

Key Stage 2



THE MATHEMATICAL

CRYSTAL MAZE

created by

Ruth Dodd

CRYSTAL MAZE

INSTRUCTIONS TO COMPETITORS

- ★ Each team to have 5 members.
- ★ There are 5 themes:-
 - 1) Egyptian
 - 2) Chinese
 - 3) European
 - 4) Indian
 - 5) African
- ★ In each theme there are 3 types of game:
 - a) number
 - b) shape
 - c) logic
- ★ Each team will play 1 game from each theme.
- ★ Each team member will play 1 game.
- ★ Team members to agree prior to the start which type of game they wish to do.
- ★ Team captain is responsible for telling organiser who is playing next and which type of game.
- ★ If a team member is 'locked in' the team will have to forfeit a crystal if they wish to release him/her.
- ★ Each crystal gained is worth 10 seconds in the pool.
- ★ In the pool find the dominoes – Even numbered spots are added together, odd ones are subtracted. The team with the highest score is the overall winner.
- ★ It is important that early teams do not discuss the games played with other people who may be entering later.

Crystal Maze – Zones and Games

Zone	Type	Game	Time allowed
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Egypt	Number	Egyptian Numbers	3 minutes
	Shape	Build a Pyramid	3 minutes
	Logic	Hekats	3 minutes

China	Number	Chinese Triangle	3 minutes
	Shape	Tangram	4 minutes
	Logic	Lo Shu Magic Square	3 minutes

Europe	Number	Sum to 100	3 minutes
	Shape	Cretan Maze	3 minutes
	Logic	Coordinates	2 minutes

India	Number	Brahmagupta's Problem	3 minutes
	Shape	Bengali Pentominoes	3 minutes
	Logic	Tower of Brahma	3 minutes

Africa	Number	Hausa Numbers	3 minutes
	Shape	Mask	3 minutes
	Logic	Huts	3 minutes

EQUIPMENT NEEDED

Space

Each zone needs to be laid out so that it is visually separate from the others. Each game normally needs a separate table. The coordinates game needs space to run between the coordinates board and the answer board. The “clue” for Bengali pentominoes needs to be positioned so the rest of the team can see it but the competitor can't see it whilst working directly on the problem.

Each zone needs to have a working area for the competitor and a line or barrier behind which the rest of the team must stay. The rest of the team must be able to see the game so that they can shout help and encouragement, but they should not be able to physically touch it.

Pens and paper

Some games will need pens, or pens and paper - e.g. Chinese triangle, Hekat, Cretan maze, Brahmagupta's problem, and Huts.

Timers

Use a stopwatch or, if possible, large sand timers of 2, 3, and 4 minutes. You would need a 3 minute timer for each zone plus 2 minute timer for 'Coordinates' and 4 minute for 'Tangram'.

The Crystal Pool

You will need a paddling pool, about 6 boxes of dominoes, and some polystyrene chips. You can try contacting a packaging firm for these, otherwise it might take you a long time to collect enough!

Crystals

These are 20 sided, clear coloured dice. Contact:-

Dice and Games Limited,
Meekings Road
Chilton Industrial Estate
Sudbury
Suffolk
C010 2XE

Tel: 01787 373501

You will also need:-

- ★ a box of pentominoes marked with Bengali numbers 1-60 when set out in a 10 x 6 rectangle.
- ★ Polydrons or Clixifit shapes - 4 squares and 16 triangles - which can be made into a pyramid shape.
- ★ A set of scales (balances)
- ★ A set of Hekats - weights graduated in units of 1, 3, 9, and 27.
- ★ A small bag of rice weighing 16 hekats.
- ★ A Tower of Brahma (or Hanoi).
- ★ A set of tangram pieces corresponding to the ones used in making the Chinese Junk.

All the photocopiable sheets need to be reproduced to the correct size and mounted on stiff card. Ex-display boards from gas or electricity showrooms are ideal. If possible laminate or cover with sticky backed plastic. Several games have playing pieces that competitors need to be able to move around. I used sticky backed velcro where appropriate. You can buy this at a good haberdashery.

The African mask needs to be reproduced double size and cut into 15 rectangles of only approximately the same size and shape.

The Cretan Maze and the Chinese Triangle both have sheets to write on as well as the instructions.

You will need some sort of small box or container for competitors to put the dominoes in from the crystal pool. Only dominoes in this box will count when you call time. Remember, 1 crystal = 10 seconds in the crystal pool. Only dominoes adding up to even spots are added together for the total score. Odd ones are subtracted!

Finally, decorate the room with as many pictures and items from each of the cultures as possible and make sure each zone is labelled with its name. It is useful to have a small label near each game saying which category it is and how much time is allowed e.g. Egypt, Logic, 3 minutes.

Don't forget to build up the excitement. Encourage the children to shout and support each other as much as possible. Keep a good pace going. Above all.....

HAVE FUN!