White Rose Maths Essentials- Early Years Kit 2 EL47704

High-quality resources. The essential tools to support the White Rose mastery-based scheme of learning.

White Rose MATHS

Here are some activities for using the resources to help children learn in fun, hands-on practical ways.

1. Sand timers - 1 and 2 minutes

- Sand timers are a great visual representation for exploring the passage of time.

- Encourage children to see how many tasks they can complete before the sand timer runs out.
  Which activities can they do more of? Which take longer to complete?

- Sand timers could also be used as part of daily routines, such as tidy up time.

Talk about time

Adult-led learning

After reading stories such as *Five Minutes' Peace* by Jill Murphy, challenge children to see how many tasks they can complete in one minute.

For example, how many star jumps they can do or how many times they can write their name.

During snack time, supervise children to make toast. How does the bread change when you toast it?

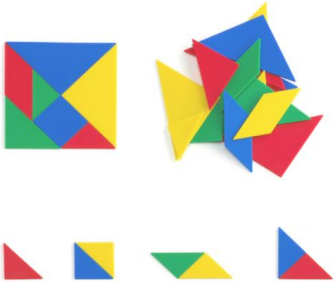
How long does the toast need to be in the toaster to make it golden? What happens if it is toasted for too long? What happens if it is not toasted for long enough?

Ask children and key adults to bring in a photograph of themselves from when they were younger. Prompt them to look at the photos carefully – whose picture is whose? How have they changed?

Provide a range of timers that measure different units of time. Encourage children to explore measuring time in a variety of ways. How many star jumps can they do in 30 seconds or how many beanbags can they throw into the hoop in one minute?

Challenge them to use the timer to measure how long it takes to do various activities.

2. Tangrams



- Tangrams are a set of 7 shapes including triangles, a square and a parallelogram.
- These can be used to exploring spatial reasoning skills such as rotating, manipulating, composing and decomposing shapes.
- Initially, provide templates or outlines of different pictures for children to build on top of. Children can then progress on to copying pictures and arrangements.

Manipulate shapes

Adult-led learning

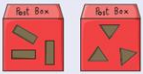
After reading stories such as *Tangram Cat* by Maranke Rinck and Martijn van der Linden, provide children with tangram pieces and encourage them to explore the different shapes.

Once children are familiar with them, provide templates with the outlines of different pictures. Prompt them to manipulate the shapes to complete the picture.

Provide children with a set of pattern blocks or similar shapes. Cut out a star template. Encourage children to find different ways to build a star. How many different shapes have they used? Prompt them to talk about the shapes they choose and what they notice.

Encourage children to investigate how many ways they can build a star using the same shape.

Use junk modelling boxes to make a range of postboxes with different-shaped openings, ensuring that there are three different orientations on each box.



Provide children with a range of shapes which will fit inside the openings of the box. Prompt them to manipulate the shapes to fit inside the postbox.

Provide children with a set of tangrams and prompt them to rotate and manipulate the shapes to make their own arrangements and pictures.

Can a partner guess what they have created? Encourage them to challenge their partner to recreate what they have made using their own pattern blocks.

3. Pattern blocks

- Pattern blocks can also be used to exploring spatial reasoning skills such as rotating, manipulating, composing and decomposing shapes.

- Encourage children to copy or create their own pictures by rotating and manipulating the pattern block shapes.

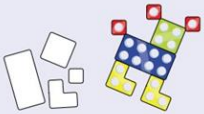
Rotate shapes

Adult-led learning

Provide children with a set of shapes. Select a shape and hold it up for all the children to see. Ask them to find the shape that matches yours.

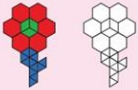
This can be adapted by making the shapes more similar and changing the orientations.

Provide children with number shapes and outlines of the number shapes in different orientations. Ask them to select shapes to match each outline.



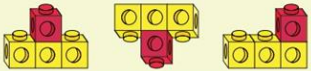
Provide baseboard overlays or number shape outlines and encourage children to use positional language as they build.

Provide children with pattern blocks or similar shapes, along with coloured picture templates for them to match. The children can progress from matching shapes with coloured pictures to pictures with outlines only.



Encourage children to look carefully and select the correct shapes. These may need to be rotated to fit in the outline.

Give children instructions to visualise a 3-D model without using equipment. For example, "Join three yellow cubes together in a line, place a red cube on top of the middle yellow cube. Then flip your model upside down." Show children three possible models and ask them which matches the model they visualised.



Copy 2-D shape pictures

Adult-led learning

After reading books such as *Mouse Shapes* by Ellen Stoll Walsh with children, revisit the later pages of the book where there are examples of more complex shape pictures. Provide children with pre-cut gummed or felt shapes and encourage them to copy pictures such as a robot or car.

Ask children to describe their pictures, focusing on the shapes used and their position.

Provide children with resources, such as pattern blocks, to make their own shape pictures. Either photograph or photocopy the pictures they make and then give them to other children for them to replicate.

Ask children to talk about the shapes they used. Does it look the same as the picture? Encourage children to give reasons as to why it is the same or different.

Provide a variety of complex shape pictures, such as a street scene or farm scene. Prompt children to talk about the shapes they can see and the positions they are in.

Encourage children to copy the pictures with their own shapes.

Show children two shape pictures where some of the features are the same and some are different. Encourage children to reason and explain what the similarities and differences are.

To extend this, prompt them to design their own pictures in a similar way. Children can then discuss the similarities and differences with a partner.

4. Building blocks

- Building blocks are a great addition to the construction or small world areas.
- As well as exploring 3-D shapes and 2-D shapes within 3-D shapes, they are particularly useful for spatial reasoning activities such as visualising, building and replicating models.

Use 3-D shapes for tasks

Adult-led learning

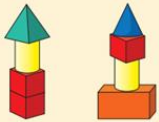
Provide children with different 3-D shapes and a ramp. Prompt them to explore which 3-D shapes roll down the ramp and which do not. What do they notice about the shapes that do roll? What is the same about them all?

Also encourage children to explore which shapes stack and which do not. What makes a shape good for stacking?

Encourage children to build an obstacle course. Prompt them to consider which objects they choose for different purposes.

Why have they chosen that object? Which shape do they need to use next?

After reading traditional tales such as *Rapunzel*, children explore building towers. Which shapes do they need to use to build Rapunzel's tower? Which shapes do they need to place at the bottom of the tower? Which shapes do they need to place at the top?



Prompt them to say why they have chosen to place that shape in that position.

Read books such as *Kitten Castle* by Ellen Weiss and Mel Friedman. Encourage children to build more complex structures, such as castles.

As children select shapes to build with, prompt them to talk about its different properties and to explain why they have chosen that shape.

Give instructions to build

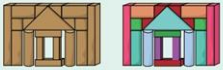
Adult-led learning

Provide each child with a set of items the same as yours, such as small-world animals. Give verbal instructions as you arrange your items. Prompt children to arrange their set in exactly the same way as yours.

Repeat with different children taking on the role of the leader.

Sing songs such as *Gonna Build a House* with children. In pairs, one child makes their own model of a house and then gives their partner instructions for how to replicate the building. The partner builds a matching model, using the original model to help them.

Encourage children to discuss how they made their models and to look for what is the same and what is different.



Provide children with a plan of a model. Prompt them to use the plan to make a group model.

Encourage children to take it in turns to place one brick at a time onto the model.

Children will need to refer to the plan and guide each other as to where to place the next block in order to make the best construction.

After reading stories such as *If I Built a House* by Chris Van Dusen, encourage children to talk about how they could build their own fantasy house.

Encourage them to mark-make instructions to show how they will make it.

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White Rose MATHS

Concrete resources to bring children's maths learning to life in engaging and meaningful contexts.

We hope you enjoy using the White Rose Maths Essential kit.