

15th October 2026

Welcome! Please remain muted with camera off and write questions for the presenters in the chat.

Best start in maths

earlymaths.org

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1. Best start in maths
2. Creating a nation of maths lovers
3. Mathematical learning through block play
4. Assessing number sense with 5-year-olds
5. Children playing with measures
6. Bringing maths to life through picture books
7. The value of spatial reasoning for maths
8. Working with families with maths
9. Young children's attitudes to maths
10. Pattern awareness predicts maths

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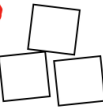
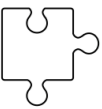


Fliss James
Sheringham Nursery
School & East London
Research School



Maths is
essential for a
best start in life



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Children's early maths skills are the strongest predictor of later achievement at school.

Maths is important in everyday life and employment.

Maths - an essential part of a best start in life



Mathematical development

Knowledge, dispositions and attitudes

Children are developing mathematically **from birth**.

Development takes time. Later development is **built on earlier development**.

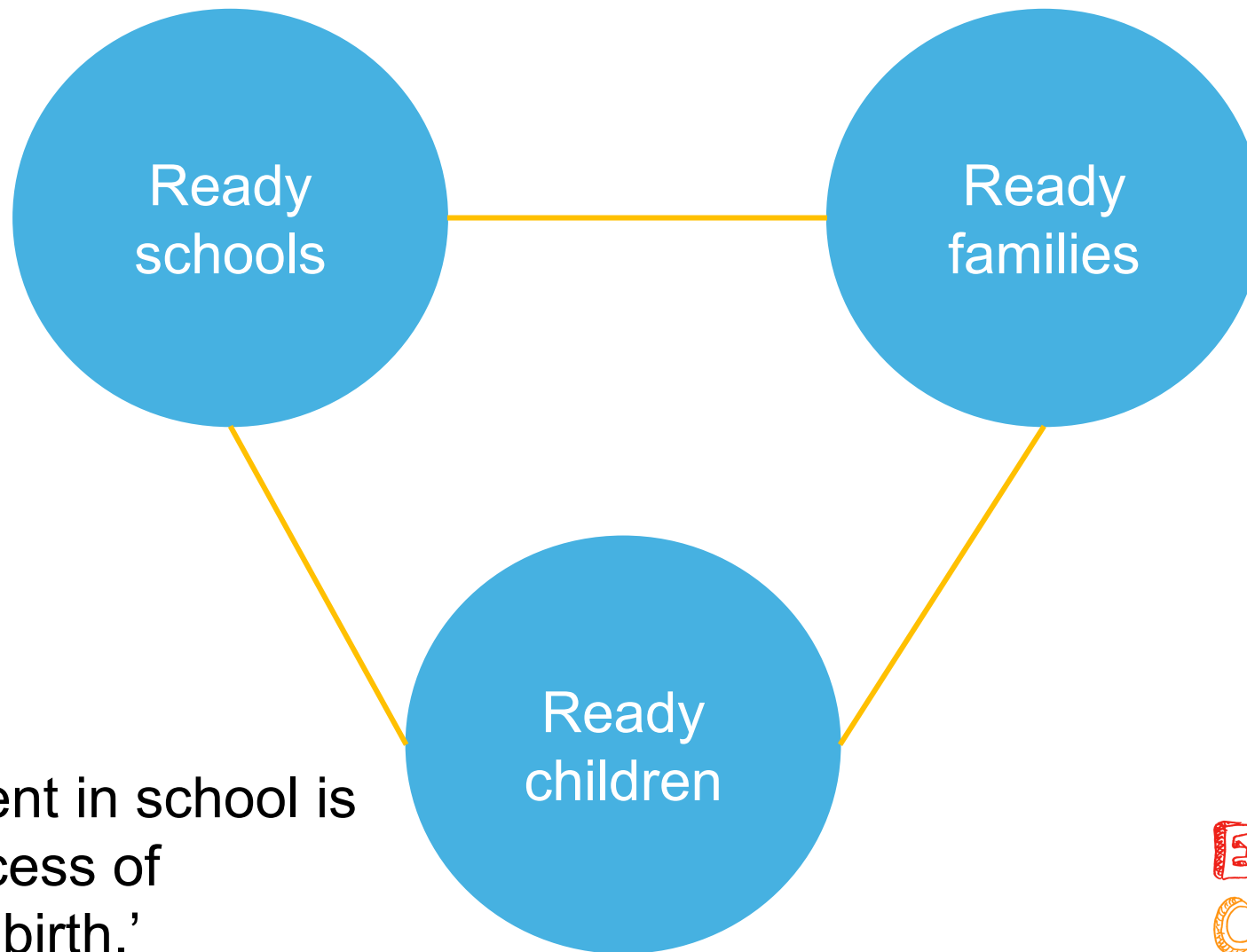
Early **mathematics is broad** and includes emerging number sense, pattern awareness, spatial reasoning, and problem solving.

All children need frequent, regular, **positive experiences**.

Experiences support developing **ways of being mathematical** (dispositions) and **attitudes to maths** as well as mathematical knowledge. Attitudes to maths are linked with attainment.



School readiness (UNICEF, 2012)



‘Learning achievement in school is the product of a process of acquiring skills from birth.’

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A best start in maths - Knowledge



Number sense

Verbal counting, object counting, cardinality, ordinality, subitising, comparison, composition

Pattern

Regularity, prediction, pattern translation, rules (including unit of repeat)

Spatial reasoning

Shape properties, composition & decomposition, orientation, transformation, position, direction, 2D/3D, scaling, perspective taking, navigation

Measures

Length, weight, capacity & volume, time, comparison



A best start in maths - Dispositions

- Pattern Sniffers
- Experimenters
- Describers
- Tinkerers
- Inventors
- Visualizers
- Conjecturers
- Guessers

Problem solvers



Cuoco, Goldenberg & Mark (1996)

A best start in maths - Attitudes to maths



Enjoyment



Confidence



Children need a wealth of enjoyable **experiences** with a **broad range** of mathematical ideas to secure the **foundational concepts**, mathematical **dispositions** and positive **attitudes** to maths which enable them to flourish.



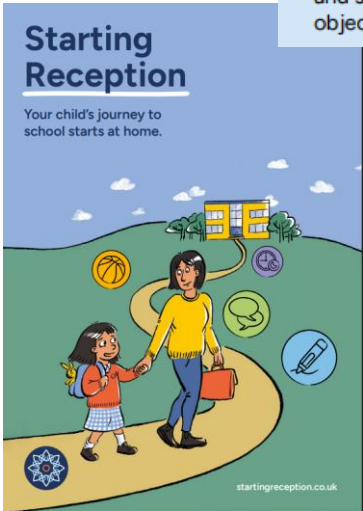
Where does maths feature in school readiness guidance in England?



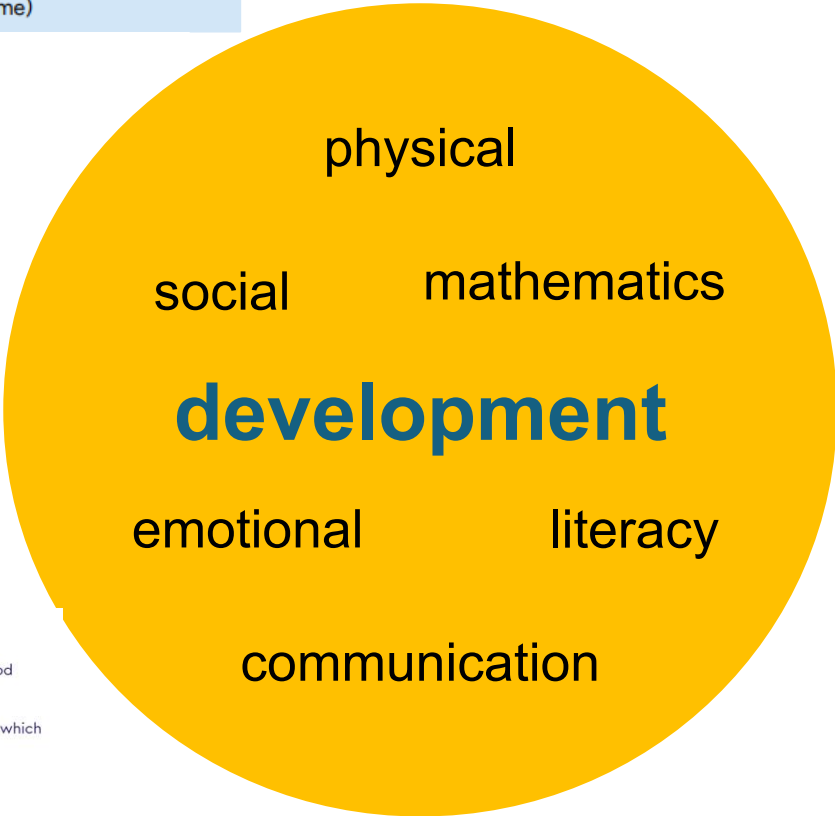
Getting children ready for reception

How schools and early years settings can work together with families to support transition into reception

April 2026



- Counting, building and doing puzzles
- Exploring the world around them (e.g. looking closely at the natural world, noticing numbers, patterns and shapes, playing safely with objects at home)



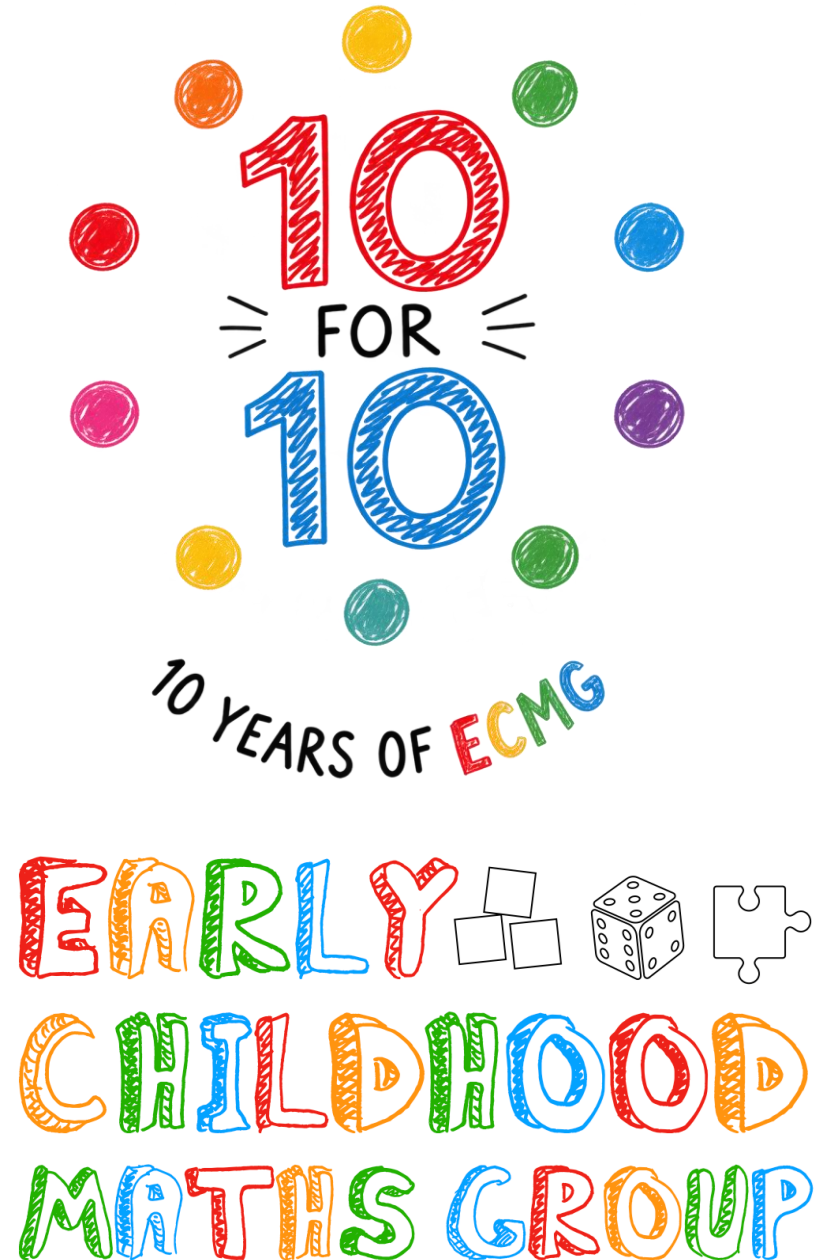
School readiness best practice guide

Early maths

- Best start with maths – ECMG: Simple everyday activities to help children make a good start in maths.
- Maths postcard for families – ECMG: Simple activities with a few prompts for families which can be used to promote mathematical thinking in young children.
- Spatial reasoning toolkit – ECMG: Information, guidance, and activities to support development of young children's spatial awareness
- Mathematics – Help for early years providers, DfE: Information, resources and activities to support practitioners to meet curriculum requirements for mathematics
- Early Years Evidence Store – Education Endowment Foundation: Approaches and practices to support early maths in the early years.



What can a best start in maths look like? A case study



Sheringham Nursery School and Children's Centre



Maintained nursery school in Newham, London

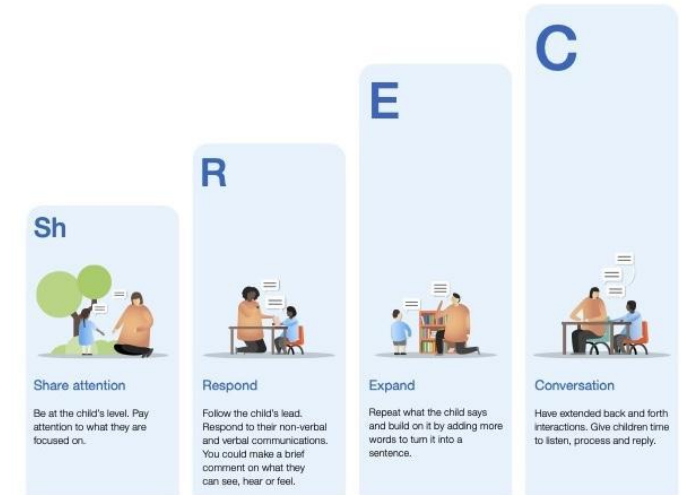
Government funded part-time and full-time places for 200 children aged 2-4 years

Children's Centre, Family Hub, Research School & Stronger Practice Hub

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Nurturing mathematical thinkers

- Rich, stimulating playful opportunities for mathematical learning that connect purposefully to children's interests and everyday lives.
- Practice that is shaped by knowledge of developmental trajectories
- A fundamental belief that strong relationships really matter - sensitive, responsive educators who will support their thinking and learning both spontaneously and in carefully planned intentional ways.



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Meaningful mathematical moments



10 FOR 10
10 YEARS OF ECMG



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Meaningful mathematical moments



<https://vimeo.com/1236217958/3682a18c89?share=copy&fl=sv&fe=ci>

“Combining free play with intentional teaching and promoting play with mathematical objects and mathematical ideas is pedagogically powerful.”

(Clements and Sarama, 2017)



Using the ECMG best start in maths posters



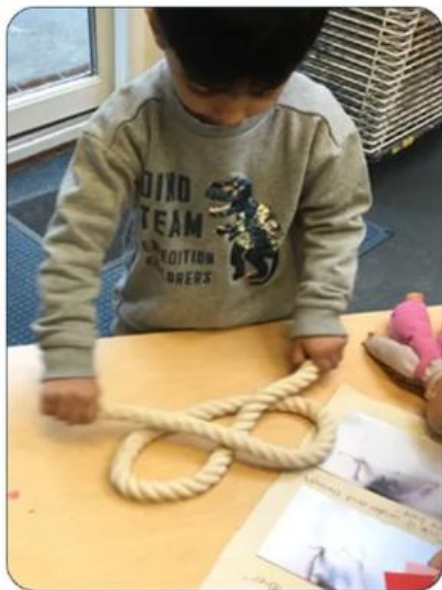
Guidance to support adults working with children from birth to seven, to develop confidence, competence and enjoyment in mathematics

We now have an extension of the Spatial Reasoning Trajectory, with activities for 7 to 11 year olds. You may like to try some of these!

Sign up for our first free E
October, 4-5pm. Register



STARTING POINTS for the mathematics curriculum



GUIDANCE based on research and experience



For Families
Click on the picture



Best start with maths



RESOURCES for educators

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Early childhood mathematics pedagogy: exploration, apprenticeship & making sense

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Give your child the best start in maths: enjoying everyday maths with children under 3



Playful counting together

counting forwards and back: e.g. 1,2,3, Go! 3,2,1 blast off! Number rhymes, e.g. 1,2,3,4,5, once I caught a fish alive

counting objects: in everyday life e.g. getting dressed and undressed *One sock, two socks- two socks altogether!* Eating food: *Three more mouthfuls – one, two, three!* Counting small groups of objects e.g. teddies, blocks, flowers, fruit, cars, dogs

counting actions and sounds: steps, jumps and claps



Talking about and playing with numbers

numbers around us: e.g. on birthday cards, packaging, door numbers, bus numbers, traffic signs

recognising 'how many' without counting (subitising): e.g. *Two dogs*

Sharing and comparing

comparing amounts: e.g. when sharing snacks or toys (*same, more, less, another one*)

comparing and ordering things: e.g. stacking cups, heights, clothes and shoes (*too big, too small, Will it fit?*)

talking about size and weight: e.g. commenting as the child notices or carries things (*big, enormous, giant, small, tiny, long, tall, short, light, heavy*)

talking about time: retelling the child's day e.g. *After breakfast we went to the shops, then we went to the park, then ... (bedtime, yesterday, today, tomorrow, soon, first, then, next, after, fast, slow)*

Playing with shapes

matching and comparing shapes: e.g. shape sorters, inset and simple jigsaw puzzles (*straight, curved, corners, bumpy, round, it fits!*)

building: e.g. boxes, wooden blocks, construction sets e.g. Duplo, (*on top, flat, wobbly*)

Give your child the best start in maths: enjoying everyday maths with your 4 year old



Playful counting together

counting forwards and back: number rhymes and picture books, showing fingers, counting as high as we can; *What's the next number?*

10, 9, 8, 7, 6, 5, 4, 3, 2, 1, *coming – ready or not!*

counting objects: shopping - *Can you get me 3 apples?* checking amounts - *Have we got 4 spoons?* Eating food- *How many left?* counting a collection e.g. toy cars, leaves

counting actions and sounds: stairs, jumps and claps



Playing with numbers

recognising 'how many' without counting (subitising): e.g. 2 dogs, 4 fingers, 5 dots on dice or dominoes

spotting numbers around us: e.g. on birthday cards, car number plates, TV remote, door numbers, clothing and shoe sizes

playing games: hopscotch, card games and board games

Sharing and comparing

comparing numbers: e.g. when sharing snacks or toys (*same number, more, less, not as many*)

comparing and ordering things: e.g. playdough, heights, growing things, distances, nesting dolls (*bigger, longer, taller, further away*)

talking about measuring tools which adults use: e.g. tape measures, height charts, weighing scales, measuring jugs (*too much, not enough, too heavy*)

talking about time: e.g. clocks, watches, calendars, timetables *lunchtime, Saturday, birthday, How many sleeps? How old? (soon, next, after, fast, slow)*

Playing with shapes

matching and comparing shapes: e.g. inset and jigsaw puzzles, shape pictures (*straight curved corners bumpy round*)



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Playful counting together

counting forwards and back: e.g. 1,2,3, Go! 3,2,1 *blast off!* Number rhymes, e.g. 1,2,3,4,5, *once I caught a fish alive*

counting objects: in everyday life e.g. getting dressed and undressed *One sock, two socks- two socks altogether!* Eating food: *Three more mouthfuls – one, two, three!* Counting small groups of objects e.g. teddies, blocks, flowers, fruit, cars, dogs

counting actions and sounds: steps, jumps and claps



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Playing with shapes

matching and comparing shapes: e.g. shape sorters, inset and simple jigsaw puzzles (*straight, curved, corners, bumpy, round, It fits!*)

building: e.g. boxes, wooden blocks, construction sets e.g. Duplo, (*on top, flat, wobbly*)

Places and spaces

positions: e.g. getting inside boxes, behind curtains, exploring gaps; playing with farms etc.; tidying up (*inside, under, behind, next to*)

routes and directions: e.g. Going through tunnels, playing with cars and trains, describing the way to the park as you go, *under the bridge, going round the corner, crossing the road, (forwards, backwards)*

Pattern spotting

describing and making patterns: e.g. patterns on clothes, fences, pavements; making patterns with leaves, pebbles and shells, patterns in music, rhymes and action songs (*same, different*)



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Give your child the best start in maths: enjoying everyday maths with your 4 year old

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Playful counting together

- **counting forwards and back:** number rhymes and picture books, showing fingers, counting as high as we can; *What's the next number?*
10, 9, 8, 7, 6, 5, 4, 3, 2, 1, *coming – ready or not!*
- **counting objects:** shopping - *Can you get me 3 apples?* checking amounts - *Have we got 4 spoons?* Eating food- *How many left?* counting a collection e.g. toy cars, leaves
- **counting actions and sounds:** stairs, jumps and claps

Playing with numbers

- **recognising 'how many' without counting** (subitising): e.g. 2 dogs, 4 fingers, 5 dots on dice or dominoes
- **spotting numbers around us:** e.g. on birthday cards, car number plates, TV remote, door numbers, clothing and shoe sizes
- **playing games:** hopscotch, card games and board games

Sharing and comparing

- **comparing numbers:** e.g. when sharing snacks or toys (*same number, more, less, not as many*)
- **comparing and ordering things:** e.g. playdough, heights, growing things, distances, nesting dolls (*bigger, longer, taller, further away*)
- **talking about measuring tools which adults use:** e.g. tape measures, height charts, weighing scales, measuring jugs (*too much, not enough, too heavy*)
- **talking about time:** e.g. clocks, watches, calendars, timetables *lunchtime, Saturday, birthday, How many sleeps? How old? (soon, next, after, fast, slow)*

Playing with shapes

- **matching and comparing shapes:** e.g. inset and jigsaw puzzles, shape pictures (*straight, curved, corners, bumpy, round*)
- **building:** e.g. boxes, wooden blocks, Lego or Duplo, construction sets; making dens indoors and outside (*on top, flat, corner, wobbly*)

Places and spaces

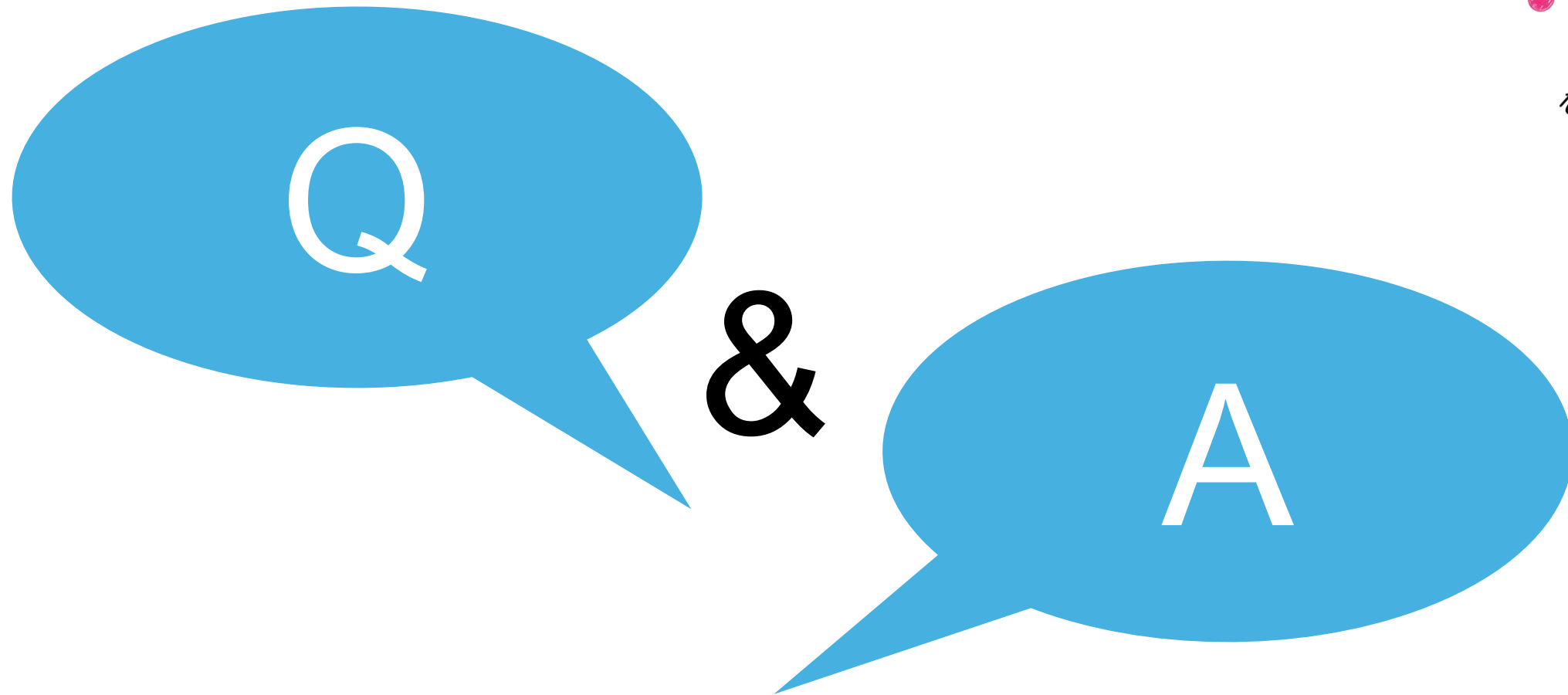
- **positions:** e.g. pretend play with toy houses, roadways, dinosaurs; tidying up, (*inside, under, in front of, behind, before, after, between*)
- **routes and directions:** e.g. describing the way to the park, giving directions (*forwards, backwards, sideways*)

Pattern spotting

- **describing and making patterns:** e.g. patterns on clothes, fences, pavements; making patterns with leaves, pebbles and shells, patterns in music, rhymes and action songs *Which bit is repeated over and over? (same, different)*



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Next webinar:

Creating a nation of maths lovers
on 3rd November 4-5pm

Post feedback about today's webinar in the chat

ECMG website: earlymaths.org

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