William Morris Maths Planning Subject topic: Using art to inspire maths: coordinates, position and direction.

School based maths lessons

Subject: Maths/ Art	Class:	Day:

National Curriculum Links:
♣ recall multiplication and division facts for multiplication tables up to 12 × 12
♣find the area of rectilinear shapes by counting squares
♣calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and ♣estimate the area of irregular shapes
♣recognise when it is possible to use formulae for area

♣ learn about great artists in history and use them for inspiration in own art.
♣ improve their mastery of art and design techniques.

Session/ Title : 7
Area

Learning Intention	Success Criteria	Key Vocabulary	Teacher & Pupil Activity (Indicate the groups that will be supported and by whom)	Plenary	Resources	Differentiation
To calculate the area on a grid. .	I can calculate the area of a shape by multiplying the length and width. I can use my understanding of area to solve problems.	Area Perimeter Length Width Side Multiple 2D shapes	**Introduction:** Show the children three rectangles (including a square) Ask the children to consider What's the same and what's different, The children should identify that all three have an area of 16 squares. Discuss that this is the surface area of a 2D shape and recap knowledge about area. **Activity 1:** Children should calculate the area of different quadrilateral with squares too guide them. What is easy about calculating the area? What would happen if there were not squares to guide	Encourage children to consider everything they have learnt in the unit. They will need to think	- PowerPoint	**SEN:** Children should split the grid evenly so that the printing process is less complex. **GDS:** Children should consider using two or three different sized

		Key Questions	them? Can they identify the formula needed to calculate area? **Follow Up:** Give the children quadrilaterals without squares to guide them. Ask the children why these questions may be more challenging and what they might need to do to calculate them. **Activity 2:** These are problem solving questions related to area, you could give the children the numicon on peg boards to manipulate or just show them the images depending on the competency of the class. Discuss what knowledge is needed to answer these questions and that sometimes area can be calculated by taking away a portion of a given area. **Activity 3:** Give the children numicon and ask how many different ways they can cover the surface area of a 10 by 10 peg board. The goal of this activity is to demonstrate to the children that there are many different ways for the children to section the same area of space. **Follow Up:** Children consider how they will section their pattern design for printing. If they choose to divide it simply (i.e. into four) then they will only need to create one printing block to print four times. The more sections of different sizes they create the more printing blocks they will need. – See Practical Printing Lesson Plans for more information.	about the area of their pillow cases and as well as whether they will translate their shape by repeatedly printing it, or rotate the printing block.		blocks and think about where these will be places so that the surface area is covered evenly. Possibly also consider creating a symmetrical pattern.