News From Curriculum Corporation Mathematics Task Centre Project
23rd July 1996

As testimony to the quality and educational perspicacity of the many teachers who have spent many hours over the past decade and a half refining the task centre concept, interest in the Task Centre Project continues to grow. The project began collecting the wisdom of task centre practice in June '92 and has since placed about 75,000 tasks into some 600 schools around the world. In Australia the project has already reached approximately 1 in 20 schools and there is no indication that interest is slowing.

But finding quality learning tasks is only part of the story. Teachers need support based on the experiences of colleagues to learn how to make best use of the tasks. So, parallel with the growth in the provision of tasks, have been requests to train consultants to deliver professional development, and construction of packages designed to assist teachers to work as a team to integrate the use of hands-on problem solving tasks.

Some specific developments in recent months are:

New tasks

The following tasks have recently been added to the catalogue:

3	Doug's Tablecloth	2d space, fractions, measurement
4	Window Frames	number
5	Make A Snake	algebra
6	Counter Escape	chance and data
65	Shape Algebra	algebra, 2d space
77	Tricube Constructions A	3d space
90	Tricube Constructions B	3d space
101	Pyramid Puzzle	3d space, number, algebra, history of mathematics
137	Training For Maths	number
144	Pascal's Triangle In Asia	number, history of mathematics
196	Stop At 4	number
197	The Maltese Cross	2d space, measurement

and Code Breaker has been replaced by

109	Number Game	number

The card for Pyramid Puzzle has been reproduced here with permission. It cannot be copied, but teachers may like to write their own version. The puzzle is referred to in the July '96 Challenging Problem Of The Month on the web home page (see below).

New Prices

Due to changes in the cost of raw materials, the project will have to increase its prices from January 1st 1997. It is expected that the cost of a kit of 100 tasks will rise to $1100 (Australian) with consequent changes in other products. Orders received before December 31st will be honoured at current prices.

'Three Lives Of A Task'

In recent work with teachers the phrase 'Three Lives Of A Task' has emerged as a curriculum planning signpost. Teachers have discovered that many tasks can be adapted to three main purposes:

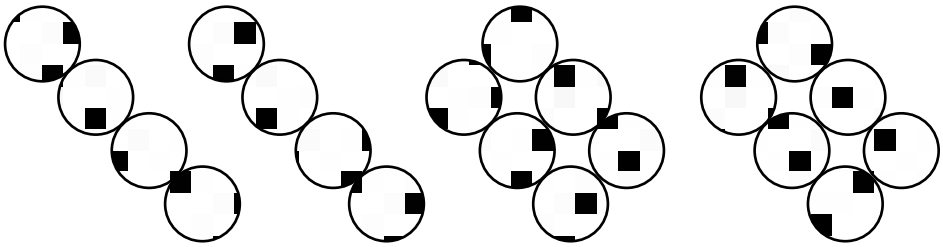
- an introductory activity for two students, as on the card
- a whole class activity
- an extended investigation for an individual or small group

PYRAMID PUZZLE

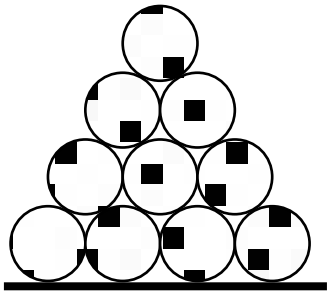
MATERIALS

Four [4] pieces made from spheres as shown below

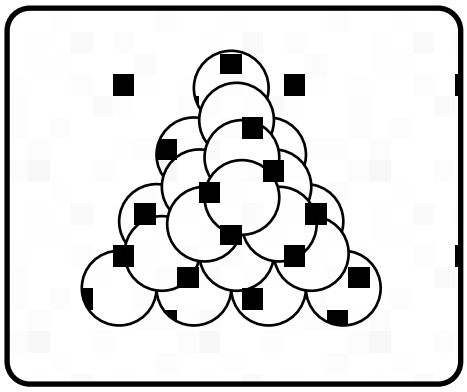
1. Use these pieces:



to make a triangular pyramid (also called a tetrahedron):



SIDE VIEW



TOP VIEW

2. Work out the number of spheres in each layer and the total number of spheres.
3. The puzzle makes a 4 layer tetrahedron. How many spheres would be on the bottom of a five layer tetrahedron? How many spheres would it use in total?
4. Work out the total number of spheres needed to make a 10 layer tetrahedron.

Action Overseas

In March Doug Williams spent a day teaching in Inveralmond Community School outside Edinburgh to demonstrate some of the uses of the tasks they had already bought. The staff were very excited by the students' responses. He also visited Oban High School on the West Coast of Scotland which had purchased a kit based on its success 'down the road' at Lochgilphead High School.

In April, a small session on the project was presented at the 23,000 strong conference of the National Council of Teachers of Mathematics in San Diego. This was part of a very successful showcase of Australian mathematics education.

In May, Michelle Selinger, Chief UK consultant for the project, delivered the introductory workshop to Thorne Grammar School, near Doncaster, in England. Andy Martin, the Head of Department was thrilled. He commented that there were some 16 other schools in the area which were watching to

see how the task centre use developed. The Northern hemisphere schools are on summer holidays at the moment, so we look forward to hearing how things develop at Thorne in the new academic year.

In June, Marj Horne and Ulla Öberg presented a day and a half session on task centres at a conference in Sweden. Marj is from the Australian Catholic University and is a consultant for the project. Ulla has established a task centre based on project materials at her university in Malmö. Marj comments:

We had about 22 people in a workshop for five 75 minute sessions. We did most of the basic workshop followed by the algebra replacement unit. One of the committee who was a 10-12 teacher came to the first part of the algebra workshop. I gave her group the Jumping Kangaroos. Two hours later, still working on the same problem, she was convinced of the depth of mathematics and the access the task gave to the iceberg as well as the motivational aspects - after all she stuck at it for that time and cut short her coffee break considerably. The people involved in the workshop were all really happy.

In addition the international threads continue to grow with recent placement of tasks in schools in New Zealand, United States of America and in the International School in Singapore.

Replacement Units

This concept of introducing or extending task use by replacing three weeks of the regular curriculum with a balance of hands-on activities, class lessons and extended investigations has proved very popular since its introduction at the end of '95. Well over 100 units have been sold and many workshops have been run based on the concept.

Pattern and Algebra units for each of Upper Primary and Lower Secondary are currently available and Version 4 of these is in preparation. Draft versions of Replacement Units in Computation and Chance & Data are in preparation and trial. They will be available by the end of the year. A half day workshop for the Replacement Unit has also been developed and successfully used with a number of schools. Contact Curriculum Corporation for details.

Other models for integrating task use are also being developed.

Working With The Web Page

The project has become conscious that as more is learnt about particular tasks it will not necessarily be in a position to publish that information in print form. So, in conjunction with Andy Wain who manages the Problem Solving Task Centre Page at URL:

http://www.srl.rmit.edu.au/mav/PSTC/index.html

there will soon be a section in which both the project and you can publish new learning about tasks themselves and ways of making use of them. This will be up and running by the end of the term, so check it out. It is likely that the first contribution you will find there will be about the ever amazing Jumping Kangaroos problem.

The following question was placed on the mailing list by students of Eltham Primary School and indicates something of the potential of this medium for encouraging students to discuss problems over the telephone lines. Their contact teacher is Roslyn Shannon. The school did not have its own internet connection at this time so Roslyn asked a friend at another school to upload the information. The children were so excited by the idea that some decided to go to a Cyber Cafe to see if they could find their message. The task Lining Up is one from the Task Centre Project.

LINING UP

We are trying to find a way to work out how many children altogether if you were in the middle and you know what position you had, eg: Third in line.

What did we do

We got people to stand up in a line and someone else to try and work out where they should stand. They did that by counting to their position from each end. Then if they needed to put or take people out they would. Last of all, they would check again to make sure.

What we found out

We found out that with any number we could multiply it by 2 then take away 1 and then you should get the right combination.

20th in line. c=children
eg (20 multiplied by 2) - 1 = 39 n=position in line.

Table

Position	Number of child
3rd	5
15th	29
25th	49
72nd	143

What to do if you know how many children there are, to find your position.

p=(c-3)/2
p=place
c=children
eg. c=25 (25-1) /2 =12
12----------you----------12

Working With Systems

Increasingly, the Task Centre Project is being seen by systems or local clusters as a strategic contributor to their professional development and curriculum priorities. Consequently, many local advisers are using the materials and processes of the project as valuable components of their work. Local advisers and regional organisers who enter a professional understanding with the project are able to advantage their schools by supplying the introductory workshop at a considerable discount.

Support For Schools

Many schools are uniquely shaping their task centre to fit their own curriculum vision. Project personnel have worked with several such schools and this expertise is now available to share. Some of the special requests which have been fulfilled recently are:

- on-going consultancy and support for integrating the task centre with the regular program
- provision of multiple copies of tasks, eg: unlaminated cards, additional materials

Class Lesson Clusters

Several schools have requested the availability of enough concrete materials to run a whole class lesson. Accordingly, a selection of the more popular of these is being prepared. Each will be presented as a package of 15 sets of task materials (enough for 30 students) plus extensive teacher support notes and photocopiable masters. The notes will show how several lessons can be built around the use of the materials. Prices will vary considerably depending on the cost of materials.

The first Class Lesson Clusters will be:
CL 1: Four Cube Houses
CL 2: Shape Algebra
CL 3: Painted Cubes
CL 4: Tower Of Hanoi
CL 5: Dominoes
CL 6: Tricubes

Clearly many tasks can easily be given this 'life' within a school by adapting equipment which is already available. Therefore the only Class Lesson Clusters which will be prepared are those where the equipment is highly specific or difficult for a school to obtain.

In summary, the Task Centre Project is active and growing. It seems that teachers are finding its many aspects to be a timely support. The project leaders, Charles Lovitt and Doug Williams can be contacted through Curriculum Corporation:
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