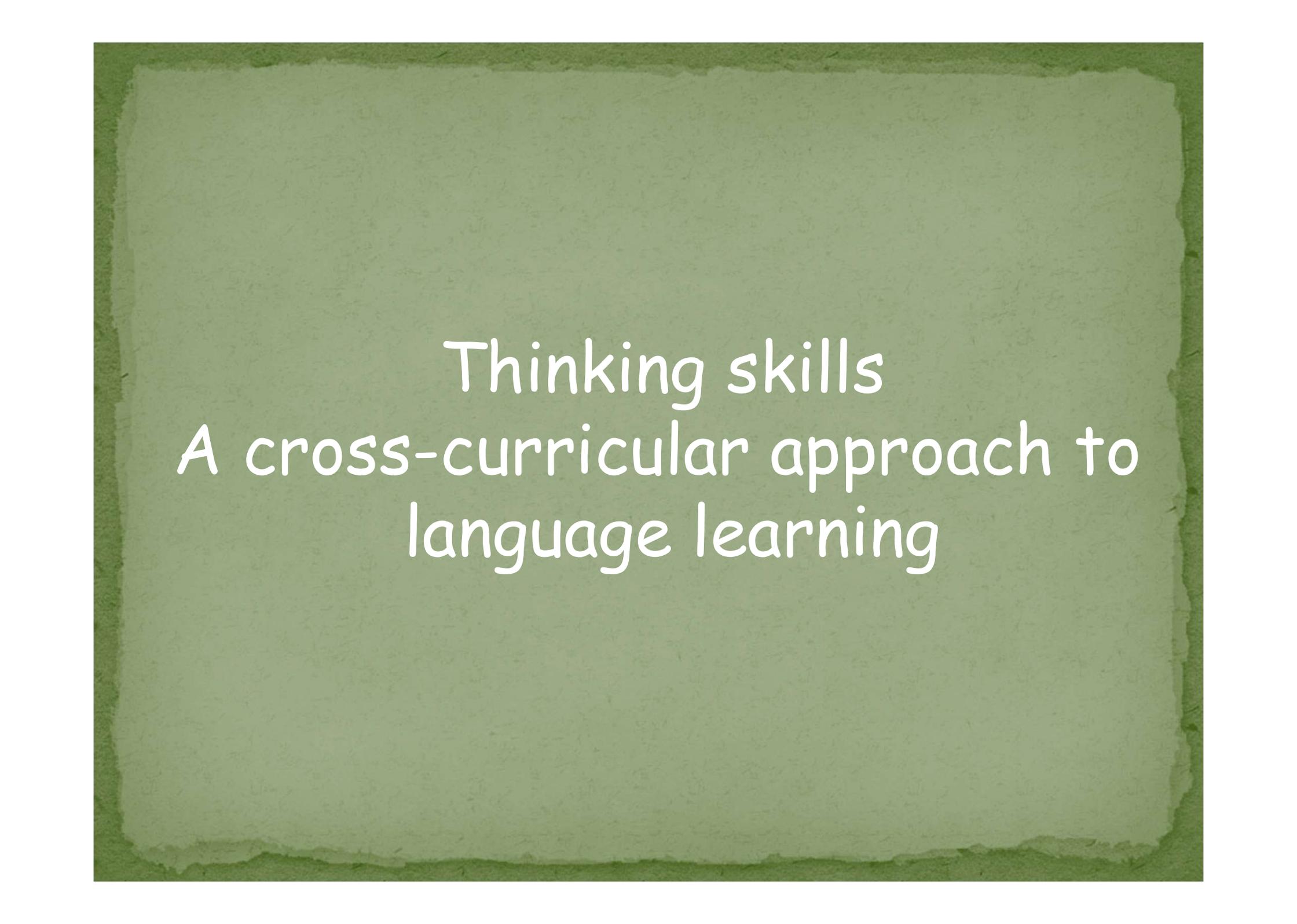
Lesson Planning



Thinking skills
And problem solving

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Thinking skills
A cross-curricular approach to
language learning

How to assess your thinking skills.....

THINKING SKILLS ASSESSMENT DEMONSTRATION TEST

TSA website (<http://tsa.ucl.ac.uk/>),

What does it test?

Problem-solving skills, including numerical and spatial reasoning. Critical thinking skills, including understanding argument and reasoning using everyday language.

Students don't need any familiarity with specific texts or theoretical frameworks - they're simply being tested on their ability to think through problems and arguments, critically and logically.

TSA ...

assesses a general academic aptitude that applies to a wide range of different courses, from Geography to Politics.
provides a benchmark that all applicants can be measured against, regardless of their background, nationality, gender or qualifications.

offers a vital additional selection filter for courses that typically attract a large field of high-achieving applicants.
is useful for assessing the suitability of applicants to courses which attract candidates from a wide variety of subject backgrounds.

correlates with future academic achievement: research shows a strong positive relationship between TSA scores and on-course success.

<http://www.admissionstestingservice.org/our-services/thinking-skills/>

Example Question 1)

Every motorist pays the same amount for road tax, regardless of how much they use the roads: someone who covers as little as 1 000 miles pays the same as someone who covers 20 000. This is unfair. Road tax should be scrapped and the money raised by an increase in the tax on car fuel. Making this change would ensure that those who use the roads more would pay more. This would not only be a fairer system, but could also bring in more revenue. Which of the following best illustrates the principle underlying the argument above?

- A People should receive free medical treatment only if they cannot afford to pay for it.
- B People who travel to work every day by train should pay a lower fare than those who travel only occasionally.
- C People who earn more than double the average wage should be made to pay much higher charges for dental treatment.
- D Television channels should be paid for by subscription so that only those people who watch them should be made to pay.
- E Telephone charges should be higher for business customers than for domestic customers because they are using the system only to make money.

In the 1950s Bloom developed the

Taxonomy of Educational Objectives

as a means of expressing qualitatively, different kinds of thinking. Bloom's original terms were revised in the 1990s by Anderson, a former pupil of Bloom, resulting in some significant improvements in the existing model. The names of the six major categories were changed to verb form as thinking is an active process. For example remembering replaced knowledge as the first level of thinking. As knowledge is an outcome rather than a type of thinking.

The six levels of thinking are ranked from the three lower level order skills Remembering, understanding, applying to the higher order level skills of Analysing, evaluating, creating

Bloom's taxonomy	Anderson's revised terms
knowledge	remembering
comprehension	understanding
application	applying
analysis	analysing
synthesis	evaluating
evaluation	creating

Skills

1 Remembering

Try to find the subcategories for the other skills

Subcategories

Recognizing

Recalling

Listing

Describing

Identifying

Retrieving

Locating

Naming

Finding

Sample Sentence Starters

What happened after.....

How many.....?

Can You name...?

Can you recognize..?

Who discovered....?

Do you know when...?

Potential Activities and products

Make a list of the main events of the story

What animals were in the story?

Make a shopping list...

Write something on a diary...

To create a time line

Play a memory game...

Skills

2 Understanding

Try to find the subcategories for the other skills

Subcategories

Interpreting

Exemplifying

Classifying

Summarising

Inferring

Comparing

Explaining

Distinguishing

Sample Sentence Starters

Can you write in your own words?

Can you explain...?

Try to classify...

What is your interpretation...?

What do you mean for...?

Can you rephrase...?

Potential Activities and products

Retell the story in your own words

Make a short summary

Search for synonyms...

Interpreting a work of art

Describe an experience...

Classify why

Draw a story map

Skills

3
Applying

Subcategories
Executing
Working out
Producing
Completing
Organizing
Implementing
Making preparations

Try to find the subcategories for
this skill

Sample Sentence Starters

Can you group by characteristics such as....?

Try to work out a graphic...

Can you organize....?

How can you implement...?

Which factors would you change if...?

Potential Activities and products

Retell the story in your own words

Produce something similar...

Organize in sequences

Complete this chart....

Can you distinguish between...

Can you executeaccording to the given instructions

Work out a map

Organize a poster showing...

Skills

4

Analysing

Subcategories

Differentiating

Focusing

Underlining

Outlining

Structuring

Integrating

Finding

Try to find the subcategories for the
This skill

Sample Sentence Starters

Potential Activities and products

Sample Sentence Starters

What do you see as other possible outcomes?

Can you distinguish between...?

What could happen if...?

Can you develop...

Try to underline

Can you select

Potential Activities and products

Design a questionnaire to gather information

Write a commercial to sell a new product

Find the differences in..

Organize....

Make a family tree to show relationships

Develop an experiment

Try to underline the most important sentences etc

Skills

5 Evaluating

Try to find the subcategories for the
This skill

Subcategories

Assess

Decide

argue

Conclude

Judge

Test

Score

Critique

Sample Sentence Starters

Is there a better solution to....? Do you think.....is a good or a bad thing?
How would you feel if?....? What do you think about...?
How effective are

Potential Activities and products

Form a panel to discuss views
Express your opinion on a specific issue
Find advantages/disadvantages
Collect, discuss and interpret data
Draw inferences from data

Skills

6 Creating

Subcategories

Arrange

Combine

Create

Design

Invent

Hypothesise

Develop

Plan

Produce

Construct

Try to find the subcategories for the
This skill

Sample Sentence Starters

Can you design a...?

What would happen if?

Can you create a new and unusual use for...?

How many ways can you....

Can you develop a proposal which would....

Potential Activities and products

Invent a new ending

Create a new product

Write about your feelings in relation to...

Write a role play

Sell an idea

Think about thinking Metacognition

Children must be taught
explicitly how to think

Learning to think Thinking to learn

Planning teaching and learning activities
with a Thinking Skills focus

Using Bloom's taxonomy

Topic Water

Have a look at the website

Somethingfishy created by the teachers support centre

Blackrock Education Centre in Dublin

<http://www.somethingfishy.ie/>

Watch the story

Fish is fish by Leo Lionni

<http://vimeo.com/39374062>

Frederick by Leo Lionni

TOPIC: Water

Remembering	<p>Make a collection of magazine pictures which show how we use water You can use pictures from English magazines Recall vocabulary</p>	
Understanding	<p>Design a poster showing what happens when you boil water and what happens when you freeze it</p>	
Applying	<p>Make a 3-D water cycle display with all the vocabulary in English</p>	
Analysing	<p>Mix different materials with water. Which materials dissolve? Which do not? Place different materials on a water surface Which objects float? Which objects sink?</p>	
Evaluating		
Creating		

TOPIC: Water

Remembering		
Understanding		
Applying		
Evaluating	Conduct an experiment to find out.....	
Creating	Write a story about an adventure on a river or at sea Dramatize the story in English	

TOPIC: Family (example)

eight-year-old pupils

Remembering					
Understanding					
Applying					
Analysing					
Evaluating					
Creating					

Understanding

Objective:

Children should be able to complete a family tree

Showing family members

Curriculum links

Find out about themselves, including their personal history and family

My family

Write your name and the names
of the other members of your family in the spaces

To develop better thinking skills ,
pupils require a learning environment
which demonstrates an open-minded
attitude to the nature of knowledge
and thinking, providing open-ended
tasks with multiple solutions

Thinking skills a cross-curricular approach
Lower Primary 2006

Lots of theories encouraging
towards this direction
All aiming to develop thinking
to a qualitatively higher level

Multiple intelligences
by Howard Gardner

Six thinking hats
by Edward de Bono

Cooperative learning structures which
develop thinking skills
by Spencer Kagan

Six thinking hats
by Edward de Bono (pictures from the web)



Six Thinking Hats®

Quick Summary

PROCESS



Blue Hat - Process

Thinking about thinking.
What thinking is needed?
Organizing the thinking.
Planning for action.

FACTS



White Hat - Facts

Information and data.
Neutral and objective.
What do I know?
What do I need to find out?
How will I get the information I need?

FEELINGS



Red Hat - Feelings

Intuition, hunches, gut instinct.
My feelings right now.
Feelings can change.
No reasons are given.

CREATIVITY



Green Hat - Creativity

Ideas, alternatives, possibilities.
Provocations - "PO".
Solutions to black hat problems.

BENEFITS



Yellow Hat - Benefits

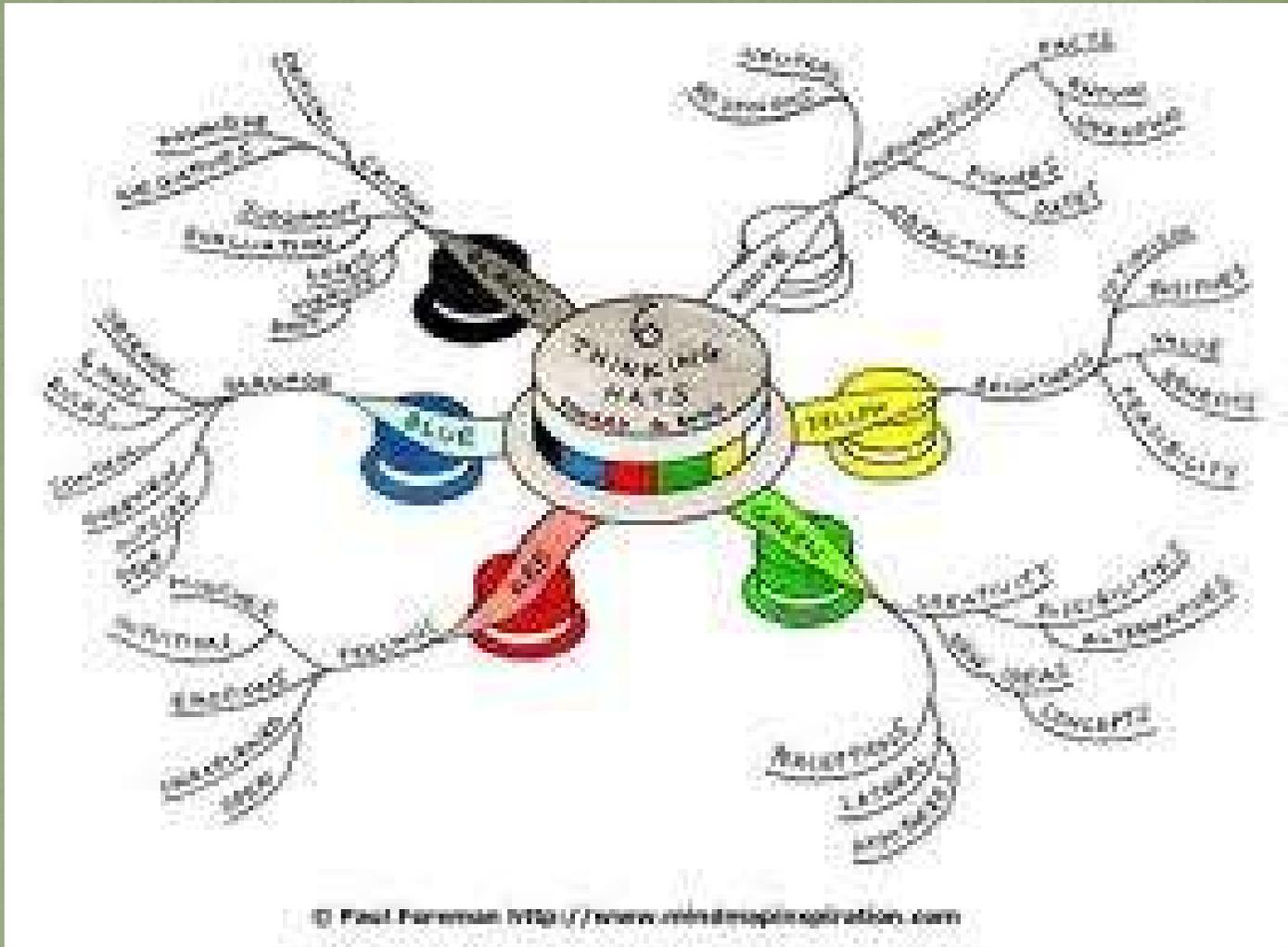
Positives, plus points.
Logical reasons are given.
Why an idea is useful.

CAUTIONS



Black Hat - Cautions

Difficulties, weaknesses, dangers.
Logical reasons are given.
Spotting the risks.



Applying thinking skills on language learning (example)

Role Plays

- Decide on the teaching materials
- Select situations and create dialogues
- or guide children create them
- Teach the dialogues for Role Plays
- Have children practice the Role Plays
- Have children modify the situations and dialogues
- Finally evaluate and check children's comprehension





Thank You for your attention