

Contents

Reciting number names in order

Focus 1: To know the number names 10-20

Focus 2: To be able to count on from zero or from one

Focus 3: To count back from a given number to zero

Focus 4: To be able to count on to 20 from a given number

Focus 5: To count back to a given number

Cardinal number

Focus 1: To explore different arrangements of numbers within 20

Focus 2: To understand that numbers can be grouped in different ways and the total amount remains the same

Ordinality

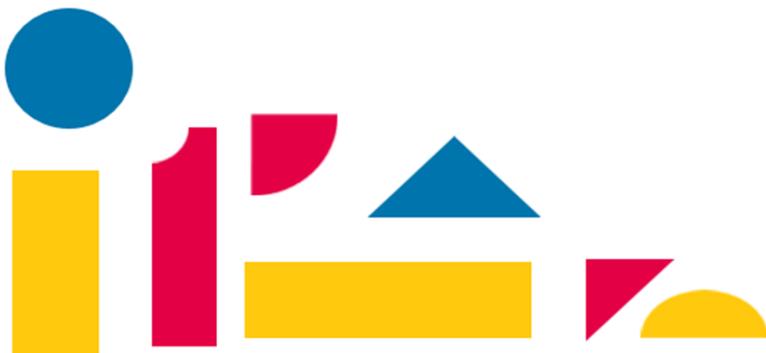
Focus 1: To understand that objects can be counted in any order

Focus 2: To understand that objects grouped into tens and ones can be counted in tens and ones

Focus 3: To order numbers on a number track

Focus 4: To know the order and position of numbers on a horizontal number line

Focus 5: To know the order and position of numbers on a vertical number line



Printable resources can be found at the back of the pack.

Guidance

Using the at home materials

This pack contains a series of tasks for you to experience with your child. Each session has been carefully designed to develop number sense and support understanding. Provide lots of opportunities to get children to use mathematical vocabulary and explain their reasoning and reveal their thinking.

We have purposefully selected these short tasks, which should last around 15 minutes, so that you can fit them around your daily lives.

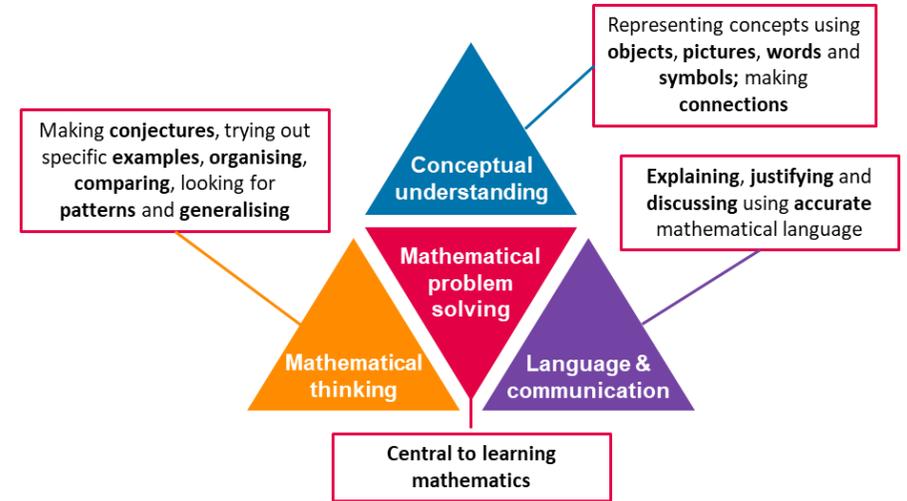
Each session begins with a short adult guided input, followed by a suggested task to complete and a suggested task to explore, which will take their learning deeper.

Success for all

At school we believe all pupils can achieve success in maths. We encourage pupils to have a belief that effort leads to success and that challenges are opportunities to learn.

Here are a few tips to encourage your children at home with maths:

- ✓Talk to your children about everyday maths
- ✓Play games with them
- ✓Value mistakes as learning opportunities
- ✓Recognise that there is more than one way to work things out
- ✓Praise children for effort over outcome
- ✓Avoid saying things like “I’m useless at maths”



What is 'Mastery'?

The 'mastery approach' to teaching mathematics is the underlying principle of Mathematics Mastery. Instead of learning mathematical procedures by rote, we want your child to build a deep understanding of concepts which will enable them to apply their learning in different situations. To achieve this we aim to develop pupils' **Conceptual Understanding, Mathematical Thinking** and **Language and Communication** (see diagram).

Counting Procedures Within 20: Reciting number names in order

Focus 1: To know the number names 10 to 20

About the maths

As children learn more number names they can confuse number names 13 to 19 with multiples of ten. It is important for pupils to know the correct pronunciation of these numbers to help avoid this misconception in the future.

Vocabulary

Number names for 10 to 20
say

Resources

Number songs, rhymes and chants involving numbers within 10
Puppet, number track

Getting started

Although children will already be familiar with number names 0 to 10 it is important to revisit these numbers and use this as an opportunity to assess pupils.

Teacher and pupils say the number names from zero to 20 in order together.

The teacher says each number individually and pupils copy the pronunciation.

The teacher and pupils will exaggerate each sound and the movement of the mouth when pronouncing each number.



Assess pupils' pronunciation and focus practising numbers 13, 14, 15, 16, 17, 18 and 19 where pupils could have more difficulty with pronunciation.

Task for pupils

Display a number track.

10	11	12	13	14	15	16	17	18	19	20
----	----	----	----	----	----	----	----	----	----	----

Teacher and pupils say a song or chant that involves reciting number names within twenty in order. When the number names are said, the teacher points to them on the number track.

Include actions for numbers that pupils have found problematic.

E.g. stand up for thirteen, clap for eighteen.

Suggested rhyme that includes numbers within 20:

One, two buckle my shoe.

Deepening understanding

Introduce a puppet or character.

Teacher explains that the puppet is learning English and wants to know the number names.

Pupils teach the puppet the number names on the number track.

10	11	12	13	14	15	16	17	18	19	20
----	----	----	----	----	----	----	----	----	----	----

At times, the teacher will make sure the puppet makes mistakes and pupils have to correct the puppet.

Mistakes could include missing initial or final sounds such as saying 'welve' instead of 'twelve, or thritee instead of thirteen.



Incorporate errors observed in the session and in previous sessions.

Counting Procedures Within 20: Reciting number names in order

Focus 2: To be able to count on from zero or from one

About the maths

Pupils need to be able to recite number names in order for counting. The ability to recite number names in order does not however mean that pupils can count a number of objects reliably.

Vocabulary

Number names for 0 to 20

Count on from, count on to

Resources

Puppet, number track, blank number line, counters or countable objects

Bead string or other resource with twenty items threaded onto string e.g. pasta tubes, buttons.

Getting started

Introduce a puppet or character.

Teacher explains that the puppet is learning English and wants to know the number names.

Focus on number names that required more practice in the previous session. Pupils teach the puppet the number names on the number track.

Task for pupils

Provide each pupil with a twenty beaded bead string.

Teacher and pupils say a song or chant that involves reciting number names within twenty in order such as 'One, two buckle my shoe'.

When the number names are said, the teacher points to them on the number track.

Include actions for numbers that pupils have found problematic. These may be different to the numbers from the previous day.

Deepening understanding

Provide each pupil with a blank number line and a counter.



Display a large blank number line and a counter.

Pupils and teacher will practise saying the number names in increasing order starting from zero as they move their counter along the number line.



The focus for this session is to recite number names in order from zero to twenty. Pupils may reach the end of the number line before saying twenty. Ensure pupils continue counting until they get to twenty.

Counting Procedures Within 20: Reciting number names in order

Focus 3: To be able to count back from a given number to zero.

About the maths

Counting on and counting back are key skills required for early addition and subtraction and for developing pupils understanding about increasing and decreasing order.

Vocabulary

Number names for 20 to 0
Count back from, count back to

Resources

Puppet, number track, blank number line, counters or countable objects
Bead string or other resource with twenty items threaded onto string e.g. pasta tubes, buttons.

Getting started

Teacher and pupils say each of the number names starting at twenty and counting back to zero.

Starting with twenty, the teacher says each number individually in decreasing order and pupils copy the pronunciation.

Introduce the puppet.

Pupils will teach the puppet the number names in decreasing order.

Task for pupils

Provide each pupil with a twenty beaded bead string.

Teacher and pupils say a song or chant that involves reciting number names in decreasing order from twenty. When the number names are said, the teacher points to them on the number track.

Include actions for numbers that pupils have found problematic.

E.g. stand up for thirteen, clap for fourteen.

Deepening understanding

Provide each pupil with a blank number line and a counter.

Display a large blank number line and a counter.

Pupils and teacher will practise saying the number names in decreasing order starting from any given number within twenty as they move their counter along the number line.



The focus for this session is to recite number names in order from any number within twenty to zero. Pupils may reach the end of the number line before saying zero. Ensure pupils continue counting until they get to zero.

Counting Procedures Within 20: Reciting number names in order

Focus 4: To be able to count on to twenty from a given number

About the maths

This task focuses on counting on from a number above ten to twenty to ensure that pupils are confident with all numbers within 20.

Vocabulary

Number names for 0 to 20

Count on from, count on to

Resources

Puppet, number cards 10 to 19, bead string or other resource with twenty items threaded onto string e.g. pasta tubes, buttons.

Getting started

Count in unison from zero to twenty.

Introduce a puppet or character.

The teacher will use the puppet to start counting from zero.

Pause at a number and explain that the puppet can't remember which number comes next.

Pupils will tell the puppet which number comes next.

The puppet will continue counting on to twenty.

Teacher repeats with the puppet pausing at different numbers within twenty.

Task for pupils

Teacher says a number (10 to 19).

Pupils say which number comes next.

Repeat with different numbers using ten to nineteen.



For pupils who have difficulty remembering the number that comes next, encourage them to count on from zero to the number and then say the next number in the sequence.

Deepening understanding

One pupil selects a number card 10 to 19.

Teacher says the number and shows a representation of the number using a bead string.

Pupils count on to twenty in unison from the number selected.

The teacher moves a bead along to show a representation of each number in the sequence.

Repeat the task several times.

Counting Procedures Within 20: Reciting number names in order

Focus 5: To be able to count back to a given number

About the maths

Being able to count back to a given number demonstrates an understanding of the order of numbers in the number system. This skill will be required for solving addition and subtraction.

Vocabulary

Number names for 20 to 0
Count back from, count back to

Resources

Puppet, number track, counters, number cards, bead string or other resource with twenty items threaded onto string e.g. pasta tubes, buttons.

Getting started

Count in unison from twenty to zero.

Introduce a puppet or character.

Display a number track and a counter.

Highlight the number that the puppet needs to count from twenty to a given number.

The puppet will start counting from twenty to the given number and move the counter along for each number said.

Pupils will say 'Stop!' when the puppet says the given number.



Teacher: "The puppet must count back from twenty to sixteen. When the puppet says sixteen you need to say stop!"

Puppet: "Twenty, nineteen, eighteen, seventeen, sixteen"

Task for pupils

Teacher says a number.

Pupils say which number comes before the number.

Repeat with different numbers using one to twenty.



For pupils who have difficulty remembering the number that comes before the number said, encourage them to count back from twenty to the number and then say the next number in the sequence.

Deepening understanding

Pupils will need a bead string.

One pupil selects a number card 11 to 20.

Teacher says the number.

Pupils count back to ones in unison from the number selected.

Pupils move a bead back to show a representation of each number in the sequence.

Repeat the task several times.

Counting Procedures Within 20: Cardinal numbers

Focus 1: To be able to explore different arrangements of numbers within 20

About the maths

Exploring how numbers within 20 can be arranged in different ways develops pupils understanding of the conservation of number and provides pupils with a strong sense of the value of these numbers.

Vocabulary

Arrange, same, different
Number names for the number to be focused on.
Number names within 20.

Resources

A range of countable objects including counters, pasta shapes, buttons, Lego bricks etc.

Getting started

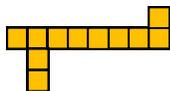
These tasks should be explored by pupils focusing on a different number within 20 each day. The example for this lesson focuses on 11. Teachers will need to plan and prepare opportunities for pupils to explore all numbers within 20.

Provide pupils with eleven multilink.

Model how to arrange the multilink as a tower.



Model how to arrange the eleven multilink in a different way.

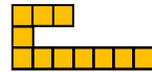
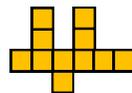
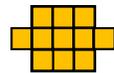


Highlight that the number of multilink has remained the same but the arrangement is different.

Task for pupils

Pupils are to explore different arrangements for the 11 multilink.

E.g.



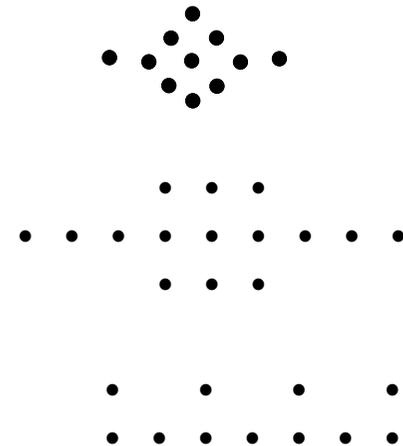
Highlight that there are 11 cubes each time. When no cubes have been added or taken away, the number of cubes remains the same.

Deepening understanding

Provide pupils with a range of materials such as counters or buttons.

Ask pupils to explore what patterns they can make with 11.

E.g.



Counting Procedures Within 20: Cardinal numbers

Focus 2: To understand that numbers can be grouped in different ways and the amount remains the same

About the maths

These tasks that involve grouping introduce pupils to the concept of place value.

Vocabulary

group, groups of, remaining

Number names for the number to be focused on.

Number names within 20.

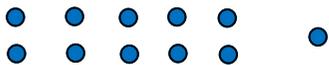
Resources

A range of countable objects including counters, pasta shapes, buttons, Lego bricks etc.

Getting started

These tasks should be explored by pupils focusing on a different number within 20 each day. The example for this lesson focuses on 11. Teachers will need to plan and prepare opportunities for pupils to explore all numbers within 20.

Place 11 counters on the table and tell pupils that there are 11 counters on the table. Model how to place the counters in groups of two.



Say: "There are 11 counters. There are five groups of two. There is one counter remaining. There are 11 counters altogether."



Do not remove, add to or change the objects. Only rearrange them into groups.

Task for pupils

Give pupils eleven counters each.

Ask them to place the eleven counters into groups of 3 then 4, and 5.

Each time, ask pupils to say:

- how many groups there are
- how many there are in each group
- how many there are remaining
- how many there are altogether.



Assess whether pupils can place the counters into groups.

Do pupils recognise that the number of objects remain the same?

Deepening understanding

Provide pupils with selection of objects with eleven in each set. E.g. eleven multilink, eleven counters, eleven lollipop sticks.

Ask pupils to place each set of eleven objects into groups of ten.

Ask pupils to say:

Each time, ask pupils to say:

- how many groups there are
- how many there are in each group
- how many there are remaining
- how many there are altogether.

Each time, pupils should recognise that there is one group of ten and one remaining. Pupils should highlight that there are eleven altogether.

Counting Procedures Within 20: Ordinality

Focus 1: To understand that objects can be counted in any order

About the maths

It is vital that pupils recognise objects can be counted in any order. This requires pupils to make links between number names, one to one correspondence and cardinal numbers.

Vocabulary

Order, how many, same number

Resources

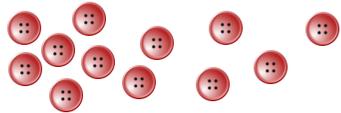
Buttons or other countable objects e.g. pasta shapes, puppet

Getting started

Teacher introduces pupils to a puppet or a character.

Explain that the puppet has some buttons and wants to count them.

Place some buttons in the middle of the table and get the puppet to 'count them'



When counting, highlight that the puppet is getting confused about which buttons have been counted and which ones have not.

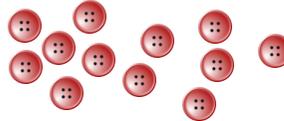
Ask pupils to suggest how the puppet could arrange the buttons so that he/she knows all have been counted only once.



Explore suggestions which may include placing buttons in a ring, in a line or in rows.

Task for pupils

Provide pupils with twelve buttons.



Ask pupils to count the buttons and find out how many buttons there are.



When counting, pupils should be encouraged to place buttons in a row and touch or move each button for each number name.



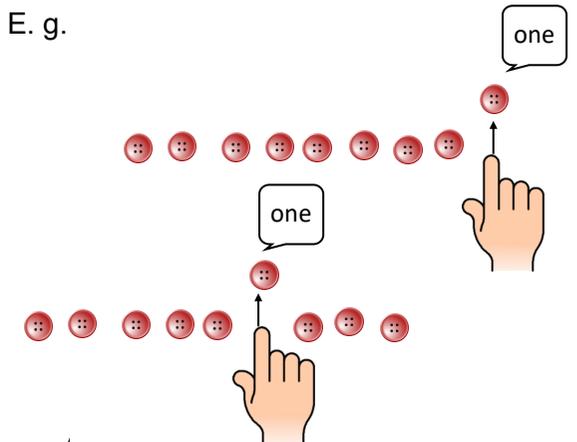
Deepening understanding

Provide pupils with twelve counters.

Pupils are to explore counting the buttons, starting from a different button each time.

Encourage pupils to move the button so that they know which buttons have been counted.

E. g.



Ensure pupils recognise that the number of objects remains the same when counted in a different order.

Counting Procedures Within 20: Ordinality

Focus 2: To understand that objects grouped into tens and ones can be counted in tens and ones

About the maths

Pupils should be able to count on from any number. This session allows pupils to explore how counting groups of ten and then remaining ones can be an efficient strategy for counting.

Vocabulary

Order, how many, same number

Resources

Buttons, puppet, lollipop sticks or other countable objects e.g. pasta shapes

Getting started

Teacher introduces pupils to a puppet or a character.

Explain that the puppet has some buttons and wants to group them into groups of ten.

Place some buttons in the middle of the table and get the puppet to group them into tens



When there is one group of ten ask pupils to say how many there are in one group and how many there are in the other group.

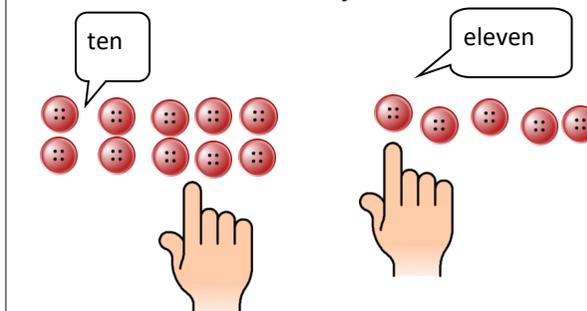
Reinforce that, if we know there are ten in a group we can start from ten and count on to find out how many there are altogether.

Task for pupils

Provide pupils with fifteen buttons.



Ask pupils to group the buttons into tens and ones. Ask pupils to count on from the ten in ones to find out how many buttons there are.

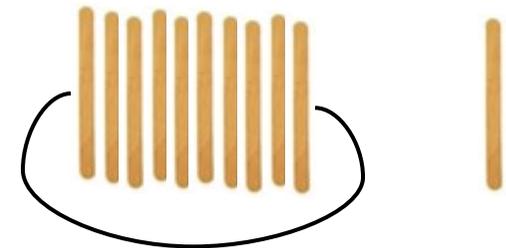


When counting, pupils should begin to recognise that they can count on from ten in ones to find out how many there are altogether.

Deepening understanding

Provide pupils with different sets of lollipop sticks (11, 12, 13, 14, 15, 16, 17, 18, 19)

For each set, pupils are to group the lollipop sticks into a group of ten and remaining ones. Pupils are to count the lollipop sticks, from ten in ones to find out how many there are in each set.



Ensure pupils recognise that the number of objects in the group of ten is ten and that the separate lollipop sticks can be counted in any order providing they are counting in ones.

Counting Procedures Within 20: Ordinality

Focus 3: To be able to order numbers on a number track

About the maths

An understanding of the order of numbers develops pupils understanding about numbers and the number system, which is key when developing early number.

Vocabulary

First, last
Number names one to ten

Resources

Left to right number tracks (numbered, pictorial and blank) countable objects e.g. buttons or pasta etc.

Getting started

Count on in unison from 1 to 20.

Display a left to right number track with the numbers from 1 to 20 written in.

Ask pupils to identify which number comes first and label it 'first'.

Ask pupils to identify which number comes last and label it 'last'.

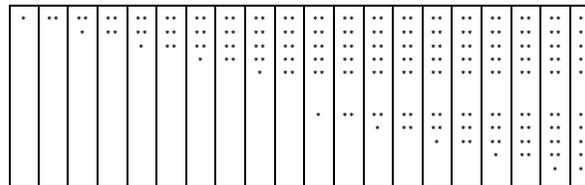
first **last**

1	2	3	→			17	18	19	20

Practice counting along the number track from first (1) to last (10).

Task for pupils

Provide pupils with a pictorial number track.



Ask pupils to place an object on one, then on two, three etc. until an object has been placed on each representation for the numbers 1 to 20.

Each time they place an object on the space, they must also say the number they are placing it on.

Deepening understanding

Provide a blank number track.

Label it with first and last and ask pupils to place a cube on the space that represents one.



first

last



Ensure all pupils know that it is a left to right number track and that the first space is on the left hand side.

Ask pupils to place an object on the space that represents two, three, four etc. until all spaces have an object on them.

Counting Procedures Within 20: Ordinality

Focus 4: To know the order and position of numbers on a horizontal number line

About the maths

This task develops pupils' understanding of the position of numbers on a number line and deepens pupils understanding about numbers and the number system.

Vocabulary

First, last
Number names zero to twenty
After, before, next

Resources

Horizontal number line, countable objects
e.g. Lego pieces, counters etc.

Getting started

Count on in unison from 0 to 20

Display a horizontal number line

Ask pupils to identify which number comes first and label it 'first'.



Highlight that horizontal number lines always increase from left to right.

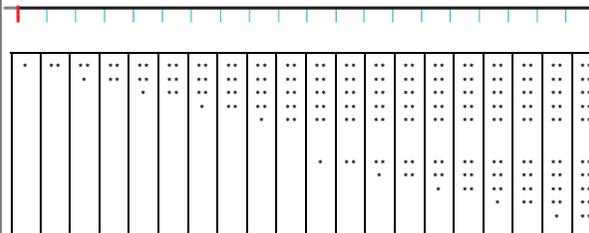
Practice counting along the number line from first (0) to last (20).

Practice counting along the number line from last (20) to first (0).

Ask pupils to find number 14. Model how to find the number that comes before 14 and after 14

Task for pupils

Provide pupils with a pictorial number line.



Ask pupils to place an object on one, then on two, three etc. until an object has been placed on each representation for the numbers 1 to 20.

Each time they place an object on the space, they must also say the number they are placing it on.

Deepening understanding

Provide pupils with a pictorial number line with all objects on them.

Teacher gives instructions for pupils to follow.

Pupils must respond with the number that they have taken the object off.

"I have taken an object off the number zero."

Suggested instructions:

Remove the last object. (twenty)

Remove the object that comes before twenty on the number line. (nineteen)

Remove the tenths object. (ten)

Remove the object that is after ten. (eleven)

Remove the object that comes before nineteen. (eighteen)

Etc.

Continue until all objects have been removed.

Counting Procedures Within 20: Ordinality

Focus 5: To know the order and position of numbers on a vertical number line

About the maths

This task develops pupils' understanding of the position of numbers on a number line deepens pupils understanding about numbers and the number system.

Vocabulary

First, last
Number names zero to twenty
After, before, next

Resources

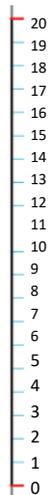
Vertical number lines (both numbered and blank), bead string or other resource with twenty items threaded onto string e.g. pasta tubes, buttons.

Getting started

Count on in unison from 0 to 20.

Display a vertical number line.

Ask pupils to identify which number comes first and last, and label it.



Highlight that vertical number lines always increase as the numbers go upwards.

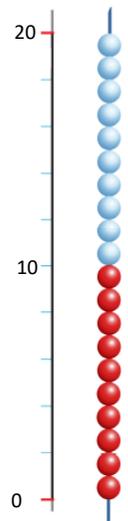
Practice counting on and back along the number line.

Task for pupils

Provide pupils with a partially scaffolded number line e.g. some numbers covered.

Ask pupils to estimate where the numbers 10, 16 and 18 would go and discuss why.

Provide pupils with a bead string to support estimations.



Highlight that vertical number lines always increase as the numbers go upwards.

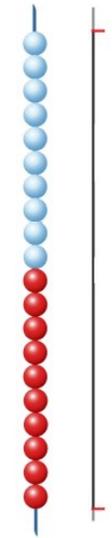
Deepening understanding

Provide pupils with a different partially scaffolded number lines.

Ask pupils to estimate where the numbers 0 to 20 would go and discuss why.

Provide pupils with a bead string to support estimations.

Regular practice exploring and working with the number line can develop pupils understanding of numbers within 20 and the value of the numbers in relation to each other.



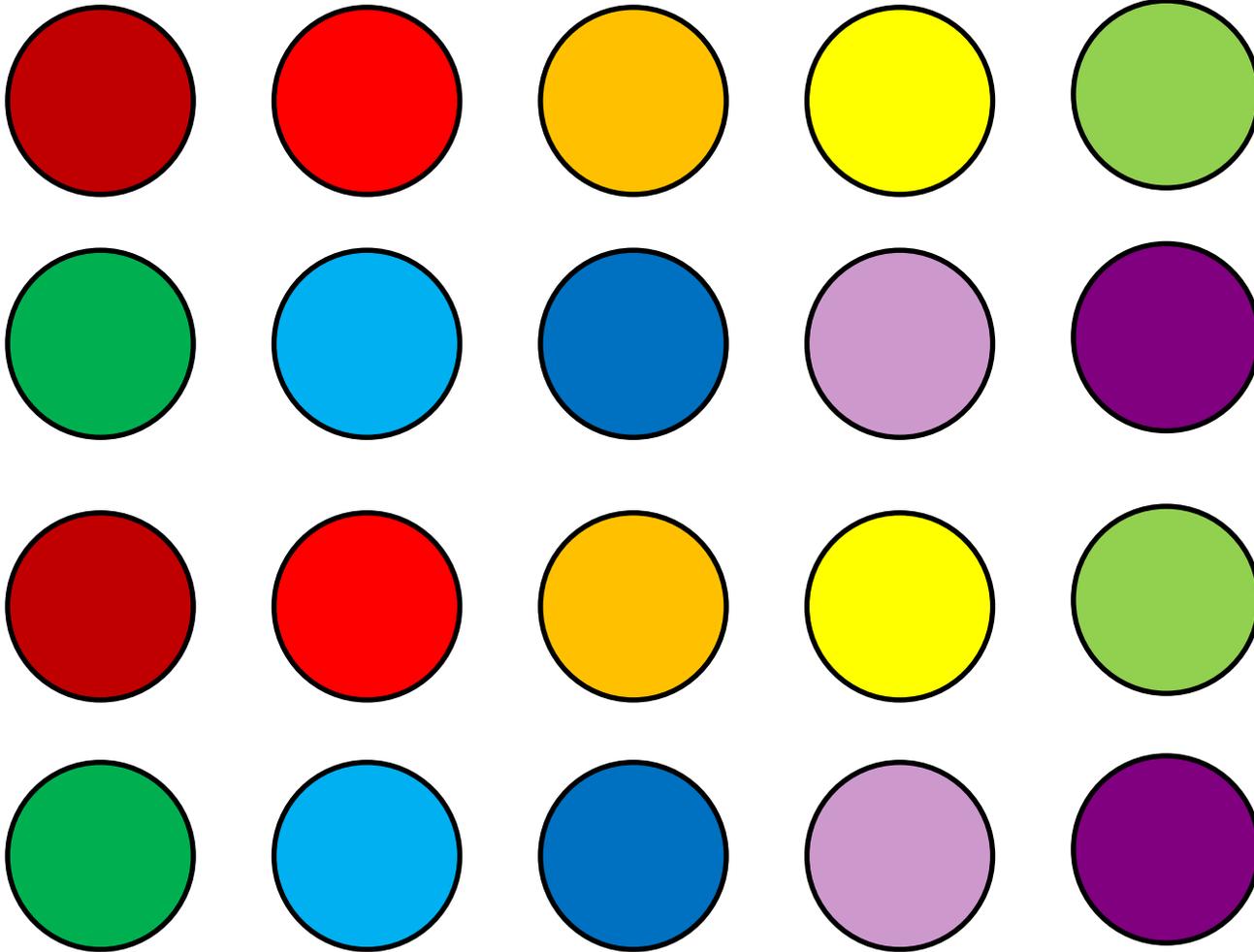
Number tracks 0-10, blank and pictorial

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

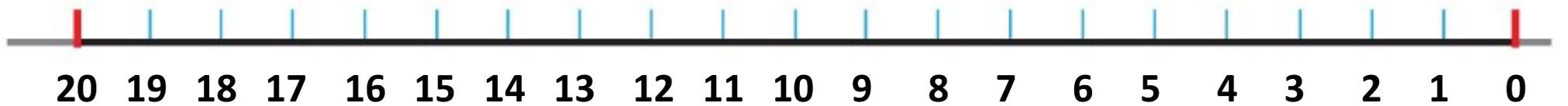
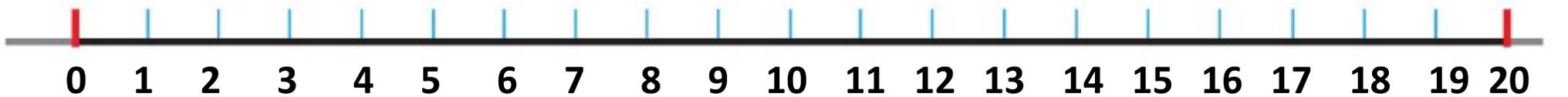
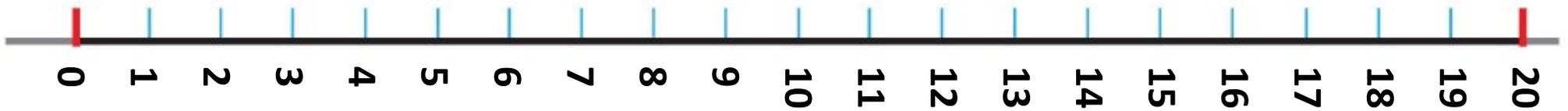
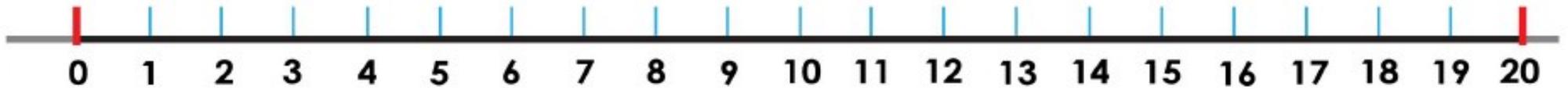
--	--	--	--	--	--	--	--	--	--	--

	*	**	**	**	**	**	**	**	**	**
			*	**	**	**	**	**	**	**
				*	*	**	**	**	**	**
						*	**	**	*	**

20 Counters



Number lines 0-20 vertical, horizontal, forwards, backwards and blank



Number cards 1-25

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

