Brilliant Activities for Stretching Gifted and Talented Children

Ashley McCabe Mowat

Brilliant Publications

Publisher's Information

Brilliant Publications
www.brilliantpublications.co.uk

Sales Office:
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website: www.brilliantpublications.co.uk

Written by Ashley McCabe Mowat
Cover design by David Benham
Illustrated by Kerry Ingham

ISBN 978-1-905780-17-4

First published in the UK in 2008
10 9 8 7 6 5 4 3 2 1

Printed in the UK by Lightning Source

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Ashley McCabe Mowat is a Gifted Educator and Consultant. She grew up in the southern states of America and was a student in the gifted programme from the age of 8. She received a BA in Early Childhood Education, a BA in Elementary Education and studied Psychology at Converse Women's College in South Carolina. Ashley continued her education at Converse, receiving a master's degree in Gifted Education. During this time, Ashley taught in an inner-city school and completed a thesis on Underachieving Gifted Males. She also planned and implemented a curriculum for the top 100 gifted students in her area for the Athena Institute, a summer programme for gifted students.

Ashley moved to England, married, and in 1999 taught Key Stage 1 at Gateway School in Great Missenden, Buckinghamshire. The following year, she piloted a gifted programme in the school, writing and implementing a themed curriculum dealing with issues of the gifted and talented. The programme has been a great success. Ashley has organized Creative and Critical Thinking Workshops at Gateway during the school holidays and taught at various summer programmes for gifted pupils. Ashley teaches at Gateway part-time. She has provided INSET training days for teachers in schools involved with the Excellence in Cities programme and has worked with the National Association for Gifted Children (NAGC) on their website.

Ashley is available to provide INSET training days, and workshops for children. She can be contacted direct via e-mail (amm_gifteded@hotmail.com) or via Brilliant Publications.

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Introduction

If you are the teacher (or even the parent) of a gifted and talented child, you'll understand the challenges involved in providing the mental stimulation they require. This book helps you to meet these challenges.

Part I reviews theories and concepts relating to creativity, learning and teaching (such as Bloom's Taxonomy), with particular regard to the education of gifted and talented children. Here you'll also find fun, motivating activities demonstrating how you can put the theories and concepts into practice.

Part II provides a selection of whole-class activities that will stretch the gifted and talented child. These are divided into:

- Quick Warm-ups
- Brainteasers
- Maths Mania
- Longer Whole-class Activities

Further whole-class activities can be found in Ashley McCabe Mowat's first book, *Brilliant Activities for Gifted and Talented Children* (ISBN 978-1-903853-47-7)

Part III, the final and largest section of the book, provides entertaining, open-ended exercises for pupils to complete independently, further stretching their analytical, creative and evaluative skills.

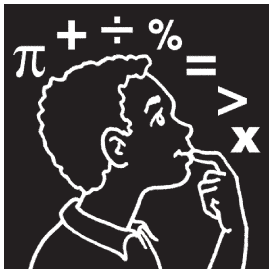
All the activities in Parts II and III are photocopiable. Cut the photocopied sheets along the dotted lines to separate activity cards. We recommend laminating the cards to increase their durability. All the activities require minimal preparation.

While written mainly for exceptional pupils up to the age of 11, this book presents approaches and insights that can apply to virtually any pupil and to any teaching situation.

Logos appear on each activity, indicating whether the task is for the whole class or for individuals, or whether the questions are brainteasers or more maths orientated.

Whole class

Individual



Maths Mania

Brainteasers

Bloom's Taxonomy

What is Bloom's Taxonomy?

Bloom's Taxonomy is, quite simply, a classification of levels of intellectual behaviour important in learning. Bloom's model describes six levels of thinking, arranging these sequentially from the least complex to the most complex. These are:

1. **Knowledge** – simple recall. Pupils can say that they 'know' something if they can recall it, recite it or write it down.

2. **Comprehension** – pupils can restate what they 'know' in their own words. Retelling a story, stating the main idea or translating from another language are several ways in which pupils can demonstrate that they 'comprehend' or understand what they have learned.

3. **Application** – pupils can apply what they have learned from one context to another. For example, they may be required to decide when to apply mathematical concepts to real-life situations.

4. **Analysis** – pupils can understand the attributes of something so that its component parts may be studied separately and in relation to one another. Asking pupils to compare and contrast, categorize and/or recognize inferences, opinions or motives would give them experience in analysis.

5. **Synthesis** – requires pupils to create a novel or original thought, idea or product. All of the activities we call 'creative thinking' give pupils experience with synthesis. Also, when pupils can take bits and pieces of several theories or combine ideas from different sources to create an original perspective or idea, they are thinking at a synthesis level.

6. **Evaluation** – pupils can judge what they have analysed.

Sample activities based on each of the six levels of Bloom's Taxonomy could resemble the following:

Knowledge	Make a timeline of some of the important events in the history of the world.
Comprehension	Write a brief outline of some of the changes that have taken place in your lifetime.
Application	Illustrate one of these changes in a cartoon strip.

Analysis

Useful verbs	Sample question stems	Potential activities and products
Advertise	If ... had happened, what might the ending have been?	Write an advert to sell a new product
Analyse	Which events could have happened?	Design a questionnaire to gather information
Categorize	How was this similar to ... ?	Conduct an investigation to produce information to support a view
Compare	What was the underlying theme of ... ?	Make a flow chart to show the critical stages
Contrast	What do you see as other possible information?	Construct a graph to illustrate selected outcomes
Distinguish	Why did ... changes occur?	Make a jigsaw puzzle showing a detailed pattern
Examine	Can you compare your ... with that presented in ... ?	Make a family tree showing relationships
Explain	Can you explain what must have happened?	Put on a play about the area of study
Identify	How is ... similar to ... ?	Write a biography of the subject of study
Illustrate	Can you distinguish between ... ?	Arrange a party. Make all the arrangements and record all of the steps needed
Investigate	What are some of the motives behind ... ?	Review a work of art in terms of form, colour and texture

The Torrance Tests of Creative Thinking

E Paul Torrance, a renowned professor of educational psychology, was among the first to recognize creativity as being part of intellect. As such, he invented the Torrance Tests of Creative Thinking, which have since become accepted as the benchmark method for measuring creativity and have served as the basis for all subsequent research on the subject. The tests comprise two parts: the verbal and the figural. The verbal test requires the pupil to invent uses for common things, such as a soft toy (eg 'How would you make this a better toy?'). Pupils' responses are then assessed for originality, fluency (number of responses), flexibility (number of different categories) and elaboration. The figural test calls on the pupil to incorporate simple shapes into more complete pictures. Responses are then judged on many of the same criteria used in the verbal test, along with the additional criteria of humour and emotionality.

Torrance's tests not only helped to debunk the belief that IQ tests alone were the best measure of a person's real intelligence, they also raised awareness of the value of creative abilities, which in turn led to the development of gifted programmes throughout the world.

Incorporating Creative Thinking Processes into the Classroom Curriculum

Based on Torrance's four criteria of Fluency, Flexibility, Originality and Elaboration, we as teachers can strive to enhance and develop the creative talents of gifted and non-gifted pupils alike. On the next few pages, we expand on these four criteria, and offer classroom activities based thereon.

Brainstorming

What is Brainstorming?

Brainstorming is a group creativity technique designed to generate a large number of ideas for the solution of a problem. It has added benefits, too, such as improving morale and encouraging a spirit of co-operation among group members.

There are some important rules for brainstorming:

1. Quantity is important

Get as many ideas as you can down on paper or on the board. It is not important what you say at this stage; just make sure that you have a long list! Encourage the children to have a 'mindshower' for one minute when they have run out of ideas. This encourages them to think as much as they can for one minute to try to create a few more ideas to write down. (Challenge them to think of 10 more ideas!)

2. No judgement

Don't make fun of anyone's ideas, even your own. Welcome all ideas and write them down on your list. You will have a chance to judge your ideas at a later stage.

3. Accept far-out ideas

Ideas that seem silly are great! They stimulate creativity and may lead to an idea that does not seem so silly later. Good ideas sometimes stem from crazy ideas!

4. Bouncing ideas off one another is definitely allowed

When you hear someone else's ideas, it makes a light switch on in your brain that gives you a different idea. This is bouncing ideas off one another. Just one idea can lead to another, and another and another! Sometimes the best ideas are stimulated from hearing a great idea from your friend.

Scamper Your Way to Creative Thinking

What is SCAMPER?

The SCAMPER technique was developed by Bob Eberle, a US educational administrator and a prolific writer on creativity for children and for teachers. SCAMPER is an acronym for idea-spurring verbs to improve objects or generate ideas. The letters represent the words 'substitute', 'combine', 'adapt', 'modify'/'magnify'/'minimize', 'put to other uses', 'eliminate'/'elaborate' and 'rearrange'/'reverse'. Questions associated with these verbs, as well as examples of recent inventions that illustrate them, are listed in the table on page 26.

After making children aware of these verbs and how they have been applied to existing objects and products, encourage them to use the SCAMPER verbs to identify new solutions to a problem. For example, a young child looking for a solution for keeping squirrels from eating out of a bird feeder thought of eliminating the pole entirely by attaching the bird feeder to balloons filled with helium, which would enable the feeder to float approximately four feet off the ground.

Scamper Task

Combining what you know about Brainstorming and SCAMPER, have pupils brainstorm an idea in ability-based groups. Brainstorm as many ways as possible to _____. The pupils will come up with a long list.

With their group, pupils are to develop criteria to judge which is their best idea. They will circle the best idea and then SCAMPER it. It is important to inform pupils that their idea may not change from the original idea after SCAMPERing it. It is the creative process that is important. For each of the acronyms, pupils will generate ideas that modify or elaborate on their existing idea. At the end of the lesson, pupils can evaluate how SCAMPER has affected the outcome.

On page 27, there is a blank SCAMPER sheet that can be photocopied and used when using the SCAMPER technique in the classroom. I suggest having a laminated SCAMPER sheet and a SCAMPER fill-in sheet for every pupil, that can be wiped clean and used again and again.

S	Substitute	What could you substitute? What might you do instead? What would you do as well (or better)? *Examples:* vegetarian burgers; disposable nappies
C	Combine	What would you combine? What might work well together? What could be brought together? *Example:* musical greeting cards
A	Adapt	What could be adjusted to suit a purpose or condition? How could you make it fit? *Examples:* air fresheners that resemble shells; children's beds that look like race cars
M	Modify	What would happen if you changed the form or quality? *Examples:* parabolic skis; scented crayons
	Magnify	Could you make it larger, greater or stronger? *Examples:* extra-strength medicines; over-sized sports equipment and televisions
	Minimize	Could you make it smaller, lighter or slower? *Examples:* wrist-band televisions; light-weight bicycles
P	Put to other uses	How could you use it for a different purpose? What are some new ways to apply it? What does it suggest? *Examples:* old tyres used for fences, swings and bird feeders; the development of snowboards
E	Eliminate	What could you subtract, take away or do without? *Examples:* sodium-free, fat-free foods; cordless telephones
	Elaborate	How could you expand or elaborate on what is there? *Examples:* a short story rewritten as a play; a simple tune developed for an orchestra to play
R	Rearrange Reverse	What would you have if you reversed it, or turned it around? Could you change the parts, order or layout? *Example:* reversible clothing

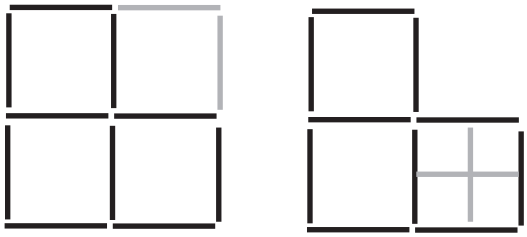
Blockbusting

When you are stuck on a problem, you can often break your pattern of thinking by blockbusting. Following an entirely different train of thought, you can often get new and different solutions to problems. You must force yourself to think in unusual ways. For instance, you might think smaller or larger, or in opposites or like someone living in another environment.

Blockbusting Tasks

Practise breaking your thinking patterns with the children by using some of these brainteasers:

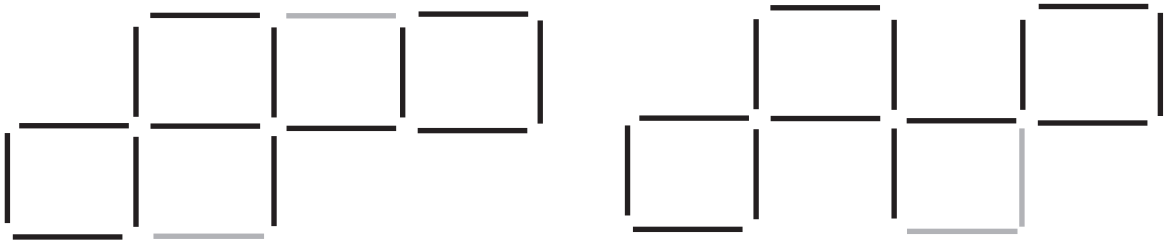
1. Take 12 pencils and make four attached squares. Change the four squares to seven squares by moving only two pencils.



2. Make the following equation correct by moving only one pencil to another place in the following equation: I+II+III=IIII. There are several solutions to this problem.

3. Turn the three pencils into four by moving only one pencil to another position. Breaking a pencil is not allowed. (Answers depend on where the children place their pencils to start with.)

4. Change the pattern from five squares to four squares by moving only two pencils to other positions. You cannot double the pencils or place two pencils side by side.



Making Associations

Creative thinkers often get new ideas by discovering associations between the things they observe around them.

One product + another product = a new idea or product

Try this one for yourself. Select two items from the list below (or think of your own); then write down their differences and find a way to combine the items into an invention that is uniquely useful.

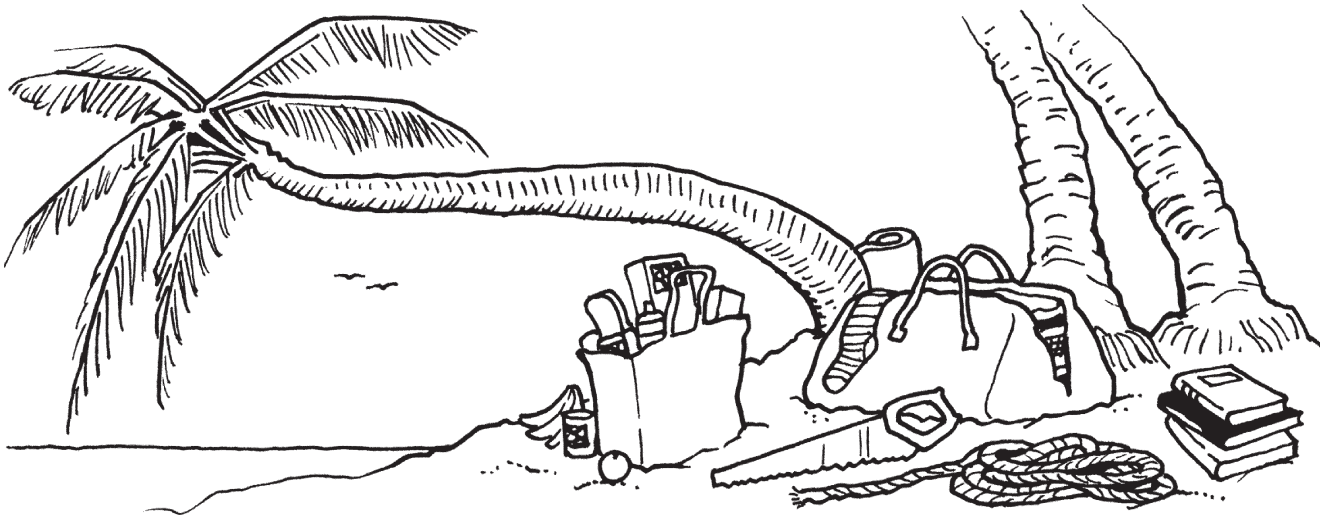
Briefcase	Roller blades	Telephone
Watch	Golf club	Car
Dictionary	Robot	Toothbrush
Comb	Jacket	Radio

One possible invention could combine rollerblades with a watch. What have you got?

Similarities	Differences
They are both for wearing.	You wear rollerblades on your feet and a watch on your wrist.
They both help you get somewhere on time.	One is small and the other is bigger.
They both have stoppers.	A watch beeps and rollerblades don't make any electronic noise.
They can both be the same colour.	A watch has a face and rollerblades do not.
They can both be worn as fashion accessories.	Rollerblades are fast (and hopefully your watch is not!).

Island Fever

You are stranded on an island and you want to get home. There are many trees and you have a saw, some rope, three books, a bag of clothing and enough food to last a week. What will you create?

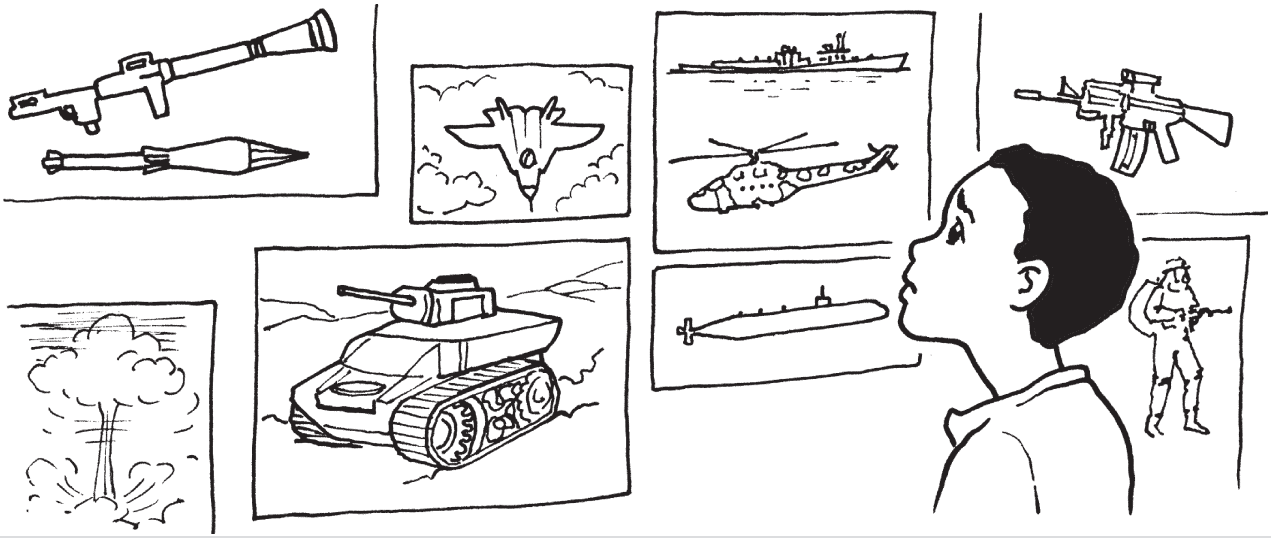


Pollution Solution

You are worried about pollution. You do not like the way the air often seems heavy and looks dirty. What will you create?

War Works

You feel sad when anyone is hurt. You want to design something for the military that is useful but will not be harmful to people. What will you create?

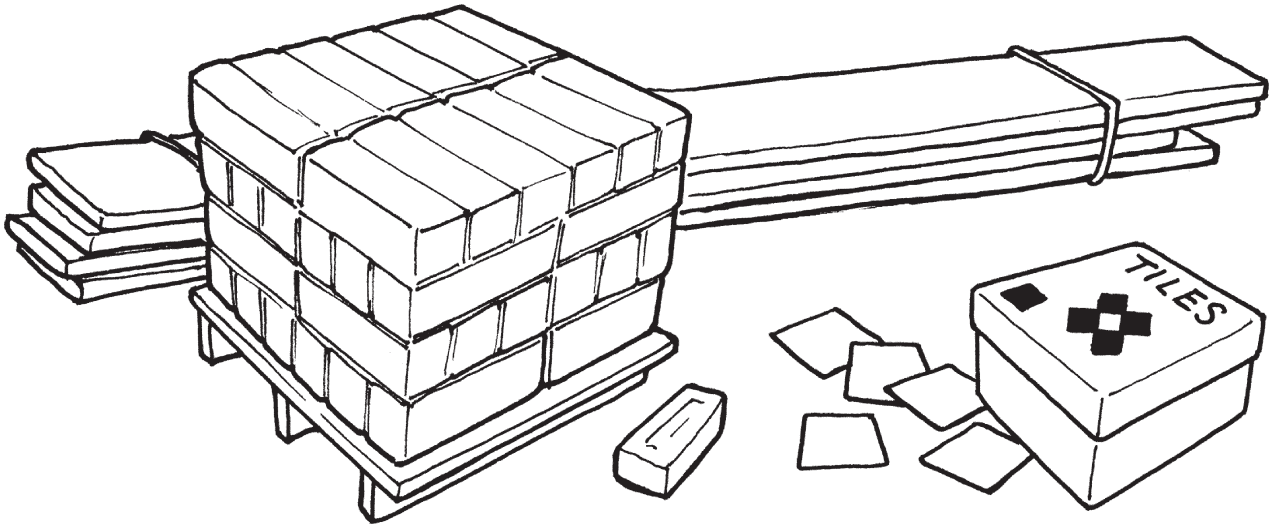


Sweet Sounds

You like music and think it would be great to invent a new kind of musical instrument. What will you create?

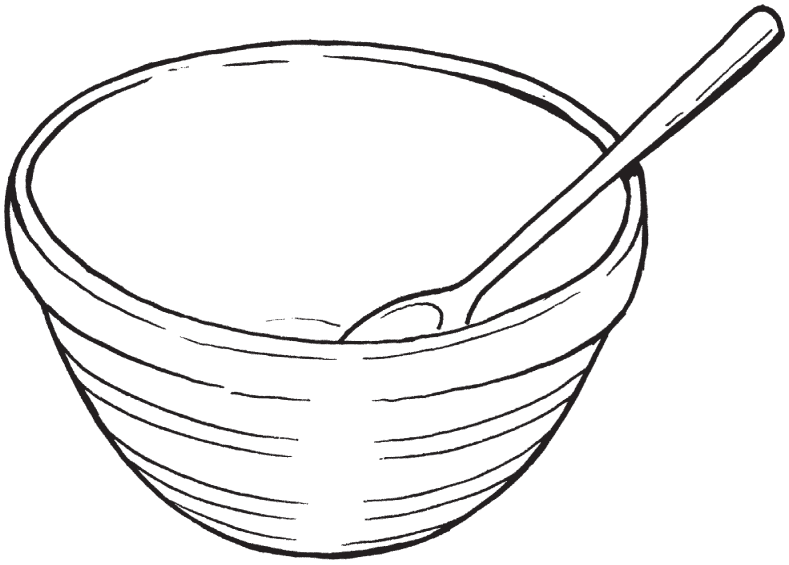
Housing Heaven

You are tired of living in your house. You think that people need some new kind of housing. What materials will you use? What will you create?



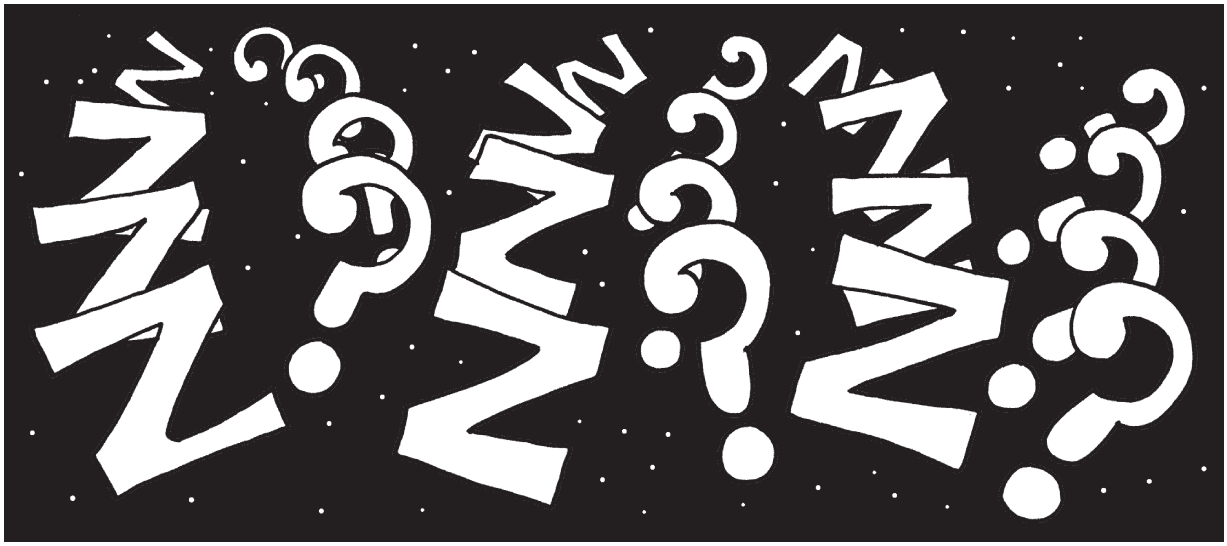
Cook's Delight

You want to make a cake and your stove, oven and fireplace are not working. What will you create?



Busy Machine

You feel that sleep is a waste of time. You would rather be spending the hours doing other things. What will you create?



Clever Cleaner

You see that doing the laundry and housework takes many hours a week. You want to design a fast, inexpensive method of doing these chores. What will you create?