

# 4 ARM SHAPES

# Picture Puzzles

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Publisher ... Mathematics Centre  
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This Picture Puzzle is based on  
... Task 154, 4 Arm Shapes  
Teaching Notes  
... [mathematicscentre.com/picturepuzzles/teachingnotes.htm](http://mathematicscentre.com/picturepuzzles/teachingnotes.htm)

# Picture Puzzles

## To Do

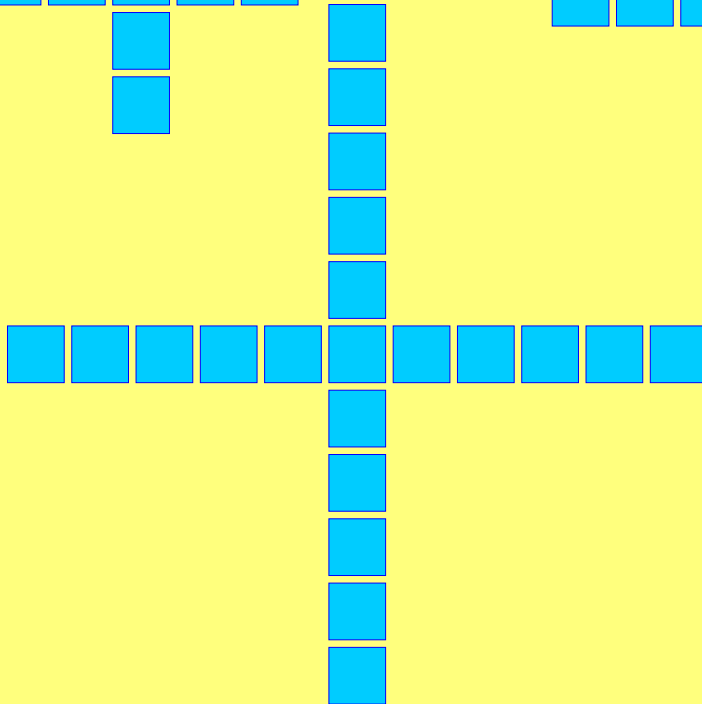
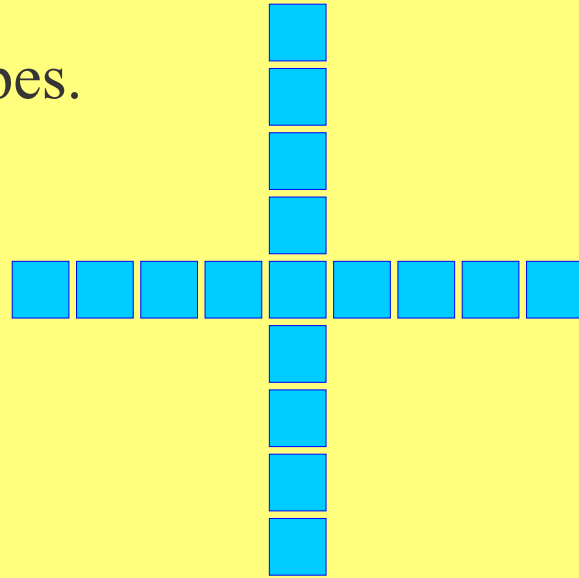
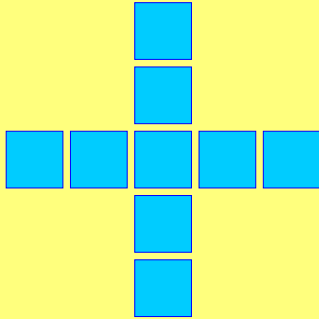
1. Find your own way to connect arm length & tiles.
2. Explain other ways to connect arm length & tiles.
3. Calculate using your own way and other ways.

## You Need

- Square tiles or cube blocks in 1 colour
- Square graph paper

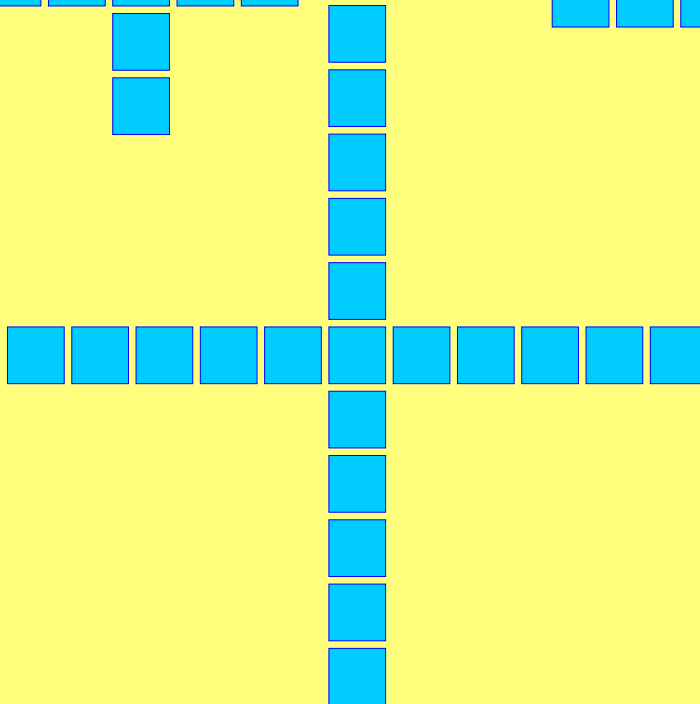
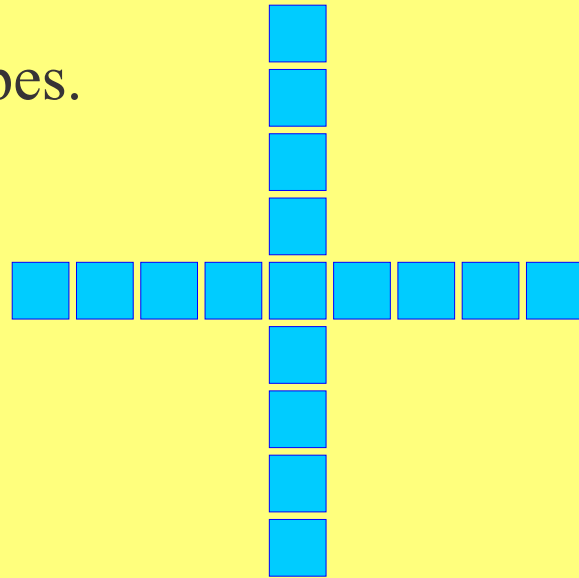
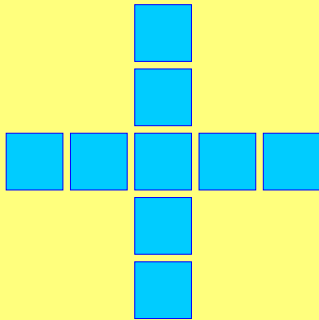
# Picture Puzzles

These are 4 Arm Shapes.



# Picture Puzzles

These are 4 Arm Shapes.



Make your own  
4 Arm Shapes  
like these.

**If I tell you any length of arm (A)  
can you tell me how to calculate  
the total number of tiles (T)?**

**Explain in your journal and calculate the number of tiles if the arm length is 100.**

**Picture  
Puzzles**

**more**

**Picture  
Puzzles**



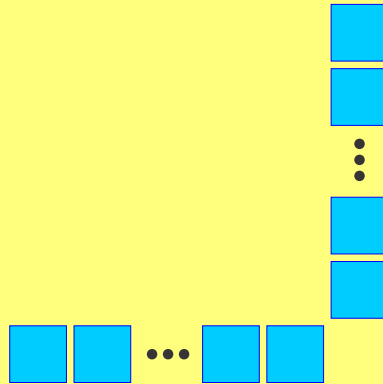
# Picture Puzzles

Mattias sees it like this



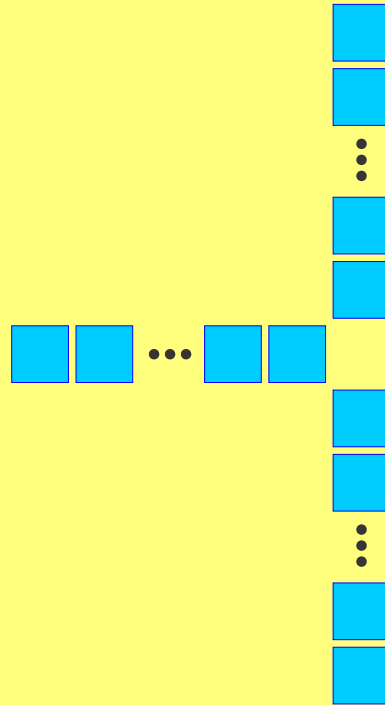
# Picture Puzzles

Mattias sees it like this



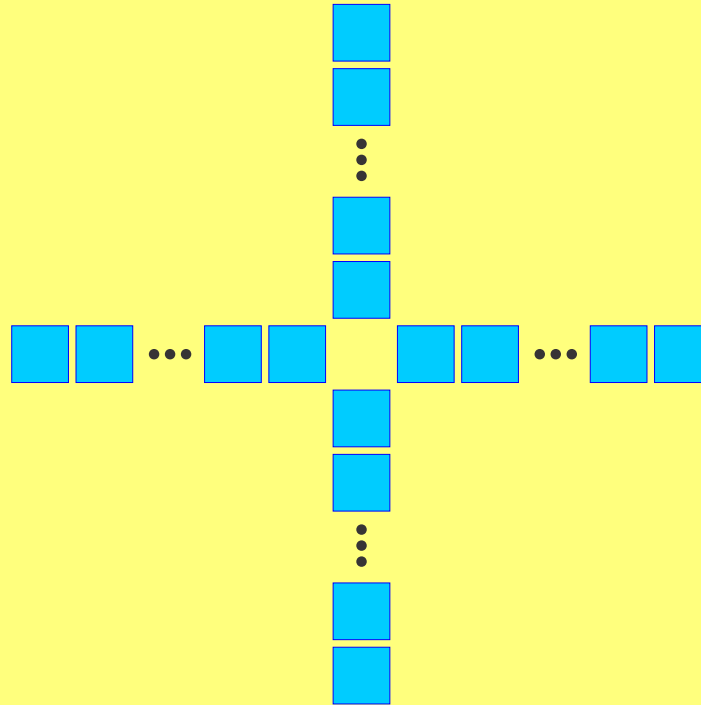
# Picture Puzzles

Mattias sees it like this



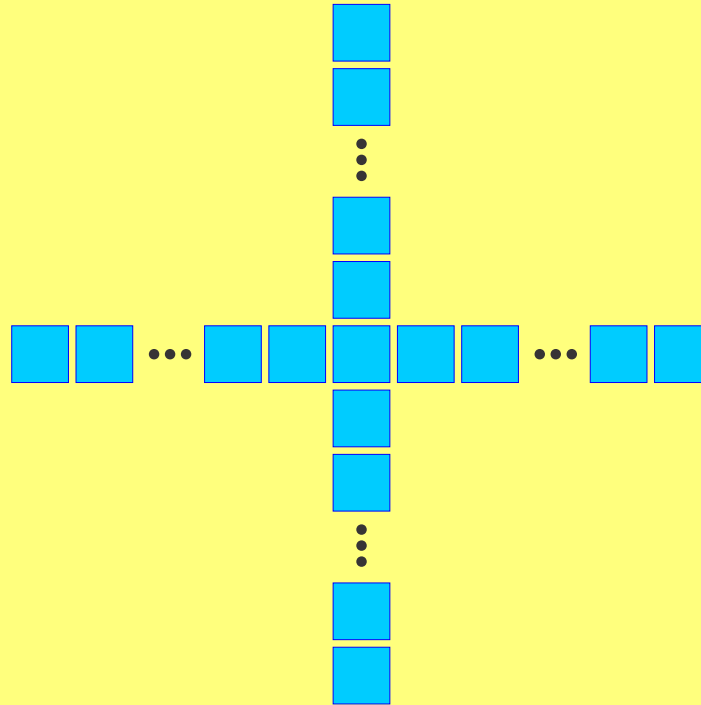
# Picture Puzzles

Mattias sees it like this



# Picture Puzzles

Mattias sees it like this



**Explain Mattias's way and use it to  
calculate the number of tiles  
if the arm length is 11.**

**Investigate using Mattias's way to calculate  
the length of each arm if he wants to  
build a 4 Arm Shape with 73 tiles.**

# Picture Puzzles

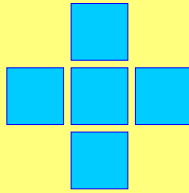
Sue sees it like this





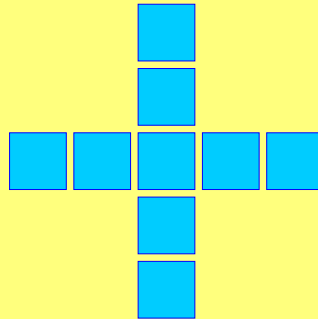
# Picture Puzzles

Sue sees it like this



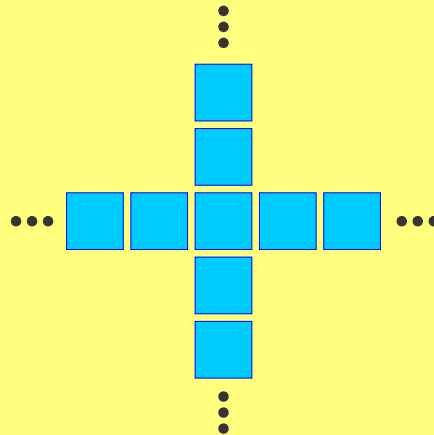
# Picture Puzzles

Sue sees it like this



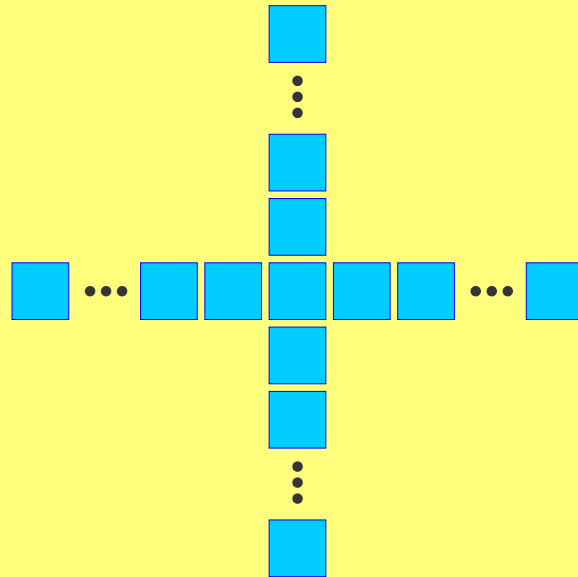
# Picture Puzzles

Sue sees it like this



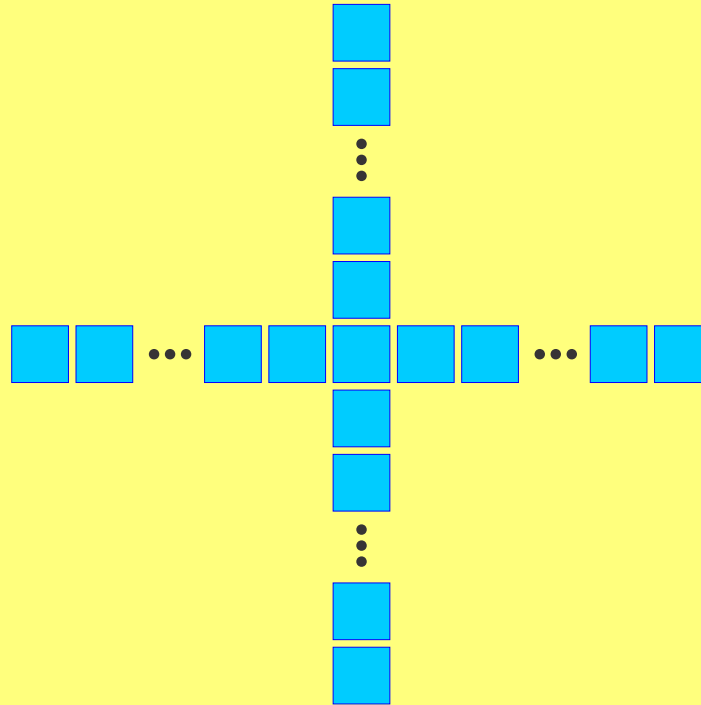
# Picture Puzzles

Sue sees it like this



# Picture Puzzles

Sue sees it like this



**Explain Sue's way and use it to  
calculate the number of tiles  
if the arm length is 16.**

**Investigate using Sue's way to calculate  
the length of each arm if she wants to  
build a 4 Arm Shape with 37 tiles.**

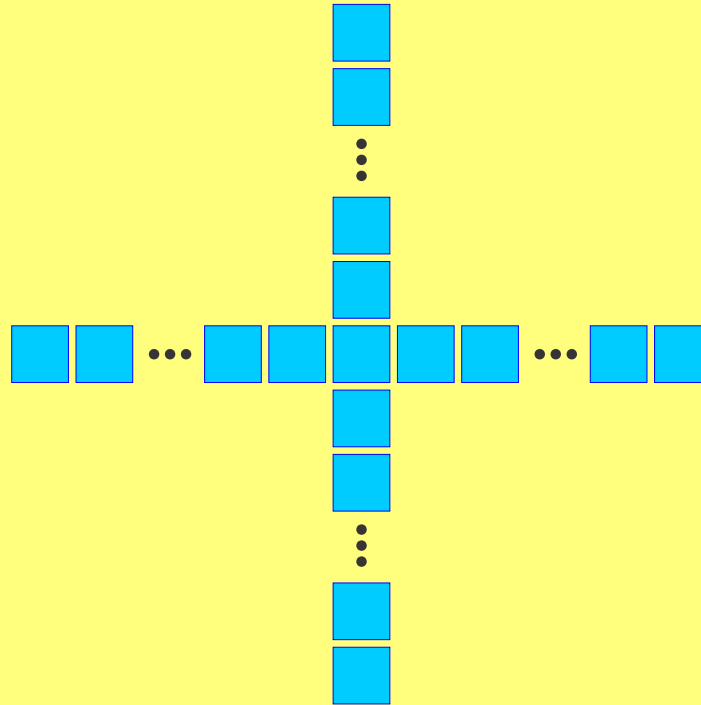
Bruno sees it like this





# Picture Puzzles

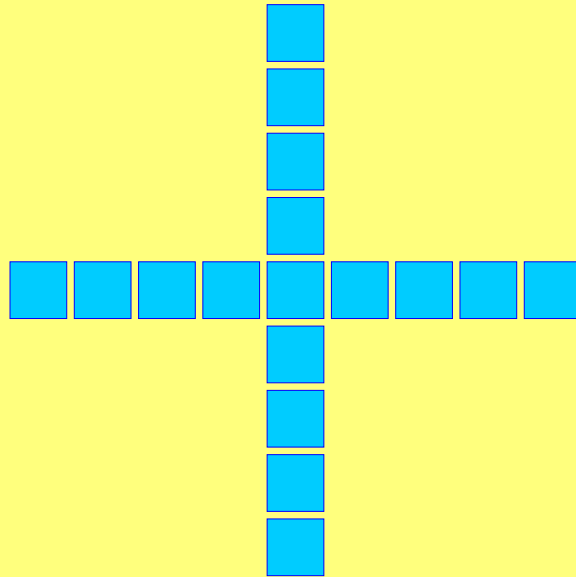
Bruno sees it like this



**Explain Bruno's way and use it to  
calculate the number of tiles  
if the arm length is 20.**

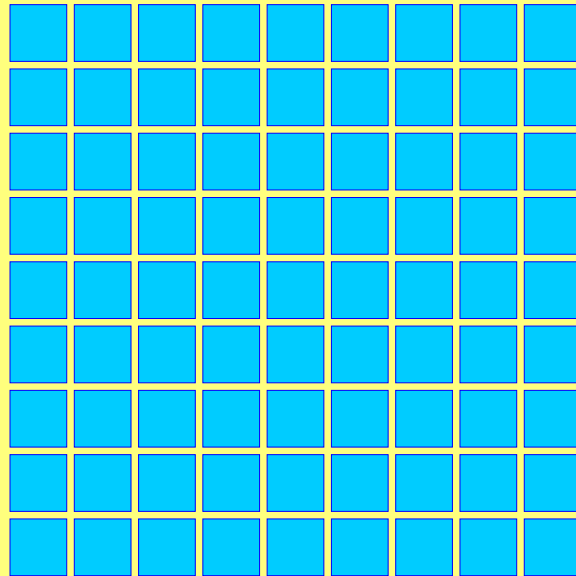
**Investigate using Bruno's way to calculate  
the length of each arm if he wants to  
build a 4 Arm Shape with 73 tiles.**

Another way to see it is...



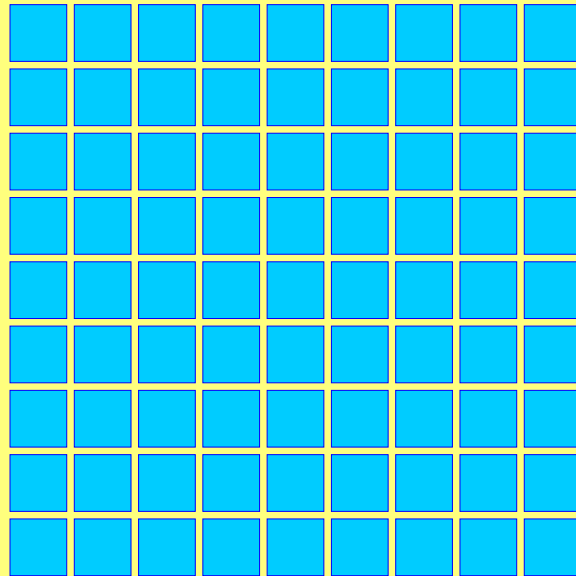
# Picture Puzzles

...like Christine who imagines this example



# Picture Puzzles

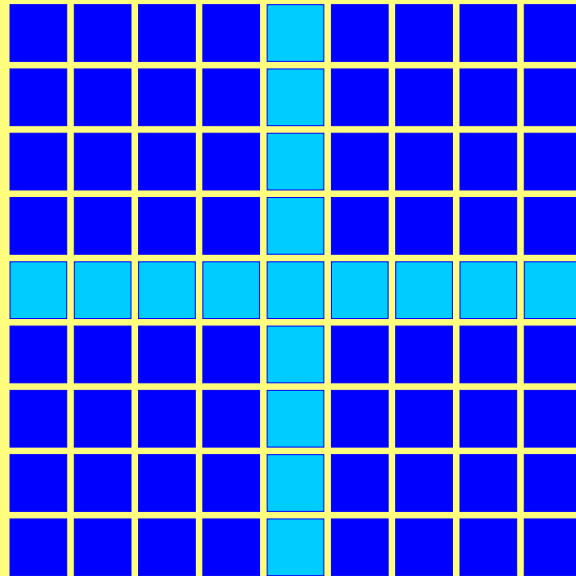
...like Christine who imagines this example



Where is the 4 Arm Shape?

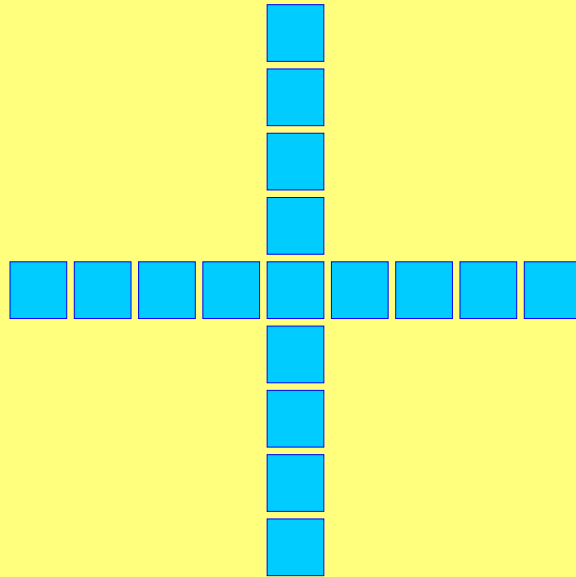
# Picture Puzzles

Surprise!



# Picture Puzzles

Here it is.





**Explain Christine's way and use it to  
calculate the number of tiles  
if the arm length is 98.**

**Investigate using Christine's way to  
calculate the length of each arm if she  
wants to build a 4 Arm Shape with 77 tiles.**

THE END...

...OR IS IT?