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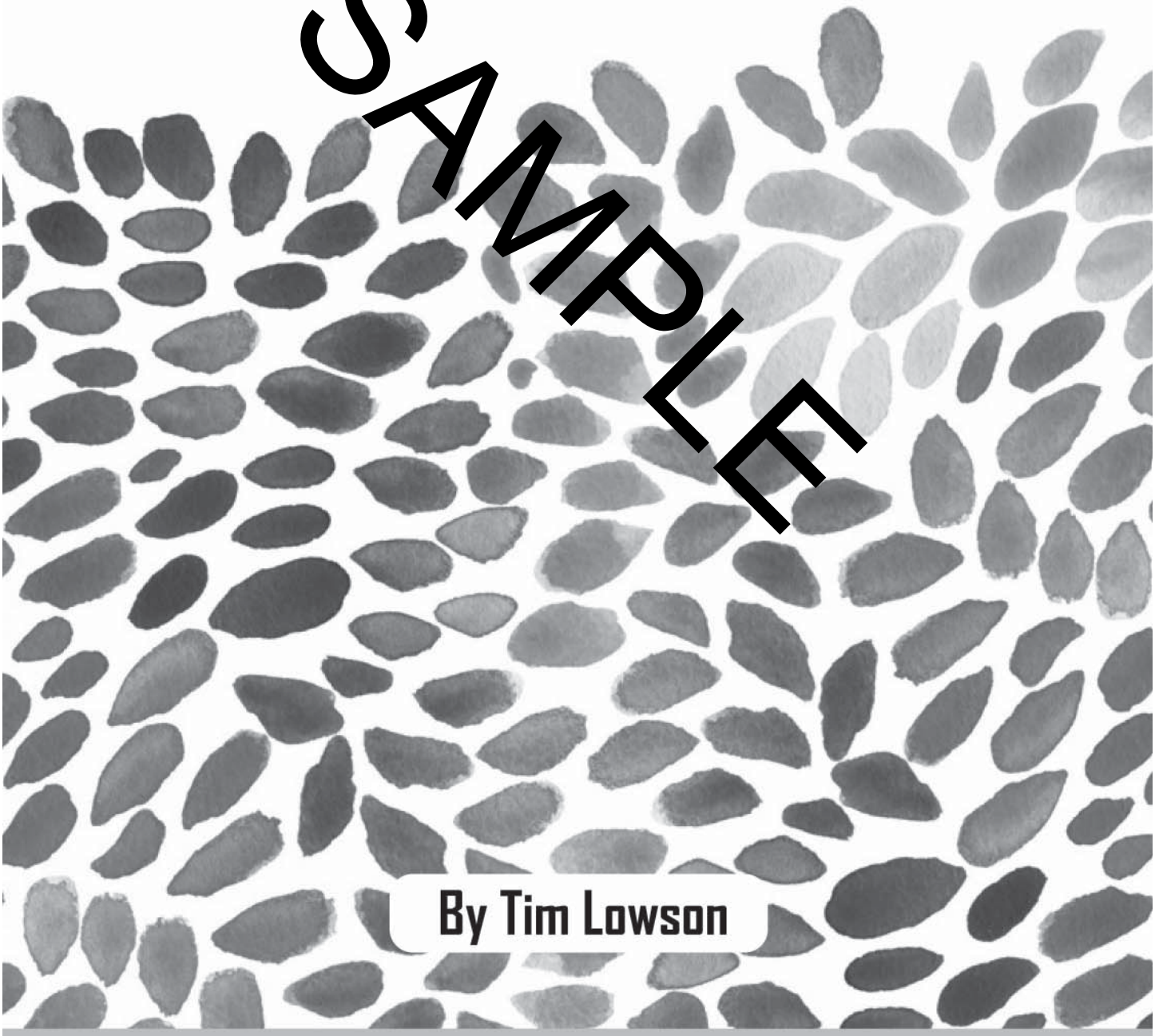
PHOTOCOPY MASTERS

Creative Challenges

Creative Thinking Activities for All Primary Ages.



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Creative Challenges - A Creative Thinking Activity Book

Notes for Teachers and Parents

❍ Anyone for (Mental) Tennis?

Edward de Bono has long been recognised as a 'guru' in the area of lateral thinking. In his book, "Thinklinks" (1975) he sets forth the idea that the ability to think is a learned skill like riding a bicycle, swimming or indeed, playing tennis. It is his contention that the mental activity of 'creative thinking' is not just the product of a high level of intelligence. Indeed, as thinking can be seen as a skill, the end result can be affected considerably by the amount of practice that the 'thinker' has been exposed to before undertaking the given task.

As with tennis, writing or swimming, the key aspect of developing the ability to think creatively and critically is to firstly, be taught the appropriate skills and secondly, to be given constant opportunities to practise those skills.

It is obvious that, again as with tennis, etc. a certain amount of thinking skills may be picked up incidentally as a child moves through his or her educational career. However, for full potential to be reached, a systematic approach need to be taken that allows the learner to be taught the thinking processes and then practise them in the course of completing normal learning requirements.

It should be noted that taken out of the context of these normal school procedures and curricula, creative learning activities on their own may become meaningless 'busy' work. These may provide the child with some mental stimulation but fail to address the need for applying creative thinking skills to curriculum related problem situations so that the learner may generate new, different or divergent solutions.

Educator Joan Dalton has summed up the area of creative thinking as applied to learning situations very effectively in her book "Adventures in Thinking" (1985), and has provided a fund of practical ideas and suggestions for teacher/parent educators to try. Her work underlines a sound principle of teaching creative thinking- that a child involved in any learning needs to work at the level of creating and producing as well as simply that of accumulating and regurgitating new areas of content.

❍ What are the skills?

This activity book follows that basic principles of de Bono and Dalton in concentrating on eight processes or skills which foster an increased ability to think creatively and divergently.

In practice these are not encountered as segregated and easily identifiable processes but for the purposes of teaching the skills it is useful to isolate them and identify them as related to either the cognitive (thinking) or affective (feeling) areas.

Cognitive abilities:

Fluency - Related to the generating of a quantity of ideas on the premise that the more ideas generated, the greater likelihood of originality.

Flexibility - Examining a problem from different perspectives; seeking variety in responses.

Originality - Coming up with new or unique solutions to given problems or questions; putting two known ideas together to make a third original one.

Elaboration - Adding to what is already apparent to make an idea more interesting or exciting; seeing relationships to the given idea.

Section 1

A Grab Bag of Creative Thinking Activities.

These activities are designed to reinforce the skills outlined in the introductory pages. Pages may be photocopied and made into cards for easy access. The top right corner of each card indicates the skill or skills highlighted in the accompanying activity.

It is suggested that initially, much discussion and idea sharing will be required, as children become more familiar with attempting tasks that don't necessarily have 'one right answer'. Some nervousness or insecurity may be encountered (particularly amongst younger children) as children are encouraged to provide a range of possible solutions when they probably feel more secure with the knowledge that they have got it right. For this reason the follow-up to the completion of activities may be just as important as the activities themselves.

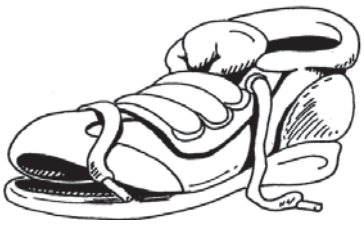
Questions and considerations such as those below could be posed:

- What are some of our solutions?
- What approaches did we take to solving the problem of completing the activity?
- How effective were our group's problem solving techniques? How did we each contribute?
- Were we able to generate a lot of solutions? (Fluency)
- How different are each of our solutions? (Flexibility)
- Which solutions were the most novel and original? (Originality)
- Were our ideas interesting and exciting and building on what we already knew? (Elaboration)

CHALLENGE 5

Skill: Fluency/Flexibility

❍ What are some things you could do with an **old shoe**?



CHALLENGE 6

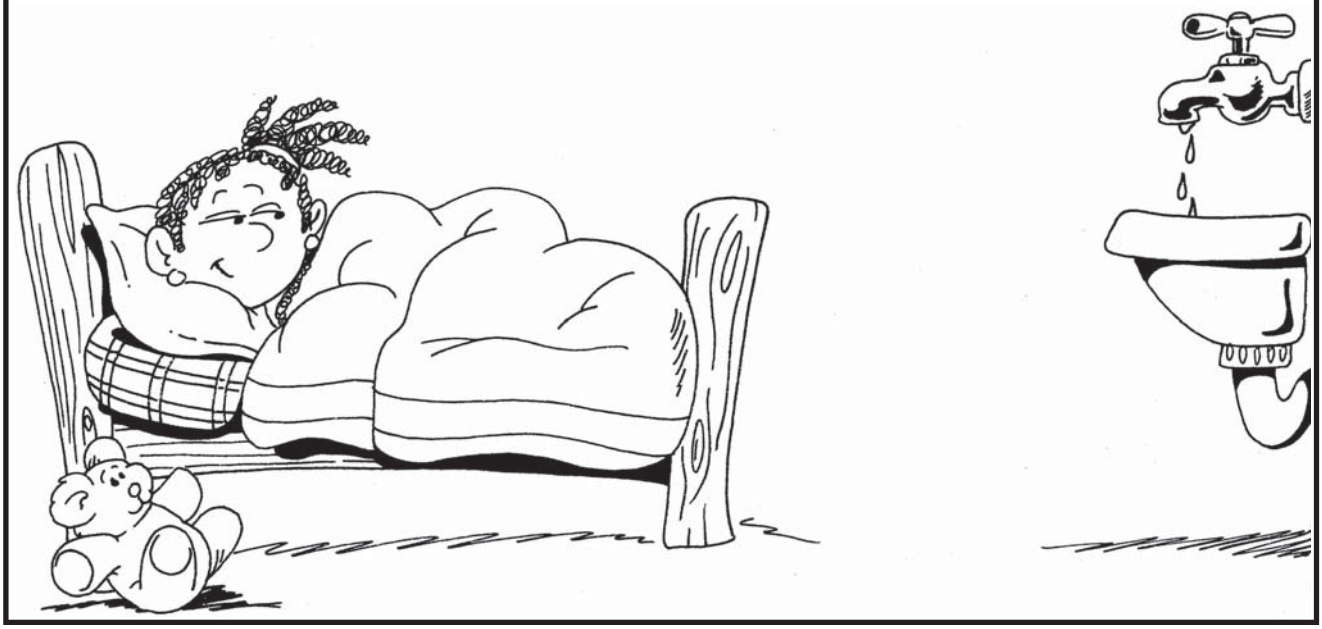
Skill: Fluency/Flexibility

❍ What are some new or different uses for a **brick**?

CHALLENGE 15

Skill: Originality/Elaboration

❍ How does she turn the **tap off** from her bed?
Draw your 'high-tech' creation below.



CHALLENGE 33

Skill: Imagination

- What is **importance**?
  Draw some important people.
  Say why they are important.

Research Task 1

Are Farm Animals Important to Us?

❍ Listing Ideas

1. List animals that live on farms.

_____

_____

_____

_____

2. List as many uses as you can for each animal.

_____

_____

_____

❍ Changing Ideas

3. In what different ways does a horse help us out? How has it helped us through history?

_____

_____

_____

4. Think of all the ways a cow would help you if you had one in your backyard.

Real Ways: _____

_____

_____

Imaginary Ways: _____

_____

_____

Creative Science

The following science-based activities are Level 3 tasks for some typical primary school science themes. They could be viewed as a stimulating culmination to a unit of work in a related science area.
Each activity utilises simple or scrap materials with the aim of producing actual working 'inventions'. An important part of the activity is the use of critical thinking and problem solving skills in order to determine what the problem is, what some possible solutions are, how the solution will be implemented and finally, what steps should be taken in the testing and evaluating process. Children could work in groups of 3 or 4 and, if so desired, a competitive element could be introduced.
An alternative way of using the constructions is to have children complete their models and then consider questions related to various scientific principles. e.g. How does it work? What makes it work? Show how your invention demonstrates the scientific principles related to : air taking up space; equalising of air pressure, etc.

❍ Theme 1 - 'Air' and similar topics.

The Big Bang

Your task:
Using the balloons provided, construct a piece of apparatus that allows a golf ball to burst a balloon from a distance of no more than 50 cm.

Conditions:
1. The golf ball may not be thrown or released directly from the designer's hand, i.e. there must be some sort of trigger involved.
2. There is no requirement that all materials be used. However, only those listed below are allowed.
3. For the demonstration of your invention, only 2 turns will be permitted.
4. You have until _____ to complete your design.

Materials:
Maximum 20 icy pole sticks, rubber bands, Plasticine, 3 pieces of A4 paper, pins, scissors, sticky tape, golf ball, 2 balloons (1 for trials).

Jet Stream

Your task:
Using the materials below, construct a vehicle that moves under its own power and in doing so demonstrates how air can provide thrust.

Conditions:
1. Your vehicle can move in any direction or on any surface.
2. The vehicle may not be launched by hand.
3. There is no requirement that **all** the materials be used. However, you may use **one** other material of your choice.
4. You have until _____ to complete your design.

Materials:
Square piece of card (about 10cm x 10cm), 2 drinking straws, 2 wooden skewers (cooking type), 1 x 4cm length of 1 cm diameter plastic tube, rubber bands, balloon, sticky tape, scissors, Plasticine, cardboard counters or discs.

Task-Starters Using Creative Thinking Skills

Skill	Task Starter	Example
FLUENCY	List all the ... What are all the ... Write 10 ... What are some reasons for ... How many ... What are the things ... if ... Tell how you felt when ...	List all the foods you like that are hot. What are the things you could do if an escaped lion came into your yard?
FLEXIBILITY	What are the alternatives to ... Compare a ... with a ... . How are they alike/different? What are the consequences of ... How many different ways ... Give 5 different reasons for ...	Compare a dog with a cat. List all the ways they are: alike, different. How many different ways can you eat your lunch?
ORIGINALITY	Plan an ... Invent a ... Create a ... Compose a song ... Think of unusual ways to ... Use all of these things to mak...	Plan a brochure advertising the first passenger trip to Mars. Use a spoon, a comb and a Mintie to help rescue a shipwrecked sailor.
ELABORATION	Improve ... by ... Modify the ... so that ... Who am I? I lived ... Change the ... so that ... Adapt ... Substitute ...	Improve the pencil so that it becomes a marvel of the electronic age. Change your arms with your legs. How would life be different?
CURIOSITY	What would happen if ... Where might ... occur? Just suppose ... What if ... Why do you think ...?	What would happen if school was banned? Why do you think we wonder why?
COMPLEXITY	Decide on the reasons for ... What are the considerations if ... What questions can be asked to find out about ...? What are the consequences of ...?	Decide on the reasons people follow fashion. What questions can be asked to find out why the leopard has spots?
RISK TAKING	Rank ... Justify ... Say why ... is the best/worst Decide ... Give reasons for ... What would you rather be ... or ...?	Rank these people according to their value to society. Say why. Say why ... is the best sports team
IMAGINATION	Imagine that ... Think of ... You are a (dog/horse/tree...) how do you feel about ...? What would it be like if ... Pretend ...	You are a horse in a show jumping competition. How do you feel? Pretend it hailed donuts. Why?