

Exhibitions and Display Categories

For Years 7 - 10 Students

OVERALL THEME FOR 2008 – MATHS ACROSS CULTURES

Ideas: Mathematicians from different cultures, different numbering systems, uses in society, currency differences, common mathematical ideas between cultures, Mathematics as a universal language, Mathematics in ancient and other cultures.

Note:

- ✓ There is no separate category for these exhibits. They should be entered in one of the other categories. Judges in this category consider **all exhibits** and judge them based on its theme content.
- ✓ Category entries do not have to portray this theme.

PUBLICITY MOTIF – Individual

The winning motif will be used as the basis of the advertising poster for Cantamath 2009. The design needs to be eye-catching and reflect the theme for 2009. Often a simple, imaginative and carefully constructed design is the most effective. Artistic merit is rewarded in this category. There are specific requirements for this category, as set out below:

Requirements:

- ✓ Use only **A4** (210mm x 297mm) paper size in vertical (**portrait**) orientation for your motif.
- ✓ Your motif may use any shapes but **must stay within the size of the A4 paper**
- ✓ You must use **red and black** only on a **white background**.
- ✓ Shading by cross-hatching is allowed
- ✓ **Technology can be used** to create the motif.
- ✓ The only words permissible are **Cantamath 2009**. *(Please note that there is no “s” on the end of Cantamath and the motif must have **next** year’s year on it.)*
- ✓ The theme for 2009 is “**Maths – Past, Present and Future**”.

Ideas: History of a person or concept; changes in technologies over the years; technology using binary numbers; population changes; growth and decay; current numbering systems; currencies and exchange rates; secret societies/perception of mathematics; mathematics in the classroom; Pythagoras – then and now; unsolved problems and partial solutions.

IMPORTANT: Placegetters will forfeit ownership of their motifs to the CMA. Entries are restricted to the best twelve per school.

MATHEMATICAL POSTERS – Individual

Ideas: Advertisements; applications of mathematics; cartoons; famous theorems; slogans; the History of Mathematics; the Mathematics of Architecture, Art, Commerce, Machines, Music, Sport, etc.

Note:

- ✓ **No computer generated work is allowed.**
- ✓ The judges will be considering originality when marking this section.
- ✓ Posters should convey a visual message and may contain approximately 10 - 15 words.
- ✓ Cartridge paper is suggested.

GEOMETRICAL DESIGN – Individual

Ideas: Mathematical curves; mathematical shapes in **2 dimensions**; patterns of any kind; tiling, quilting and wallpaper designs.

Note:

- ✓ **No computer generated work is allowed.**
- ✓ Designs **must not** contain any words.
- ✓ Hand made items can be entered into this section.
- ✓ The judges will be considering originality when marking this section.
- ✓ Cartridge paper is suggested.

MATHEMATICAL MODELS – Individual

Ideas: Mathematical shapes in **3 dimensions**; curve-tracing equipment; mobiles; polyhedra; working or non-working scale models (not kitsets) of devices employing or demonstrating some mathematical content; string designs, etc. **Models must be made to be free standing and have no loose parts that can be lost.**

Note:

- ✓ A brief explanation must accompany each entry. Working models must include any instructions required to enable the judges to mark the work fairly. An Excellence award will not be given to Mathematical Model entries that are not accompanied by an explanation.
- ✓ The judges will be considering **originality** when marking this section.
- ✓ Models, especially working models, are very liable to accidental or deliberate damage and therefore must be strongly made and have no loose parts that can be lost.

COMPUTER GENERATED DESIGN – Individual

Ideas: Mathematical curves; mathematical shapes in 2 dimensions; patterns of all kinds; tiling, quilting and wallpaper patterns.

Note:

- ✓ Designs **do not** contain any words and should be printed on paper.
- ✓ A brief description of the creation of the design must be attached. It will need to include information as to which software programmes were used and how they were used as well as referencing any templates/previously created material used in the creation of the design. An Excellence award will not be given to Computer Generated designs that are not accompanied by an explanation.

WRITTEN WORK - Individual or Small Groups (no more than 3 students)

Ideas: Description or investigation of some mathematics used in a branch of agriculture, commerce, science, health or daily life; a statistical investigation (see sub-category below); a mathematical principle or idea; a story with a mathematical significance.

Note:

- ✓ The work may be either prose or poetry.
- ✓ It may include illustrations or decorations, done by hand or photocopied.
- ✓ The work may be presented as a single sheet or as a book.

Group work needs to clearly show the full names of all participants.

STATISTICAL BASED INVESTIGATION - Individual or Small Groups (no more than 3 students)

This sub-category of the written work section is generously sponsored by the Christchurch City Council and a theme is attached to it each year. A cash prize will be awarded for the winning entry in each year level and for the school from which the entry came.

The **theme** for **2008** is **rubbish reduction/recycling**. It is expected that the school will use their prize money on reducing/recycling rubbish within the school.

Entries in this category will **be judged in the written work section as well as for the cash prize.**

Ideas: Investigate the amount of rubbish produced in Christchurch per person in one year compared to other cities; compare the volume of rubbish if you recycle compared to not recycling; investigate any trends in volume of rubbish per household in Christchurch.

Information/ideas can be found on the CCC website www.ccc.govt.nz or the library website www.library.christchurch.org.nz

Prize: \$50 to the winning entry per Year level AND \$300 for the school from which the entry came. The school is expected to use the money for rubbish reduction or recycling initiatives within the school.

CLASS PROJECT - This must be undertaken by a whole class or a substantial portion of a class and should include a brief description of what the class has undertaken.

Ideas: Murals with a mathematical theme; investigations of mathematical ideas; scale drawing or models; statistical survey or experiment; tape/slide presentation.

Note:

- ✓ An Excellence award will not be given to Class Projects that are not accompanied by an explanation.
- ✓ Please notify the Secretary by July 20th if a large space is required (particularly for large murals - maximum size 2m x 1.2) or power points, tape or slide presentations are being displayed.
- ✓ Performance items must be registered with the Secretary by July 20th. Items will be judged on the Wednesday morning of Cantamath, and the groups may be asked to perform during the evening.

CATEGORIES FOR YEAR 7 AND 8 ONLY

TEAM COMPETITION BANNER - Years 7 and 8 only

The banner is for supporting your school at the teams' competition on the appropriate night. It can only be used for one night and must be no larger than 5m x 2m. The banner can be hung over the balcony but must not interfere with the running of the team competition below.

There will be two prizes in the banners competition this year.

- ✓ **Best Visual Appeal** – as judged by the Cantamath committee.
- ✓ **Best Supporting Crowd** – judged on the amount of noise!

GAMES AND PUZZLES - Years 7 and 8 only.

Individual or Small Groups (no more than 3 students)

Ideas: Calculator games; games of skill with counters; hidden-word puzzles; race games.

Note:

- ✓ Games or puzzles must be **NO** bigger than A2 in size.
- ✓ The rules of the game must be given, and the mathematical principles explained. An Excellence award will not be given to Games and Puzzles that are not accompanied by an explanation.
- ✓ Games which use counters or dice should have them in a typical playing position.
- ✓ Loose pieces can be easily lost, please tape or stick them down for the display.
- ✓ Simplicity and originality will be rewarded.

CATEGORIES FOR YEAR 9 AND 10 ONLY

WEARABLE MATHS - Year 9 and 10 only.

Individual or Small Groups (no more than 3 students)

Ideas: Make a wearable item using anything from your knowledge of mathematics. Use a mathematical story, message, slogan, theorem or principle.

Note:

- ✓ **Wearable maths designs must be able to be worn.**
- ✓ An explanation of the mathematics involved **should** accompany the display. An Excellence award will not be given to Wearable maths designs that are not accompanied by an explanation.
- ✓ They can be made from any material available.
- ✓ Items should be able to be easily hung for display purposes.

(Updated 13/05/08)