**Maintenance**

Before opening check whether all pieces are there. This applies in particular for the puzzle tables and “Drawing in the mirror”.

In the following “cleaning“ means using all-purpose cleaner.

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|  | **Activity** | **Pieces** | **Cleaning** | **Additional** | **Activity duration** |
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|  | **General** | Large display. Six tables. Three plinths. 8 mats. |  |  |  |
|  | **Soap Film**Dip different frames into soapy water to explore the different shapes they make. | One table, with four buckets set into the table.Four wire frames. | Regularly clean tablechange liquid (at least every second day) at least once a week clean models and buckets | Soap water recipe:1 litre of warm water250ml of Fairy liquid (Fairy liquid is best for good quality mixture)Mix gently. | 3 minutes |
|  | **Puzzle Table 1**Five geometric puzzles:Ball pyramid. 2-piece pyramid. 4-piece pyramid. T-puzzle. Square-triangle. | Ball pyramid: 4 red pieces 2-piece pyramid: 2 blue pieces4-piece pyramid: 4 red pieces T-puzzle: 4 yellow pieces Square-triangle: 4 green pieces | Clean table and pieces once a day | Puzzles need to be occasionally reset, and checked all pieces are there.Pieces are large and we don’t expect pieces to be accidentally lost or taken. | 3 - 10 minutes each |
|  | **Puzzle Table 2**Three dice puzzles. Two colour puzzles. Code puzzle.Queue of dice.Red dice out.Second will be last.Honeycomb puzzle.Coloured pieces.Secret code. | Queue of dice: 20 dice.Red dice out: 39 diceSecond will be last: 4 large dice.Honeycomb puzzle: 7 pieces. Middle piece fixed.Coloured pieces: 4x4 grid. Fixed to table. 16 colour pieces.Secret code: Circle. Fixed to table. Red grille, removeable. | Clean table and pieces once a day | We will provide spare dice for queue of dice, and red dice out. | 3 - 10 minutes. |
|  | **What fits in a cube**Can you fit these shapes into the glass box. | Glass boxThree large solid shapes (red tetrahedron; yellow cubeoctahedron; blue Kepler Star). | Clean table and pieces once a weekClean cube with glass-cleaner once a day  |  | 3 - 8 minutes |
|  | **Mirror Box – Infinite patterns**Slide patterns into slot and view infinite patterns. | Mirror box. 4 slides. | Clean pieces once a weekClean mirrors with glass-cleaner (at least) once a day |  | 2 - 5 minutes |
|  | **Lights On**Logic problem. Press buttons to turn all lights on. | Stand-alone exhibit. | Clean surface once a week | Needs power. | 5 minutes |
|  | **Towers of Ionah**Move all discs from one hole to another. Classic puzzle. | Stand-alone exhibitTwo red discs, two blue discs. | Clean pieces once a week |  | 5 minutes |
|  | **How Many Smarties**Estimation and sampling problem. Take guesses. Uses frames to take a sample. | Poster: Wall mounted.4 frames (square, triangle, rectangle, circle).Hanging bar and hook | Clean picture and pieces once a week | Can be a group lead activity. Perhaps to introduce a group to exhibition. | 5 minutes |
|  | **Mirror Book**Move the mirrors to create different patterns and different number of reflections. | Mirror BookTwo foam triangle piecesOne stick | Clean pieces once a weekClean mirrors with glass-cleaner (at least) once a day |  | 2 minutes |
|  | **Corner Mirror (12 ring puzzle)**Can the pieces be placed on the mirrors to create a circle of 12 linked rings | Corner MirrorFoam rings.1 blue ring.1 yellow half ring.1 green half ring.1 red quarter ring. | Clean pieces once a weekClean mirrors with glass-cleaner (at least) once a day | Spare pieces can be provided. | 2 – 5 minutes |
|  | **Symmetric letters**Create words with symmetric letters | Assorted letters. | Clean pieces once a weekClean mirrors with glass-cleaner (at least) once a day | Spare letters are available. | 2 – 8 minutes |
|  | **Drawing in the mirror**Can you trace the shapes while only looking in the mirror?  | Stack of printed fish and star shapes (A4 paper).Pencils | Clean surface at least once a weekClean mirrors with glass-cleaner (at least) once a day | New printing can be provided. | 5 minutes |
|  | **Find the Fish**Use the fish frame to find the fish shape in the poster. | Poster: Wall mounted.Fish frame.Hanging bar and hook. | Clean fish and the picture once a week |  | 3 - 10 minutes |
|  | **Penrose Fish**Tesselate the magnetic fish to create patterns. | Green fish shapes. Yellow fish shapes. | Clean pieces once a day | Spares are available. | 2 - 5 minutes |
| C:\Users\j_gri\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\2B920799.tmp | **Pendulum Wave**Turn the handle to set the pendulums, and release. Pendulums create patterns as they synchronise. | Stand-alone exhibit on table. | Clean handle at least once a day. Clean surface at least once a week |  | 2 minutes |
| Image result for momath ring of fire | **Ring of Fire**Place Perspex shapes into the ring. The laser shows you the cross section. | Table.Ring of fire (ring laser)Perspex solids (cube, cylinder, cone, tetrahedron, dodecahedron)  | Clean surface and pieces at least once a week | Needs power. May need supervision. | 5 – 8 minutes |
|  | **Parabolic bounce**Release the ball to hit the focal point. | Stand-alone exhibit. One ball. | Clean surface at least once a week |  | 3 minutes |
|  | **Tautochrone**Release two discs from any two points on opposite sides. They will always reach the middle at the same time. | Curve and stand. Two discs. | Clean surface and pieces at least one a week. |  | 3 minutes |
| Image result for giant rush hour game | **Rush hour game**Puzzle. Slide the red car out of the traffic jam. | Table. 12 cars. | Clean table and pieces once a day |  | 5 – 10 minutes |
| Image result for giant soma cube | **Giant Soma Cube**Make a large cube | 9 pieces.1 mat. | Clean surface at least once a week |  | 5 – 10 minutes |
| Image result for genius square | **Genius Square**Place the blockers (pegs) on the grid. (Optionally, use the dice to determine placement). Fill the remaining space with tetris shapes. Race a friend. | 7 pegs.9 tetris shapes7 dice (optional) | Clean table and pieces once a day |  | 5 minutes |
|  | **Ipad (puzzle app) and stand.**Stand may be knocked over if not fixed. | 1 stand1 ipad | Clean surface at least once a day | Needs power. | 3 – 10 minutes |