

# Notes for Teachers

### How to use this resource

Encourage your students to follow our research journey by reading through the resource.

They will encounter a selection of prompt questions and activities as they go through, which will encourage them to reflect on what they are reading.

### 3. Colour and Pigments

The microscopy photos show that there is some colour still on the surface of the angels. Some of these colours have changed over time, much has been lost and some areas have been repainted. The angels would have originally been brightly coloured. There are other scientific methods we can use to identify the original pigments.

#### Fibre Optic Reflectance Spectroscopy

This method is used to calibrate satellite images. It can also be used to identify minerals, plants and other materials used to make paint. It measures light reflected and absorbed by a surface. The result of the analysis is shown as a spectrum with features such as absorption bands, which are typical of the materials present in the object.

The three absorption bands indicated by arrows in the spectrum above shows us that the Virgin's cloak on the shield of the second angel was painted using azurite. [Azurite](#) is a blue mineral made of copper, which was widely used by medieval artists. The paint would have originally appeared bright blue but over time it has darkened and accumulated surface dirt.

We can also look at documentary evidence from the period to learn about how artists worked. The treatise of the painter [Cennino Cennini](#), *Il Libro dell' Arte*, describes painting techniques used in Italy in the 14th Century. The treatise, which reads like a recipe book, covers all aspects of painting technology from the preparatory stages, including the manufacture of the pigments, through to the final paint and varnish layers.