



# Maths in the Monastery

**Archaeologists draw plans of buildings that they are surveying or excavating. In this activity you will draw and measure a plan of the church in an abbey or monastery and then use this to estimate how many floor tiles might have covered the floor.**

**If you do not have access to a church, try doing the activity in your school hall.**

## You have

- Plan of the church (optional) or have a go at drawing a sketch plan or bird's eye view of the building by walking around and working out the shape of the building.
- Pencil
- Calculator (optional)
- Long tape measure or trundle wheel
- Some real or replica medieval floor tiles. You may be able to borrow some from your local museum.

## Activity

This activity should be done at the abbey or monastery although it can be adapted to other buildings. Try using your local church, or you could adapt the activity for your school hall. The church at an abbey is interesting because it is shaped like a cross and can be divided into rectangles to make measuring and calculating the area quite easy.

1. Sketch the plan of the church or use an existing plan
2. Divide the church into rectangular sections
3. Measure the length and width of each section. You can now work out the area of each section (length x width)
4. Add up the area of all the sections to find the total floor area of the church.
5. Now draw a scale plan of the church using your measurements.

You now know how big the church floor was. In medieval times it was popular to decorate the floor of an abbey church with tiles. You can see what they looked like at [www.museumoflondon.org.uk/ceramics/index.asp](http://www.museumoflondon.org.uk/ceramics/index.asp)

Medieval floor tiles measure about 12 or 13 square centimetres.

1. How many floor tiles would you need to cover an area of 1 square metre?
2. How many tiles would you need to cover the floor of your church?

## Useful questions

- How accurate do you think your area calculation is?
- How could you make it more accurate?
- Do you think all the floor was covered by tiles?
- Were the tiles all the same? Think about shape and size.

## Research and extension activities

- Find out about other abbeys that still have some of their original floor tiles. Some of the best examples are at Byland Abbey, North Yorkshire.
- There may be Medieval or later Victorian floor tiles in a local church or cathedral. Look for different patterns and styles. You could draw and record the different tiles.
- Many tiles can be fitted together to make larger patterns. Have a go at designing your own tiles and patterns.
- Try making and decorating your own tiles in school using air drying clay.

## Useful websites

<http://www.leeds.gov.uk/kirkstallabbey/>  
<http://www.kirkstall.org.uk/abbey/>  
<http://www.24hourmuseum.org.uk/leeds/museum/>  
<http://www.mylearning.org/>  
<http://www.derbycity.com/michael/medieval.html>  
<http://www.thebritishmuseum.ac.uk/compass/>  
[http://www.historylearningsite.co.uk/medieval\\_church.htm](http://www.historylearningsite.co.uk/medieval_church.htm)  
<http://www.britainexpress.com/History/TheMedievalChurch.htm>

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	National Curriculum	QCA Unit
<b>KS 1</b>	Maths: Ma2; Ma3 History: 4a, 6b	Numeracy framework
<b>KS 2</b>	Maths: Ma2; Ma3; Ma4 History: 2a, b; 4a, b; 5c	Numeracy framework History: unit 18

## creativeminds



The Creative Minds project works with museums libraries and archives across the Yorkshire region, to provide young people with learning opportunities in Science, Technology, Engineering & Maths (S.T.E.M.). This ground-breaking project is the first of its kind in the country and is managed by MLA Yorkshire. This pack was developed by Creative Minds with funding from Yorkshire Forward.