

Bluespot crystal competition 2007

Judging Guidelines and Mailing Instructions

Key Stages 2, 3 and 4

1. Teacher guidelines

The judging criteria are described below. Use them and the references mentioned at the end to help you select the best three entries from your class or science club.

Schools that have registered more than one class or club are allowed to send three crystals per category or Key Stage. However if anyone sends more than three crystals per category they will be disqualified.

2. Posting and packaging your crystals

NB Ensure each entry is labeled with the student name, and accompanied by an entry form with student name, key stage, school name and teacher name (three copies are attached).

Crystals are fragile and are easily crushed! Wrap them carefully in cotton wool, bubble-wrap or a similar material. Then package the crystals in a small cardboard box with a tightly fitting lid, or a plastic canister, e.g. from a 35mm film. Place this inside a Jiffy bag and label the outside of the package clearly with 'FRAGILE'.

Send your entry to arrive by 5pm on Thursday 15th March 2007 to:

Bluespot crystal competition
SETPOINT Lancashire
LEBP Darwen House
Guide
Blackburn
Lancs BB1 2QE

Please note that crystals will not be returned.

3. Judging criteria

The crystals will be judged on both quality and size.

Quality

Please ensure that only single crystals are entered i.e. those that consist of one major component. Clumps of crystals will be disqualified.

Marks for quality will be awarded on the basis of five features (see Table 1). For further information consult the reference at the end of these guidelines.

1	Edges	Highest marks go for straight, intact edges
2	Faces	Highest marks go to well-formed, flat faces
3	Occlusions	Highest marks going to perfect crystals Marks will be deducted for any extra bits inside the crystal or anything stuck on the outside
4	Clarity	Highest marks go to the clearest crystals
5	Shape	Highest marks go to Alum crystals which are regular truncated octahedrons Octahedrons are eight-faced polyhedrons, where each face is an equilateral triangle. Marks will be deducted for <i>truncated</i> octahedrons where each of the points (or vertices) is 'cut off' slightly.

Table 1. The criteria used for judging the of crystal quality

The five criteria are added together to give a total quality score

Quality score = score for edges + score for faces + score for lack of occlusions + score for clarity + score for octahedron shape

Size

We will weigh crystals to an accuracy of 0.01g. Then we apply a correction factor to ensure that heavy, low quality crystals are ranked below lighter, high quality crystals.

This formula is $Score (mass) = \log_{10} (mass + 1)$

Final score for each crystal = Quality Score * Mass Score

For further information on crystals see:

The International Union of Crystallography’s website

<http://www.iucr.org>

Navigate on the menu bar on the left at the side and look under

- Publications
- Teaching pamphlet
- Crystals - a handbook for school teachers, this can be downloaded and printed