Summer

Scheme of learning

Reception

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White Rose MATHS

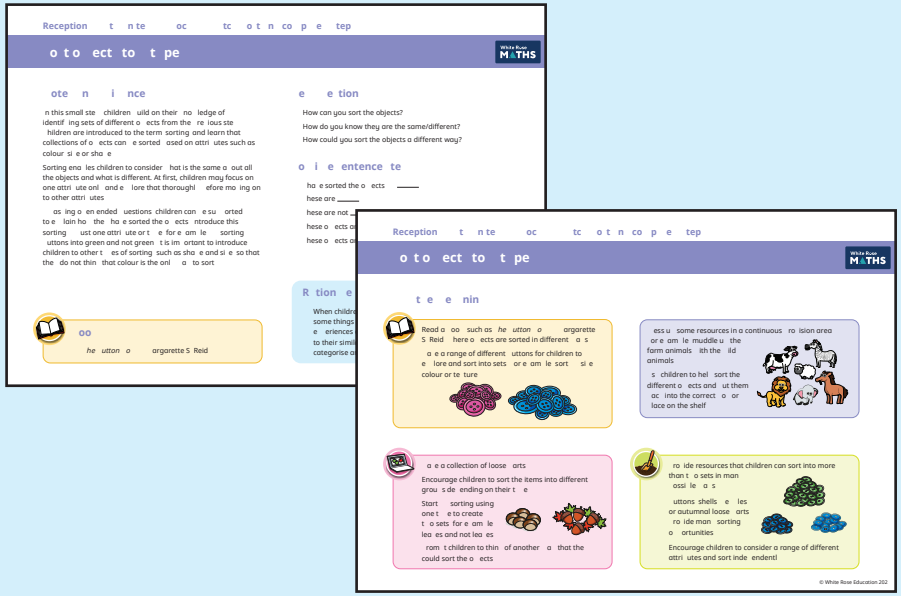
The ite Ro e t schemes of learning

Reception i nce

The schemes cover the DfE statutory framework for the EYFS and Educational Programme for Mathematics and will support you to deliver a curriculum that embeds mathematical thinking and talk.

Our schemes support the ethos of the EYFS whilst at the same time enabling teachers to create a mathematically rich curriculum. Additionally, they allow for key mathematical concepts to be revisited and developed throughout the year.

The guidance has been divided into 18 blocks and provides a variety of opportunities to develop the understanding of number, shape, measure and spatial thinking.



e c in n e nin

Our reception schemes support you in teaching the key aspects of the EYFS curriculum. The scheme supports specific teaching through small steps with adult-led activities and continuous provision. The focus is on building up the numbers slowly, so children gain a deep understanding of them and how they are composed. However, this does not mean children should not be counting and discussing larger numbers in routines such as lining up. It is also important that teachers are aware of, and children are supported in gaining an understanding of, the counting principles.

1. The one-to-one principle.
2. The stable-order principle.
3. The cardinal principle.
4. The abstraction principle.
5. The order-irrelevance principle.

These principles are covered in more detail on the following pages.

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Reception ote n i nce

e o ntin incip e

Following research from Gelman and Gallistel in 1978, it is vital that teachers understand the five counting principles. (Gelman, R. & Gallistel, C. (1978) The Child's Understanding of Number. Cambridge, MA. Harvard University Press.)

e one to one p incip e

This involves children assigning one number name to each object that is being counted. Children need to ensure that they count each object only once, ensuring they have counted every object.

Children will sometimes count objects more than once or miss an object out that needs to be counted. Encourage children to line up objects and touch each one as they count, saying one number name per object. This will also help to avoid children counting more quickly than they touch the objects which again shows they have not grasped one-to-one correspondence.



1 2 3 4

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Reception ote n i nce

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Children understand that, when counting, the numbers have to be said in a certain order.

Children need to know all the number names for the amount in the group they are counting. Teachers can therefore encourage children to count aloud to larger numbers without expecting them to count that number of objects immediately.

e c in p incip e

Children understand that the number name assigned to the final object in a group is the total number of objects in that group.

In order to grasp this principle, children need to understand the one-to-one and stable-order principle. From a larger group, children select a given number and count them out. When asked 'how many?', children should be able to recall the final number they said. Children who have not grasped this principle will recount the whole group again.

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Reception ote n i nce



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e t ction p incip e

This involves children understanding that anything can be counted, including things that cannot be touched, such as sounds and movements e.g. jumps.

When starting to count, many children rely on touching the objects in order to count accurately. Teachers can encourage abstraction on a daily basis by counting claps or clicks. They can also count imaginary objects in their head to encourage counting on. This involves the children visualising objects.

e o e i e e nce p incip e

This involves children understanding that the order in which we count a group of objects is irrelevant. There will still be the same number.

Encourage children to count objects, left to right, right to left, top to bottom and bottom to top. Once children have counted a group, move the objects and ask children how many there are. If they count them all again they have not fully grasped this principle.

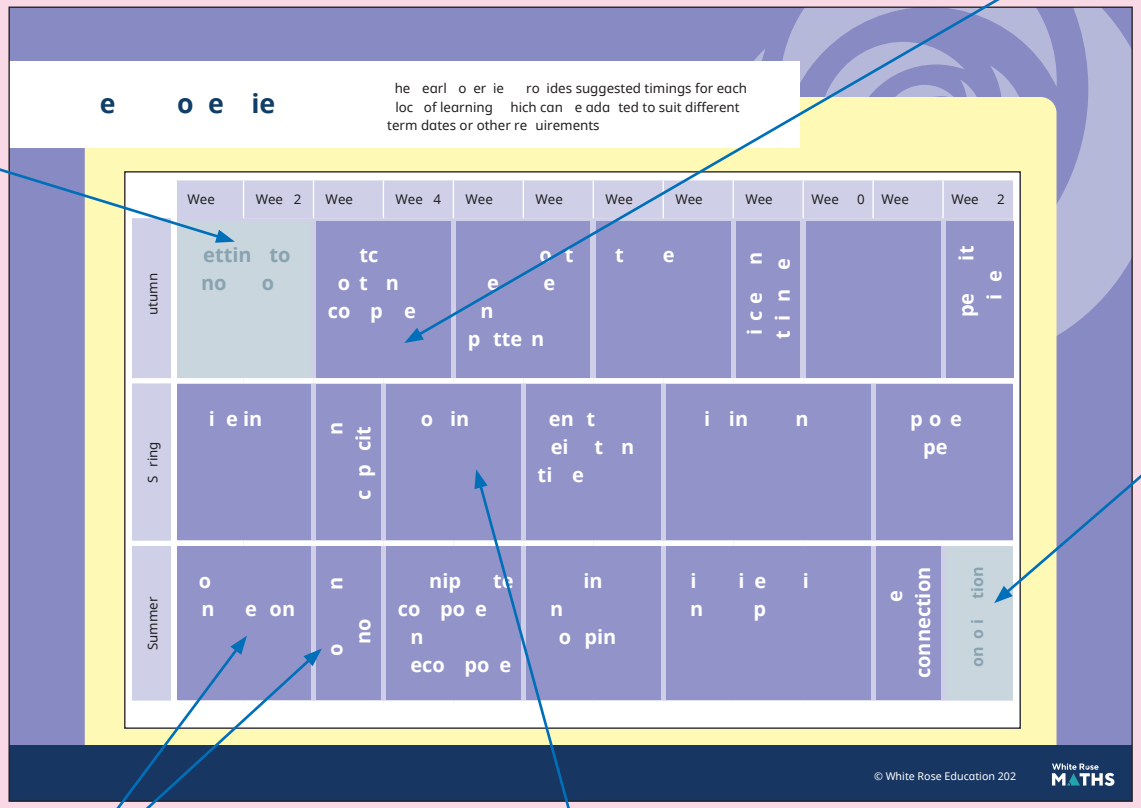
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e o e ie

Overview with suggested weekly timings. Block titles are clear and show progress through number and spatial reasoning.

Early blocks focus on use of provision to support key early maths and routines.

The first 2 weeks are for you to get to know children, develop routines and give you the flexibility to complete baseline assessments.



Consolidation weeks allow for a degree of flexibility in the suggested block lengths or to consolidate learning based on the needs of your children.

Content is consolidated so all concepts are explicitly taught before assessment for ELG.

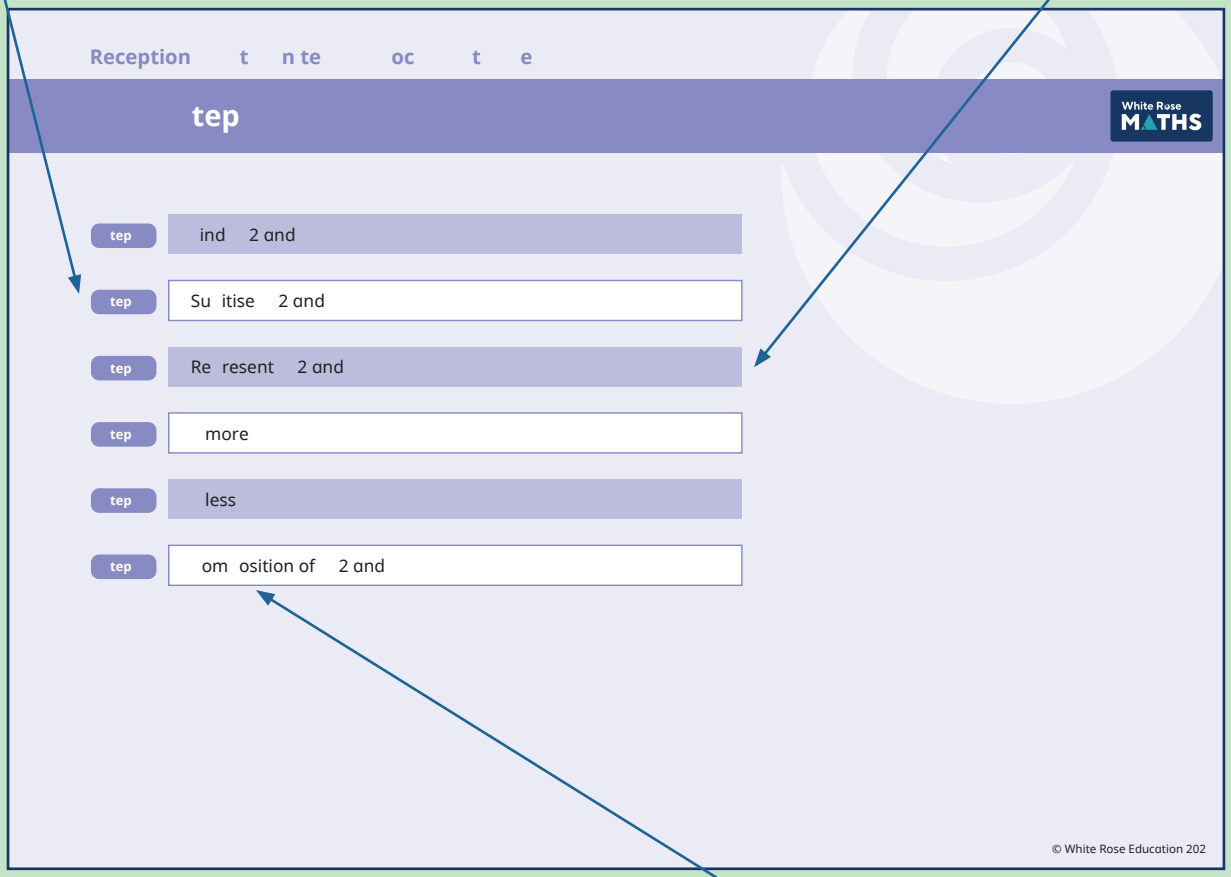
Subitising is taught both perceptually and conceptually through the blocks. Concepts such as doubling and 1 more / 1 less is focused on in the progression of the numbers.

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tep e o n

Each block has sequenced small steps.

Step titles are in the same sequence to help embed learning.



Step titles clearly explain what the teaching focus is.

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cti itie n o

An activity introduced by a reading from a fiction or non-fiction book.

Sho children the illustrations from ages 2 and of the stor *nno s ounting oo* itsumasa nno

Encourage them to loo at the ictures and identif here the can see the different re resentations of 2 and

Where do the see each re resentation

o do the see it

An activity which includes a rhyme or musical instrument.

a e a ile of ean ags

eat a drum either 2 or times





hildren listen carefull and count out 2 or ean ags from a larger grou to match the num er of eats

A suggested daily routine to be supported by a teacher.

i o tine

When lining u in the da as children to oin the line de ending on different attri utes for e am le line u if ou ha e a sister

An outside activity or one that uses resources from nature.

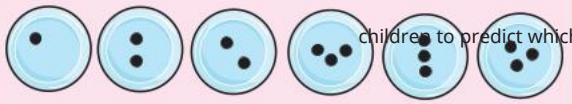
o outside and model ho to ma e sim le large scale patterns, such as stick, leaf, stick, leaf, stick, leaf.



Su ort children to co the atterns and see if the can continue them Encourage children to use loose arts to ma e sim le atterns for a artner to co and continue

An activity that has accompanying teaching slides to support adult-led learning as part of a premium subscription.

re are a set of dot lates or num er cards hich ha e 2 or dots in different arrangements



old u the dot lates and as the children ho man dots

Can children show the correct number of fingers?

s children if the can match the numerals 2 and to the dot lates

As a class, select two objects from

children to predict which object

Encourage them to hold one object in each hand and

Put the objects into two distinct piles: heavy and light.

A digging deeper activity to deepen children's understanding is provided for each small step.

Wrap up a range of boxes, each with a different mass.

Ensure that some of the small o es are hea and some of the large o es are light

ic u a o and as children to redict if it ill e hea or light



s them to test their redictions using a alance scale

re all small o es light

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e c e i nce

Teacher guidance pages are provided at the start of each block of learning.

Suggested resources that will support children's learning throughout the block, although other resources can be used.

A suggested list of books that can be used to support and spark learning within the block.

Useful ideas to consider when teaching this block to give a practical helping hand.

Reception t n te oc t e

e c e i nce

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nno s ounting oo itsumasa nno
o to ount to ne as ar Salmon
oldiloc s and the hree ears
he inger read an
S uash and a S uee e ulia onaldson
he hree ill oats ruff

e e o ce



op tip

a ing a set of teacher resources a aila le for children in ro ision ill encourage them to inde endentl demonstrate their learning

great alternati e to dou le sided counters are dried utter eans S ra these on one side or decorate as mini easts for acti ities in chec oint

lan a er lates could e left out for children to design their o n dot lates

f ou do not ha e a dice ou can use a standard dice and co er the num ers 4 and



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tep i nce

An overview of the content that provides key vocabulary to introduce, relevant subject knowledge and advice on progression.

Reception t n te oc t e tep

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ote n i nce

n this small ste children erce tuall su itise his form of su itising refers to instantl recognising the num er of o ects or items in a grou ithout needing to count them

Encourage children to su itise grou s of 2 and items his ill allo them to de elo an understanding of hat each num er loo s li e and hat it is made u of se images and stories that include grou s of 2 and characters or o ects to oint out and encourage children to su itise ice and s inners ith dots are useful in hel ing su ort children to de elo their su itising s ills t is im ortant that the see the dots or other o ects in different arrangements so that the don t thin a num er re resentation such as al a s a ears in the same a

e e tion

o man can ou see

o do ou no

o man are there in each grou

What can ou sho me

What can ou see

o i e entence te

here are _____ dots altogether

here is _____

There are 2/3 _____

can see _____ ithout counting

can su itise _____



R e

When Was ne anged hum



oo

o to ount to ne as er Salmon

in to t e c ic

e elo ment atters Rece tion Su itise

irth to atters – Range 5 – Subitises one, two and three o ects ithout counting

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Key questions that can be used to develop children's mathematical talk and reasoning skills.

Key sentence stems to further support children's mathematical talk and the use of mathematical vocabulary.

Indicate the statement(s) from Development Matters and Birth to 5 Matters that are covered in the small step.

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The adult-led learning section provides suggested activities that can be used when teaching this small step. These activities could be delivered to the whole class or in small groups.

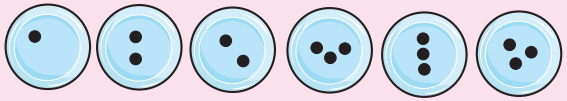
Reception t n te oc t e tep

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t e e nin

re are a set of dot lates or num er cards hich ha e 2 or dots in different arrangements



old u the dot lates and as the children ho man dots

Can children show the correct number of fingers?

s children if the can match the numerals 2 and to the dot lates

la a sim le trac game ith small orld creatures or characters

hildren ta e it in turns to roll a dice or a s inner and su itise the num er of dots

he mo e the creature or character the corres onding num er of um s

Who will be the first to reach the finish?



Share stories such as *o to ount to ne* as er Salmon

Encourage them to su itise and notice here the see 2 and

Where can the see 2 and grou s of o ects or characters from the stor

an the sho ou 2 and

Re resent 2 and using small o ects o er each amount ith a o l or cu



uic l re eal one grou of o ects and as children ho man there are

S a the ositions around

When ou sto can the oint to the o l ith

ift the o l and see if the children can instantl sa hether the are correct

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ontin o p o i ion

This section provides suggested ways that continuous provision could be used or enhanced to consolidate children's learning from the block.

Reception t n te oc t e

ontin o p o i ion

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Su ort children to ma e their o n re resentation cards

ro ide them ith a iece of a er and allo them to aint dra or use collage materials to re resent the num ers 2 and

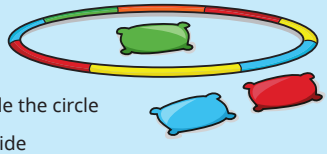


hildren can create their o n dots dice atterns or create a icture of something that interests them

These can then be used to play games such as 'Snap'.

lace a hoo on the ground

s the children to collect ean ags and to ta e turns to thro them into a circle



o man land inside the circle

o man land outside

ro ide an easel or cli oard so that the can record their o n scores

a e dough se a reci e that in ol es measuring using 2 or cu s

s children to measure out the ingredients and count the cu s

2 cups of plain flour
1 cup of salt
2 cups of water
2 tablespoons of oil
1 teaspoon of cream of tartar
3 drops of food colouring

ro ide a collection of arious loose arts or natural o ects and some small ots la elled 2 and for children to fill.



nclude some unla elled ots and encourage children to ma e their o n la els to sho ho man the ut inside

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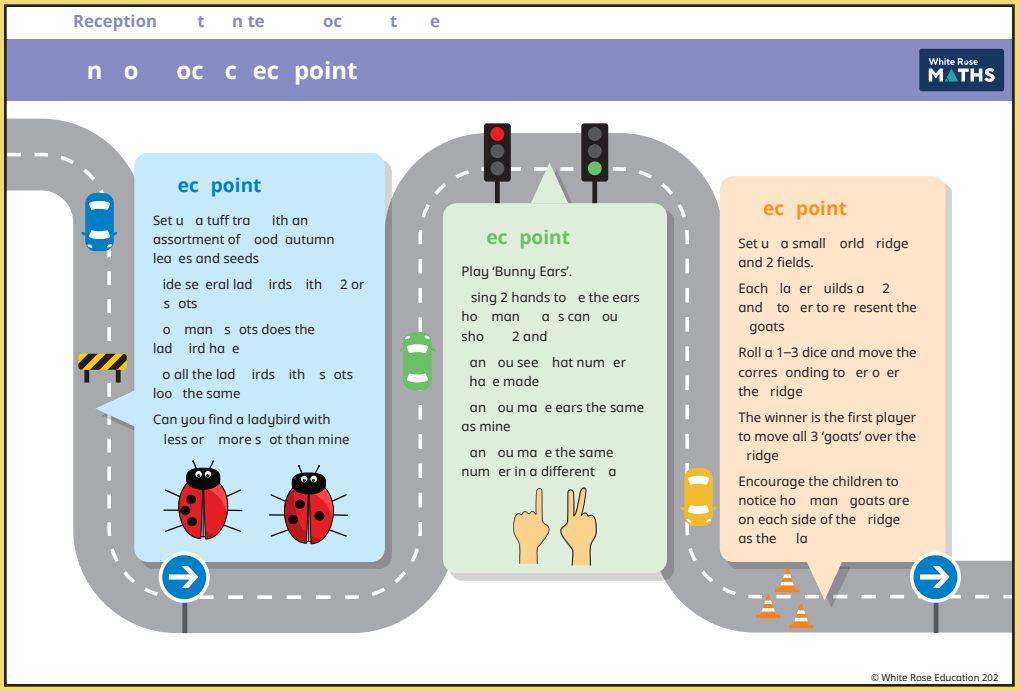
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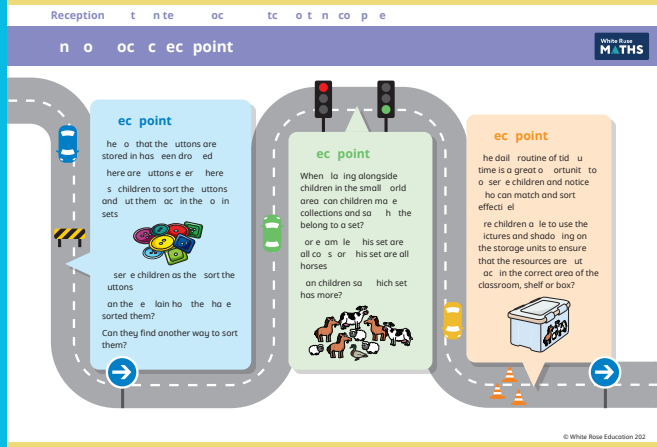
n o oc c ec point

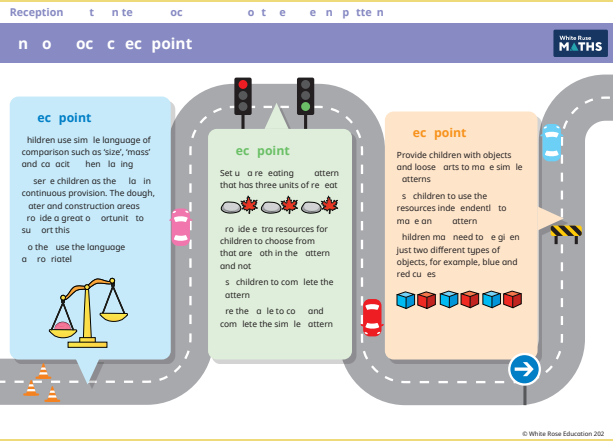
This section provides suggested activities that can be used to assess children's learning from the block.

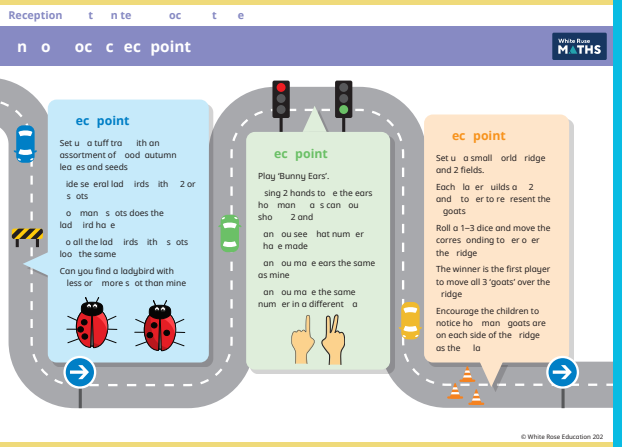
Each block has three end of block checkpoints where adults can observe children demonstrating the knowledge they have gained. These are designed to be fun games or activities to support play-based practical learning.

The end of block assessments from each block can be printed out and joined together on display to show the children's learning journey.









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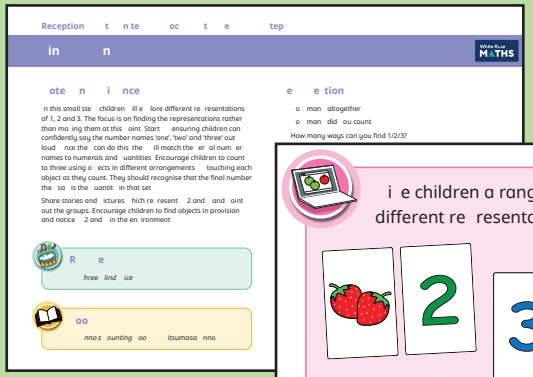
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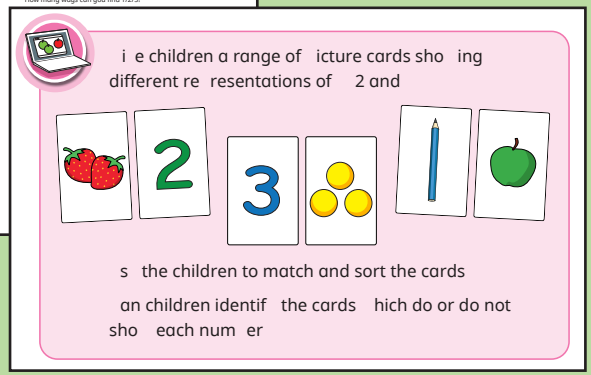
e i ppo tin te i

Within the Reception premium resources, there are teaching slides that can be used to support children's learning in each small step. These teaching slides can be used alongside concrete resources.

Within the Reception premium resources, there are also daily starters available to help children revisit and consolidate previous learning.

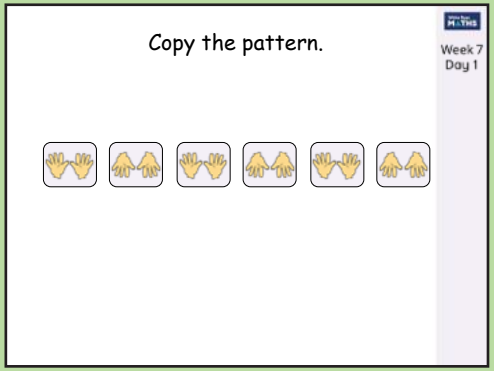
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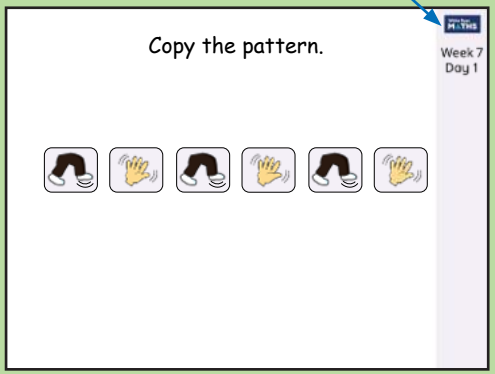


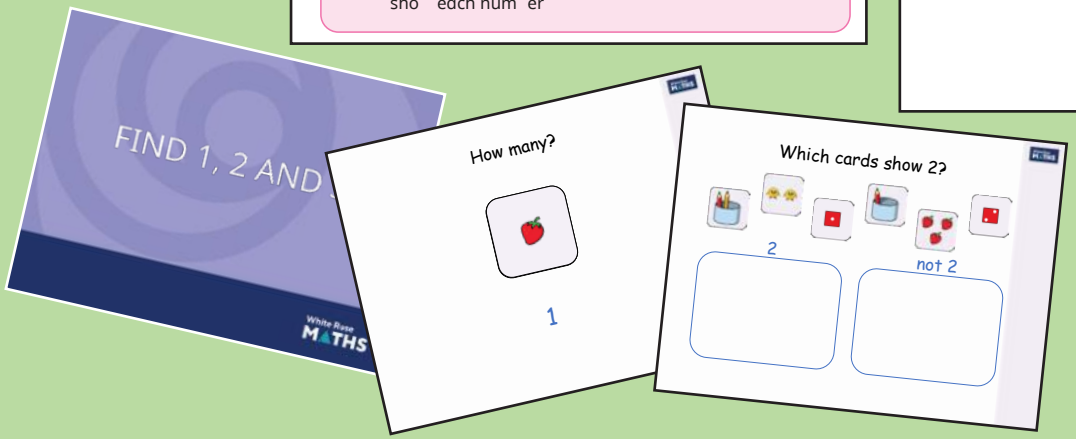


Each set of starters revisits the previous week's learning to support consolidation.

e i e o ce t te i e







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t n oo i t



These books are within the White Rose Maths Reception schemes of learning.
They are not an exclusive list, but support the learning in each step.

oc tc o t n co p e

A Pair of Socks by Stuart J. Murphy
Seaweed Soup by Stuart J. Murphy
The Button Box by Margarette S. Reid
Beep Beep, Vroom Vroom! by Stuart J. Murphy

oc o t e e n p tte n

Where's My Teddy? by Jez Alborough
It's the Bear! by Jez Alborough
The Blue Balloon by Mick Inkpen
Dear Zoo by Rod Campbell
My First Book of Patterns by Bobby and June George
We're Going on a Bear Hunt by Michael Rosen
A-B-A-B-A – A Book of Pattern Play by Brian P. Cleary

oc t e

Anno's Counting Book by Mitsumasa Anno
How to Count to One by Casper Salmon
Goldilocks and the Three Bears
The Gingerbread Man
A Squash and a Squeeze by Julia Donaldson
The Three Billy Goats Gruff

oc ice n t i n e

Circle, Triangle, Elephant! A Book of Shapes and Surprises by Kenji Oikawa and Mayuko Takeuchi
Triangle by Mac Barnett and Jon Klassen
Shapes, Shapes, Shapes by Tana Hoban
We're Going on a Bear Hunt by Michael Rosen
Rosie's Walk by Pat Hutchins

oc

Witches Four by Marc Brown
Five Little Fiends by Sarah Dyer
Pete the Cat and his Four Groovy Buttons by Eric Litwin
Kipper's Birthday by Mick Inkpen
The Very Hungry Caterpillar by Eric Carle
Stella to Earth! by Simon Puttock and Philip Hopman
Anno's Counting Book by Mitsumasa Anno

oc pe it i e

Bear in a Square by Stella Blackstone
Square by Mac Barnett and Jon Klassen
Shapes, Shapes, Shapes by Tana Hoban
Night Monkey, Day Monkey by Julia Donaldson
The Fox in the Dark by Alison Green

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p in oo i t



These books are within the White Rose Maths Reception schemes of learning.
They are not an exclusive list, but support the learning in each step.

oc i e in

- *Zero is the Leaves on the Tree* by Betsy Franco
- *None the Number* by Oliver Jeffers
- *Anno's Counting Book* by Mitsumasa Anno
- *I Spy Numbers* by Jean Marzollo
- *The Ugly Five* by Julia Donaldson
- *Five Small Stars* by Elizabeth Matterson and Madge Bugden
- *Room on the Broom* by Julia Donaldson

oc n c p cit

- *Who Sank the Boat?* by Pamela Allen
- *Balancing Act* by Ellen Stoll Walsh
- *A Beach for Albert* by Eleanor May

oc o in

- *Handa's Surprise* by Eileen Browne
- *Sidney the Silly Who Only Eats 6* by M.W. Penn
- *Six Dinner Sid* by Inga Moore
- *1, 2, 3 to the Zoo* by Eric Carle
- *Kipper's Toybox* by Mick Inkpen
- *Quack and Count* by Keith Baker
- *Simon Sock* by Sue Hendra and Paul Linnet
- *Missing Mittens* by Stuart J. Murphy
- *Noah's Ark*
- *Double Dave* by Sue Hendra
- *Minnie's Diner* by Dayle Ann Dodds
- *Two of Everything* by Lily Toy Hong
- *Don't Forget the Bacon!* by Pat Hutchins
- *The Snail and the Whale* by Julia Donaldson

oc en t ei t n ti e

- *Superworm* by Julia Donaldson
- *Actual Size* by Steve Jenkins
- *Jim and the Beanstalk* by Raymond Briggs
- *I Can Only Draw Worms* by Will Mabbitt
- *Titch* by Pat Hutchins
- *Tall* by Jez Alborough
- *Jack and the Beanstalk*
- *The Giraffe Who Got in a Knot* by Paul Geraghty and John Bush
- *Five Minutes' Peace* by Jill Murphy
- *Mr Wolf's Week* by Colin Hawkins
- *A Dark, Dark Tale* by Ruth Brown
- *Jasper's Beanstalk* by Nick Butterworth

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p in oo i t



oc i in n

- *Nine Naughty Kittens* by Linda M. Jennings
- *Ten Little Fingers and Ten Little Toes* by Mem Fox
- *Cockatoos* by Quentin Blake
- *How Do Dinosaurs Count to Ten?* by Jane Yolen
- *The 'Ten Little ...' series* by Mike Brownlow
- *Anno's Counting Book* by Mitsumasa Anno
- *One Duck Stuck* by Phyllis Root
- *Mouse Count* by Ellen Stoll Walsh
- *Ten in the Bed* by Penny Dale
- *One Gorilla* by Anthony Browne
- *Mr Willy-Nilly and Zoey's Dream* by Ji-yun Shin
- *Pete the Cat and the Missing Cupcakes* by Kimberly and James Dean
- *Ten Black Dots* by Donald Crews
- *Two of Everything* by Babette Cole
- *Double the Ducks* by Stuart J. Murphy
- *One Odd Day* by Doris Fisher and Dani Sneed

oc p o e pe

- *Circle! Sphere!* by Grace Lin
- *Changes, Changes* by Pat Hutchins
- *Naughty Bus* by Jan Oke
- *Rapunzel*
- *Kitten Castle* by Ellen Weiss and Mel Friedman
- *Shapes, Shapes, Shapes* by Tana Hoban
- *Pattern Fish* by Trudy Harris
- *Pattern Bugs* by Trudy Harris
- *Busy, Busy, Busy* by Haneul Ddang
- *The Leopard's Drum* by Jessica Souhami
- *Jamil's Clever Cat* by Fiona French with Dick Newby

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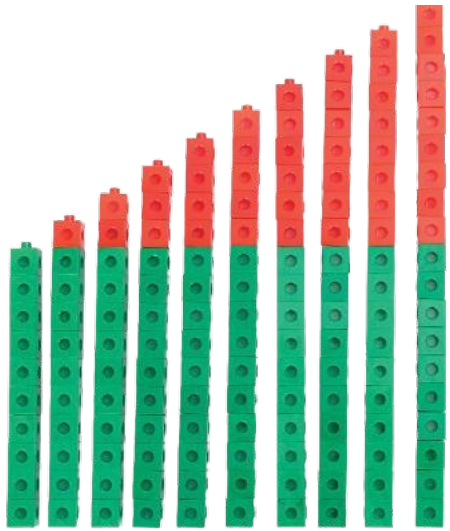
onster ath nne iranda

is ne asha udor

e e o ce









op tip

ontinue counting ast 0 as the num ers ust e ond can e the tric iest ncor orate counting ithin our dail routine such as counting children hen lining u or the num er of slee s to a e e ent

se a range of concrete mani ulati es hich ar in si e colour and osition to su ort children hen counting

Encourage children to notice numerals and uantities u to 20 in the classroom and outdoor en ironment

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tep

tep	Build numbers beyond 10 (10–13)
tep	Continue patterns beyond 10 (10–13)
tep	Build numbers beyond 10 (14–20)
tep	Continue patterns beyond 10 (14–20)
tep	er al counting e ond 20
tep	er al counting atterns

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i n e e on

ote n i nce

n this loc children ecome more familiar ith num ers beyond 10 and the pattern (stable order) of numbers to 20 and e ond hildren ill e familiar ith larger num ers from dail routines such as counting children or the da s in the month his small ste focuses on num ers e ond 0 irst ensure that children can sa the num ers 2 and and su ort them to use one to one corres ondence to count items e ond 0

ro ide aried o ortunities for uilding the num ers 0 2 and to su ort children s understanding Encourage children to la games that in ol e these num ers and count on and ac to im ro e children s no ledge of the sta le order counting rinci le



R e

Sesame Street s in all um er ount



oo

nno s ounting oo itsumasa nno

onster ounting oo to 20 rances ac a

e e tion

o ill ou uild the num er 0 2

Where can you find 10/11/12/13?

What num er ha e ou uilt

What do ou notice a out that num er

o i e entence te

can see _____

can uild _____

0 2 has ten and _____

in to t e c ic

e elo ment atters – Reception – Count beyond ten.

irth to atters – Range 6

- ses num er names and s m ols hen com aring num ers sho ing interest in large num ers
- Enjoys reciting numbers from 0 to 10 (and beyond) and ac from 0 to 0

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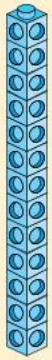
i n e e on

t e e nin

Read stories such as *onster ounting oo* *to 20* rances ac a focusing on the ages u to

ro ide children ith a range of different mani ulati es such as num er sha es and cu es rom t them to uild num ers u to





s children uild the num ers encourage them to notice and tal a out the num er structures

n airs children ta e t o em t 0 hole egg o es and fill one with loose parts. Child 1 closes their eyes while child 2 fills the other egg box with 1, 2 or 3 o ects hild 2 o ens their e es and su itises the ten and counts on ho man



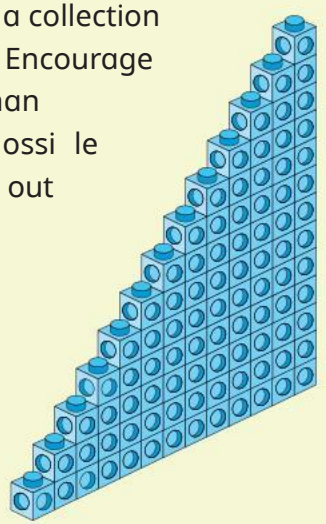


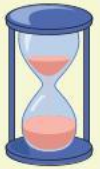
fter reading the oo *nnos ounting oo* itsumasa nno ith children e lore ho the num ers uild u across the ages u to the num er 2

Su ort children to then create their o n age for the num er

ro ide children ith a collection of cu es and a timer Encourage children to uild as man staircase models as ossi le efore the timer runs out







rom t children to count out loud and encourage them to notice the attern of num ers

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ontin e p tte n e on

ote n i nce

n this small ste children continue to uild and notice atterns ith numbers beyond 10 (up to 13). Provide opportunities for children to recognise that the num ers to re eat after e er full ten So the ha e ten and ten and 2 ten and t is im ortant to embed this skill with numbers to 13 first, before going up to 20

Encourage children to count on and ac from different starting oints to sa hat comes efore or after a gi en num er and to lace num ers in order hallenge children to notice 2 and in dis la s and stories se stories lin ed to interests to em ed the sta le order hildren en o correcting u ets ho ma e counting errors or sa the num ers incorrectl ail counting routines and games ro ide man o ortunities to regularl count e ond 0



R e

Sesame Street s in all um er ount



oo

Wa s to Eat a l Sue ea enrich

e e tion

What num er comes after _____

What do ou notice a out that num er

What attern can ou see

o i e entence te

can see ten and _____

_____ and _____ ma es _____

_____ comes after _____

in to t e c ic

e elo ment atters Rece tion ount e ond ten

irth to atters – Range 6

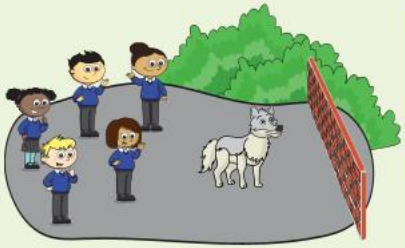
- ses num er names and s m ols hen com aring num ers sho ing interest in large num ers
- Enjoys reciting numbers from 0 to 10 (and beyond) and ac from 0 to 0
- Increasingly confident at putting numerals in order 0 to 10 (ordinality)

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ontin e p tte n e on

t e e nin

la the game What s the time r Wolf ic one child to e the olf and as them to stand at one end of the outdoor area facing the other a ll the other children stand at the other end hildren as the olf What s the time r Wolf he olf sa s a time for e am le t is o cloc



Su ort children to count and ta e ste s to ards the olf Re eat for other num ers u to 2

Encourage children to stand in a circle hoose a child to start counting aloud around the circle from ero Each child in turn sa s the ne t num er he child ho sa s the num er sits do n in the middle of the circle



ontinue counting from 0 to around the circle until one erson is left standing his erson is the inner

ro ide children ith crates num ered to and a set of alls rom t children to aim and thro the alls at the crates he crate the all lands in is the num er of oints the score Su ort children to ma e mar s or use a tall to record their scores







The first to score exactly 13 is the winner.

ro ide children ith a num er trac from to a dice la elled to and counters

	2		4						0		2	



Encourage them to ta e it in turns to roll the dice and count on the corres onding num er of s aces on the num er trac

What num er do ou need to roll ne t to get to

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i n e e on

ote n i nce

n this small ste and the ne t children uild on their s ills using the num ers to to ecome more familiar ith the num ers to 20

his small ste focuses on uilding num ers to 20

ro ide man o ortunities for children to uild these num ers again focusing on the ten and 4, 5, 6, 7, 8, 9

ontinue to encourage them to uild the num ers using the sequence identified in number stories. Use manipulatives to e lore the structure of num ers e ond 0

Sim le matching games can su ort children to lin the num er to the uantit using resources such as num er and re resentation cards Encourage children to use loose arts and o ects of interest to ma e these larger num ers se ten frames to su ort and em hasise the structure the are uilding llo children to e lore larger staircase models and atterns that sho that the ne t num er is one more than the re ious num er



oo

he Real rincess renda Williams

ne oose ent ice laire eaton

e e tion

o ill ou uild the num er _____

Where can you find the number _____

What num er ha e ou uilt What do ou notice

o i e entence te

can see _____

can uild ha e made _____

_____ has ten and _____

in to t e c ic

e elo ment atters Rece tion ount e ond ten

irth to atters Range 6

- ses num er names and s m ols hen com aring num ers sho ing interest in large num ers
- Enjoys reciting numbers from 0 to 10 (and beyond) and ac from 0 to 0
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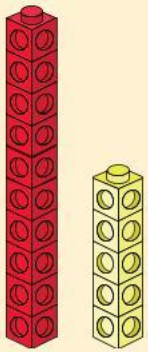
i n e e on

t e e nin

Read stories such as *ne oose ent ice* laire eaton hich sho different re resentations of num ers u to 20

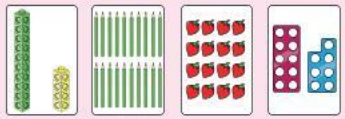
rom t children to use mani ulati es such as cu es to re resent the num er sho n on each age

o man cu es do ou ha e What do notice



ro ide a set of icture cards and matching numeral cards for num ers u to 20

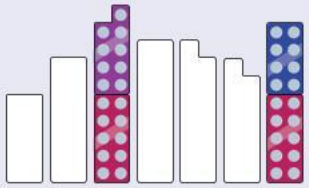
Give one card to each child and ask them to find a artner ith the matching num er rom t them to then find other children who have the same number sho n in different a s





What num er card do ou ha e o do ou no

Provide blank outlines of a cityscape for children to fill using number shapes. Prompt them to see which number has filled each to er s there more than one a to do this





hallenge children to design their o n cit sca e for a partner to fill with number shapes.

fter reading stories such as *he Real rincess* renda Williams ro ide children ith lan re folded oo s Encourage children to ma e their o n num er stories rom t them to dra out num ers from familiar stories or num ers lin ed to their o n interests



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ontin e p tte n e on

ote n i nce

n this small ste children de elo their e eriences of uilding the num ers from 4 to 20

he ill no focus on seeing the attern of ten and 4 more ten and 5 more, ten and 6 more, and so on, which will then be built on further in later ear grou s

Su ort children to recreate this attern in ro ision using different resources and conte ts such as utting a gi en num er of ehicles on a road or a gi en num er of loc s in a to er

a ing an em t ashing line and num er cards a aila le for children to sort ill su ort children to recognise numerical atterns

good a to su ort children to see hat comes ne t in a se uence is ha ing a u et remo e or reorder familiar resources such as num er sha es in an interacti e dis la

oo

20 ig ruc s in the iddle of the Street
ar ee

ac the uilder Stuart ur h

e e tion

What num er comes after _____

What do ou notice a out that num er

What attern can ou see

o i e entence te

can see ten and _____

_____ and _____ ma es _____

_____ comes after _____

in to t e c ic

e elo ment atters Rece tion ount e ond ten

irth to atters – Range 6

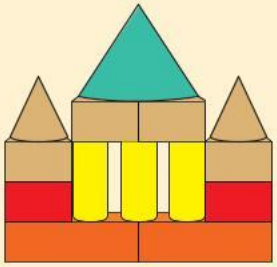
- ses num er names and s m ols hen com aring num ers sho ing interest in large num ers
- Enjoys reciting numbers from 0 to 10 (and beyond) and ac from 0 to 0
- Increasingly confident at putting numerals in order 0 to 10 (ordinality)

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ontin e p tte n e on

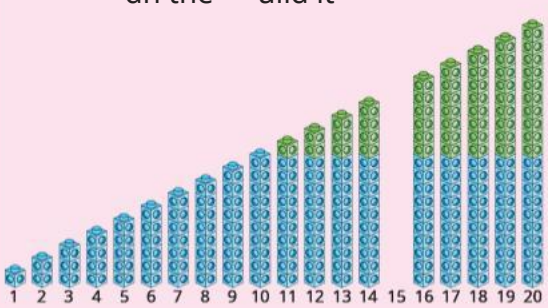
t e e nin

fter reading stories such as *ac the uilder* Stuart ur h encourage children to uild their o n cit sca es using different num ers of loc s Encourage children to count as the uild



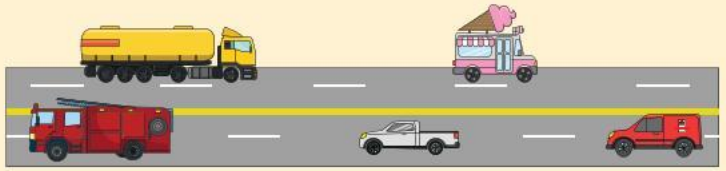
rom t them to tell a artner hat the ha e uilt and ho man loc s the ha e used

ro ide a randoml arranged set of to ers to 20 and use a class u et to remo e a to er ithout children seeing s them to order the to ers to identif hich one is missing o do the no an the uild it



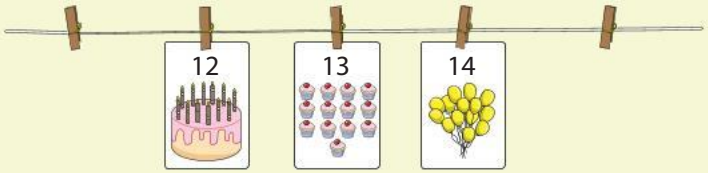


Read stories such as *20 ig ruc s in the iddle of the Street* ar ee ith children rom t them to enact the stor adding different ehicles to their street in the small orld area



Encourage children to count ho man ehicles the ha e each time What atterns do the notice

ro ide children ith a set of irthda cards here the cardinal alue is re resented in ictures on the front



la Which one is missing ith a irthda card number line. Shuffle the cards and prompt children to order them to find the missing card.

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e co ntin e on

ote n i nce

n this small ste and the ne t children ill focus on counting er all e ond 20

hildren should alread ha e heard the num ers e ond 20

his ste ro ides time to focus on this s ill in adult led learning o e er this ill also need to e em edded in dail routines to support children to become confident.

n this small ste children focus on the rocess of counting and the numerical atterns ro ide man o ortunities for er al counting e ond 20 ausing at each multi le to dra out the structure la ing games and ta ing art in acti ities in ol ing num ers e ond 20 can hel to de elo this s ill focusing on sa ing the num ers out loud ne e am le of this is la ing hide and see



R e

atch atch atch a ish



oo

onster ath nne iranda

e e tion

What num er comes after_____

What num er comes efore _____

What num er shall e start counting from

o i e entence te

_____ comes after _____

_____ comes efore _____

ill start counting from _____

in to t e c ic

e elo ment atters – Reception – Count beyond ten.

irth to atters – Range 6

- ses num er names and s m ols hen com aring num ers sho ing interest in large num ers
- Enjoys reciting numbers from 0 to 10 (and beyond) and ac from 0 to 0
- Increasingly confident at putting numerals in order 0 to 10 (ordinality)

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e co ntin e on

t e e nin

la ing ong ith num ers to 20 and e ond Sa one num er and then rom t children to sa the ne t num er re eating ac and forth





Re eat ith different starting num ers and ractise counting on and ac

Encourage children to sit in a circle ith oth their legs stretched out in front of them ic a target num er elo 0 and rom t children to count from ero to 0



hildren sa one num er for each leg the ha e in the circle and ta each leg in turn as the sa each num er f a child sa s the target num er then the must tuc that leg a a ontinue until there is ust one child left in the game

Sit the hole class in a circle ith a range of different sea creatures ehind their ac s and sing the rh me atch catch, catch a fish, hoo it on our line Reel it reel it reel it in this one will be mine". Children with a fish behind their ac lace it into the middle of the circle ount ho many fish there are altogether.



Repeat the song and change the 'fish' to other sea creatures

ill three ten frames ith 0 small orld o ects and lace them in the middle of t o children to egin the game



hildren ta e it in turns to roll a dice and collect the corres onding num er of o ects from the frames he child ho ta es a a the last o ect ins the game s children la encourage them to sa ho man o ects remain

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e co ntin p tte n

ote n i nce

n this small ste children uild on er al counting e ond 20 noticing the counting atterns in ol ed

ro ide calendars hundred s uares or num er trac s oth inside and out either ainted or mar ed out on the ground his ill su ort children to ecome familiar ith 2 digit num ers e ond 20 and to start to s ot the atterns ithin them hildren ma naturall e curious a out igger num ers Read stories such as *is ne* asha udor ith children a ing articular attention to ho each num er is re resented in the ictures to su ort counting larger num ers

t is im ortant that this s ill should still remain fun and acti e so that children are eager to count good a to encourage this is for one child to ic the starting num er such as the date of the month and another to sa if e ill e counting on or ac hildren can also ic hat actions the count such as ta s clic s or stam s to em ed this s ill and ma e it memora le



oo

is ne asha udor

e e tion

What num er comes after _____

What num er comes efore _____

What num er shall e start counting from

o i e entence te

_____ comes after _____

_____ comes efore _____

ill start counting from _____

in to t e c ic

e elo ment atters Rece tion ount e ond ten

irth to atters – Range 6

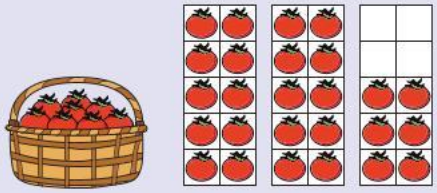
- ses num er names and s m ols hen com aring num ers sho ing interest in large num ers
- Enjoys reciting numbers from 0 to 10 (and beyond) and ac from 0 to 0
- Increasingly confident at putting numerals in order 0 to 10 (ordinality)

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e co ntin p tte n

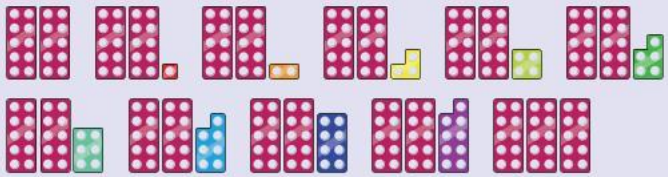
t e e nin

t the start of snac time count out the fruit ith children ma ing sure ou ha e more than 20 ieces to count



s ou lift each iece of fruit out of the as et sa the num er name and lace it in a line or on a ten frame

ro ide children ith a range of num er sha es rom t children to ma e their o n num er line using the num er sha es



What do ou notice a out the attern of these num ers

la count

ou count ith children to ractise counting on from different starting oints oint to ourself and egin counting hen oint to the grou and rom t them to continue the count

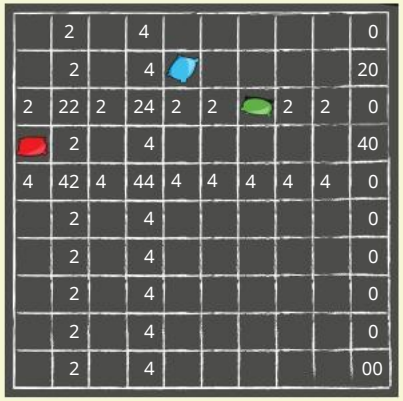




his could e e tended to ha ing more than one grou of children

ro ide children ith a large hundred s uare chal ed on the ground outside o er some of the num ers u and as children to identif the missing num ers

o do the no that num er is the missing num er an the count on from the missing num er

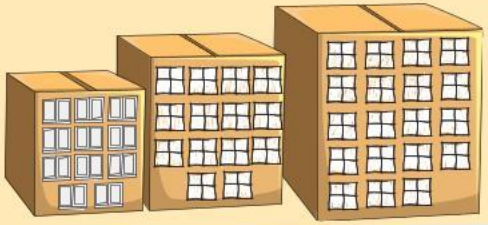


	2		4						0
	2		4						20
2	22	2	24	2	2		2	2	0
	2		4						40
4	42	4	44	4	4	4	4	4	0
	2		4						0
	2		4						0
	2		4						0
	2		4						0
	2		4						00

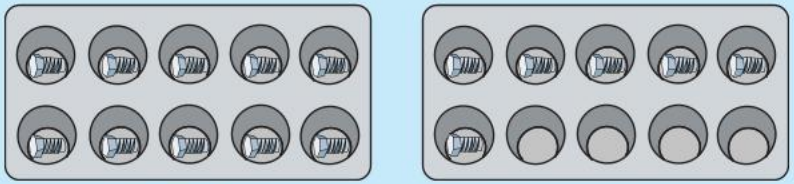
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ontin o p o i ion

Ensure that children ha e a ariet of small and large rec cla le o modelling resources Encourage children to ma e their o n num er cit constructing different si ed uildings and re resenting amounts the num er of indo s



i e children u to 0 small loose arts for e am le nuts and olts Encourage them to estimate ho man there are hen rom t them to arrange these items into un tins ith 0 s aces to hel them to see ho man full tens and ho man of the ne t ten the ha e



Enhance ro ision ith tedd ears and gi e each a irthda adge ith a num er from to 20

ro ide children ith lan folded cards and encourage them to ma e their o n irthda cards for one of the ears rom t them to mar ma e or dra images to re resent the corres onding num er



ro ide children ith hundred s uares and num er trac s oth inside on a small scale and outside on a larger scale ainted or chal ed onto the ground alendars dis la ed ith e e ents are also a great a to encourage children to count for ards or ac ards to im ortant dates

Encourage children to notice and ecome familiar ith 2 digit num ers and start to s ot the atterns ithin them

e ruar

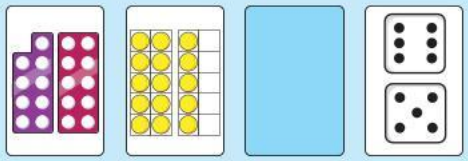
S		E	WE		R	S
	2		4			
		0		2		4
					20	2
22	2	24	2	2	2	2

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n o oc c ec point

ec point

ro ide children ith a selection of icture cards from to 20 and as them to select four each old u numeral cards one one f children ha e the matching icture card the can turn it o er



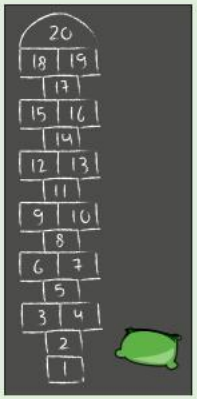
an children recognise hat num er is re resented on each icture card

ec point

la ho scotch to 20

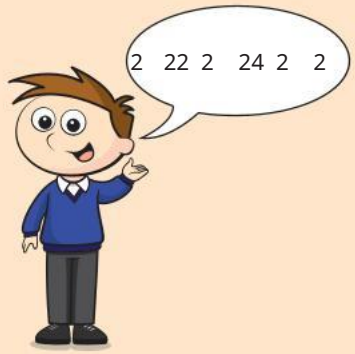
hildren thro a ean ag to ards the ho scotch

an the identif the num er their ean ag landed on an the count on as the mo e u the ho scotch and then count ac as the return



ec point

Select a num er to egin counting from and as children to choose hether to count on or ac an children maintain the sta le order hen counting e ond 20



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Summer loc 2

o n no

© White Rose Education 2024

e c e i nce

e oo

ouse ount Ellen Stoll Walsh

ne ed alls out of ed ulia onaldson

rann Went to ar et Stella lac stone

r um s uting ohn urningham

S lash nn onas

ad en i a ies

he Sho ing as et ohn urningham

e e o ce





op tip

Using ‘first, then, now’ number stories helps children to find the answer to the question “How many now?” by providing meaningful conte ts

Encourage children to re resent num er stories using ro s and mani ulati es so that the can see the maths that is ha ening

sing dou le sided counters on ten frames ro ides a isual aid so that children can see how many have been added or taken away.





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tep

tep	dd more
tep	How many did I add?
tep	Take away
tep	How many did I take away?

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o e

ote n i nce

In this small step, children build on their understanding as they e lore the change structure of addition augmentation adding more. The focus for this step is on increasing a quantity by a given amount, while continuing to work within 10

Children will use real objects to see that the quantity of a group can be changed by adding more. The 'first, then, now' structure is a very effective way to help build their understanding by creating mathematical stories in meaningful contexts. At first, children may need to re-count all the items (for example, 1, 2, 3, 4, 5, 6, 7) to see how many they have altogether. When they are ready, support them to count on instead (for example, 4, 5, 6, 7).

Encourage children to enact and re resent num er stories using ten frames, number tracks and their fingers.

e e tion

How many are there?

How many were there first?

How many are there now?

How many are there altogether?

o i e entence te

First there were _____

hen _____ more were added.

Now there are _____

here are _____ altogether

oo

ouse ount Ellen Stoll Walsh

ne ed alls out of ed ulia onaldson

rann Went to ar et Stella lac stone

in to t e c ic

Development Matters – Reception – Automatically recall number bonds for numbers 0–5 and some to 10.

Birth to 5 Matters – Range 6 – In practical activities, adds one and subtracts one with numbers to 10

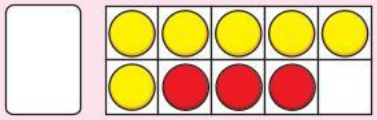
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o e

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Ask children to show you 5 fingers. Now show 2 more. How many fingers are showing now? How do you know there are 7?

Extend this by showing children a numeral card and as ing them to re resent the num er on a ten frame with double-sided counters all on the same coloured side rom t them to add 3 more, representing this using the other side of the dou le sided counters

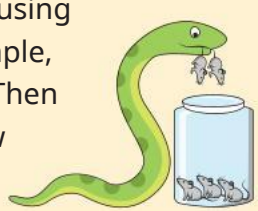


How many are there altogether? Repeat this with different num ers

Use 'first, then, now' to tell simple number stories to ractise adding more in real life conte ts Set u a us and us sto s and rom t children to sa the stor out loud to match the context. For example, "First there were 2 people on the bus. Then 2 more people got on the bus. Now there are 4 people on the bus."



Read stories such as *ouse ount* Ellen Stoll Walsh with children, which demonstrate adding more than one. Enact 'first, then, now' stories using props linked to the story. For example, "First there were 3 mice in the jar. Then the snake added 2 more mice. How many mice are in the jar now?"



Count out 5 cubes. Ask children to check how many there are. Cover the cubes with a cloth. Then, add a hidden num er of cu es under the cloth Show children how many cubes there are now. Challenge them to work out how many cubes were added, using their fingers or mark-making.



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ote n i nce

In this small step, children continue to develop their understanding of the addition change structure adding more Children have already explored finding the answer to "How many are there now?" To deepen learning, provide children with 'first, then, now' number stories where the 'then' part is missing. For example, "There were 5 children on the bus, then we don't know how many more got on, but now there are 8 children on the bus."

Support children to use real objects, such as a ten frame and counters, to find the missing number that was added. For example, they represent the starting number with red counters and then they add yellow counters until they reach the total amount. The number of yellow counters represents the number that has een added



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e e tion

How many are there?

How many are there now?

How many were added?

o i e entence te

First there were _____

Now there are _____

_____ were added.

I added _____

in to t e c ic

e elo ment atters – Reception – Automatically recall number bonds for numbers 0–5 and some to 10.

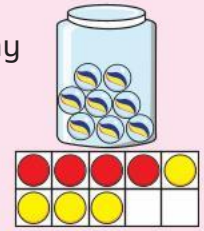
Birth to 5 Matters – Range 6 – Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-"

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lace a num er of mar les in a ar and re resent this number on a ten frame with red counters. Use a class u et to add more mar les to the ar without children seeing. Count how many marbles are in the jar now. Support children to find how many were added by placing yellow counters on the ten frame until ou reach the total num er

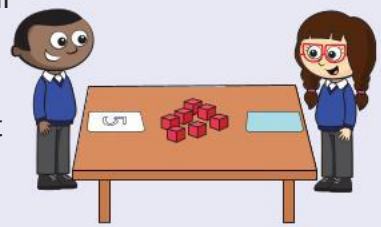


How many yellow counters did you add? How many marbles must the puppet have added?

fter reading stories such as *r um s uting* by John Burningham, encourage children to play the characters from the story. Have some children in the oat and as the other children to shut their eyes. Secretly tap some of these, who join the boat without the others seeing hen as e er one to open their eyes. How many children are in the boat now? How many were added?



In pairs, one child selects a numeral card and collects that num er of cu es he other child selects another numeral card and, without showing their partner, they add that num er of cu es to the ile



Their partner must work out what number is on the hidden card by finding how many cubes were added.

In the context of the song *en reen ottles*, tell children a 'first, then, now' story where the first part is missing. For example, "We don't know how many bottles were on the wall, but then 3 more were added and now there are 10 altogether."



Encourage children to use a ten frame and counters to work out how many bottles there were at the start.

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ote n i nce

In this small step, children build on their understanding as they e lore the change structure of su traction reduction ta ing away. Children will have experience of taking away objects in everyday life and this is built on by focusing on taking away more than 1 object. The focus is on decreasing a quantity by a given amount, while continuing to work within 10

Encourage children to use real objects to see that the quantity of a group can be changed by taking some away. Prompt them to remove the items and then count or subitise to see how many are left. The 'first, then, now' structure is an effective way to help build their understanding creating mathematical stories in meaningful contexts, using ten frames, number tracks and their fingers.



R e

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ad en i a ies

e e tion

How many are there?

How many were there first?

How many are left?

How many are there now?

o i e entence te

First there were _____

hen _____ were taken away.

Now there are _____

here are _____ left

I have _____, how can you show me _____?

in to t e c ic

Development Matters – Reception – Automatically recall number bonds for numbers 0–5 and some to 10.

Birth to 5 Matters – Range 6 – In practical activities, adds one and subtracts one with numbers to 10

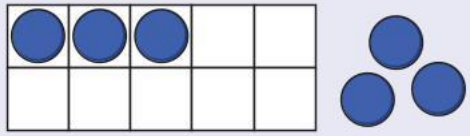
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Ask children to show you 5 fingers and then show you 4 fingers by putting one finger or thumb down. Prompt them to notice that 1 less is the same as taking away one. Repeat this and encourage children to notice how many are left each time

Extend this by showing children a numeral and asking them to re resent that num er on a ten frame with counters hen as them to take away 3 counters. How many are left?



Repeat with different numbers.

fter reading stories such as *S lash* by Ann Jonas with children, set up a small-world scene with characters linked to the story. Encourage children to act out 'first, then, now' stories where characters are taken away. Following this, they could be prompted to create their own number stories. Encourage children to talk about how many characters are left each time.

Encourage children to act out rh mes such as *en urrant uns* and ada t them so that more than one bun is taken away each time.



rom t children to use ro s to find how many are left.



he could also re resent the 'first, then, now' story using cubes or counters on a ten frame

In pairs, children play a game of 'pirate treasure'. ic a numeral card and count out the corres onding num er of gold coins or loose arts ne child covers their eyes while their artner steals some of the coins and hides them



The first child has to work out how many coins have een stolen hildren could count on or use dou le sided counters to su ort them

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o n i t e

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In this small step, children continue to develop their understanding of the subtraction change structure by taking away. Children have already explored finding the answer to "How many are there now?" To add challenge, provide children with 'first, then, now' number stories where the 'then' part is missing. For example, "There were 5 children on the bus, then we don't know how many got off, but now there are 2 children."

Support children to use real objects to find the missing number that was taken away. They can represent the starting number with counters on a ten frame, then remove counters until they represent the number of items there are now. Prompting children to talk about how many counters were taken away will help them understand the missing art



R e

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e e tion

How many are there?

How many are there now?

How many were taken away?

o i e entence te

First there were _____

Now there are _____

_____ were taken away.

I took away _____ and now there are _____

in to t e c ic

e elo ment atters – Reception – Automatically recall number bonds for numbers 0–5 and some to 10.

Birth to 5 Matters – Range 6 – Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-"

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o n i t e

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fter reading stories such as *he Sho ing as et* John Burningham with children, enact scenes from the stor ut ada t them so that more than one item is secretly taken away. Model using towers of cubes to work out how many were taken away. Start by building a tower to represent the starting number. Take away cubes until you represent the number of items you have left. How many cubes were taken away?

Use simple 'first, then, now' number stories to practise taking away in real-life contexts.

Act out the 'first, then, now' story setting u a train in the outdoor area



s some children to close their e es and then rom t other children to get on the train. How many children are left at the station? How many have gone?

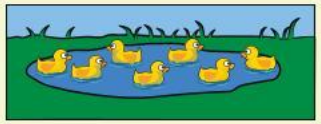
As children are playing in the small-world area, encourage them to create their own 'first, then, now' stories. In pairs, they act out these num er stories using ro s

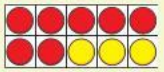




Have numeral cards available for children to select as starting num ers for their num er stories hen one child takes away some of the objects while their partner closes their eyes. Their partner then works out how many were taken.

In the context of the song *en ittle uc s*, tell children a 'first, then, now' story where the first part is missing. For example, "We don't know how many ducks there were to start with, then 3 swam away and now there are 7 ducks left."



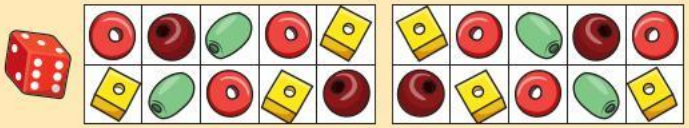


Encourage children to use a ten frame and different coloured counters to represent how many there are now and how many were taken away.

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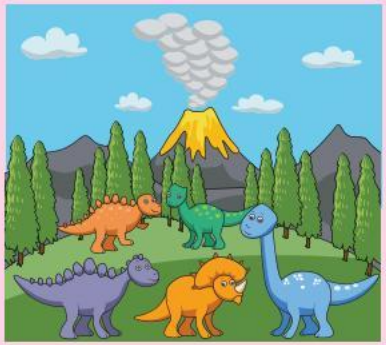
ontin o p o i ion

Encourage children to la a game of race to ero Provide them with two ten frames each, a dice and loose parts. Each child collects 20 items to fill their two ten frames hen the ta e it in turns to roll a dice and take away the corresponding number of items. Each time, children say how many they have left.



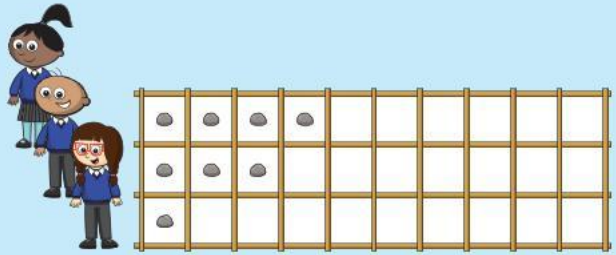
The first child to reach exactly zero wins the game.

rom t children to create their own 'first, then, now' stories using small-world resources lin ed to their interests



For example, "First there were 3 dinosaurs. Then 2 more dinosaurs came along. Now there are 5 dinosaurs altogether." Encourage children to enact their number stories with a partner.

Enhance provision outside by providing a square-holed trellis, or tape a grid onto the playground, and a range of small o ects such as ean ags or e les Each child has a row on the trellis. They take it in turns to roll a dice and then they fill their row with the corresponding num er of o ects



The first child to fill their row wins the game.

In pairs, prompt children to collect 10 objects. They take it in turns to choose whether to take away 1, 2 or 3 objects. The winner is the player who avoids taking the last o ect

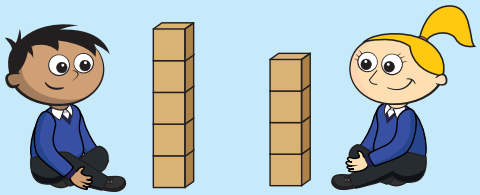


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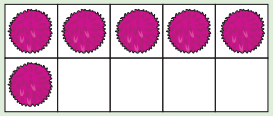
Provide children with a 1 to 3 dice and cu es hildren ta e it in turns to collect 1, 2 or 3 cubes to add to their tower.



Can children say how many were added? How many cubes do they have now? How tall can they build their towers before they topple over?

ec point

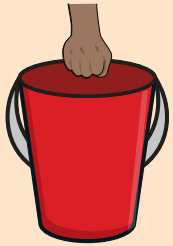
la a game of ass it on in small grou s Each child starts with 6 loose parts. They roll a 1 to 3 dice and ass the corres onding num er of o ects to the child on their left. The winner is the first child to give away all their o ects



Can children say how many they have taken away? How many do they have left?

ec point

Provide children with a 5 to 10 dice, beanbags and a uc et Encourage one child to roll the dice and lace the corres onding num er of ean ags into the uc et rom t another child to ta e some of the ean ags out of the bucket without the group seeing how many. Tip the remaining ean ags out of the bucket. How many are left now? Can children work out how many ean ags must have been taken?



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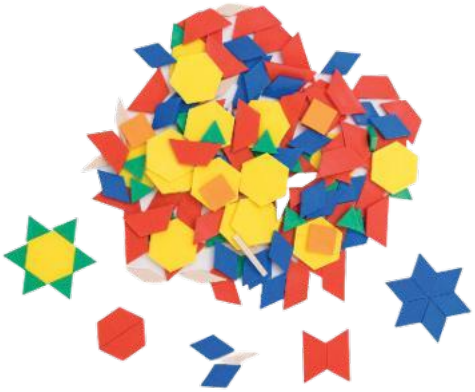
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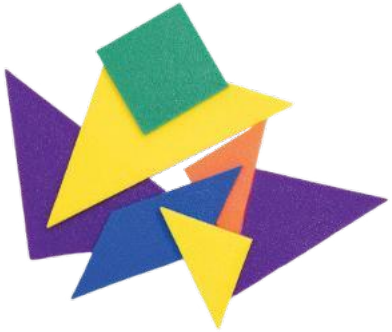
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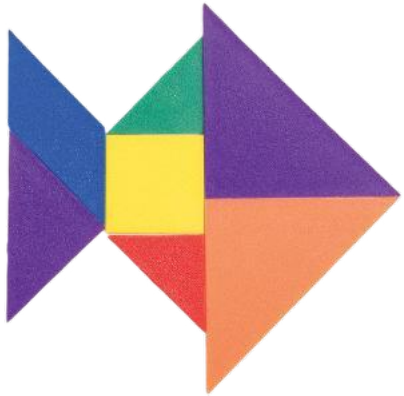
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e e o ce









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tep

tep	Select sha es for a ur ose
tep	Rotate sha es
tep	ani ulate sha es
tep	E lain sha e arrangements
tep	om ose sha es
tep	ecom ose sha es
tep	o 2 sha e ictures
tep	ind 2 sha es ithin sha es

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e ect pe o p po e

ote n i nce

hildren ha e alread had e erience of selecting sha es for a ur ose hen using sha es for tas s n this small ste this learning is e tended to further e loring the ro erties of sha es and s atial relations

ro ide o ortunities for children to e lore the attri utes of sha es and to select sha es for a articular ur ose Encourage them to e lain h the chose a articular sha e and h other sha es ould not e suita le

rom t children to e lore using attern loc sha es and encourage them to fill templates or make their own pictures.
hildren could also e lore selecting sha es for a ur ose outside using large scale construction to uild large models such as ehicles or dens

oo

ig o of Sha es Wile le ins

Which ne oesn t elong hristo her anielson

r um s otor ar ohn urningham

e e tion

Which sha es ill ou need

Wh ha e ou chosen a _____

o i e entence te

ha e chosen a _____ ecause _____.

his one doesn t elong ecause _____.

need a _____ to com lete m icture

in to t e c ic

Development Matters – Reception – Select, rotate and mani ulate sha es to de elo s atial reasoning s ills

irth to atters Range

- hooses items ased on their sha e hich are a ro riate for the child s ur ose
- Res onds to oth informal language and common sha e names
- Sho s a areness of sha e similarities and differences et een o ects

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e ect pe o p po e

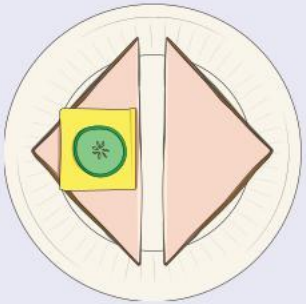
t e e nin

fter reading oo s such as *Which ne oesn t elong* hristo her anielson ith children ro ide them ith a range of sha es that could e used in a similar a to those in the oo Select the sha es so that there is a reason h each one of them doesn t elong



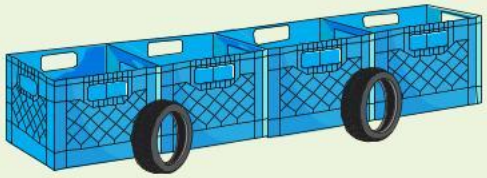
s children hich one doesn t elong and encourage them to e lain their reason h

ro ide children ith real food or re cut a er sha es to re resent sand ich ingredients such as ro n triangles for read ello s uares for cheese slices green circles for cucum er slices and red circles for tomato slices



rom t children to design and ma e their o n sand ich e laining h the ha e chosen each of the sha es and laced them in that order

fter reading oo s such as *r um s otor ar* ohn urningham encourage children to ma e arrangements outside such as a car using a ariet of resources

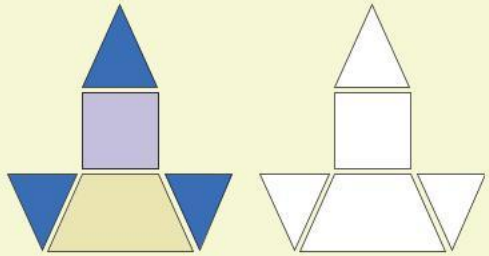


rom t them to tal a out hich sha es to select and here to lace them in relation to the other sha es

ro ide children ith attern loc s and encourage them to design their o n icture

rom t them to create a tem late to hel them to remem er their design

he could then as a artner to use the tem late to recreate their icture



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Rot te pe

ote n i nce

n this small ste children ill e lore ho sha es ill a ear hen rotated e thing to loo out for is that children ma not recognise a sha e hen its orientation changes or e am le children often do not recognise triangles and s uares hen the ha e een rotated

Rotating sha es is an im ortant ste as it ill hel to su ort children to visualise how shapes and objects will fit together in later ste s

ro ide o ortunities for children to select and rotate sha es to fill a given space. Using jigsaws, number shape baseboards and attern loc tem lates can hel to su ort this

rom t children to notice that some igsa ieces are corner ieces and that some ha e straight edges he ma also notice that the ieces ha e stic out its or holes Encourage children to notice how the pieces fit together or why certain pieces will not fit together.

oo

Which ne oesn t elong hristo her anielson

e e tion

Which sha e ill match

What sha es ha e ou used to ma e our icture

How did you make the shape fit?

How did you manipulate the shape to make it fit?

o i e entence te

his sha e is a _____.

need to _____ the shape to make it fit.

need a _____ to com lete m icture

This will not fit because _____.

in to t e c ic

e elo ment atters – Reception – Select, rotate and mani ulate sha es to de elo s atial reasoning s ills

irth to atters Range n estigates turning and flipping objects in order to make shapes fit and create models redicting and isualising ho the ill loo s atial reasoning

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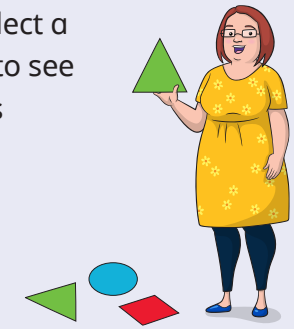
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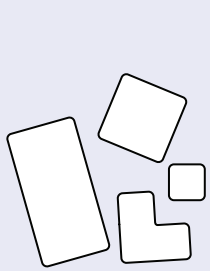
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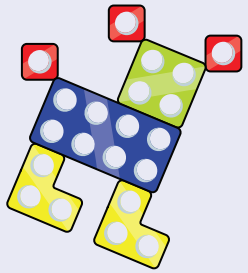
ro ide children ith a set of sha es Select a sha e and hold it u for all the children to see Ask them to find the shape that matches ours

his can e ada ted ma ing the sha es more similar and changing the orientations



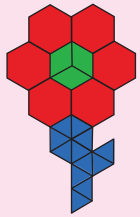
ro ide children ith num er sha es and outlines of the num er sha es in different orientations s them to select sha es to match each outline

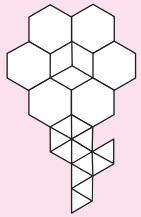




ro ide ase oard o erla s or num er sha e outlines and encourage children to use ositional language as the uild

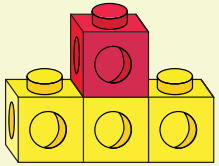
ro ide children ith attern loc s or similar sha es along ith coloured icture tem lates for them to match he children can rogress from matching sha es ith coloured ictures to ictures ith outlines onl

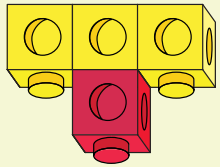


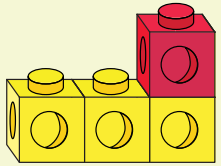


Encourage children to loo carefull and select the correct shapes. These may need to be rotated to fit in the outline

i e children instructions to isualise a model ithout using e ui ment or e am le oin three ello cu es together in a line lace a red cu e on to of the middle yellow cube. Then flip your model upside do n Sho children three ossi le models and as them hich matches the model the isualised







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nip te pe

ote n i nce

n this small ste children uild on the learning from re ious ste s no mani ulating sha es hildren ill e lore mo ing turning, rotating and flipping shapes to fit into the spaces ro ided ontinuing to enhance ro ision ith attern loc tem lates and num er sha e ase oards ill su ort children to mani ulate sha es

s ith rotating sha es ro ide o ortunities for children to see sha es in a ariet of orientations and ositions so the learn that the same sha e can loo different Sha e sorters can su ort ith this, as they encourage children to turn, rotate and flip shapes.

In this small step, tangram pieces are introduced for the first time llo some time for children to e lore the tangram sha es in o en ended acti ities efore mo ing on to using these in adult led tas s

e e tion

Which sha es ill ou need to use

- o ha e ou mo ed the sha e sha es
- o ha e ou made our icture
- o ould ou descri e our icture

o i e entence te

ha e chosen a _____ ecause _____.

need a _____ to com lete m icture

need to _____ my shape to make it fit.

oo

angram at aran e Rinc and arti n an der inden

hree igs ne Wolf and Se en agic Sha es race accarone

in to t e c ic

Development Matters – Reception – Select, rotate and mani ulate sha es to de elo s atial reasoning s ills

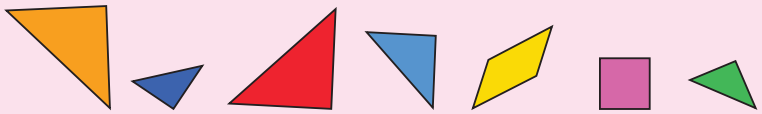
irth to atters Range n estigates turning and flipping objects in order to make shapes fit and create models redicting and isualising ho the ill loo s atial reasoning

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nip te pe

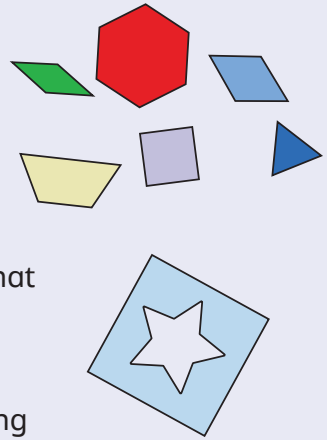
t e e nin

fter reading stories such as *angram at* aran e Rinc and arti n an der inden ro ide children ith tangram ieces and encourage them to e lore the different sha es



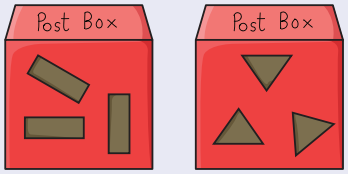
nce children are familiar ith them ro ide tem lates ith the outlines of different ictures rom t them to mani ulate the sha es to com lete the icture

ro ide children ith a set of attern loc s or similar sha es ut out a star tem late Encourage children to find different ways to build a star. o man different sha es ha e the used rom t them to tal a out the sha es the choose and hat the notice



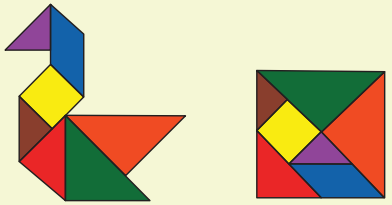
Encourage children to in estigate ho man a s the can uild a star using the same sha e

Use junk modelling boxes to ma e a range of ost o es ith different sha ed o enings ensuring that there are three different orientations on each o



Provide children with a range of shapes which will fit inside the o enings of the o rom t them to mani ulate the shapes to fit inside the postbox.

ro ide children ith a set of tangrams and rom t them to rotate and mani ulate the sha es to ma e their o n arrangements and ictures



an a artner guess hat the ha e created Encourage them to challenge their artner to recreate hat the ha e made using their o n attern loc s

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p in pe n e ent

ote n i nce

n this small ste children use their re ious no ledge of ositional language and no rogress to e laining more com le sha e arrangements ro ide o ortunities for children to match arrangements of sha es rom ting them to use ositional language to descri e here the sha es are in relation to one another

n la rom t children to descri e the osition of sha es uilding loc s or small orld characters his could also e done on a large scale outside hen uilding and follo ing o stacle courses

Encourage children to la arrier games here t o children sit o osite each other ith a arrier in et een them iece of card oard or a oo ma e good arriers When la ing the game one child gi es instructions to their artner for them to ma e the same arrangement as them irst egin ithout a arrier then rogress to using a arrier ut gi e uic ee s inall e tend to lea ing the arrier in lace so that children must rel on er al instructions to co the sha e arrangements

oo

ouse Sha es Ellen Stoll Walsh

e e tion

o are the sha es arranged

Which sha es ha e ou used

o can ou e lain our model

o i e entence te

he _____ is ne t to the _____.

he _____ is in front of the _____.

he _____ is ehind the _____.

o e around the _____.

o e under o er the _____.

in to t e c ic

e elo ment atters – Reception – Select, rotate and mani ulate sha es to de elo s atial reasoning s ills

irth to atters – Range 6 – Uses informal language and analogies e g *heart sha ed and hand sha ed lea es* as ell as mathematical terms to descri e sha es

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p in pe n e ent

t e e nin

ccidentall dro a range of sha es onto the floor. See how they land.

rom t children to e lain here the sha es are in relation to each other

s uestions such as "Can you find a square and descri e its osition



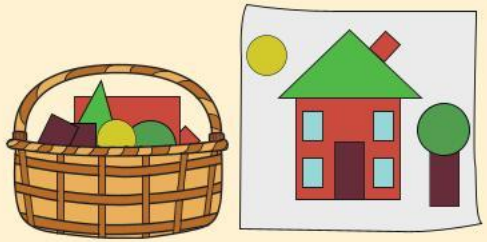
ro ide children ith a range of large outdoor construction e ui ment iscuss ho these could e used to de elo an o stacle course for their eers



s children to construct an o stacle course s the create it encourage them to e lain to a artner ho the o stacles are arranged and tal to them a out ho to mo e around the course

Read stories such as *ouse Sha es* Ellen Stoll Walsh ith children ro ide a range of gummed a er or re cut felt sha es and rom t children to create arrangements

al to children a out here the different sha es are ositioned in relation to each other



la a arrier game ith children in an area of ro ision such as the construction area Ensure that ou and the child ha e identical o ects efore lacing a arrier et een ou oth rrange the o ects and descri e the arrangement to the child rom t them to create an identical arrangement

his could e de elo ed encouraging children to descri e arrangements to each other



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o po e pe

ote n i nce

n this small ste children understand that sha es can e com ined to ma e ne sha es ro ide o ortunities for children to fit shapes together using resources such as pre-cut gummed sha es attern loc s and num er rods Encourage children to in estigate ho man different a s a gi en sha e can e made using smaller sha es

At first, support children by providing them with certain shapes to use for e am le onl the correct sha es that the ill need hen rogress to ro iding them ith a larger selection of sha es so that children must decide hich to use lso the can e lore com ining a gi en set of sha es in a ariet of a s to ma e different sha es

E loring illustrations of ho sha es ha e een com ined to ma e ne sha es in oo s can su ort children s understanding in this ste and ro ide meaningful conte ts for com osing sha es

oo

e ettino eo ionni

Jack and the Flumflum Tree ulia onaldson

e e tion

o are the sha es arranged

Which sha es ha e ou used

What sha e ha e ou made

o man sha es did ou use

an ou ma e a sha e in a different a

o i e entence te

used _____ sha es to ma e a _____.

o ma e the smallest largest _____, I used _____ ieces

in to t e c ic

e elo ment atters – Reception – Compose and decom ose sha es so that children recognise a sha e can ha e other sha es *ithin* it ust as num ers can

irth to atters – Range 6 – Enjoys composing and decom osing sha es learning hich sha es com ine to ma e other sha es

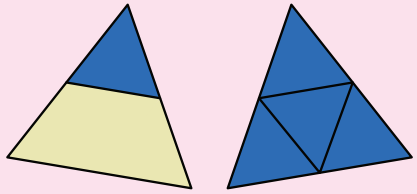
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o po e pe

t e e nin

fter reading oo s such as *e ettino* eo ionni lea e the oo s out for children to loo at inde endentl ro ide a range of s uares and triangles and encourage children to use them to ma e ne sha es s uestions such as Which sha es ha e ou used o man s uares did ou need o man triangles did ou need

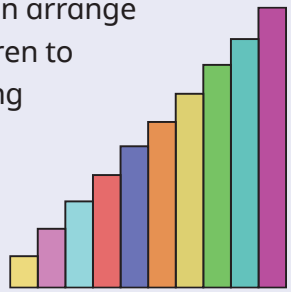
ro ide a set of attern loc s or similar sha es and challenge children to uild as man different triangles as the can Who can uild the largest triangle Who can uild a triangle ith t o three or four ieces



rom t children to e lore and discuss the different ways they can find to build the same-sized triangle. o su ort ith this acti it ro ide tem lates or gi e children the correct num er of ieces needed to ma e a triangle

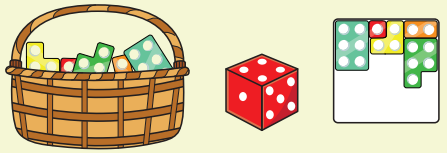
ro ide children ith a set of num er rods Encourage them to see ho man different a s the can arrange the rods to uild a s uare rom t children to ma e another s uare the same si e using different rods

o do the no the are s uare What do the notice a out the rods as the uild



i e children a set of num er sha es and an outline of a s uare Each side of the s uare should e the same length as t o num er ieces laced together end to end

Wor ing in airs or small grou s rom t children to ta e turns to roll a dice select the corres onding num er sha e and lace this on their s uare he winner is the first player to fill their square exactly.



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eco po e pe

ote n i nce

n this small ste children e lore identif ing sha es ithin sha es

hildren understand that sha es can e se arated to ma e ne sha es ro ide children ith a er or gummed sha es and encourage them to fold or cut them for e am le folding a rectangle to ma e t o s uares or cutting a s uare to ma e t o triangles

E loring ho sha es are decom osed in oo s can ro ide meaningful conte ts for identif ing sha es ithin sha es fter reading these oo s together encourage children to decom ose sha es in similar a s in ro ision

nce children ha e e lored decom osing sha es in o en ended acti ities as them to redict hat ne sha es the can ma e folding or cutting rom t children to tal a out hich sha es the ill see or redict hat ill ha en if the fold the sha e in half



oo

erfect S uare ichael all

rand a s uilt ets ranco

e e tion

o are the sha es arranged

Which sha es did ou need to rotate

Which sha es did ou se arate

What is our ne sha e

What are our ne sha es

What ha ens hen ou fold our sha e

o i e entence te

can ma e a _____ using

used a _____ to ma e

in to t e c ic

e elo ment atters – Reception – Compose and decom ose sha es so that children recognise a sha e can ha e other sha es *ithin* it ust as num ers can

irth to atters – Range 6 – Enjoys composing and decom osing sha es learning hich sha es com ine to ma e other sha es

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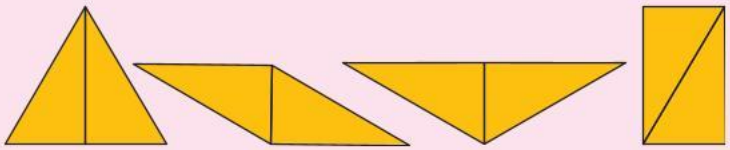
eco po e pe

t e e nin

fter reading oo s such as *erfect S uare* ichael all ro ide children ith a s uare sha ed iece of a er s them hat the could ma e from a s uare Encourage children to ri or cut the s uare and use it to create something ne

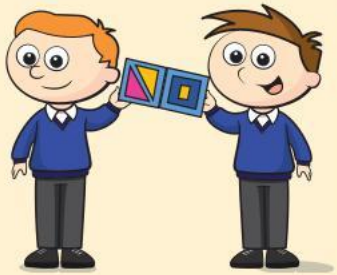
Sho children t o identical right angled triangles hich ha e een made cutting a rectangle in half diagonall o man ne sha es can the make by fitting the triangles together? Can they ma e sha es ith three sides or ith four sides

Encourage children to return the t o triangles ac into a rectangular sha e efore in estigating further



o de elo this acti it ro ide children ith four identical right angled triangles

Read oo s such as *rand a s uilt* ets ranco rom t children to design one s uare for their o n class uilt ut all the indi idual s uares together and discuss the designs children ha e made



Encourage children to arrange the s uares to ma e a long thin rectangle or a short fat rectangle

ro ide children ith a hotoco of their fa ourite icture or oo co er rom t children to cut u the icture or oo co er and gi e it to a artner to ut ac together



o ha e ou cut u our icture o man ieces do ou ha e s it easier to com lete a igsa ith more or fe er ieces

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op pe pict e

ote n i nce

hildren ill alread ha e had some e erience of ma ing sha e ictures in re ious loc s n this small ste children ill uild on this rior learning and ill rogress to co ing more com le 2 sha e ictures he ill use learning from earlier ste s in this loc such as rotating mani ulating and com osing sha es to hel them hen co ing sha e ictures

rom t children to tal a out the ro erties of the 2 sha es the use as the ma e their ictures and encourage them to use sha e oca ular to e lain h the ha e used the sha es in that a

Encourage children to e lore sha e ictures in oo s and rom t them to co the ictures using re cut gummed sha es ocus on more com le sha e ictures that include more sha es and also include sha es in different orientations

e e tion

o are the sha es arranged

Which sha es can ou see

Which sha es can ou see inside other sha es

Wh ha e ou used those sha es

o ha e ou mo ed our sha e to match the icture

o is the sha e ositioned

o i e entence te

can see _____.

ha e made a _____ using

oo

olor oo ois Ehlert

ouse Sha es Ellen Stoll Walsh

in to t e c ic

e elo ment atters – Reception – Select, rotate and mani ulate sha es to de elo s atial reasoning s ills

irth to atters – Range 6 – Investigates turning and flipping objects in order to make shapes fit and create models redicting and isualising ho the ill loo s atial reasoning

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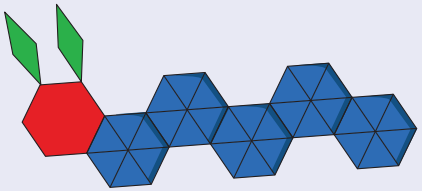
op pe pict e

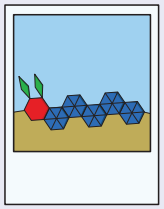
t e e nin

fter reading oo s such as *ouse Sha es* Ellen Stoll Walsh ith children re isit the later ages of the oo here there are e am les of more com le sha e ictures ro ide children ith re cut gummed or felt sha es and encourage them to co ictures such as a ro ot or car

s children to descri e their ictures focusing on the sha es used and their osition

ro ide children ith resources such as attern loc s to ma e their o n sha e ictures Either hotogra h or hotoco the ictures the ma e and then gi e them to other children for them to re licate





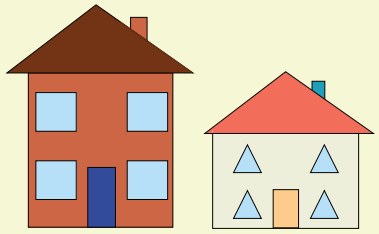
s children to tal a out the sha es the used oes it loo the same as the icture Encourage children to gi e reasons as to h it is the same or different

ro ide a ariet of com le sha e ictures such as a street scene or farm scene rom t children to tal a out the sha es the can see and the ositions the are in

Encourage children to co the ictures ith their o n sha es



Sho children t o sha e ictures here some of the features are the same and some are different Encourage children to reason and e lain hat the similarities and differences are



o e tend this rom t them to design their o n ictures in a similar a hildren can then discuss the similarities and differences ith a artner

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in pe it in pe

ote n i nce

Children will have experience of finding 2-D shapes within 3-D sha es from earlier loc s n this small ste this learning is uilt on and children are encouraged to notice 2 sha es ithin sha es in a range of conte ts Encourage children to ma e a range of constructions using s ills from the re ious ste s in this loc to rotate mani ulate and e lain sha e arrangements

When uilding rom t children to tal a out h the ha e chosen each sha e or o ect articularl focusing on the 2 sha es ithin the sha es and h this ma es it suita le for their construction

s a class e lore oo s that use sha es and encourage children to notice here the can see 2 sha es on the faces of the o ects hildren can then uild structures in a similar a to the oo s Encourage them to tal a out the sha e ro erties as the uild

oo

u es ones linders S heres ana o an

o itects im Smith

e e tion

What sha es can ou see

Where can ou see a _____

Wh ha e ou chosen that sha e s that the est sha e to use

o i e entence te

can see a _____ ithin a _____.

can see a _____ in the _____.

no it is a _____ ecause it has a _____.

can feel that this sha e is a _____ ecause

in to t e c ic

e elo ment atters – Reception – Compose and decom ose sha es so that children recognise a sha e can ha e other sha es *ithin* it ust as num ers can

irth to atters – Range 6 – Enjoys composing and decom osing sha es learning hich sha es com ine to ma e other sha es

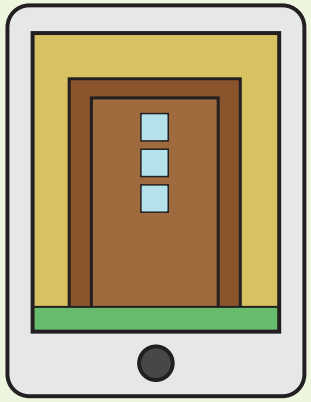
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in pe it in pe

t e e nin

Read oo s such as *u es ones linders S heres* ana o an and encourage children to notice 2 sha es on the faces of sha es

o on a sha e hunt to loo for and identif 2 sha es ithin o ects



Take pictures of the shapes children find and collate them into a class oo

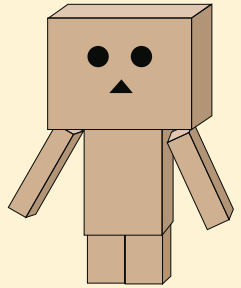
reate a feel o or ag ith a ariet of sha es inside

Encourage children to feel inside the o or ag and identif the sha es the can feel



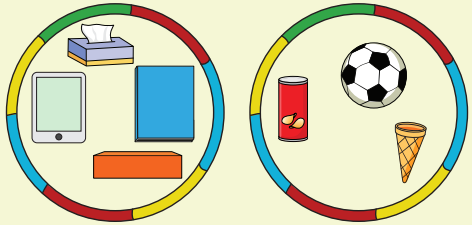
rom t children to sa out loud hat the can feel using the language relating to 2 sha es

fter reading stories such as *o itects* im Smith lace the oo s in the construction area for children to refer ac to Encourage them to construct their o n models and discuss here the can see 2 sha es



o e tend this children could as a artner to identif here the see 2 sha es on the faces of their model

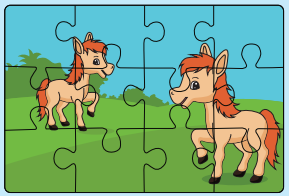
Sit children in a circle around t o hoo s and ro ide a range of sha es including real life o ects ic a child to create a rule and then sort the sha es using this rule or e am le the rule could e all the sha es that ha e a rectangular face go in one hoo and those that don t go in the other

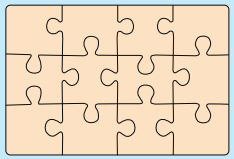


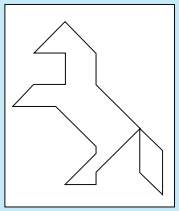
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ontin o p o i ion

Enhance ro ision ith a range of igsa s as ell as attern loc and tangram tem lates Encourage children to tal a out ho the are turning rotating and flipping each iece as the com lete the igsa s and tem lates

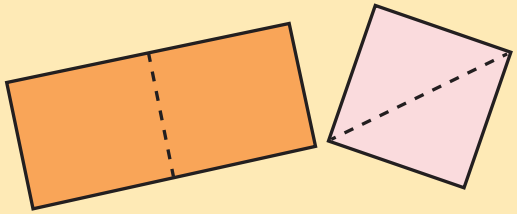






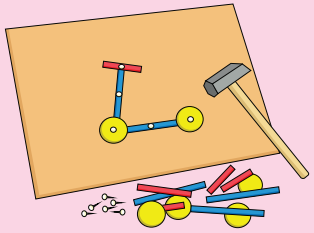
hildren could egin com leting tem lates here all the indi idual ieces are clearl sho n and then the can rogress on to tem lates that ust sho the outline

ro ide re cut a er rectangles s uares and triangles Encourage children to e lore hat ne sha es the can ma e folding or cutting the a er rom t them to redict hat the ne sha es ill e and then as them to in estigate to chec

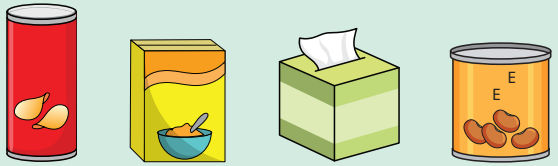


hildren could then ma e 2 sha e ictures ith the ne sha es the ha e made

ro ide children ith hammer and nail sha e oards Encourage them to use these to co sha e ictures or the could create their o n ictures for a artner to co



Enhance the construction area ith real life o ects such as cris tu es and cereal o es Encourage children to tal a out the 2 sha es the can see ithin the sha es as the uild

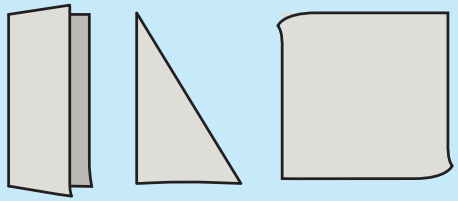


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n o oc c ec point

ec point

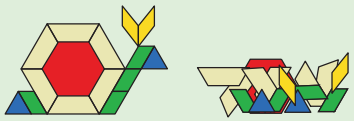
ro ide children ith re cut a er sha es that the can fold to ma e ne sha es n airs one child folds a sha e and their artner has to redict hat the ne sha e ill e after folding



an children correctl redict hat ne sha es ill e made once the a er is folded

ec point

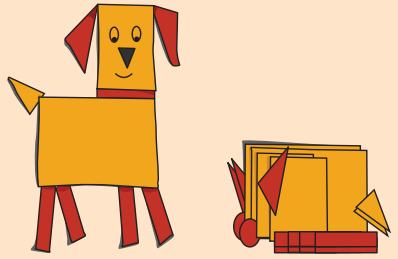
Encourage children to com lete attern loc tem lates hese tem lates could e coloured or to e tend this further ro ide children ith lac and hite tem lates here the can see onl the outlines of the sha es



an the select the correct shapes and rotate them to fit on the tem late

ec point

ro ide children ith a range of re cut gummed sha es or felt sha es to ma e their o n sha e ictures ith an the tal a out h the are choosing each sha e and hat it is going to re resent on their sha e icture



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Summer loc 4

in n

o pin

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e c e i nce

e oo

he ast arshmallo race in

he S uirrels Who S ua led Rachel right

ne ungr at oanne Roc lin

he oor ell Rang at utchins

ess the urse ic Sharratt

he inger read an

ean hirteen atthe cElligott

issing ittens Stuart ur h

lison u le llan hl erg

e e o ce











op tip

ra u on children s ast e eriences hen discussing the idea of fair and e ual grou s hildren are more li el to notice hen things are fair hen it in ol es items that are of im ortance to them such as food and to s r to use other non food resources to ro e fair and not fair

© White Rose Education 2024

tep

tep E lore sharing

tep Sharing

tep E lore grou ing

tep rou ing

tep E en and odd sharing

tep la ith and uild dou les

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p o e in

ote n i nce

n this small ste children ill egin to de elo an understanding of sharing he ill in estigate hat sharing is and descri e e ual sharing as fair and une ual sharing as unfair

Within this loc e e lore sharing and grou ing hich are oth different methods of di ision Sharing see small ste s and 2 in ol es di iding a set e uall et een a certain num er of grou s rou ing see small ste s and 4 in ol es di iding a set lacing a certain num er of items in each grou

cti ities such as sharing snac s or la ing grou games are great o ortunities for children to notice hen it is fair hese ractical acti ities hel children see hether items ha e een shared e uall and hether e er one has the same hildren ma remem er from re ious ste s the conce ts of e en and odd num ers relating to this hich ill e focused on in later ste s

E osing children to this conce t of sharing into grou s and eginning to identif hen these grou s are e ual ill ensure that children are read to mo e on to the ne t ste

oo

he ast arshmallo race in

he S uirrels Who S ua led Rachel right

e e tion

s it fair o do ou no

re the grou s e ual

o all the grou s ha e the same amount

o i e entence te

t is fair ecause

t is not fair ecause

he _____ ha e ha e not een shared e uall

in to t e c ic

Development Matters – Rece tion

- om are num ers
- E lore the com osition of num ers to 0

irth to atters Range

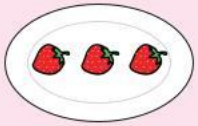
- Estimates of num ers of things sho ing understanding of relati e si e
- ounts out u to 0 o ects from a larger grou

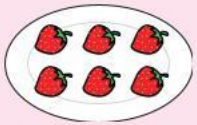
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p o e in

t e e nin

Sho children a o l of stra erries and t o lates E lain that ou are going to share the stra erries so that each late has the same num er ut a handful straight onto each late ithout counting ma ing sure that one late clearl has more stra erries than the other





s children hether it is fair rom t them to sho ou ho to share the stra erries fairl What if there are three lates

ro ide o ortunities for children to see items shared e uall and une uall i e each child a noticea l different handful of cards – is it fair?



o all the children ha e an e ual num er of cards

n the dough area start off ith all the dough in one all rea the dough and gi e each child a noticea l different amount of dough s s it fair oes e er one ha e the same amount



o can e ma e it fair so that all children ha e the same amount of dough

Read stories such as *he S uirrels Who S ua led* Rachel right utside set u t o t res ith one character in each ro ide children ith a collection of natural materials such as acorns con ers or inecones Encourage them to e lore hether these items can e shared e uall et een the t o characters

rom t children to e lain their reasoning



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in

ote n i nce

n this small ste children ill uild u on their no ledge of sharing from the previous small step and refine these skills further hildren ill share racticall for a ur ose ha ing a num er of o ects to share et een arious eo le or grou s

hildren ill learn that to share e need to ta e one o ect at a time and gi e it to one child efore ta ing the ne t o ect and gi ing it to the ne t child re eating this rocess until all the o ects are gone or each child has an e ual amount

his small ste ill also address hat ha ens if an amount cannot e shared e ually the num er of children that e ha e the ill identif that at times there ill e lefto er o ects that cannot e shared fairl hildren ma ha e ideas on hat should e done ith lefto er o ects

Stor oo s that relate to sharing can e ose children to a range of scenarios and ro ide meaningful conte ts Encourage children to discuss their e erience of sharing and ho the no hether it is fair



oo

ne ungr at oanne Roc lin

he oor ell Rang at utchins

e e tion

o ill ou share the _____ e ually

o do e ma e sure e er one has the same amount

re there an left o er

o i e entence te

he _____ ha e ha e not een shared e ually

here are _____ altogether

he are shared e ually et een _____ grou s

in to t e c ic

e elo ment atters – Reception

- om are num ers
- E lore the com osition of num ers to 0

irth to atters Range

- Estimates of num ers of things sho ing understanding of relati e si e
- ounts out u to 0 o ects from a larger grou

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in

t e e nin

ro ide tedd ears lates and small uantities of loose arts to re resent different food items s children to share out the loose arts fairl so that each tedd gets the same amount



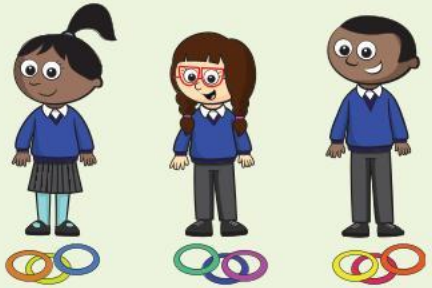
re there an items left o er What ill ha en if another tedd oins the icnic

fter reading stories such as *ne ungr at* oanne Roc lin su ort children to a e coo ies or ma e them in the dough area nce the ha e made the coo ies encourage them to share them e uall ith a artner



o man coo ies does each child ha e a e the shared the coo ies e uall

n airs la a thro ing game using uoits i e children a uc et of uoits and tell them that each la er needs to start the game ith the same num er o ill e share the uoits e uall o can e ma e it fair Re eat ith different num ers of uoits and different num ers of la ers



fter reading oo s such as *he oor ell Rang* at utchins gi e children 2 coo ies ct out the stor and encourage them to share the coo ies et een 2 then then 4 eo le



What ill ha en if one more erson arri es

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p o e o pin

ote n i nce

n the re ious small ste s children ha e e lored the method of sharing and ill no mo e on to the method of grou ing When e loring grou ing in this small ste children ill use their no ledge of e ual and une ual grou s to su ort them

Remem er that grou ing in ol es di iding a set lacing a certain num er of items in each grou hereas sharing see small ste s and 2 in ol es di iding a set e uall et een a certain num er of grou s

When grou ing children di ide a set lacing a gi en num er of o ects in each grou and in estigate ho man grou s the ill re uire ro ide aried o ortunities for children to recognise and ma e e ual grou s he use of stories can ro ide meaningful conte ts for grou ing

o ma imise children s o ortunities to inde endentl de elo their grou ing s ills ensure that classroom ro ision is enhanced ith some la elled grou s for e am le la elling ho man encils elong in each ot id u time ill then ro ide a rele ant ur ose for grou ing



oo

ess the urse ic Sharratt

e e tion

o man do ou ha e

o man are there in each grou

re the grou s e ual o do ou no

o i e entence te

he grou s are e ual not e ual ecause

here are _____ grou s of _____

here are _____ altogether

in to t e c ic

Development Matters – Rece tion

- om are num ers
- E lore the com osition of num ers to 0

irth to atters Range

- Estimates of num ers of things sho ing understanding of relati e si e
- ounts out u to 0 o ects from a larger grou

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p o e o pin

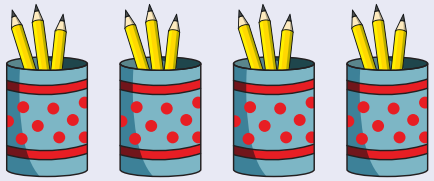
t e e nin

fter reading stories such as *ess the urse* ic Sharratt enact a similar scenario ith children Sho them ho man o ects ou ha e such as 0 stic ers i e stic er each to children then gi e the remaining stic ers to another child s children a e grou ed the stic ers e uall

f e ha e 0 stic ers and e gi e to each child ho man children can e gi e stic ers to



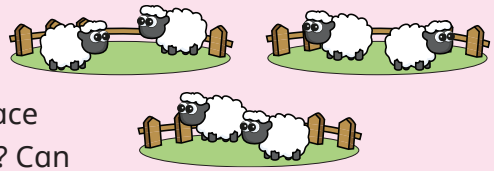
hallenge children to hel ou reorganise the mar ma ing ro ision ell children that ou ould li e to ut encils in each ot o man ots ill ou need



Re eat this and reorganise different areas of ro ision such as aint rushes in ars or oo s in as ets

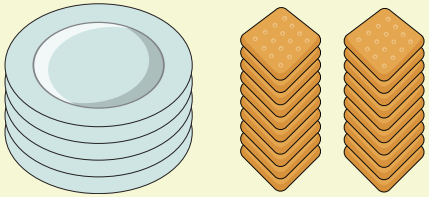
s children to ma e grou s using the small orld animals f the ha e shee and 2 shee need to go in each field, how many fields will they need?

What ha ens if the ma e grou s of and lace sheep in each field? Can the ma e more grou s of 2 or more grou s of



Re eat this in different conte ts

Encourage children to sit in small grou s for a icnic outside and ro ide different uantities of food



rom t children to gi e out the food in different a s to encourage grou ing or e am le if each child needs cream crac ers ho man children can eat at the picnic with us? How can we find out?

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o pin

ote n i nce

n this small ste children uild u on their no ledge of grouping from the previous step and refine these skills further.

hildren ill grou for a ur ose and di ide a set of o ects lacing a certain num er of them in each grou he ill in estigate ho man grou s the need in order to gi e out all their o ects

When ma ing grou s encourage children to lace their o ects into ots o ls or other containers to su ort them to ma e distinct grou s and to see hether the grou s are e ual hildren could also e lore grou ing on a larger scale outside lacing o ects into hoo s or uc ets urther to this the could e encouraged to la team games that re uire them to get into teams of certain num ers

ro ide a range of o ortunities for children to e lore grou ing initiall rom ting them to di ide a num er of o ects that can e grou ed e uall o further de elo children s understanding rogress to e osing them to num ers of o ects that cannot e grou ed e uall and so items are left o er Encourage them to come u ith their o n suggestions for ho to resol e this



oo

he inger read an

e e tion

o man are there altogether

o man are there in each grou

o man grou s can ou ma e

o i e entence te

here are _____ altogether

he _____ can e ut into e ual grou s of _____

here are _____ grou s of _____

in to t e c ic

e elo ment atters – Reception

- om are num ers
- E lore the com osition of num ers to 0

irth to atters Range

- Estimates of num ers of things sho ing understanding of relati e si e
- ounts out u to 0 o ects from a larger grou

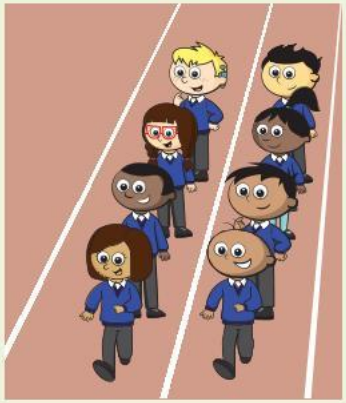
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o pin

t e e nin

la rela races in small grou s e laining that e need teams of 4 children to la the game o man teams can e ma e

Re eat ith different num ers of children needed in each grou o man teams can e ma e this time



ro ide children ith lant ots soil and seeds for lanting E lain to children that e need to ut seeds in each pot. How many pots can be filled?







his could e re eated gi ing children a different num er of seeds to e ut in each ot oes the num er of ots change

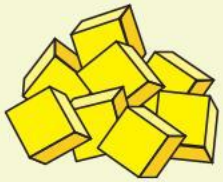
Read the stor *he inger read an* i e children a num er of ginger read iscuits and some raisins to use as uttons and rom t them to lace uttons on each ginger read iscuit

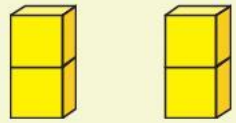




o man ginger read iscuits can ha e uttons Repeat this with different numbers of buttons – how man iscuits can ha e uttons this time

i e children 2 cu es f the ut 2 cu es in each to er ho man to ers ill the ma e





s them to in estigate different a s of grou ing their cu es into to ers Which num ers ma e e ual grou s Which num ers don t

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en n o in

ote n i nce

n re ious small ste s children ha e e lored sharing and e erienced fair and unfair sharing identif ing hether o ects are left o er

hildren ill no use these s ills in this small ste to identif hether a num er is odd or e en sharing into t o grou s sing language such as odd e en e ual and une ual ill rom t children to ma e the lin s to the num er of o ects the are sharing

hildren are encouraged to tal through the sharing rocess e laining hat the notice and ho the no hether an amount is odd or e en o do this ensure that children are ro ided ith a range of hands on e eriences that use aried resources and different num ers of o ects

Encourage children to model their thin ing as ing uestions such as an ou sho me hat ou did and o do ou no

oo

ean hirteen atthe cElligott

issing ittens Stuart ur h

e e tion

o man are there altogether

o ou ha e an odd or e en num er o do ou no

o man e ual grou s do ou ha e o ou ha e an left o er

o i e entence te

here are _____ altogether

ha e an odd e en num er of _____. I know because...

in to t e c ic

e elo ment atters – Reception

- om are num ers
- E lore the com osition of num ers to 0

irth to atters Range

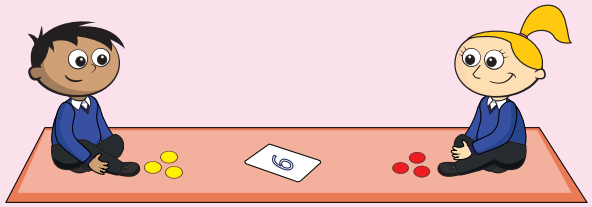
- Sho s a areness that num ers are made u com osed of smaller num ers e loring artitioning in different a s ith a ide range of o ects
- ounts out u to 0 o ects from a larger grou

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en n o in

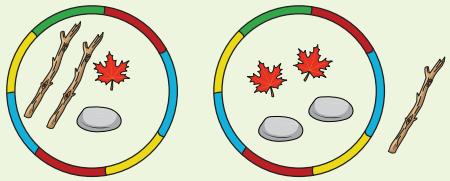
t e e nin

n airs children select a numeral card and count out the corres onding num er of counters s this an e en or odd num er Encourage them to share the counters et een the t o of them o the ha e t o e ual grou s or is there one counter left o er

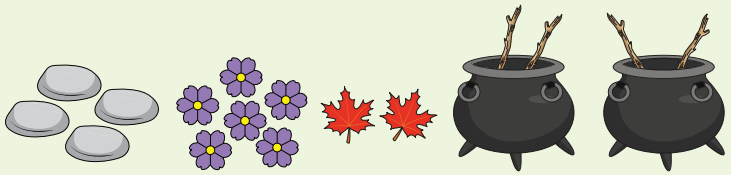


hildren then ring their numeral card to the front and sort it into an odd or e en hoo

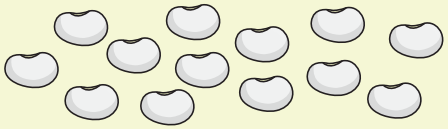
ro ide airs of children ith a 0 second timer utside as them to collect as man loose o ects as the can a e the collected an e en num er or an odd num er o do the no rom t children to share their o ects into t o groups to find out.



Encourage children to ma e an odd or e en otion collecting natural o ects such as stic s e les lea es and etals o man of each o ect do ou ha e rom t children to tr sharing the o ects e uall et een t o cauldrons or ots to chec hether the ha e an odd or e en otion



fter reading stories such as *ean hirteen* atthe cElligott gi e children a num er of eans o the ha e an odd num er or an e en num er o do the no



rom t them to share the eans e uall et een t o grou s to in estigate

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it n i o e

ote n i nce

In this small step, children consolidate their learning of finding and ma ing dou les ontinue to rom t them to e lore in estigate and uild dou les in a range of different conte ts

Encourage children to dou le num ers ut also rogress this to sho ing children a dou le and as ing them to sa hat num er has been doubled, by finding the inverse. Prompt children to use sentence stems to su ort their mathematical tal

n games and acti ities romote and model the automatic recall of dou le facts rather than al a s rel ing on uilding the dou les each time Resources such as to ers of cu es counters on ten frames and dominoes ill continue to su ort children ho are not et secure ith recalling all dou le facts

ra ing on no ledge of e en and odd sharing from the re ious small ste children ma recall that all dou les are e en num ers as the are made u of t o e ual grou s

oo

lison u le llan hl erg

e e tion

What is a dou le

What is dou le _____

o can ou sho me dou le _____

o i e entence te

ou le _____ is _____

can see _____ and _____

can see _____ altogether

his is dou le _____

in to t e c ic

e elo ment atters – Reception – Automatically recall num er onds for num ers 0 and some to 0

irth to atters – Range 6 – Shows awareness that num ers are made u com osed of smaller num ers e loring artitioning in different a s ith a ide range of o ects

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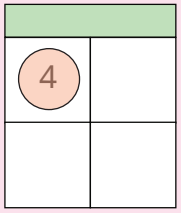
it n i o e

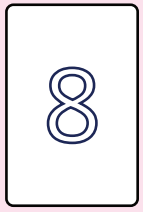
t e e nin

la a game of dou le ingo ro ide children ith some counters and a num ered grid ith num ers u to on it Sho them a numeral card such as and as them hich num er is dou led to ma e

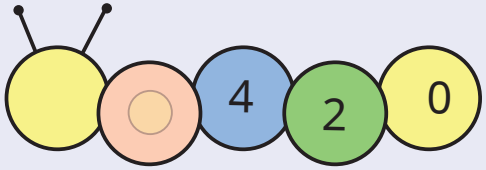
he then lace their counter on the corres onding num er such as num er 4

o su ort children gi e them cu es to use to or out the dou le





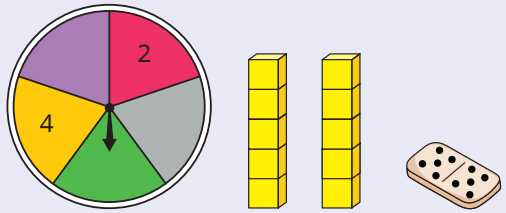
la cater illar dou les ro ide children ith a num er trac sha ed as a cater illar ith the num ers 2 4 and 0 dis la ed on it in a random order rom t children to roll a to dice dou le the num er and ut a trans arent counter on the dou le





s children to s in a to s inner ou le the num er the s inner lands on uilding to ers or dra ing s ots on lan dominoes

What num er did ou land on What is the dou le



Sho children a dou les to n in the small orld area E lain that e er thing in the dou les to n sho s a dou le or e am le there are houses hich sho s dou le

s children to reason h each o ect is art of the dou les to n o e ha e all the dou les to 0 in our to n

an children ma e their o n dou les to n

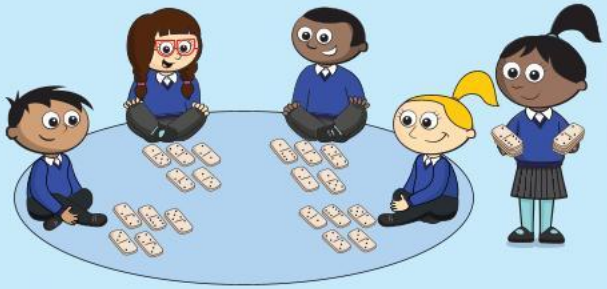


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ontin o p o i ion

Enhance ro ision ith games such as dominoes here children need to share out all the resources e uall efore the la

oes e er one ha e the same num er of o ects re the grou s e ual Which grou has an odd num er of o ects



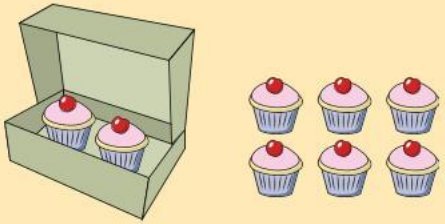
Reorganise resources in the outdoor ro ision grou ing ell children that e need to lace the t res in iles of o man iles can e ma e Re eat this for other resources such as iles of crates alls in uc ets and to ers of ric s

hildren could then ma e their o n signs to la el the grou s



Set u a ca e sho in ro ision ith cu ca e cases and o es i e children orders for certain num ers of cu ca es f e ut 2 cu ca es in each o ho man o es ill e need

Re eat this ith different num ers of cu ca es and o es o e ha e an odd or e en num er o do e no



oc t o of the same num er sha es together in a adloc Write the dou le on the tag of the corres onding e Re eat this for dou les to 0 and then rom t children to find the correct key to unloc the adloc s



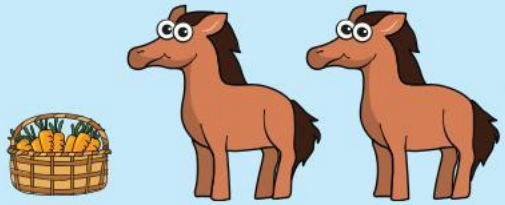
nce the ha e unloc ed all the adloc s children can loc the num er sha es in the adloc s again for a artner to unloc

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n o oc c ec point

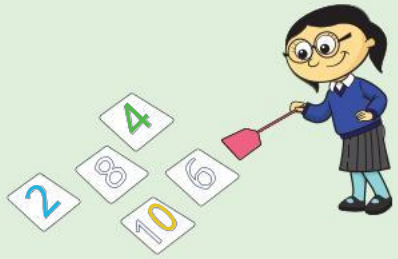
ec point

n the small orld area encourage children to share o ects e uall et een t o or more grou s or e am le can the share the carrots et een 2 horses an the share the sheep between 3 fields? How man are there in each grou re the grou s e ual o the ha e an odd num er



ec point

S read out numeral cards 2, 4, 6, 8 and 10 on the floor or around the classroom Shout out a num er and rom t children to dou le that num er Encourage them to race to s at the correct numeral ith a s atter



ec point

Shout out a num er and rom t children to get into grou s of that num er



o man grou s ha e e made re the grou s e ual s an one not in a grou

Re eat this ith different num ers of children and different num ers in each grou s our grou odd or e en

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Summer loc

i i e i

n p

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e c e i nce

e oo

See a attern ere ruce oldstone

attern ish and *attern ugs* rud arris

rt orms in ature Ernst aec el

Rosie s Wal at utchins

What the ad ird eard and *he ruffalo*
ulia onaldson

isne s he ion ing ustine orman ontes

We re oing on a ear unt ichael Rosen

oc atoos uentin la e

artha a s t ut eigh odg inson

n E er ouse on E er Street ess itchman

f uilt a ouse hris an usen

he Secret ath ic utter orth

e on the a oan S eene

irates o e nder ants laire reedman

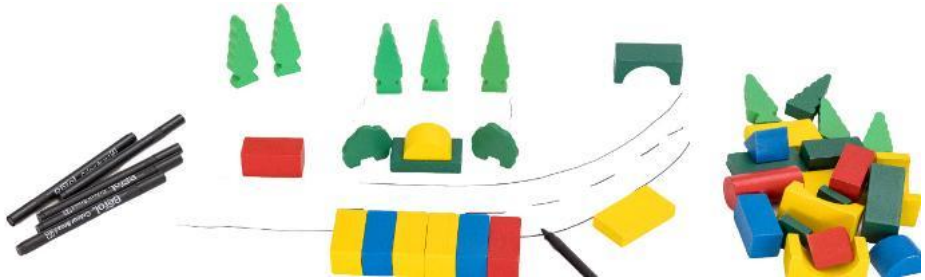
a oo Sara anelli

ittle Red Riding ood

he nce u on a ime a oo enness

e e o ce







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tep

tep	dentif units of re eating atterns
tep	reate o n attern rules
tep	E lore o n attern rules
tep	Re licate and uild scenes and constructions
tep	isualise from different ositions
tep	escri e ositions
tep	i e instructions to uild
tep	E lore ma ing

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tep

tep	Re resent ma s ith models
tep	reate o n ma s from familiar laces
tep	reate o n ma s and lans from stor situations

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enti nit o epe tin p tte n

ote n i nce

his loc egins returning to the conce t of re eating atterns hildren ill dee en their understanding of different atterns and ill egin to de elo a secure no ledge of attern rules and the a ilit to er alise their thin ing and e lain it to others

n this small ste the focus is su orting children to dra out the unit of re eat irst this can e done h sicall su orting children to ull out the unit from a attern for e am le from a line of cu es Encourage children to mo e the cu es do n from the attern and see each section of the attern as a unit his ill build on skills from earlier blocks where children identified sets.

Encourage children to identif units of re eat in images and oo s and rom t them to re licate them ith mani ulati es or dra ings Encourage children to hear the units of re eat in songs such as eating in time to a rh thm his is also lin ed to musical notation and ho the eats in a ar are grou ed

oo

See a attern ere ruce oldstone

attern ish rud arris

attern ugs rud arris

e e tion

What attern can ou see

o does the attern continue

What is the re eat

o i e entence te

his is a _____ attern

he _____ comes ne t in the attern

he re eat is _____.

in to t e c ic

e elo ment atters – Reception – Continue, copy and create re eating atterns

irth to atters Range

- S ots atterns in the en ironment eginning to identif the attern rule
- hooses familiar o ects to create and recreate re eating atterns e ond atterns and egins to identif the unit of re eat

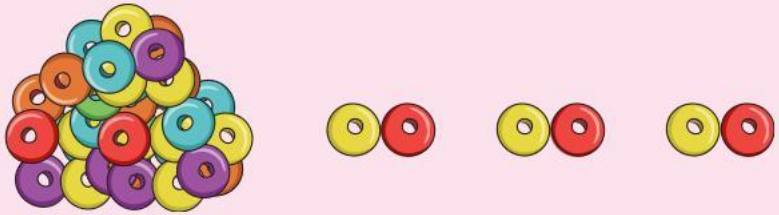
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enti nit o epe tin p tte n

t e e nin

ro ide children ith a range of resources such as loose arts cu es and eads rom t them to ma e atterns ith at least three units of re eat

Encourage children to ull out each unit to see the attern s structure and ho it re eats



Read oo s such as *See a attern ere* ruce oldstone and e lore the rele ant ages in oo s that sho re eating atterns

ro ide children ith loose arts or resources from the classroom



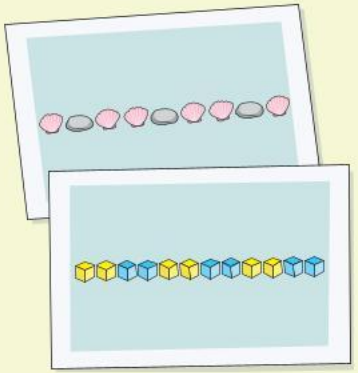
Encourage them to co the atterns the see and then identif the units of re eat

n an o en s ace outside enact large mo ement atterns and rom t children to sa hat the unit of re eat is



Encourage children to co and continue these atterns

Set u a attern station ith hotos of com le atterns such as atterns that start mid unit of re eat or atterns here the unit of re eat starts and ends ith the same item



Encourage children to identif the unit of re eat as ell as co and continue the attern

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e te o n p tte n e

ote n i nce

n this small ste children e and on dra ing out the rule in a gi en attern and rogress to creating their o n re eating attern rules hildren ill need to ha e had lots of e erience in identif ing a rule in the re ious small ste Su ort children modelling our o n rules and er alising them as the are made or e am le hen sorting uttons into atterns in a tra e lain h ou ha e ic ed each utton

sing a u et to model sorting rules is a good a to ta e the onus off the child to create their o n attern rules u ets can also get things rong and can e corrected o hel children gain confidence and think more deeply, model patterns that start mid unit of re eat Encourage children to sho their atterns and er alise their o n rules ro ide lots of e citing resources that s ar children s interests to encourage them to in ent and descri e their atterns

oo

See a attern ere ruce oldstone

attern ish rud arris

attern ugs rud arris

e e tion

What attern ha e ou made

What is the unit of re eat

What is our attern rule

o i e entence te

he _____ comes ne t in the attern

ha e made a _____ attern

need _____ to finish my pattern.

in to t e c ic

e elo ment atters – Reception – Continue, copy and create re eating atterns

irth to atters Range

- S ots atterns in the en ironment eginning to identif the attern rule
- hooses familiar o ects to create and recreate re eating atterns e ond atterns and egins to identif the unit of re eat

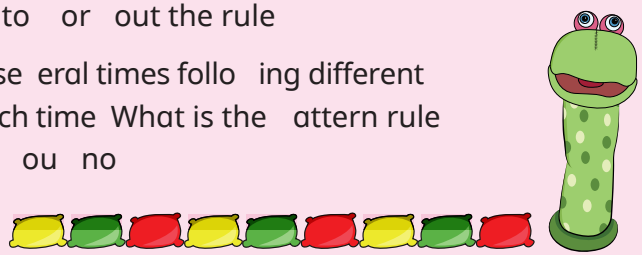
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e te o n p tte n e

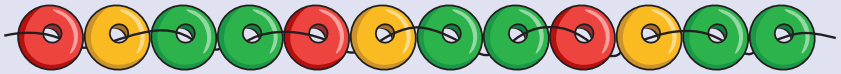
t e e nin

ntroduce children to a class u et and e lain that the u et is going to create a attern using their o n rule Encourage children to loo carefull at the attern to or out the rule

Re eat se eral times follo ing different rules each time What is the attern rule o do ou no

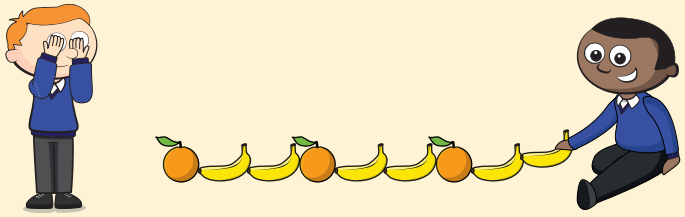


Set u a e eller or sho ith different lengths of string eads and cotton reels Encourage children to create their o n racelets and nec laces using their o n attern rules rom t children to descri e the rule the follo ed



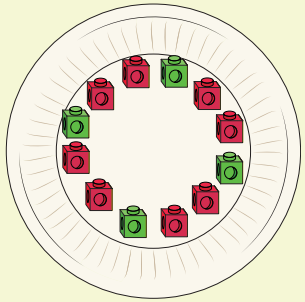
o e tend this children could e the customer and re uest a racelet or nec lace ith a gi en rule or e am le the could as for an nec lace

fter reading oo s such as *attern ish* or *attern ugs* rud arris ro ide children ith a range of resources to ma e atterns n airs one child ma es a attern follo ing their o n rule heir artner must guess hat the rule is rom t the artners to then s a roles



Sho children atterns around a circle here there is more than one ossi le rule or unit of re eat

rom t children to identif the units of re eat and encourage them to ma e their o n attern creating their o n rules around a circle ro ide children ith a er lates or circular tem lates and cu es to su ort them to do this



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p o e o n p tte n e

ote n i nce

his small ste focuses on children eing a le to er alise and descri e their o n atterns as ell as other children s atterns

rom t children to comment on each other s atterns as a grou and to descri e ho the ha e used different resources Encourage them to as uestions a out each other s atterns such as Wh did ou ut that there or ma e comments such as li e the a our attern or s

ro iding ta lets or cameras for children to ta e ictures of atterns is a good a of referencing each other s or he could also e used during grou times or num er tal sessions here atterns can e discussed and descri ed ee en children s o ser ational s ills on attern ro iding resources that ha e atterns on them such as shells or sea creatures

a ing a lace to erform in the classroom ill facilitate and encourage children to act out their atterns for e am le touch head shoulders shoulders head and to comment on each other s or



oo

See a attern ere ruce oldstone

rt orms in ature Ernst aec el

e e tion

What is the unit of re eat

o man units of re eat do need

What is our attern rule

an ou guess the rule o do ou no

o i e entence te

attern is a _____ attern no this ecause he rule is _____.

in to t e c ic

e elo ment atters – Reception – Continue, copy and create re eating atterns

irth to atters Range

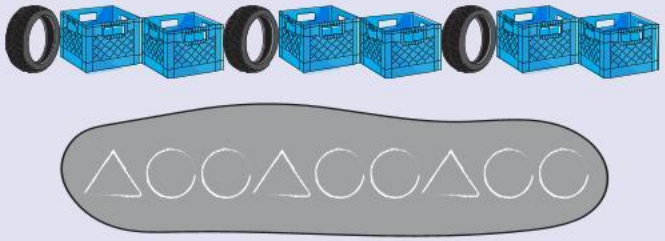
- S ots atterns in the en ironment eginning to identif the attern rule
- hooses familiar o ects to create and recreate re eating atterns e ond atterns and egins to identif the unit of re eat

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p o e o n p tte n e

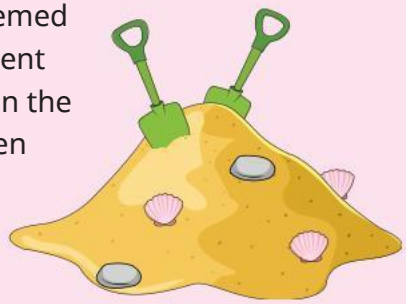
t e e nin

ro ide children ith a range of items for them to ma e atterns ith s them to identif their rule



rom t them to change the conte t of their attern using different items to sho the same rule

ide a range of each themed loose arts such as different si ed shells and e les in the sand tra n airs children dig u the items and one child uses them to ma e a attern heir artner can co the attern and identif the rule rom t the artners to then s a roles



Set u a erformance area or stage outside ro ide children ith a range of musical instruments and encourage them to ma e different sound atterns ith them

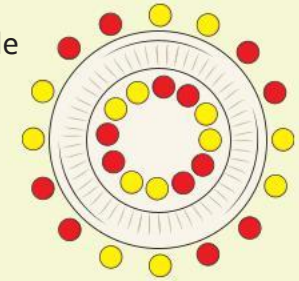


s the audience to descri e hat the rule is

ro ide children ith a a er late and items to ma e a pattern. Prompt the first child to make a pattern on the inside of the late

n ite a second child to then re eat the same attern around the outside of the late

s the distance around the outside of the late is greater the second child ill need to e tend the pattern to fill the space. Ensure that the add in the e tra unit of re eat



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Rep ic te n i cene n con t ction

ote n i nce

he second art of this loc focuses on s atial reasoning

Re licating scenes in the small orld and construction areas de elo s children s thin ing as to here o ects are in relation to each other his is the eginning of ma ing

hildren s motor s ills should alread ha e de elo ed in their uilding ourne rogression to allo them to mani ulate o ects ith greater s ill hildren ill ha e gained s ills in identif ing hich sha es are 2 and hich are as ell as in com osing and decom osing sha es With these s ills children can e su orted to mani ulate and discuss re made scenes and models or ones of their o n design

When re licating scenes or constructions children ill gain an idea of scaling to si e and here to lace and mani ulate o ects de elo ing these s ills children ill get a clear image in their mind s e e of ho sim le scenes are laid out and this ill su ort them ith further isualisations



oo

Rosie s Wal at utchins

What the ad ird eard ulia onaldson

e e tion

What ill ou use to uild

o ill ou uild ma e it

Wh ha e ou uilt it li e that

o ill ou recreate the scene

o i e entence te

he scene of the _____ is the same ecause

he scene of the _____ is different ecause

used _____ to uild _____.

_____ is here ecause

in to t e c ic

e elo ment atters – 3 and 4-year-olds

- iscuss routes and locations using ords li e in front of and ehind

irth to atters – Range 6 – Uses own ideas to make models of increasing com le it selecting loc s needed sol ing ro lems and isualising hat the ill uild

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Rep ic te n i cene n con t ction

t e e nin

Encourage children to access the small orld area sing the resources a aila le rom t children to create a scene and then in ite a artner to co it

What is the same What is different



reate a scene or en ironment follo ing children s interests for e am le a fair to n al through here ou ha e laced o ects and h rom t children to then re licate and uild their o n scene

Encourage children to e lain the reasons h the ha e laced o ects here the ha e



fter reading stories such as *Rosie s Wal* at utchins and *What the ad ird eard* ulia onaldson discuss the scenes that are in the stories

Encourage children to descri e hat the can see rom t children to access the outdoor area and use large scale resources to recreate scenes similar to those in the oo s



sing large construction deconstructed role la or un modelling sho children a scene of different si ed houses

Encourage children to access the resources and recreate a similar scene



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Visualise from different positions

ote n i nce

n this small ste children are encouraged to loo at the orld structures and their o n creations from different ers ecti es his ma e a ne conce t to children so it is im ortant to ta e time to e lore different ositions and ers ecti es through la the outside en ironment and ro ision

his small ste allo s children to gain no ledge of ho things can loo from different ie oints de elo ing their s atial awareness. Children will also gain confidence if activities are made fun for e am le using characters from stories in the small orld area he can e lore hat each character might see or here a character could hide if e ere loo ing from one direction What ould ha en if e mo ed to loo from another ie ing oint Would the character still e hidden



R e

he ear Went o er the ountain



oo

isne s he ion ing ustine orman ontes

e e tion

What can ou see

f ou mo e to a different osition hat can ou see no

o i e entence te

can see _____. If I move, now I can see _____.

he _____ is ne t to a o e elo the _____.

in to t e c ic

e elo ment atters – 3 and 4-year-olds

- escri e a familiar route
- iscuss routes and locations using ords li e in front of and ehind

irth to atters Range

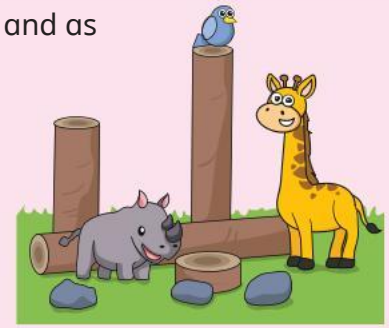
- ses o n ideas to ma e models of increasing com le it selecting loc s needed sol ing ro lems and isualising hat the ill uild
- ses s atial language including follo ing and gi ing directions using relati e terms and descri ing hat the see from different ie oints

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Visualise from different positions

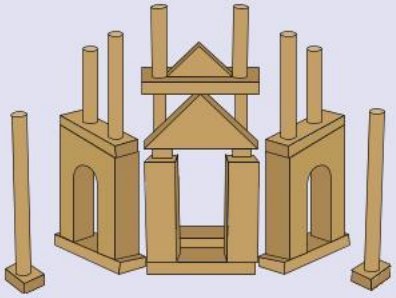
t e e nin

Set u a small orld scene and as children to descri e here o ects are ositioned and here the are in relation to other things Encourage them to mo e around and loo at the scene from a different ie oint



What do ou notice oes the scene still loo the same

Ensure the construction area is ell resourced ith am le loc s and ric s of ar ing sha es and si es Encourage children to uild more com le structures such as castles



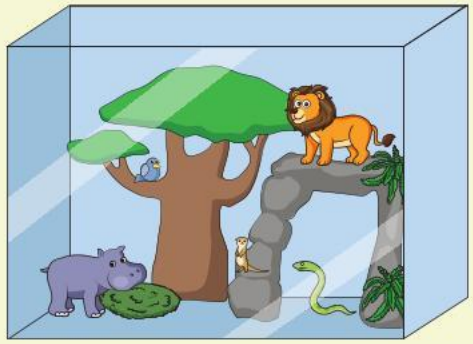
rom t them to loo at their constructions from different ositions

a e hotogra hs of the outdoor area from unusual ie oints or e am le from high u lo do n or from under a tree Encourage children to identif here the hotogra her as standing hen the too the icture



rom t them to ta e their o n hotogra hs from different ie oints

fter reading stories such as *isne s he ion ing* ustine orman ontes set u a similar scene in the small orld area or in a curiosit cu e



Encourage children to e lore and tal a out hat the characters ill e a le to see from different ositions and ie oints

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e c i e po ition

ote n i nce

n this small ste children uild on their no ledge of isualising from different ers ecti es and ill no er alise this descri ing scenes using ositional language

Sim le ositional language ill ha e een used in earlier ste s and this is uilt on using more com le scenarios s children ill ha e loo ed at scenes from different ers ecti es this gi es them the s ills to descri e scenarios such as ourne s of a small orld character in more de th hildren descri e their route-finding spatial awareness in more detail.

Su ort children to descri e osition using more com le images in stories and rh mes Encourage children to ma e u their o n



oo

We re oing on a ear unt ichael Rosen

oc atoos uentin la e

artha a s t ut eigh odg inson

n E er ouse on E er Street ess itchman

e e tion

Where is the _____ ositioned

s the _____ in front of or ehind the _____?

o i e entence te

ha e ut the _____ ne t to the _____.

he _____ is ositioned

in to t e c ic

e elo ment atters – 3 and 4-year-olds

- nderstand osition through ords alone for e am le he ag is under the ta le ith no ointing
- escri e a familiar route
- iscuss routes and locations using ords li e in front of and ehind

irth to atters Range ses s atial language including follo ing and gi ing directions using relati e terms and descri ing hat the see from different ie oints

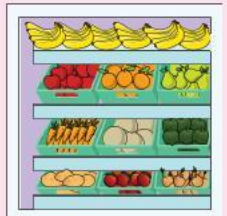
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e c i e po ition

t e e nin

Sho children hotogra hs of familiar laces rom t them to descri e here things are in relation to one another using ositional language





o de elo this encourage children to ring in hotogra hs of laces that are s ecial to them and descri e hat the icture sho s

fter reading oo s such as *We re oing on a ear unt* ichael Rosen set u a small orld scene to enact the stor



rom t children to descri e here the are mo ing the characters as the act out the stor

Sho children illustrations from stories such as *oc atoos* uentin la e nitiall encourage children to sa hat the can see efore mo ing on to descri ing the osition of e characters from the stories

fter reading oo s such as *artha a s t ut* eigh odg inson or *n E er ouse on E er Street* ess itchman loo at more com le images in oo s



Encourage children to descri e the ositions of o ects and eo le in the illustrations

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i e in t ction to i

ote n i nce

n this small ste children use the s atial a areness s ills the gained in re ious small ste s to gi e and follo instructions to uild ne models and scenarios ractical acti ities are still encouraged although children might naturall mar ma e to e lain their thin ing or to em hasise a direction

gi ing instructions on ho the ha e uilt their model children ill dis la a clear no ledge of construction and what fits where spatially. The child will be able to visualise and mentall ma the osition of the o ects Encourage children to gi e adults instructions and follo these e actl eli eratel ta e the instructions literall for e am le ut the shee on the ottom so the ecome a are of the im ortance of gi ing clear unam iguous instructions for uilding a model



R e

onna uild a ouse



oo

f uilt a ouse hris an usen

e e tion

o ill ou ma e the models the same

What instructions do ou need to gi e

What do ou need to do ne t

o i e entence te

ha e ut the _____ ehind in front of ne t to the _____.

e t ou need to _____.

in to t e c ic

Development Matters – and 4 ear olds – nderstand osition through ords alone for e am le he ag is under the ta le ith no ointing

irth to atters Range

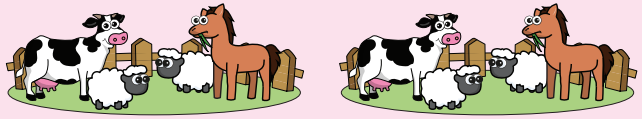
- ses o n ideas to ma e models of increasing com le it selecting loc s needed sol ing ro lems and isualising hat the ill uild
- ses s atial language including follo ing and gi ing directions using relati e terms and descri ing hat the see from different ie oints

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i e in t ction to i

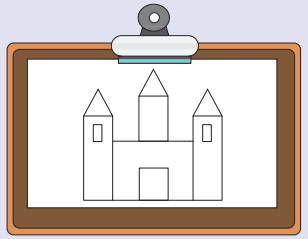
t e e nin

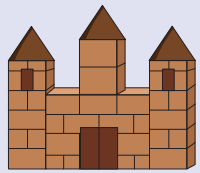
ro ide each child ith a set of items the same as ours such as small orld animals i e er al instructions as ou arrange our items rom t children to arrange their set in e actl the same a as ours



Re eat ith different children ta ing on the role of the leader

ro ide children ith a lan of a model rom t them to use the lan to ma e a grou model



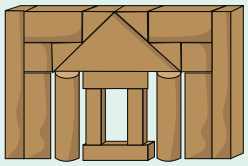


Encourage children to ta e it in turns to lace one ric at a time onto the model

hildren ill need to refer to the lan and guide each other as to here to lace the ne t loc in order to ma e the est construction

Sing songs such as *onna uild a ouse* ith children n airs one child ma es their o n model of a house and then gi es their artner instructions for ho to re licate the uilding he artner uilds a matching model using the original model to hel them

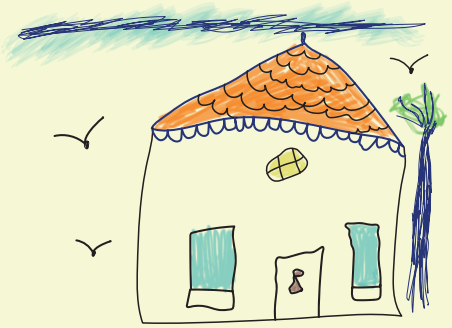
Encourage children to discuss ho the made their models and to loo for hat is the same and hat is different





fter reading stories such as *f uilt a ouse* hris an usen encourage children to tal a out ho the could uild their o n fantas house

Encourage them to mar ma e instructions to sho ho the ill ma e it



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p o e ppin

ote n i nce

re ious small ste s on isualising from different ers ecti es ill hel su ort children to see ho an aerial ie can e de icted or dra n on a ma his small ste focuses on e loring different ma s so children ill e e osed to these in man different a s ut ill not dra them at this stage

lan time to e lore ma s in a er form as ell as in stories and online E lain to children ho ma s ere originall made and ho digital ma s are no created using technolog Sho children ho ma s can e h sical ma s nautical ma s thematic ma s and road ma s Some ma s are aerial ma s ta en from a o e and some ma s are re resented in so e can isualise ho e ould actuall al through an area

se language that models descri ing hat can e seen for e am le can see the school is there and the ost o is ne t to the house he road goes ast all the houses then sto s at the ar



oo

What the ad ird eard ulia onaldson

he Secret ath ic utter orth

e on the a oan S eene

e e tion

What can ou see on the ma

Where is _____?

What do ou notice

an ou follo m ma to _____?

o i e entence te

can see _____.

ha e dra n _____ on m ma ecause

in to t e c ic

Development Matters – and 4 ear olds

- nderstand osition through ords alone for e am le he ag is under the ta le ith no ointing
- escri e a familiar route
- iscuss routes and locations using ords li e in front of and ehind

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p o e ppin

t e e nin

When reading stories such as *What the ad ird eard* ulia onaldson and *e on the a* oan S eene encourage children to e lore the ma s What do the ma s sho What can the see E lain that ma s should e eas to read and follo and should include e details such as landmar s



fter reading stories such as *he Secret ath* ic utter orth ith children e lore different inds of ma s such as ma s of ma es iscuss ho ou could follo the ma to mo e around the ma e Encourage children to ma e their o n ma es ut not to dra them at this stage

ro ide children ith a range of aerial ma s to e lore

Ensure that children can clearl see areas from their local en ironment rom t them to tr and identif e landmar s such as their school



Sho children a ma of the orld a e animals from the small orld area such as enguins lions olar ears and giraffes Encourage children to tal a out here these animals might li e





What do the need to sur i e o the li e in a cold or hot en ironment in a forest or a desert Su ort children to identif the areas on the ma here each animal li es and lace the animal there

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Rep e ent p it o e

ote n i nce

n this small ste children dra out information from a ma using models as re resentations

re ious e eriences of ma ing and re licating models of scenes and constructions ill ha e ro ided children ith the foundational no ledge needed for this ste

Encourage children to inter ret ma s and as a recursor to dra ing their o n use o ects to re resent the s ace the see Encourage children to do this using ma s of familiar laces or small orld setu s

hildren ma use a mi ture of media to su ort them to recreate ma s and the ma start to mar ma e Ensure that children use a range of resources to re resent their ma s for e am le creating a street in o modelling

Su ort children initiall mar ma ing asic ma s for them to osition e landmar s on using ric s loc s or small orld items



oo

he Secret ath ic utter orth

n E er ouse on E er Street ess itchman

e e tion

What can ou see on the ma

What ill ou uild

What ill ou use to ma e a _____?

o i e entence te

ha e made a _____.

he _____ is ositioned ne t to the _____.

in to t e c ic

Development Matters – and 4 ear olds

- nderstand osition through ords alone for e am le he ag is under the ta le ith no ointing
- escri e a familiar route
- iscuss routes and locations using ords li e in front of and ehind

irth to atters – Range 6 – May enjoy making sim le ma s of familiar and imaginati e en ironments ith landmar s

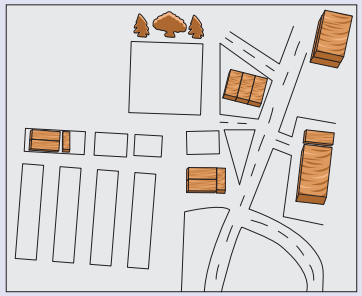
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Rep e ent p it o e

White Rose MATHS

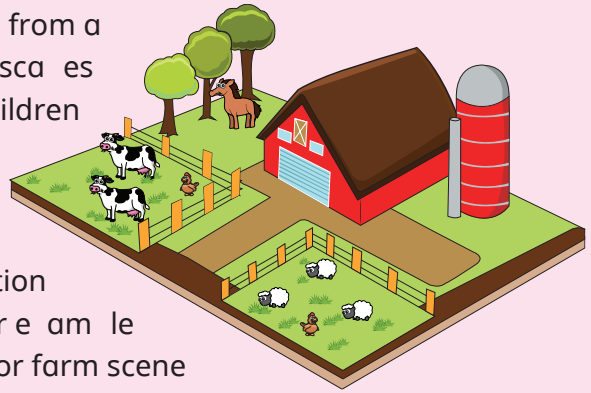
t e e nin

Sho children ma s of the school and the local area ic out e landmar s that the recognise and together ma e a ma of the area around the school using small construction se mar ma ing on large a er to su ort this



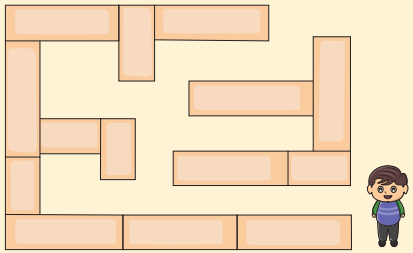
What can ou recognise on the ma Where ha e ou ositioned the school

E lore ma s from a range of landsca es Encourage children to recreate scenes using small orld and construction resources or e am le ma e a ar or farm scene



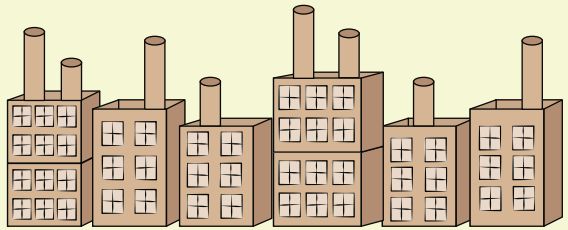
fter reading stories such as *he Secret ath* ic utter orth ro ide children ith ictures of different ma es for them to e lore nitiall encourage them to trace their finger through the maze. Then prompt children to use construction loc s to uild their o n ma es

hildren can as a artner to use a small orld character or animal to try to find the a out of the ma e



fter reading oo s such as *n E er ouse on E er Street* ess itchman ro ide children ith rec cled o es and tu es Encourage them to uild and re resent street scenes

rom t them to ma e a ma of their street What e landmar s are on our street What does our house loo li e



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e te o n p o i i p ce

ote n i nce

s children continue to de elo their s atial a areness along with their motor skills, they begin to gain the confidence to draw out their o n thin ing sho ing this in their mar ma ing

his small ste focuses on su orting children to ma e sim le ma s of familiar laces t is crucial that children can actuall see the en ironment that the are ma ing out Encourage this using routes and laces that children fre uentl tra el along or isit hildren ill need o ortunities to discuss their routes and lans to isualise these efore the can record them

hildren can also use ad enture scenarios or stories to enhance their ma ma ing such as irates loo ing for treasure he ill e more successful in doing this if the ha e had o ortunities to design and record plans of familiar routes first. Teachers can su ort the de elo ment of ad enture scenarios hiding or burying treasure for the pirates to find – X marks the spot!



oo

irates o e nder ants laire reedman

a oo Sara anelli

e e tion

Where does the _____ go

Where did you find the treasure?

o i e entence te

irst need to

o straight until ou get to the _____.

he _____ is ne t to the _____.

in to t e c ic

Development Matters – and 4 ear olds

- escri e a familiar route
- iscuss routes and locations using ords li e in front of and ehind
- egin to descri e a se uence of e ents real or fictional, using words such as ‘first’, ‘then…’

irth to atters – Range 6 – May enjoy making sim le ma s of familiar and imaginati e en ironments ith landmar s

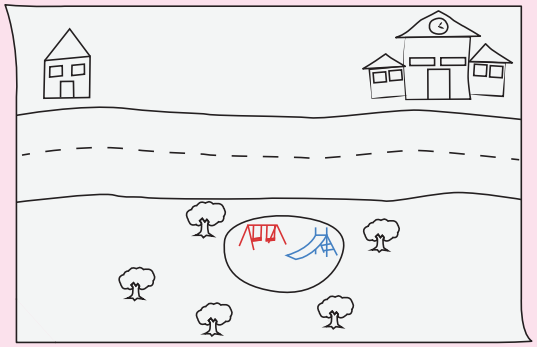
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e te o n p o i i p ce

t e e nin

egin e laining our route to school from the car ar or the school gates s children hat the ass on their a to school Encourage children to dra a sim le linear ma to sho their home their street the school and some landmar s the ass on the a

What do the pass first, next and last



n the car et ro ide a large iece of a er in the sha e of the classroom ith the doors and indo s alread mar ed on the a er Sho children a range of hotogra hs that sho the different areas of the classroom E lain that e are going to ma e a ma of our classroom using the large iece of a er and the hotogra hs Encourage children to identif the areas on each of the ictures and discuss here the thin the need to e ositioned on the a er ma

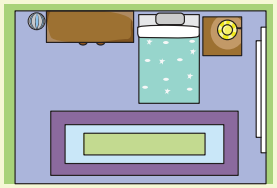
Read stories ith children such as *irates o e nder ants* laire reedman that sho illustrations of treasure ma s iscuss hat a treasure ma needs to include for others to e a le to use it to find the treasure.

ide treasure in the outdoor area and create a treasure ma for children Encourage them to discuss hich area each art of the ma is sho ing and then follo the map to find 'X marks the spot'.



Encourage children to ma e their o n treasure ma s for other children to follo

is la ictures of different rooms in a house discussing that e er one s houses and rooms loo different Encourage children to dra a ma of one room in their o n house and then tal a out the different arts of the ma



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e te o n p n p n o to it tion

ote n i nce

n the re ious small ste children e erienced creating ma s to re resent ell no n routes and laces

n this small ste children mo e on from these real life scenarios and focus more on inter reting stor situations

o su ort children s imaginati e thin ing and de elo their a ilit to ada t scenarios de ending on their interests create scenarios and as uestions a out them such as What if Red Riding ood didn t go straight to randma s house

ro ide materials for children to ma e u their o n role la stories using a ariet of items he can then de elo ma s and enact their ad entures using the mathematical language of ma ma ing osition direction and s atial reasoning

oo

ittle Red Riding ood

he nce u on a ime a oo enness

What the ad ird eard ulia onaldson

he ruffalo ulia onaldson

a oo Sara anelli

e e tion

Where does our ma ta e ou

What is on our ma escri e the route

o i e entence te

ha e follo ed the ma and it has led me to _____.

e t to the _____ is _____.

in to t e c ic

Development Matters – and 4 ear olds

- escri e a familiar route
- iscuss routes and locations using ords li e in front of and ehind
- egin to descri e a se uence of e ents real or fictional, using words such as 'first', 'then…'

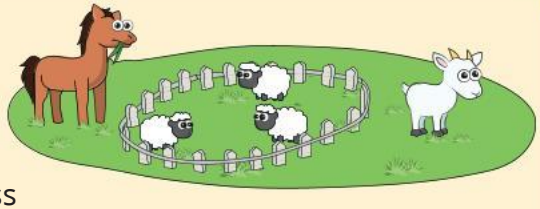
irth to atters – Range 6 – May enjoy making sim le ma s of familiar and imaginati e en ironments ith landmar s

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e te o n p n p n o to it tion

t e e nin

Read stories such as *What the ad ird eard* ulia onaldson ccess the small orld area ith children and ma e the farm resources a aila le



Encourage children to design a similar scene to that in the stor and ma e their o n ma of a farm ard sho ing the ourne that the characters ma e

is la a ma that relates to the stor of *he ruffalo* ulia onaldson s children to identif hich stor it ma e re resenting o do the no

Read the stor hile ee ing the ma isi le and rom t children to loo at and follo the ourne as ou read

Encourage children to dra their o n ma s to sho the ourne that the mouse ma es and the characters assed along the a

When reading stories such as *ittle Red Riding ood* change the ending so that Red Riding ood didn t go to randma s house al to the children a out ho the e ents of the stor ha e changed Encourage them to create their o n ma or lan of here Red Riding ood ent instead of going to randma s house



Read stories such as *a oo* Sara anelli or *he nce u on a ime a oo* enness to e lore more com le ma s Encourage children to create their o n ma s in the same st le as the ma s in the oo s

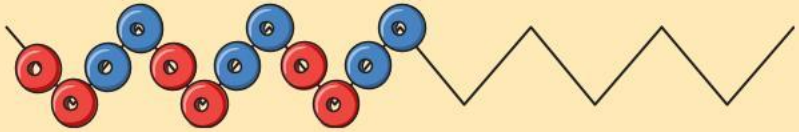
an children e lain their stories in their ma s a e they used any specific landmar s or characters



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ontin o p o i ion

Set u a attern area and ro ide children ith a range of loose arts and images of atterns rom t children to ic a attern and recreate it llo them to ta e a hoto to dis la their attern in that area for other children to recreate an the see the re eat

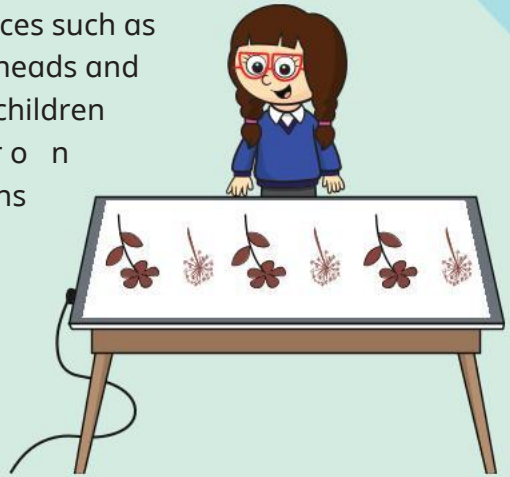


ro ide children ith attern detecti e its hich include a magnif ing glass note ad encil and camera Encourage children to hunt around the indoor and outdoor areas to identif different atterns

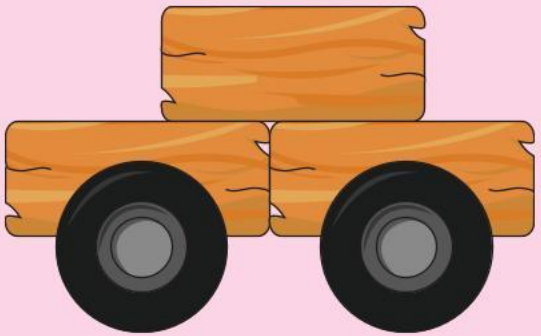


ro ide aried resources such as shells e les seed heads and pressed flowers that children can use to ma e their o n more com le atterns

Encourage children to identif atterns ithin those indi idual o ects too



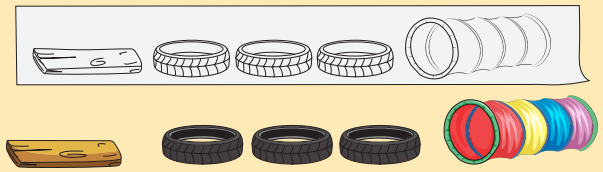
Su ort children to use large scale loose arts and outdoor resources to recreate real laces the ha e isited or laces in familiar stories rom t them to consider the scale needed for their constructions for e am le ho ide do e need to uild a car so that we can all fit inside?



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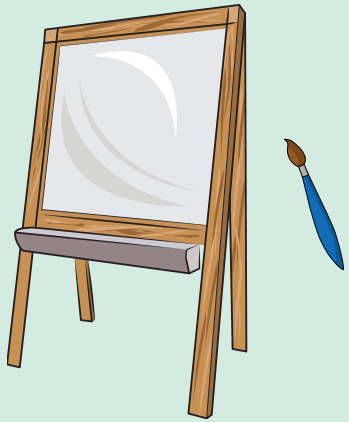
ontin o p o i ion

ro ide a sim le ma of an o stacle course Encourage children to use the ma to uild the o stacle course chec ing here things need to e in relation to others

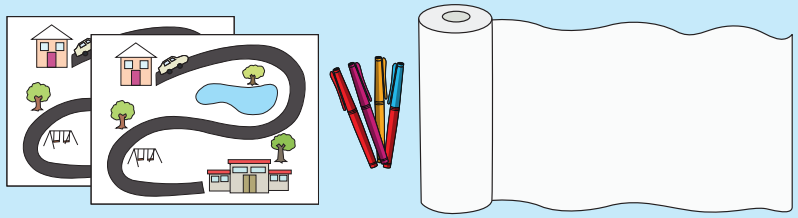


he might also li e to design their o n o stacle course and dra a ma to hel them to remem er the design

is la oo s such as *he ruffalo* ulia onaldson or *irates o e nder ants* laire reedman to ins ire children to recreate ourne s or ma s from the stories s children to dra or aint ma s of familiar ourne s or laces in stories

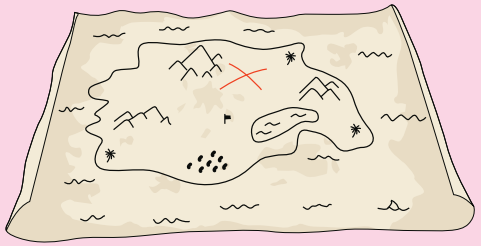


ro ide children ith a range of ma s and large rolls of a er in ro ision Encourage them to dra their o n ma s in the same st le as the e am les



hildren could ring construction and small orld resources to their ma to enhance it and ring it to life

Enhance the indoor and outdoor ro ision ith tea stained a er and cli oards to encourage children to create their o n treasure ma s



ro ide tea ags and su ort children to ma e their o n tea stained a er to roduce ma s

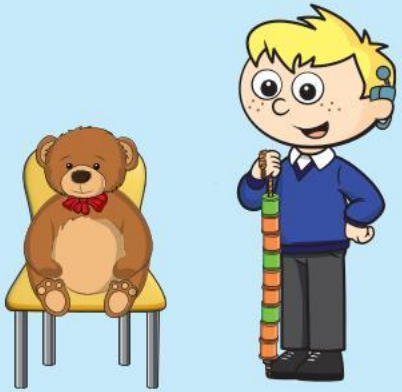
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n o oc c ec point

ec point

lace a ear or a u et on a chair in a focal oint of the classroom

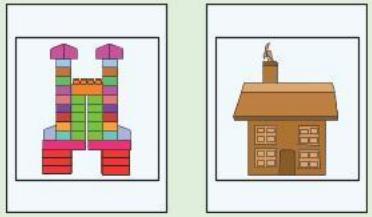
rom t children to create their o n attern and go to tell the ear on the chair a out their attern and hat the rule is



ec point

Encourage children to uild models and then dra and e lain hat the ha e uilt hotogra hs of these can e ta en and laced in the construction area for other children to see discuss and recreate

an children uild isualise and ma out their thin ing



ec point

reate ma s of laces that children are familiar ith on tuff tra s rom t children to add different o ects such as cars eo le and uildings an the descri e a ourne through the ma



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Summer loc

e connection

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e c e i nce

e oo

ill s uc et es ra

r um s uting ohn urningham

o an egs es ra

nts Rule he ong and Short of it o arner

r rchimedes ath amela llen

Who San the oat amela llen

ou an t a e an Ele hant on the us atricia le eland ec

n re ious oo s from ast loc s can e re e lored and used to dee en conce ts or to ust en o

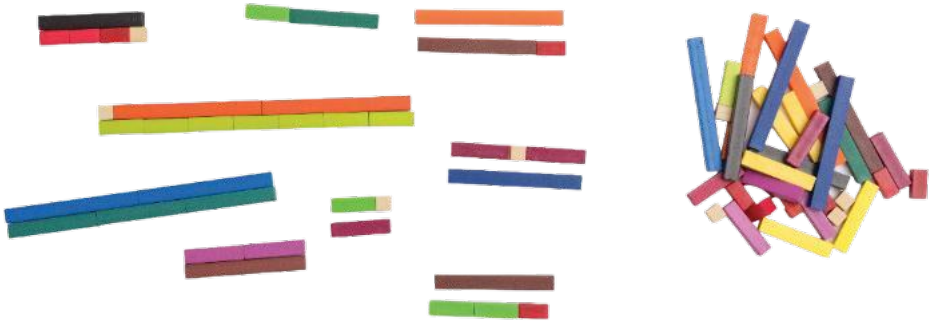
e e o ce



op tip

efore using a aratus for ro lem sol ing acti ities ensure that children ha e had lent of o ortunities to e lore resources and their ossi ilities

t this stage of the ear it is im ortant to ro ide o ortunities here adults can o ser e children sho ing their s ills in maths through la in an inde endent fashion ssessments should e mindful of children s inde endent confidence in maths and how skills can be used and applied.



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tep

tep	ee en understanding
tep	atterns and relationshi s

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eepen n e t n in

ote n i nce

n this loc the focus is on ma ing connections et een all the as ects of maths that ha e een co ered through the ear n this small ste e loo at dee ening this understanding through de elo ing children s reasoning and ro lem sol ing strategies

i e children lent of o ortunities to engage in e tended ro lem sol ing and de elo their critical thin ing s ills hese ro lems can e lin ed to familiar stories children s interests or real ro lems that arise as the la hildren ma need su ort to carr out their lans and ma e ada tations s children o en ended uestions to e lore their thin ing fter ards encourage children to re ie and discuss their strategies



R e

here s a ole in uc et



oo

ill s uc et and *o an egs* es ra
r um s uting ohn urningham
Who San the oat amela llen

e e tion

What can ou see E lain ho ou see it

What num er stor can ou ma e o man _____ do ou ha e

What strateg did ou use id it or

Wh do ou thin that ha ened o can e tr again

o i e entence te

here are _____ altogether

can see _____ here and _____ there

he _____ or ed ecause

used _____ ecause

in to t e c ic

Educational Programme for Maths – statutory frame or

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eepen n e t n in

t e e nin

ro ide children ith materials such as tin foil or modelling cla to ma e oats o man mar les ill their boat hold while staying afloat?

Whose oat ill hold the most mar les Encourage children to ada t their design so that their oat holds more mar les



fter reading stories such as *r um s uting* ohn urningham ro ide children ith a range of small orld animals and a container to use as a oat rom t children to ta e turns to close their e es and collect an animal o man legs does the animal ha e hildren re resent the legs of the animal the ha e ic ed dra ing on a ten frame



The first child to fill their ten frame is the inner Encourage children to discuss hat animal the need to in

This can be extended by having to fill two ten frames.

Read stories such as *ill s uc et* es ra to use as a starting oint for loo ing at com arison and num er stories Set u a small orld scene in a tuff tra and as children to tal a out hat the can see

What num er stories can the ma e using different com inations rom t children to create their o n scene and ma e u their o n num er stories



Read stories such as *o an egs* es ra hich ro ide starting oints for e loring counting ro lems s children to or out ho man legs there are in the different scenarios descri ed in the stor he children ill need to consider a ide ariet of animals including those ith no legs

Encourage the children to create their o n nonsense scenarios in the st le of the stor and calculate ho man legs there ould e hese could e collated and made into a class *o an* oo

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tte n n e tion ip

ote n i nce

n the second small ste of this loc on ma ing connections children should e gi en o ortunities to e lore and in estigate relationshi s et een num ers sha es and atterns to further dee en their understanding and e lore ossi ilities lassroom resources such as num er rods attern loc s and unit construction loc s are articularl good for e loring these atterns and relationshi s

n addition to this ensure that children are gi en the o ortunit to e tend these connections e ond mathematical a aratus and a l them to large scale acti ities outside Su ort children to enact scenarios here the ha e to thin of more than ust one ans er for e am le if e all ma e slime hat do e need to do in order to ta e it home safel

llo ing children to ma e decisions a out hat the ould li e to do and lanning it out loud ith su orted scri ing hel s their lanning and inde endence s ills llo children time to discuss their lans and decisions and to thin of all the ossi ilities

e e tion

o do ou no

What do e need

o can e chec

What can ou see

s there another ans er

o i e entence te

no m idea has or ed ecause

o ma e a _____ need _____.

lan is

decided this ecause

oo

nts Rule he ong and Short of it o arner

in to t e c ic

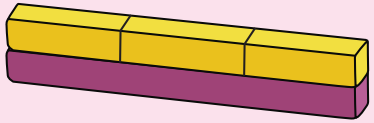
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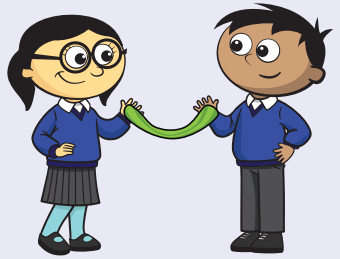
t e e nin

Sho children a set of num er rods s children uestions such as o man ello loc s measure the same as one ur le loc What other relationshi s can they find? Can they find a block which is double the length of another loc o could the chec



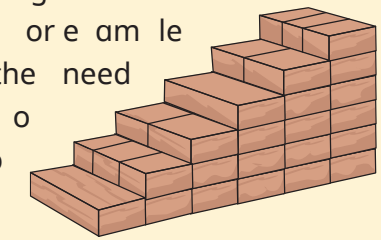
Encourage children to challenge a artner to or out the length of a gi en rod e erimenting ith the remaining rods

llo children to lan ith adult su ort if needed the last da of school Encourage children to thin a out fun acti ities that the en o or something that the ould li e to do for e am le ma ing slime

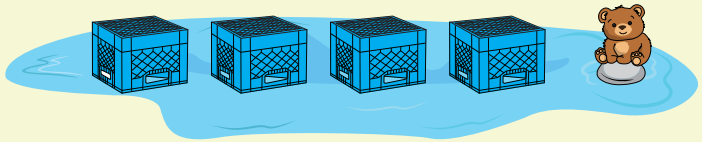


nce children ha e made a lan as What resources do ou need to do these tas s o long ill each tas ta e o e all need to or together or in small grou s

fter reading stories such as *nts Rule he ong and Short of it* o arner encourage children to access the construction area s children to e lore the different relationships they can find between arious construction loc s or e am le ho man short loc s do the need to match four long loc s o could the use the loc s to ma e a set of stairs



n the outdoor area challenge children to sol e ro lems on a large scale or e am le sa he la ground is a crocodile infested s am o can e rescue tedd ithout utting our feet on the ground

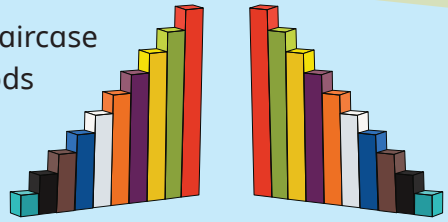


ther ideas could e uilding a shelter to ee everyone dry, choosing a vessel to fill with water, or ee ing ater in a essel ith holes in it

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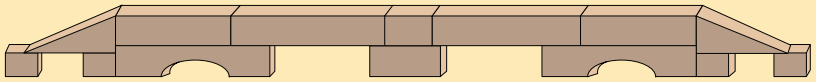
ontin o p o i ion

s children to uild a staircase attern using num er rods an the uild it so that it goes u and then do n an the uild it so that it goes do n and then u



Encourage children to com are the different staircase atterns What do the notice he could also e lore uilding staircase atterns that go u or do n in t o or three ste s

Sho children hotogra hs of ridges and rom t them to tal a out hat the notice Encourage children to or together to uild the longest ridge the can o ill the measure it What is the strongest ridge the can uild o could the measure the strength of the ridge

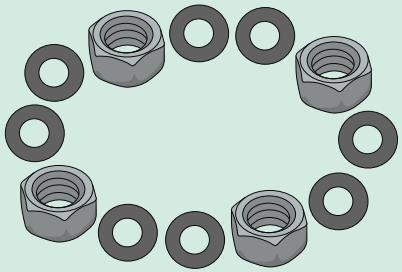


Encourage children to ma e their o n cit sca es ro ide large rolls of a er ith different si ed s onges and aint or outdoor chal oards and different coloured chal

rom t them to tal a out their ictures for e am le discussing ho has dra n short uildings or ho has dra n tall uildings Which house has the most indo s



ro ide a range of natural materials and loose arts for children to create re eating atterns ith Encourage them to ma e different atterns hich all ha e the same structure an the uild a re eating attern hich continues around a circle



s there more than one a to descri e this attern Where is the starting oint

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n o oc c ec point

ec point

fter reading stories such as *ou an t a e an Ele hant on the us* atricia le eland ec encourage children to ma e their o n ehicles for to or small orld animals lanning out hat the ill need and using sim le non standard units of measure

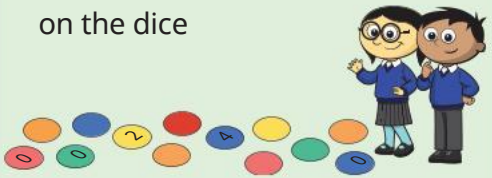
Encourage children to test their ehicles and e lain their designs Wh ha e the or ed or not or ed



ec point

Provide floor spots with numerals 0 to 0 dis la ed on them and a sided dice ith the ords dou le one more one less e en e ual and odd

hildren stand on a num er and roll the dice an children move to a floor spot that matches the instruction on the dice



ec point

n airs child co ers their e es hile child 2 selects t o numeral cards and collects the corres onding num er of cu es for each card

hild 2 then com ines all the cu es and turns o er one of the numeral cards hild o ens their e es an the or out hat numeral is on the hidden card using the cu es to hel them hildren then s a roles



ser e children as the la Can they find the hidden number ithout counting out all the cu es

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