

the outdoor classroom

bridges and repeating patterns

Curriculum focus: Numeracy

Keywords: Bridges, Patterns, Design

Skills learnt in this worksheet include:

- Develop and Observing
- Understand the concept of repeating patterns
- Collect evidence
- Record findings
- Look for differences and similarities in the natural and manmade world
- Use ICT (optional)
- Design and build a bridge (optional)

Resources available to support these activities include:

- Data sheets
- Summary sheets



Ideas for activities on site:

1. Discussion and investigation

**In Kneller Gardens and Mereway there are several bridges.
In Crane Park there are road bridges and footbridges across the millstream.**

Find a bridge and look carefully at it

- Can you see a repeating pattern which has been used in the design of this bridge?
- On a data sheet identify all the different shapes that have been used?
- How many different shapes are there?
- Do groups of shapes make up different patterns?
- Draw these patterns on a data sheet.
- How many times is the pattern repeated on the bridge?

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- Why are these shapes were used?
Are the shapes used because they are pleasing to look at or are there other reasons for example strength, safety, fitting in with natural surroundings?
- Draw the repeating pattern on a data sheet.
- On the data sheet design your own repeating pattern that could be used on a bridge.

*This could be part of a follow up activity using a computer graphics programme.
The bridge could be built as a model or as part of a design and technology project.*

Look at the surrounding area in the park.

2. Find repeating patterns in nature.

- Draw some of these on a datasheet, or collect twigs, leaves, flowers, seed heads which have repeating patterns.

As a follow up activity use these repeating patterns as the basis for the design of wrapping paper possibly made using stamps made out of old sponges and paint.

3. Look for repeating patterns in the buildings of the park and possibly on the way back to school.

- Compare repeating patterns in nature and in buildings and draw them.
- What are the differences and what are the similarities?
- Discuss whether the repeating patterns on the bridge are inspired by nature or can be found in nature?