Remember the Mayor said the new Market Hall should cost less than £5,000,000. How did we do?

Market Stall
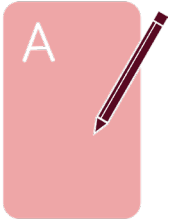
'LET'S DO SOME MATHS!'

ACTIVITY /

Today you are going to help Sophie and Tomas design a new market for Towncaster and will build a model of a Market Hall.

Your teacher will organise you into groups of 4 or 5.

RIBA
Architecture.com

First **check** that you have the right materials. Your group should have:

MATERIAL	SIZE	QUANTITY
Craft Sticks	200mmx2/3mm	20
Clear Sticky Tape	Roll on dispenser	1
Craft Straws	210mm	100
Pens		2
Ruler	30cm	1
Sheet Corrugated Cardboard, 6mm thick	A2	1
Lego (8 stud blocks)	32x16x9mm	50
White Card	A4	4
Coloured Card	A4	8

IMPORTANT THINGS TO REMEMBER/

The cost of the roof material (including its installation) is £1,200 per square metre.

The scale of the model is 1:100 so 1 square centimetre on the model is 1 square metre in real life.

You can work out the area of one of roof leaves by drawing a grid of 1cm squares on it.
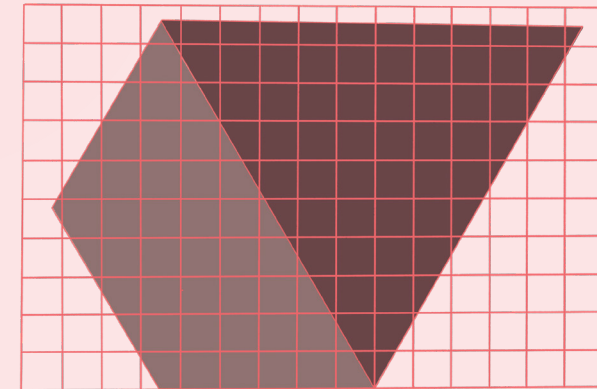
Now you can work out the Total Cost for the Market Hall:

Total Cost of Market Hall

= Cost of Columns + Cost of Stalls + Cost of Roof

MATHS 3 /

Next work out the cost of the roof:

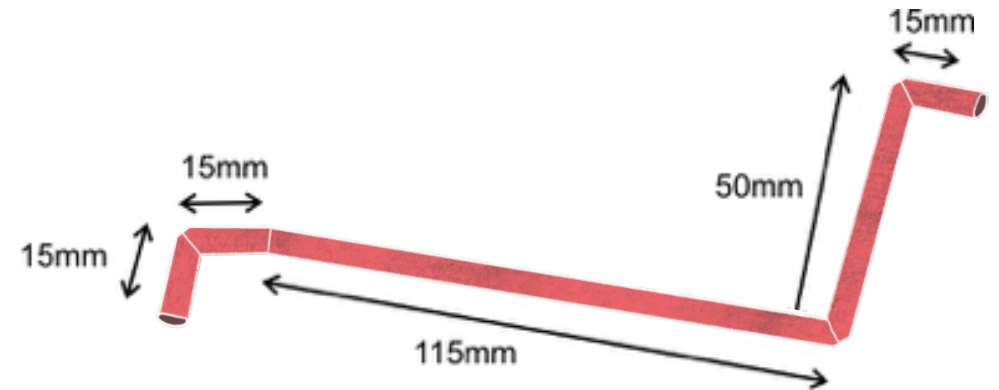**Cost of roof is = Area of Roof x Cost of 1 square metre.**

Area of Roof in square meters = Area of Model Roof in square centimetres
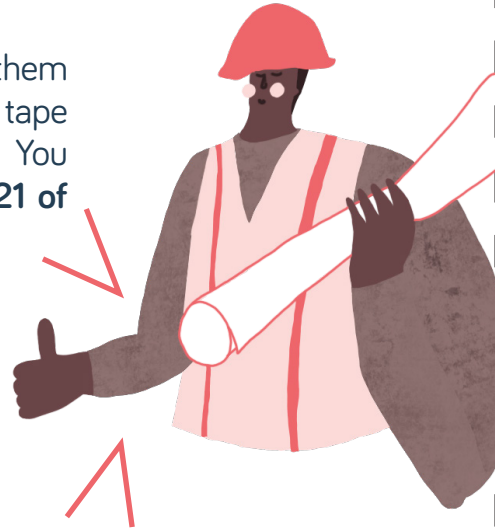
STEP 1 /

"To make a model of the Market Hall there are a set of different components to make. A simple column can be made with three drinking straws. First bend each straw as follows."
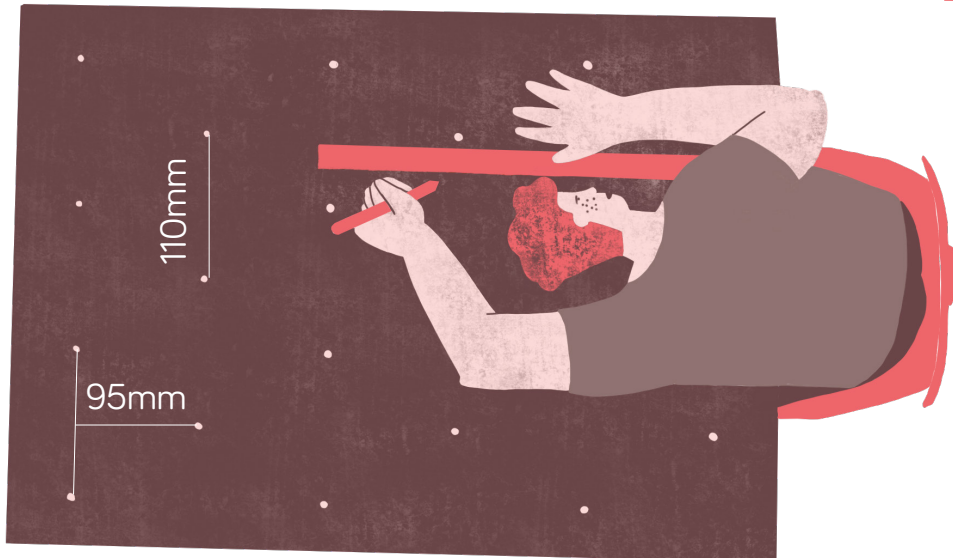
15mm

15mm

15mm

50mm

115mm

STEP 2 /

"Then carefully fix them together with sticky tape to make a column. You will need to **make 21 of these**"

"The columns need to fit to a base board to represent the ground. Take the large sheet of corrugated cardboard and carefully **mark it out** as follows."

STEP 3 /

110mm

95mm

MATHS 1 /

Now you can work out how the Market Hall will cost.

First work out the cost of the columns which have be made in Europe.

$$\text{Cost of One Column in Pounds} = \frac{\text{Cost of one Column in Euros}}{\text{Pounds to Euro Exchange Rate}}$$

Cost of columns = Number of Columns X Cost of One Column

Remember one column costs 90,000 Euros each and you can ask your teacher what the exchange rate is.

MATHS 2 /

Next work out the cost of the market stalls:

Cost of market stalls is = Number of stalls x Cost of One Stall

Remember each stall can be made and installed on site for £13,500 but if we order more than 35 stalls then they only cost £10,500 each.

STEP 8 /

"Using the remaining coloured card, make a set of leaf shaped pieces to represent the roof. If these are all the same and carefully fixed to the frame in the same way you can make a very stylish and dramatic roof."
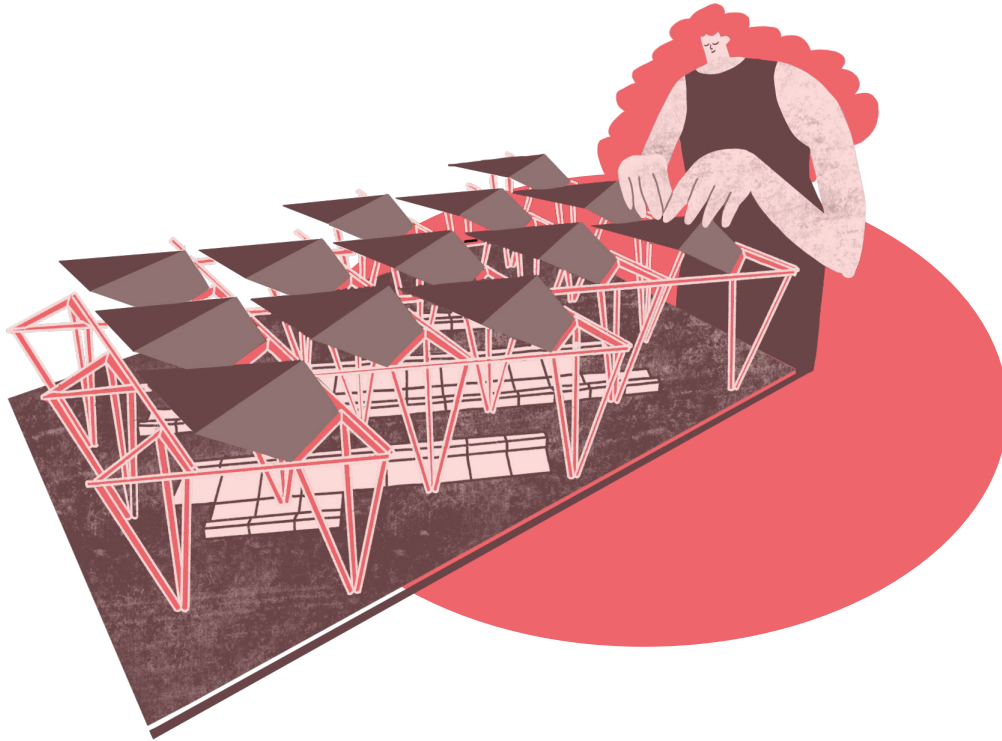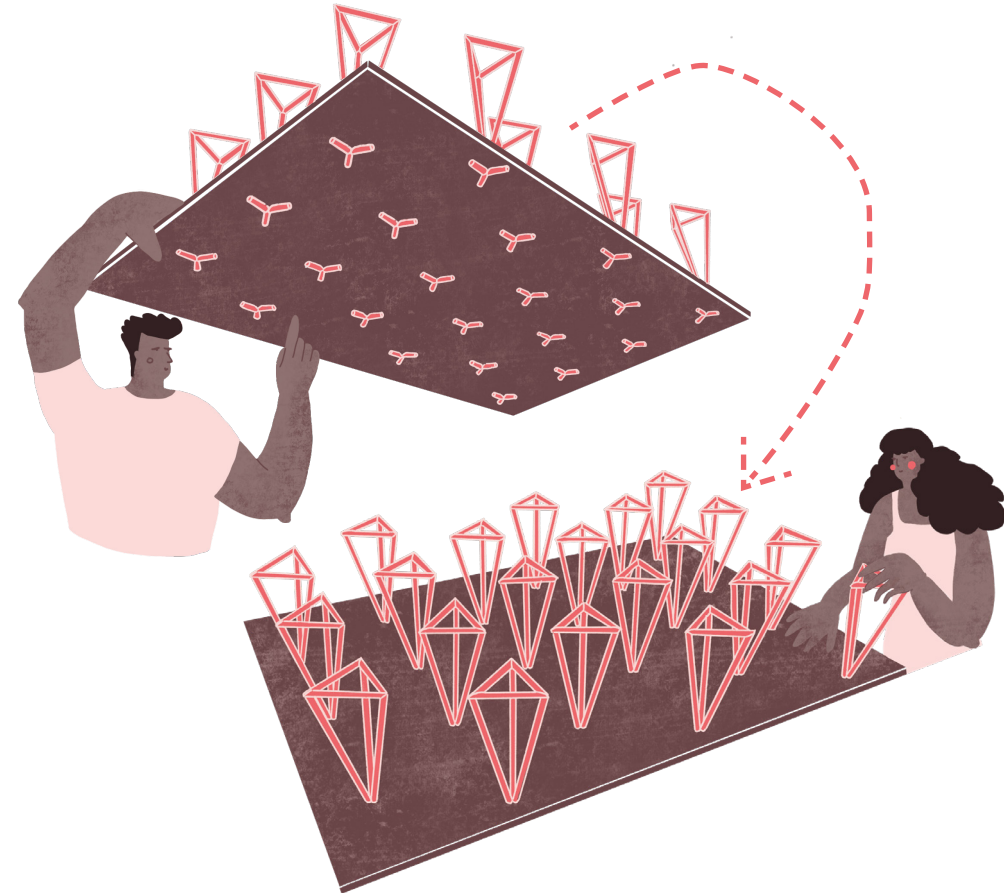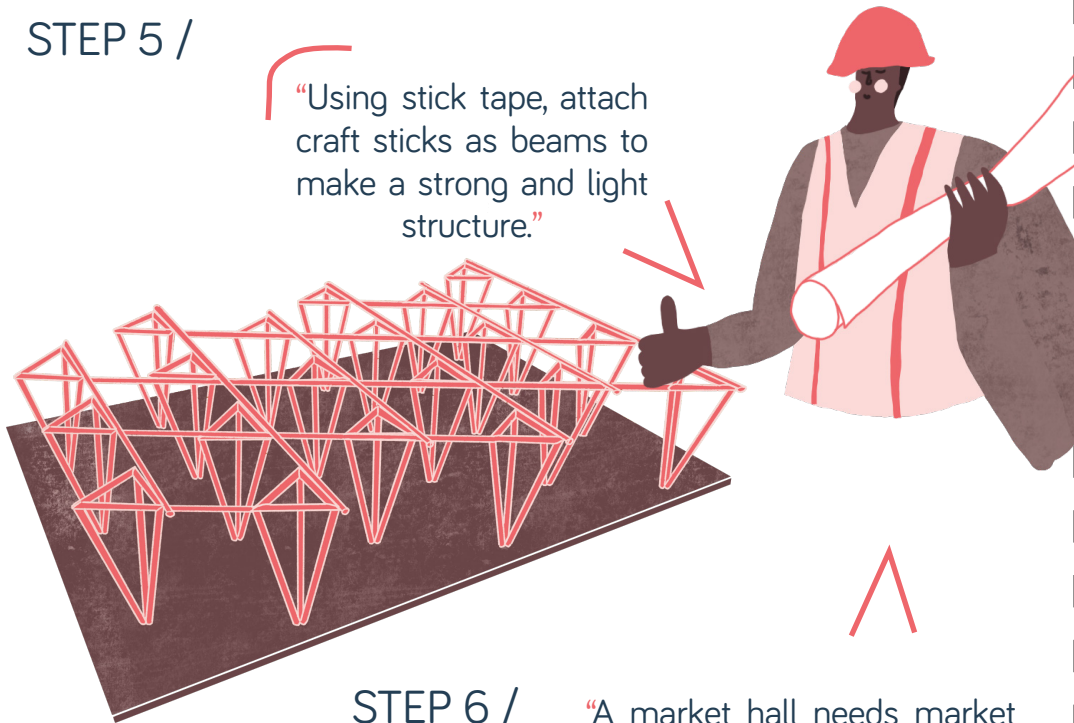
STEP 4 /

"Carefully make a hole at each point marked and thread through the base of a column. Splay out the straws underneath and secure with sticky tape.

You will now have an array of columns."

STEP 5 /

"Using stick tape, attach craft sticks as beams to make a strong and light structure."

STEP 6 /

"A market hall needs market stalls. A simple market stall can be made by sticking a toy building block to a piece of card. The block represents the counter and the card which measures **40mm x 32mm** represents the space of the stall."

STEP 7 /

"Cut out the pieces of card you need, stick on the block using blue tack or similar and add to the model. The mayor said 40 stalls are needed. Think about how these can be arranged in the Market Hall."