

Introduction

Topics

- Map-making - scale and distance
 - Romans used giant click-wheels for measuring miles
- Drawing geometry - solid objects - perspective - vanishing point
- Art & Drawing - other techniques for depicting distance - focus and clarity
 - When you look at a photograph ...
 - ... and when you look at a painting ...
 - ... how do you know which things are nearer and which things are further away?
 - (In sound, such as radio drama, a similar effect is achieved by volume and echo)
- Technologies for seeing-far and seeing-small.
- Battle of good and evil - germs versus white blood cells.
- Similar patterns at different scales - e.g. planetary system and atomic structure.

Aspects

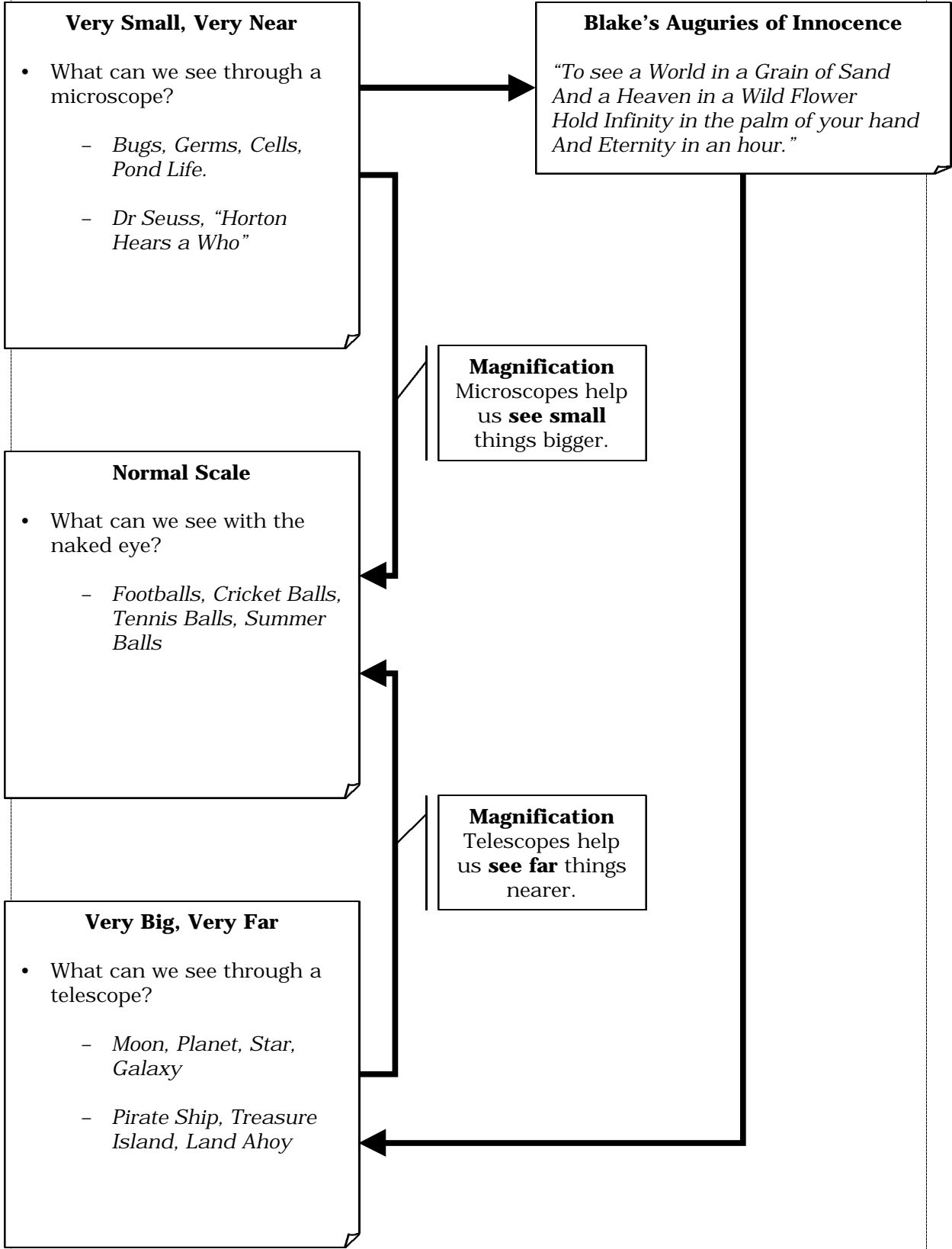
- Practical techniques (representation, measurement)
- Structures (in mathematics: geometry, fractals)
- Feelings - smallness and awe in the face of the universe, represented by the awe when one enters a large cathedral or temple.
- Spiritual implications

This is one of a series of topic sheets, which are designed to encourage the study of a single topic from as many different perspectives as possible.

This topic sheet can be used by parents and teachers to help structure a series of detailed interlinked investigations and discussions.

Children and adults are invited to consider how these various aspects may link together, and make judgements about the significance (meaning, relevance, importance) of these aspects to their own lives and concerns.

Large and Small



Devices for Changing Size

Microscopes & Telescopes

- How do they work?
 - Lenses and magnification
- Important role in history of science
 - Galileo as one of the early users of the telescope
- Important role in history
 - Nelson as a well-known misuser of the telescope - "I see no ships"

Fantasy Devices

- Alice in Wonderland
 - "Eat Me"
- Gulliver's Travels
- "Honey I shrunk/blew up the kids."

Use of Fantasy Devices

- How do books and films make use of the fantasy of changing people's size?
 - What can very small people see and do?
 - What can very large people see and do?

Other Technologies

- Can you think of any other devices with similar names?
 - Micro__
 - Tele__
 - __scope
- Can you think of any devices that do similar things?
- What do these devices have in common?
- How are these devices different?
- Think of science fiction devices as well as real ones.
- Invent a new device, or an interesting improvement on an existing device. Draw a picture and write a description to explain how it works.

Use of Technology

- Think of different uses for size/scale technologies - real and imaginary.