

## National Literacy and Numeracy Week 2009 Project Report

<b>Project title:</b> Active Numeracy through 'hands-on' participation
<b>Project description:</b> There will be a targeted Numeracy day within NLNW where the curriculum will consist of: <ul style="list-style-type: none"><li>• an ICT component using <i>TaLE</i> and the <i>National Library of Virtual Manipulatives</i> resources,</li><li>• a hands-on project using concrete and visual stimulus</li><li>• a relay based on a medley of numeracy activities.</li></ul> The project will run for 6 periods (full day) in which students will be divided into 3 groups. The groups will be structured to be inclusive of a variety of ability levels. Each group will rotate through a series of 3 different activities. To ensure the students are supported in their learning, there will be a ratio of teachers to students of approximately 1 to 7. The last period of the day is intended as a structured evaluation and recount period where students will be required to provide a written account and feedback on the day's events. These evaluations will be used to create a media release advertising the school's and ultimately, the NLNW achievements.
<b>Person responsible for project:</b> Vicky Saisanas HT Mathematics
<b>School, region, diocese:</b> Granville Boys High School, Granville District
<b>Contact person's email:</b> <a href="mailto:vicky.saisanas@det.nsw.edu.au">vicky.saisanas@det.nsw.edu.au</a>
<b>Number of students, teachers, parents, other community members directly involved:</b> The school principal, Ms. Linda O'Brien, seven Mathematics teachers, three Learning Support teachers, a total of 60 Year 8 students.
<b>Intended literacy and/or numeracy outcomes:</b> <ul style="list-style-type: none"><li>• To raise awareness of numeracy outside the mathematics classroom</li><li>• To understand the importance of numeracy in everyday life</li><li>• To provide an opportunity to work with concrete materials through a direct 'hands-on' approach</li><li>• To facilitate co-operative learning to solve numeracy problems</li><li>• To apply boys' education principles through basing learning on varied visual stimulus</li><li>• To provide an opportunity to investigate ICT strategies in "Working Mathematically"</li><li>• To encourage teacher Professional Learning at GBHS by exploring alternative numeracy deliveries</li><li>• To provide an opportunity for parent engagement in their son's learning</li></ul>

**Evidence of achievement of intended literacy and/or numeracy outcomes:**

- Oral and written feedback (written evaluation) from students
- Staff were excited and actively participated and promoted the activities
- Senior school executive joined in
- There was a great buzz for days after the Numeracy Day
- Student absenteeism was low
- Staff and students felt they had accomplished something special

**Staff Observations of student engagement**

- Students requested more of these types of days in the future
- Students displayed great enthusiasm working with peers who they would not usually work with and were supportive of each other in using a variety of strategies to solve problems
- All students were engaged with no discipline issues reported

**Other information:**

The structure of the day was altered to address Ramadan and therefore the funding was reallocated to reflect this. Further, we felt that the students would respond to the day being run as a competition: this was extremely effective and all students received a small token for their hard work.

Unfortunately, parent and community support was not as strong as anticipated.

**Budget expenditure:**

- Incentives for competition- **\$250**
- Worksheets and laminated activities - **\$100**
- Purchase of relevant concrete material and visual stimulus (for example, Pentominos, Tangrams, Board games such as decimals, dominos, mastermind, manipulative puzzles that can be pulled apart and reassembled- **\$707**
- Processing of photos - **\$8**
- **School funds were used to top up**

**Feedback about making grants available for such projects:**

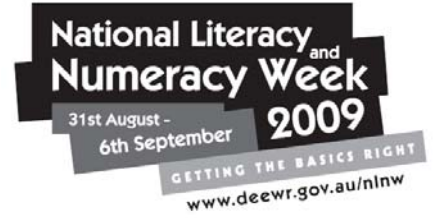
This grant provided an opportunity for staff professional development and varied learning experiences for students. It allowed us to purchase resources for our students which will be used during numeracy periods. It also provided a platform for future initiatives in terms of teaching and learning and professional development, and reinforced the dedication and commitment of the staff to boys' education. The project promoted numeracy within the school and fostered team spirit amongst the students. It also promoted National and Literacy and Numeracy Week.

We are extremely appreciative of this grant and look forward to applying again, if the opportunity arises.

Please see materials below:



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Names: \_\_\_\_\_

# ANAGRAMS

An **anagram** is a word that has had its letters mixed up.

Your task is to unscramble these anagrams.

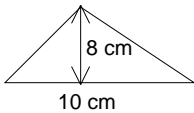
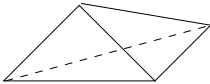
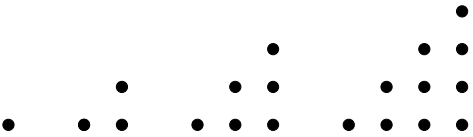
Good luck!

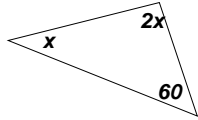
Anagram	Word	Anagram	Word
RUBNEM		REEMT	
TRACOFIN		REETH	
SCITAMTHEAM		LAMICED	
ADUQRILATLARE		PLYIMUTL	
NIOSIVID		FRCTOA	
CTODRPU		GEOTYRME	
OGNXEHA		BRAALGE	
CENTPAGERE		TINEVGAE	
IENN		EEEEUMMNRST	



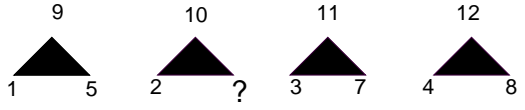
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# Triangles

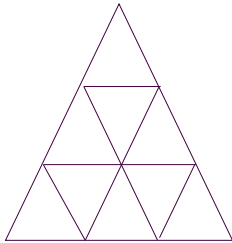
1.	How many sides in a triangle?	
2.	What do you call a triangle with two equal sides and two equal angles?	
3.	In an equilateral triangle, what is the size of each angle?	
4.	Find the area of this triangle. 	
5.	Name the solid. 	
6.	Draw a net of a triangular prism.	
7.	These numbers are called triangular numbers because of the pattern they make. What are the next three numbers in the sequence? 	
8.	Find the value of $x$ .	



9. What number should replace the question mark to continue the series?



10. How many triangles can you see?



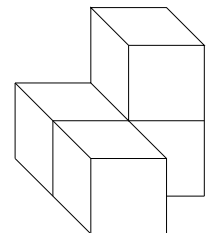
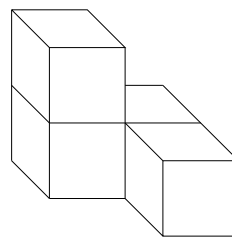
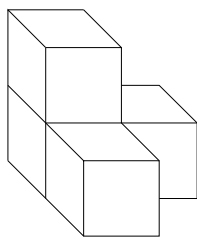
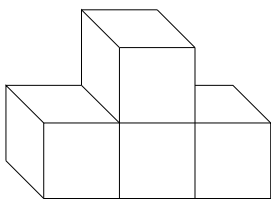
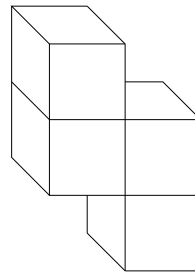
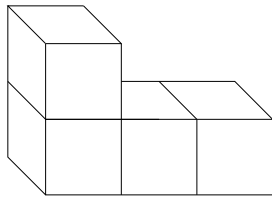
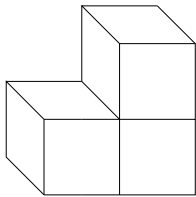


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**National Literacy and Numeracy Week**  
31st August - 6th September 2009  
GETTING THE BASICS RIGHT  
[www.deewr.gov.au/nlw](http://www.deewr.gov.au/nlw)

# Soma Cubes

Check that you have the following cubes.



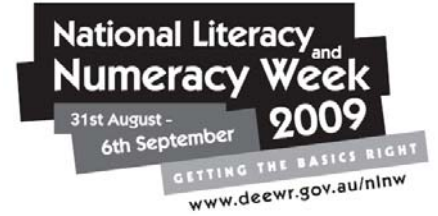
Can you put all of these pieces together to

make a 3 x 3 x 3 cube?





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# Manipulatives

**Two metal manipulatives have been included with this activity. The purpose is to separate the pieces without force. Working with your team members or on your own, see if you can be the first to discover the trick.**

**Good Luck!**



# Slide, Flip and Turn WORKSHEET

NAME \_\_\_\_\_

Visit the Tangram Puzzle at:

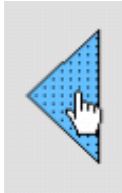
[http://nlvm.usu.edu/en/nav/category\\_g\\_3\\_t\\_3.html](http://nlvm.usu.edu/en/nav/category_g_3_t_3.html)

Scroll down the list until you see the 'Tangrams' link and to click it. This will open up the Online Tangram Manipulative.

Choose one of the four puzzles shown in Diagrams 1-4 below. Click on the same shape in the interactive figure that appears on your computer screen.


- Work with your partner to use all seven pieces to fill in the puzzle outline. Decide together which piece to move and if you should slide, flip or turn. If you need a hint to help you solve the puzzle, click on the **Show Hint** button.
- Here's how to move the shapes:

**Slide the Shape**



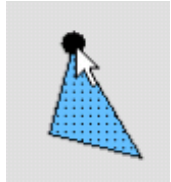
Click in the middle of the shape, and slide it with the mouse.

**Flip the Shape**



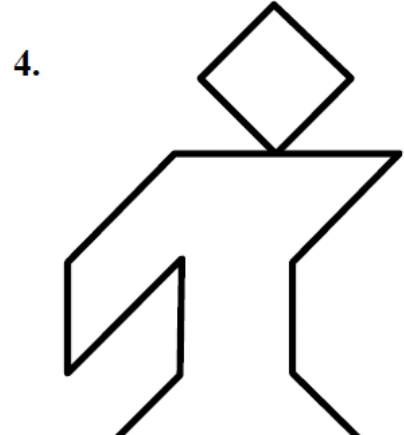
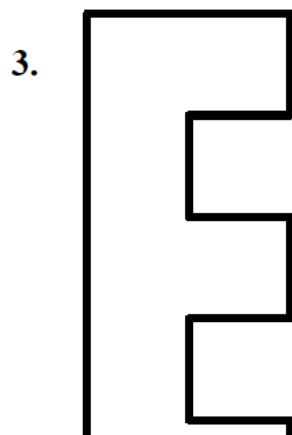
Click in the middle of the shape, then click the arrow button to flip it.

**Turn the Shape**

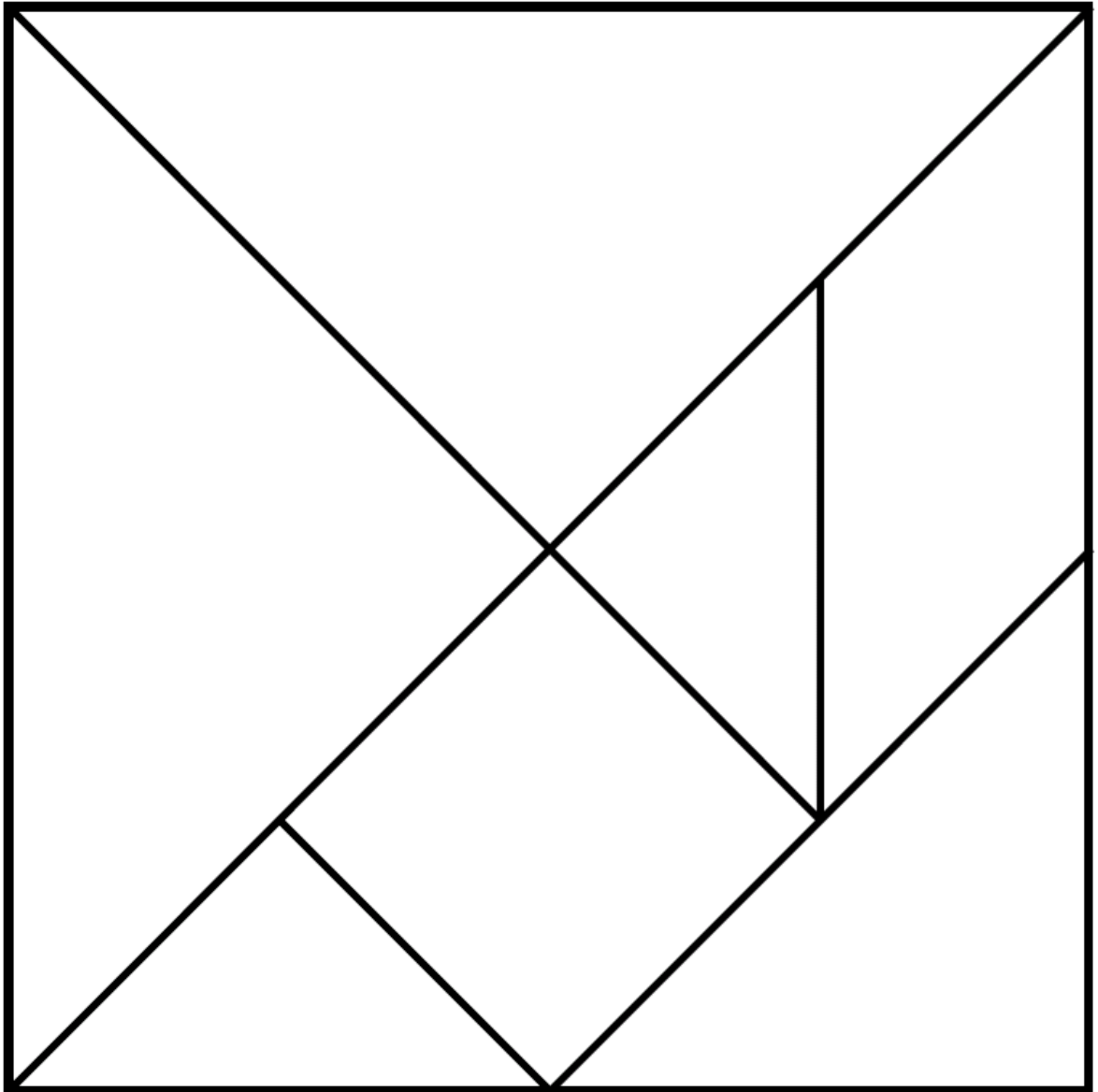


Move the mouse to a corner until you see the black dot, then turn it.

- After you solve each puzzle, **draw the solutions** in the outlines below and on the next page.



- To create your own tangram, cut out the following pieces:





# Pentominoes WORKSHEET

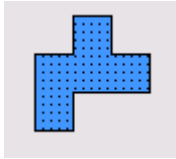
NAME \_\_\_\_\_


Visit the Pentominoes Puzzle at:

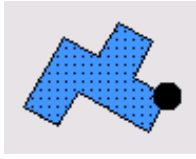
[http://nlvm.usu.edu/en/nav/category\\_q\\_3\\_t\\_3.html](http://nlvm.usu.edu/en/nav/category_q_3_t_3.html)

Scroll down the list until you see the 'Pentominoes' link and to click it. This will open up the Online Pentominoes Manipulative. Once open, to select one of the 12 pentomino shapes, click on the shape you want from the right hand side and it will appear in the working space.

Here's how to move the shapes:

Slide the Shape

Click in the middle of the shape, and slide it with the mouse.

Flip the Shape

Click in the middle of the shape, then click the flip button to flip it.

Turn the Shape

Move the mouse to a corner until you see the black dot, then turn it.

## ACTIVITIES

### 1. Naming Pentominoes

Pentominoes are formed by joining five squares side-by-side. There are 12 different pentominoes. The name of each pentomino is the name of the letter of the alphabet that it looks like.

To complete this activity:

1. Look at the 12 pentomino pieces on the toolbar below the workspace.

How many can you name?

2. Place one of each of the pentominoes on the workspace and arrange them in alphabetical order.

The names of the pentominoes are: F, I, L, N, P, T, U, V, W, X, Y, and Z.

## 2. Building Congruent Figures

Congruent figures have the same size and shape.

To complete this activity:

- (a) Build two congruent figures, each made up of two pentominoes.

How many other pairs of congruent shapes can you find?

Two congruent pairs can be made with U, Y and V, X pieces.

- (b) Congruent triple pairs are each made with three pentominoes.

How many can you make?

One congruent triple is made up of L, N, and P, U, and V, Z pieces.

## 3. Making Stairs

To complete this activity:

- (a) Combine two different pentominoes to make a stair with four steps.

How many combinations of two pentomino pieces make a stair with four steps?

One combination uses the L and W pieces.

- (b) Combine three different pentominoes to make a stair with five steps.

How many combinations of three different pentomino pieces make a stair with five steps?

One combination uses the L, W, and I pieces.

