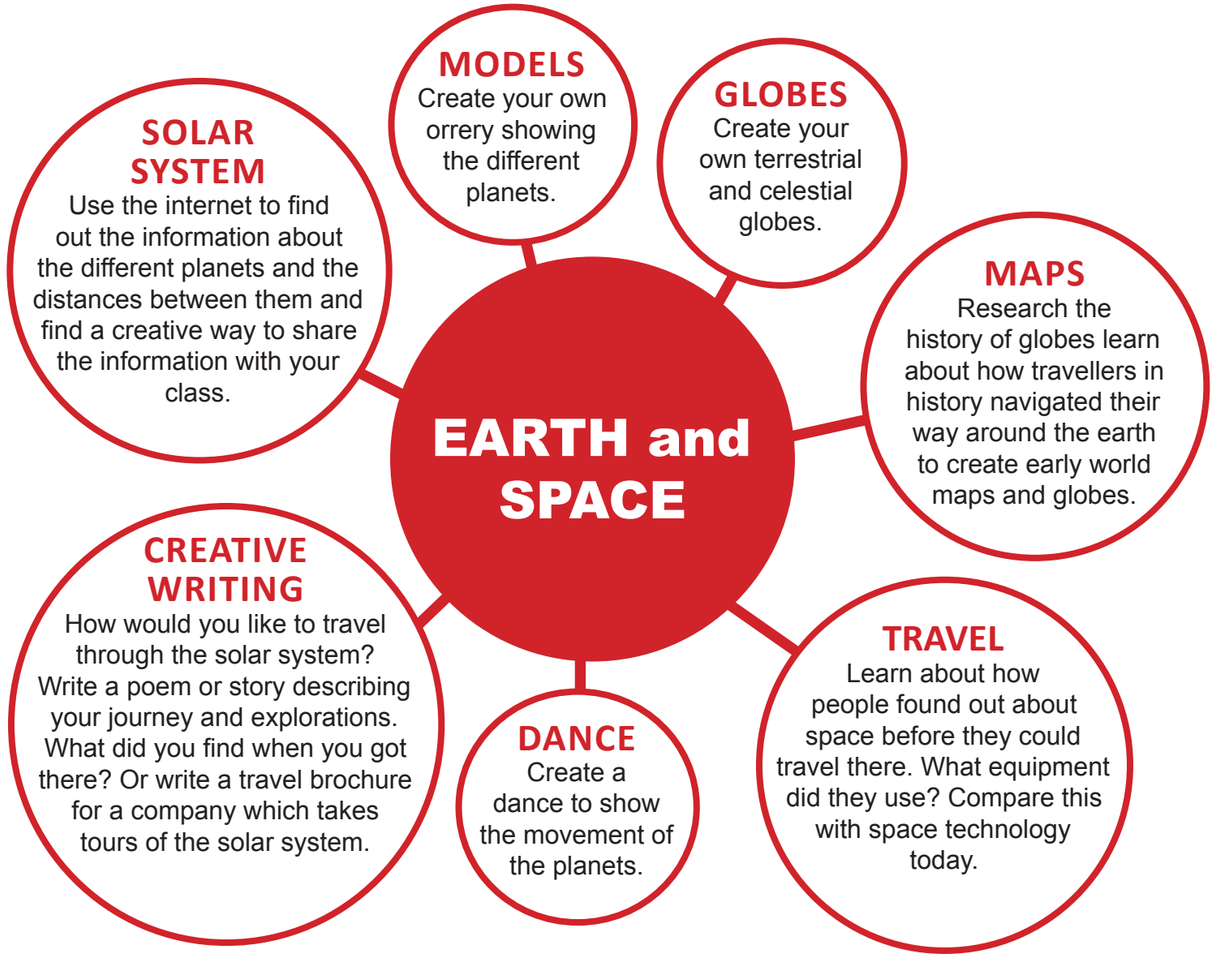
EXAMPLES OF POSSIBLE THEMES USING THIS OBJECT

SPACE EXPLORATION
MECHANICAL MODELS
GLOBES
MAP MAKING
THE SOLAR SYSTEM
ASTRONOMY AND ASTRONOMERS
LIGHT AND SHADOWS
CONSTELLATIONS

An example showing how using earth and space as a theme can lead to cross-curricular work



Please contact us or visit our website to book a visit or for more information about our programmes including training opportunities

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MUSEUM of the HISTORY of SCIENCE

ORRERY

Take One Object

TAKE ONE...

Inspired by the National Gallery's Take One Picture programme

Teacher Guidance Notes

Take One Object provides an unique opportunity to use an object from our collections as a focus for cross-curricular teaching and learning. A visit to see this object at the Museum of the History of Science linked with work in school offers a special learning experience for teachers and children and can result in creative, original and exciting outcomes. These notes provide background information about the object and give ideas about how to use it as a starting point for your own Take One project.

Table Orrery, By W. & S. Jones, early 19th century Inv.45104 displayed in the small basement gallery

BACKGROUND INFORMATION

What is an orrery?

An orrery is a mechanical model of the solar system that shows the relative sizes, positions and movements of the planets and moons. It is driven by a clockwork mechanism, with a globe representing the sun at the centre and a planet at the end of each arm. This orrery shows the planets as far as Uranus, the extent of the solar system known in 1800. It demonstrates the movement of the earth and moon relative to each other and to the sun using a geared mechanism.

'**A Philosopher lecturing on the orrery in which a lamp is put in place of the sun**' Joseph Wright of Derby, c 1766. Derby Museum and Art Gallery, Derby

THE HISTORICAL CONTEXT

Although the Greeks had working models of the planets, the first modern era planetarium was produced in 1704. Orreries became popular in 18th century society for learning about the solar system. The painting by Joseph Wright of Derby shows a family grouped around an orrery learning about astronomy.

Charles Boyle, 4th Earl of Orrery (1674-1731)

Charles Boyle, 4th Earl of Orrery was an English nobleman, statesman and patron of the sciences. Born at Chelsea and educated at Oxford, he was an author, soldier, statesman and politician.

Clockmaker George Graham created the first mechanical solar system model to show the motion of the planets around the sun. The device was named the orrery in the Earl's honour.

Boyle died in 1731 and was buried in Westminster Abbey. He bequeathed his personal library and collection of scientific instruments to Christ Church Library. The instruments are now on display in the Museum of the History of Science, Oxford.

ASTRONOMY IN THE 18TH CENTURY

At this time people were very interested in astronomy and the solar system because of new dramatic discoveries at the time. William Herschel discovered the planet Uranus in 1781. He and his sister, astronomer Caroline Herschel, spent hours studying the stars and created the most up to date star atlases of their time.

Caroline Herschel (1750-1848)

William Herschel (1783-1822)

DEVELOPING IDEAS

For creative planning across the KS1 and KS2 curriculum

Use the orrery an a starting point to develop pupils' critical and creative thinking and their learning across the curriculum. Explore cross-curricular themes and develop ideas before deciding which one to follow in more detail. Start with the following suggested ideas for introducing children to the object to encourage curiosity and engage with the object. Then use the starting questions to develop pupils' thinking and stimulate ideas.

Some possible lines of enquiry are shown here, followed by a more detailed example of how you could expand these ideas into cross-curricular work with your class.

TIPS FOR INTRODUCING AN OBJECT TO A CLASS

1. Display an image of the object in the classroom for a number of days with a tape recorder or 'graffiti wall' for children to add comments or questions. Once the pupils' comments and questions have been gathered follow with a class discussion.
2. Display a large image of the object in the classroom. Cover parts of the poster and during the few days before a visit start uncovering sections of the image, asking pupils to guess what they are going to see.
3. Work in pairs, sitting back to back. Give one child a picture of the object and ask them to describe what they are looking at. The other child has to draw what is described and guess what it is.
4. Create a word bank using words that come from looking at the object and use these to create poems.
5. Introduce an object to the whole class in a question and answer session as outlined on page 1 designed to develop pupils' speaking and listening skills.
6. Show an object to the class for a couple of minutes. Remove the object and see what they remember.
7. Collect pictures or examples of similar objects from different time periods and explore their similarities and differences. Then try to organise the objects according to age.

STARTING QUESTIONS

These questions may be useful as a starting point for developing speaking, listening and enquiry skills. They can help to facilitate looking, critical and creative thinking and the development of a personal response.

Q What do you recognise when you look at the object?
Q How is it decorated?
Q Who might have owned or used it?
Q What sort of person might have made it?
Q How might it work?
Q Why do you think it is in a museum?
Q How could this object be part of a story?