RECORDING SHEETS

Recording the Investigation

Some tasks require worksheets. These are also freely available at http://www.mathematicscentre.com/taskcentre/docs.htm
<table>
<thead>
<tr>
<th>SQUARES AROUND SQUARES</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME(S):</td>
</tr>
<tr>
<td>................................</td>
</tr>
</tbody>
</table>

© Mathematics Task Centre Task 24 Reproducible Page
Each square is the same size as the shape named $x$.
The sheet can help you work out the area of each shape.
You might trace the shapes and then remove them to work out the area.
Each square is the same size as the shape named $x$.
The sheet can help you work out the area of each shape.
You might trace the shapes and then remove them to work out the area.
### RACETRACK RESULTS

**NAME(S):** .......................................................... **CLASS:** ..................

#### Racetrack One

<table>
<thead>
<tr>
<th>First Try</th>
<th>Second Try</th>
<th>Third Try</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jockey A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jockey B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Racetrack Two

<table>
<thead>
<tr>
<th>First Try</th>
<th>Second Try</th>
<th>Third Try</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jockey A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jockey B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Racetrack Three

<table>
<thead>
<tr>
<th>First Try</th>
<th>Second Try</th>
<th>Third Try</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jockey A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jockey B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## HOW MANY SQUARES?

**NAME(S):** ..............................................  **CLASS:** .................................

<table>
<thead>
<tr>
<th>Size of square (S)</th>
<th>1 x 1</th>
<th>2 x 2</th>
<th>3 x 3</th>
<th>4 x 4</th>
<th>5 x 5</th>
<th>6 x 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of tiles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of squares formed (F)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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1. Colour the grid to show how the squares with areas from 1 to 25 fit inside this 36 square.

2. 36 = ...................................................

3. The 20th Square Number would be: .......................  
   Explain your reasons here.
DIVIDING SHAPES

NAME(S): ................................................................. CLASS: .................

3 identical shapes 2 identical shapes 6 identical shapes 4 identical shapes

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# WIN AT THE FAIR

**NAME(S):** .......................................................... **CLASS:** ................

One row per pair. Enter your initials in the 'Tally for...' box.

<table>
<thead>
<tr>
<th>20¢</th>
<th>50¢</th>
<th>$1</th>
<th>$2</th>
<th>$3</th>
<th>$4</th>
<th>$5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tally for .......</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your Totals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals So Far</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals So Far</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
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<th>$5</th>
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</thead>
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<td>Tally for .......</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your Totals</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals So Far</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAME(S)</td>
<td>CLASS</td>
<td>NAME(S)</td>
<td>CLASS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------------------</td>
<td>-------------------------</td>
<td>------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGNESI, Maria Gaetana</td>
<td>1718 - 1799</td>
<td>HYPATIA</td>
<td>c. 370 - 415A.D.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEDEKIND, Richard</td>
<td>1831 - 1916</td>
<td>KOVALEVSKAYA, Sonya</td>
<td>1850 - 1891</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DESCARTES, Rene</td>
<td>1596 - 1650</td>
<td>LOVELACE, Ada Byron</td>
<td>1815 - 1852</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>DU CHATELET, Emilie</td>
<td>1706 - 1749</td>
<td>NEWTON, Isaac</td>
<td>1642 - 1727</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EUCLID</td>
<td>c. 300 B. C.</td>
<td>NOETHER, Emmy</td>
<td>1882 - 1935</td>
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<td></td>
</tr>
<tr>
<td>EULER, Leonhard</td>
<td>1707 - 1783</td>
<td>PASCAL, Blaise</td>
<td>1623 - 1662</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FERMAT, Pierre de</td>
<td>1601 - 1665</td>
<td>REIMANN, Georg</td>
<td>1826 - 1866</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GAUSS, Karl F.</td>
<td>1777 - 1855</td>
<td>SOMERVILLE, Mary</td>
<td>1780 - 1872</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GERMAIN, Sophie</td>
<td>1776 - 1831</td>
<td>YOUNG, Grace Chisholm</td>
<td>1868 - 1944</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Three interesting facts I found out about ……………………………………………. are:

1. _______________________________________________________________________
   _______________________________________________________________________
2. _______________________________________________________________________
   _______________________________________________________________________
3. _______________________________________________________________________

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## SQUOUND

<table>
<thead>
<tr>
<th>Total counters (T)</th>
<th>Counters in Square (S)</th>
<th>Counters in Circle (C)</th>
<th>Counters in Squound (Q)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>8</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
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<td></td>
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<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. I think the rule for finding the number of counters in the SQUOUND could be:

   ____________________________________________________
   ____________________________________________________
   ____________________________________________________
   ____________________________________________________

2. Write your rule as an equation which uses these symbols:
   - the total number of counters used is called \( T \)
   - the number of counters in the square is called \( S \)
   - the number of counters in the circle is called \( C \)
   - the number of counters in the SQUOUND is called \( Q \)
MIRROR PATTERNS 3

<table>
<thead>
<tr>
<th>NAME(S):</th>
<th>CLASS:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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TRISQUARES

NAME(S): .......................................................... CLASS: ...............