



Shape Detectives

STEAM  ACTION



“There is geometry in the humming of the strings, there is music in the spacing of the spheres.”

Pythagoras





As teachers, we know the importance of teaching children to recognise shapes and symbols, but when was the last time you reminded yourself of **why** it is so important to teach these skills.

Why learn about shapes?

Learning about shapes and symbols is something that is achievable to all and can be studied through many different means. This allows children to make clear connections with the world around them with ideas they learn in the classroom and so, giving purpose to their learning. Learning about shapes is truly cross curricular, covering not only mathematical development, but science, art and literacy and not forgetting that children are physically great at making shapes with their bodies.

“Early success in reading requires the ability to recognise shapes and symbols, while being keenly aware of subtle differences”, Bette Fetter (Founder of Young Rembrants)

Shapes in nature

Children are subconsciously exposed to shapes all around us, everyday. Learning about shapes in nature, harnesses the natural exploratory learning powers innately present within children. They are able to connect their own thoughts, concepts and experiences and begin to construct their own questions and hypotheses. For example:

“Why do we not find many squares in nature?”



“There are universal shapes to which everybody is subconsciously conditioned and to which they can respond, if their subconscious control does not shut them off.”

Thomas Henry Moore





Man-made shapes

Science has always looked to the natural world to inspire inventors, solve problems and model new ideas. By drawing on these connections, we can embed the important concept of shapes being all around us. Man moved items around by cylindrical tree trunks, long before the wheel was invented!



Shape Poems

The cross-curricular links to learning about shape and space are many and we can develop children's ability to play with language through poems. Often rhyming in nature and sometimes funny, children are often able to access poetry in this form, where they might otherwise struggle. Poetry is special in that it is often meant to be read aloud, and so by looking closely at poetry, children are able to practice both their listening skills and their oracy whilst having fun.



The
Pheasant

The Queen gave a present
 who wasn't very Pleasant at all!
 and put it in a sack

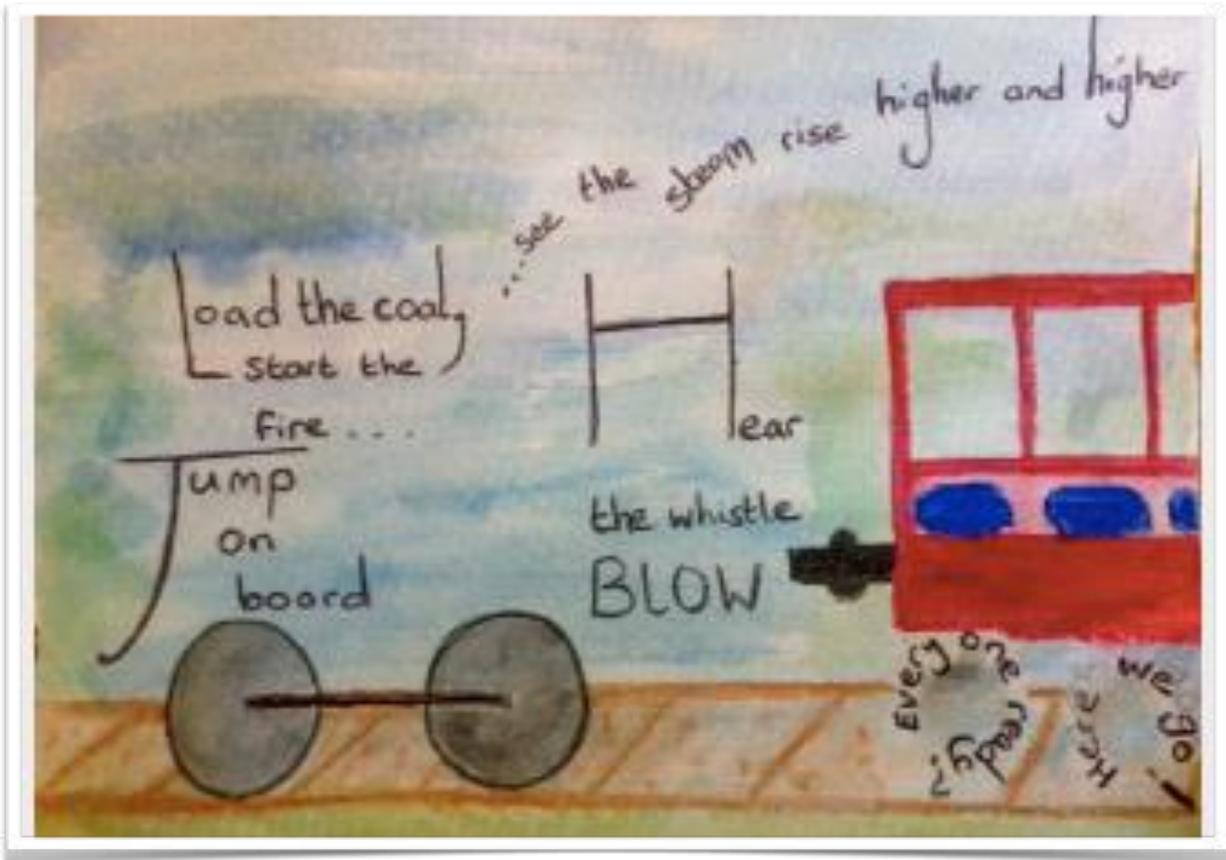
to an unpleasant pheasant
 So she took the present back
 and gave it to the peasants next door

Isabelle Creek
Age 8





“Genuine poetry can communicate before it is understood.” – T.S. Eliot



Looking at the poem above is a great starting point for discussion. Children are able to listen and give their own thoughts on this poem. Can they recognise the image? What do they think the poem is about? Do they notice anything different to writing they usually see? Do they remember hearing a whistle blow when they have been on a steam locomotive? Can they see any shapes represented by the words or letters?

Calligrams

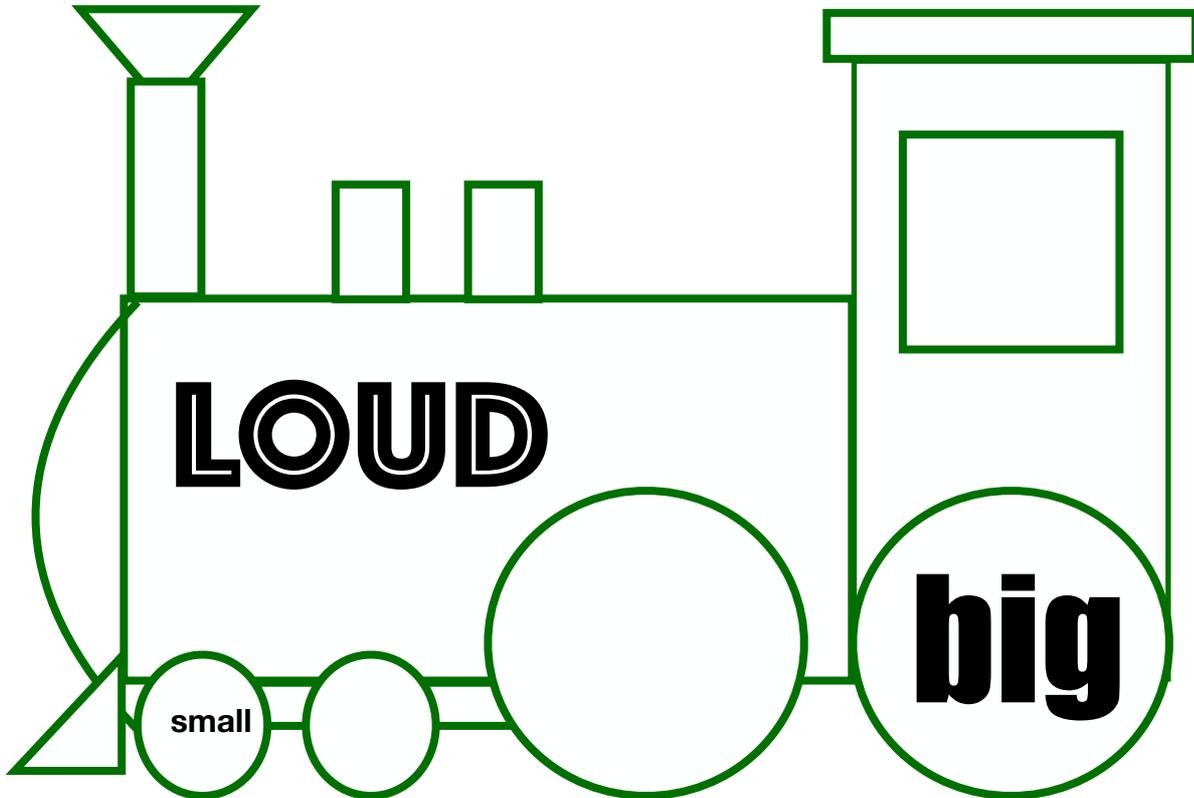
“A word or piece of text in which the design and layout of the letters creates a visual image related to the meaning of the words themselves.” Oxford English Dictionary

Calligrams are fun, they're accessible and they give children a way to express themselves, without the usual constraints of grammar and punctuation. With the right amount of support, all children can develop their own poems on a level that is appropriate to them. It's a great way to link emotions to their





writing as they consider how words make them feel and then how they can paint a picture of this for others to enjoy. They give children a way to be able to appreciate shape in a very different format.



Clickety clack

Clickety clack

Shape Detectives

In our Shape Detectives module, children are encouraged to both search for and recognise shapes all around them. Some shapes are easier to find than others and children can be supported by using our shape wands.

Discussion with children can include talk about which shapes they can find and which shapes they can fit together in order to create another shape.





Teaching Resources: Shapes

Introduction

By investigating shapes at Audley End Miniature Railway, children are able to study the nature of shapes through all elements of STEAM learning whilst also developing their literacy skills. Using the shape wands, we invite you to become a Shape detective and explore Audley End miniature railway to discover the shapes all around us.

Nature Shape bracelets



Cut a piece of masking tape to loosely wrap around each child's wrist with the sticky side facing out. This should form a bracelet shape. Explain to the children that they are going to collect fallen leaves and other nature items to stick to their tape to create nature bracelets. As you are collecting, reinforce the notion of the shapes they might find. Use the shape wands to help children to spot shapes that they might not be able to collect. These could be photographed to look at back in the classroom.

Important:

- ☼ Please remind children not to collect berries.
- ☼ To ask an adult if they are unsure if they can collect something.
- ☼ To wash their hands after the activity





All Aboard!



Back at your base classroom. Children can use some of the items that they have collected on their shape detective walk to create their own imaginative pictures of a steam engine.

What could you use for a wheel shape?

Can you make a square shape for a window?

Which shape would make a good funnel?





Links to Early Years Foundation Stage Outcomes

Language and Literacy

Reading

- They demonstrate understanding when talking with others about what they have read

Writing

- Uses some clearly identifiable letters to communicate meaning, representing some sounds correctly and in sequence.
- Writes own name and other things such as labels, captions.
- Attempts to write short sentences in meaningful contexts.

Mathematics

- Beginning to use mathematical names for 'solid' 3D shapes and 'flat' 2-D shapes, and mathematical terms to describe shapes.
- Selects a particular named shape.
- Uses familiar objects and common shapes to create and
- Recreate patterns and build models.

Understanding the World

- They make observations of animals and plants and explain why some things occur, and talk about changes

Expressive arts and design

- Children use what they have learnt about media and materials in original ways, thinking about uses and purposes.
- They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Useful Stories featuring trains

The Little Engine that could - Watty Piper

Steam train, Dream Train - Sherri Duskey Rinker

The Train Ride - June Crebbin

The Goodnight train - June Sobel

The Little Train - Louis Lenski





More fun with poetry

"A peanut sat on a railroad track ..." By Anonymous

A peanut sat on a railroad track,
His heart was all a-flutter.
The five-fifteen came rushing by--
Toot toot! Peanut butter!

The Runaway Train by Vernon Dalhart

T'was in the year of eighty-nine, on that old Chicago line
When the winter wind was blowin' shrill
The rails were froze, the wheels were cold, then the air brakes wouldn't hold
And Number Nine came roaring down the hill.....oooooh!

The runaway train came down the track and she blew, she blew
The runaway train came down the track and she blew, she blew
The runaway train came down the track, her whistle wide and her throttle back
And she blew, blew, blew, blew, blew

The engineer said the train must halt and she blew, she blew
The engineer said the train must halt and she blew, she blew
The engineer said the train must halt, he said it was all the fireman's fault
And she blew, blew, blew, blew, blew

The fireman said he rang the bell and she blew, she blew
The fireman said he rang the bell and she blew, she blew
The fireman said he rang the bell, the engineer said "You did like ..."
And she blew, blew, blew, blew, blew

The porter got an awful fright and she blew, she blew
The porter got an awful fright and she blew, she blew
The porter got an awful fright, he got so scared he near turned white
And she blew, blew, blew, blew, blew

A drummer sat in the parlour car and she blew, she blew
A drummer sat in the parlour car and she blew, she blew
A drummer sat in the parlour car and he nearly swallowed a fat cigar
And she blew, blew, blew, blew, blew

The runaway train went over the hill and she blew, she blew
The runaway train went over the hill and she blew, she blew
The runaway train went over the hill and the last we heard she was going still
And she blew, blew, blew, blew, blew

