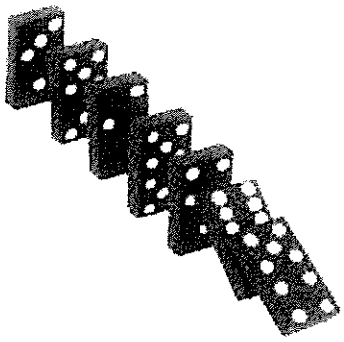
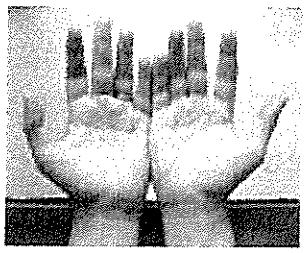
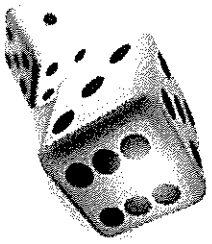
Number identification, number sequencing, number before/after, addition/subtraction.







Numeral Cards

1. Children are randomly given a numeral card (lining up to enter classroom, lesson break) and are asked to line up in sequence 1-20, 20-1, evens and odds. Leave out a number and ask children to find the missing number/numbers.
2. Children are given a numeral card and call out the count 1-20, 20-1 out aloud.
3. Children place their number on the number line. Discuss number before/number after/missing number.
4. A number is placed on the board and children place their number according to larger than/smaller than.
5. Children are given a numeral card -Teacher calls out number before 8/after 12/2 after etc and child moves to the floor or leaves classroom for break.
6. Children are given a numeral card and are asked to find another child with the same number or a number that when added together is less than 20/larger than 20.
7. Numeral cards are placed in the centre of a circle. Roll a dice and find the corresponding numeral. (Roll 2 dice and add).
8. Teacher holds up a numeral card and suggests a movement - children match movements to numeral (5 claps, starjumps, ball bounces, stamps)
9. Teacher holds up a numeral card and children have to cluster in groups of that number.

Dot Patterns / Tens frame

1. Teacher flashes dot patterns/tens frame - children call out number/clap number. How many more to make 10?
2. Teacher flashes 2 dot patterns - children work out total.
3. Children sit in a circle and cards with dot patterns and numerals are placed face down in the centre. Play memory to match the cards. Base ten cards and number words can also be used.
4. Dot pattern is flashed and children have to reconstruct pattern with counters.

Dominoes

1. Number is written on the board. Children are given a domino and are asked to place theirs on a chart -smaller (less) than/larger (more) than/equal to.
2. Children are given a domino and are asked to give the number before/after.
3. Children are given a domino and have to place theirs on a domino trail - dot-dot, dot-numeral, dot -numeral-word.
4. Children are given 4 numeral dominoes - play bingo.
5. Children are given a domino and are asked to count dots on both sides - they then need to find other children with the same total.

Calendar

1. Find todays date
   - How many days have we had in April so far?
   - How many more days to go?
   - How many days until 20th?
   - What date is before/after 10th? Make links between numerals and ordinals.

Roll Call

1. Count boys/girls
   - How many children altogether?
   - Are there more boys or girls?

- How many more boys than girls are there?
- How many more boys to make 10?
- We have 23 in our class -How many are away?
- How many more to make a class of 30?

2. Make groups of 2, 3, 4. Join 2 groups - How many?
3. Make a group of 7
4. How many meals do we have in a day? How many in 2 days, 3 days?

Hands / Body Movements

1. Teacher displays a numeral card -children clap, stamp, click
2. Shake fingers -Stop and show 4. Use 2 hands to show 4 - look at the combinations.
3. Show 3 fingers -How many more to make 10?
4. Show 6 fingers -Take away 2. How many left?
5. Teacher flashes a finger pattern - initially single digit - Children call out number. (move to 2 digit numbers by quickly flashing 10 fingers twice + 4 - 24)
6. Use body movements to reinforce 1:1 counting - Count each step as you take 6 steps. (Simon Says)
7. A large number line is placed on the floor. Children have to get to the end of the number line to leave the room -a dice is thrown to indicate how many steps and the exact number has to be thrown to finish or directions are given on randomly selected cards (move forward 2, move back 3 etc)
8. Use body movements to introduce skip counting - initially count each movement then fade out - 1,2,**3**,4,5,**6**,7,8,**9**
9. Children sit in a line - the child at the back traces a number on the back of the child sitting in front and this number is passed on to the front of the line.
10. Children are asked to make 4 groups of 5 or to sit in arrays - 4 by 5

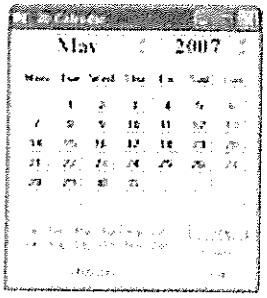
Games

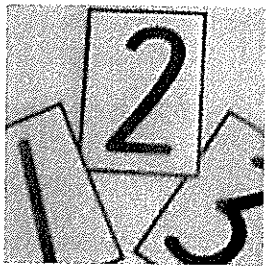
1. Buzz off - counting by ones, twos, fives, tens (on and off the decade / forwards and backwards)

2. Maths Tipping - number before/after, next number when counting by 5, how many more to make 10?
3. Boo Hoo 2 - Roll 2 dice - add - roll one dice - keep a running total - children choose to sit down at any stage - if a 2 is rolled, all out. Child sitting with highest score WINS.
4. Number Squeeze - Child chooses a secret number - class asks question about the number eg Is it larger than 10? Does the number have 3tens? Number possibilities are displayed. This can be done on class number chart or personal number lines.
5. Number Bins - The class is divided into teams and the blackboard has 2 large bins drawn at child height. A different number is placed above each bin and the team has to represent the number in as many different ways as possible - number sentence, dot pattern, visual representation.

Interactive Whiteboard

Many of the above activities can be played with the use of rolling dice, dominoes, dot patterns etc from IWB.





Activities for Students at Perceptual Counting Stage
(to encourage visualisation of amounts, adding and subtracting)

Five Frame Additions
Students are shown a five frame with some counters positioned on it and others beside it.
Possible questions:
**How many counters are on the five frame?*
**How many counters are off the five frame?*
Students are asked to imagine 2 counters jumping onto the five frame.
Possible questions:
**How many counters are there altogether?*
**How did you work that out?*
**How many squares are full/empty?*
The 2 counters are then moved onto the five frame for students to check their answers. This activity encourages students to visualise numbers. Repeat with other counter combinations.

Addition Posting Box
Students silently count while the teacher drops a collection of blocks into a box one at a time. Students record the total number of blocks, compare and discuss their totals with others. Teacher adds more blocks slowly (2 or 3). Students count silently and record the new total.
Possible questions:
**How did you find the total number of blocks?*
**Targeted students are encouraged to use fingers/counters, etc for the starting number and add fingers, etc for the second number, then count to determine the total. Other students may be able to count on from first number.

Ten Frame Additions
Students are shown a ten frame with some counters positioned on it and others beside it.
Possible questions:
**How many counters are on the ten frame?*
**How many counters are off the ten frame?*
Students are asked to imagine 3 counters jumping onto the ten frame.
Possible questions:
**How many counters are there altogether?*
**How did you work that out?*
**How many squares are full/empty?*
The 3 counters are then moved onto the ten frame for students to check their answers. This activity encourages students to visualise numbers. Repeat with other counter combinations.

Ten Frame Subtractions
Students are shown a ten frame with counters on it.
Possible questions:
**How many counters are on the ten frame?*
**How many squares are full/empty? How did you know that?*
Students are asked to imagine 3 counters jumping off the ten frame.
Possible questions:
**How many counters are left on the frame?*
**How did you work that out?*
**How many squares are full/empty now?*
The 3 counters are now removed from the ten frame for students to check their answers. This activity encourages students to visualise numbers. Repeat with other number combinations.

Hand Prints
Make baseboard with 2 hand prints (– fingers spread out) or use blank ten frames.
In small groups, students are given a die (numbered 1,1, 2, 2, 3, 3), a collection of counters and baseboard.
The object of the game is to collect exactly 10 counters. In turn, students roll the die, collect that number of counters and place them on the baseboard. If a student cannot fit their number of counters on the baseboard, they must remove that number from the board instead.
e.g. Fred needs to roll a 1 to finish the game, but rolls a 3 instead. He then has to take 3 counters from his baseboard leaving 6.

Hidden Counters
Students are given a small number of counters to count.
The teacher picks up the counters with one hand, puts both hands behind her back, distributes the counters between her two hands and closes her fists. Students are then shown the two closed fists. One hand is opened and the students see the number of counters in that hand. Students determine how many counters the teacher has in the other hand and explain how they worked it out.
The activity is repeated many times and the number of counters is varied.
Variation: Students play this as a game with a partner.

On the Bus
Initially demonstrate with 5 frame and 10 frame buses.
Tell the students stories like, **"James is a school bus driver. At the first bus stop 5 children got on the bus. At the next bus stop 3 children got on the bus."**
Ask, *"How many children are on the bus? How did you work that out?*
Select students to demonstrate/explain their strategies.
Tell students, **"Some more children got on the bus at the next bus stop. There are now 10 children on the bus."**
"How many children got on at the third bus stop? How did you work that out?"
Variation
Tell subtraction stories about the bus going home in the afternoon and children getting off bus.

Counter Cover Up
Have students sit in a circle. Place 10 counters in a line on the carpet. Ask students to count the counters and then close their eyes. Place a piece of paper over 2 of the counters.
Ask, *"How many counters have I hidden under the paper? How did you work it out?"*
Model the strategies the children use.
Repeat using different combinations of counters.

Dot Patterns
Use dice dot patterns initially. Show a dot pattern briefly, then cover. Have children tell how many and how they knew how many.

Finger Patterns
Flash finger patterns briefly (10 represented by both hands). Have children tell how many and how they knew how many.

Dot Card/Ten Frame Match (Materials: dot cards, ten frames)
Students select a dot card and try to describe what that amount would look like on a 10 frame, they then match it to a ten frame with the same amount.

Grab Bag
Students have a brown paper bag with 10-12 (5-6 of each of 2 colours) unifix cubes inside. Student reaches in and grabs a handful of cubes – they can count them, sort and count each colour, etc. Students record number sentences – if played in pairs, both students record all number sentenc

In a Box

Show the students two small boxes. Place 6 cubes in one box and 3 cubes in the other.
Invite two students to count how many cubes are in each box. Ask the students 'How many cubes are there altogether? How did you work it out?'
Call for answers and encourage students to discuss how they worked it out?

Add One More

Ask students, *"Can you show me 6 fingers?'*
Ask students to put their hands behind their backs and pop up one more finger without looking at their hands.
Ask, *"How many fingers are you showing now?"*
Encourage students to state their answers without looking at their fingers. Observe whether students need to count fingers to find total (perceptual).
Repeat activity using 1 more than 8, 2 more than 4, 3 more than 5, etc.

Domino Count

Students are given a set of dominoes and asked to count how many dots are on each side and then how many dots there are altogether. Students are encouraged to:
**Work out how many dots there are on each side without counting one at a time.
**Discuss different strategies they could use to work out how many dots there are altogether.

The teacher could ask the students to imagine a domino with four dots on one side and one dot on the other. Students discuss how many dots there are and strategies that can be used to find out.
The teacher could also pose the problem:
'There are six dots altogether on my domino. How many dots could there be on each side?'
Students record and discuss the possible answers. Some students may require materials such as counters to assist them in solving the problem.
Possible questions include:
- is there a quicker way to find the answer than counting by ones from one?
- is there a quicker or easier way to add?
- is that the only possible answer?

Counter Hands

Place 7 counters in one hand and 2 counters in the other.
Open 1 hand and tell students: "I have 7 counters in this hand". Close the hand.
Open other hand and tell students: "I have 2 counters in this hand". Close the hand.
Ask "How many counters do I have altogether? How did you work it out?"
Encourage students to verbalise their strategies.
Repeat for other combinations to 10 and other numbers.

Adding Counters

Students are given five counters and a work mat marked with two large circles and asked to place some of the counters in one circle and some in the other.
Possible questions include:
- how many counters did you put into each circle?
- how many counters are there altogether?

As students give their answers, the teacher models recording this as a number sentence.
Students are asked to make as many different combinations to 5 as they can.
The activity is repeated using a different number of counters eg 10, 20. Students practise recording number sentences

Activities for Students at Figurative Counting Stage
(to encourage counting on or back from larger number to solve problem)

Twenty Frame Flash
Flash a twenty frame card to your students and ask them to identify how many dots they saw. To challenge students ask them to identify one/two more or one/two less than the number of dots they saw.
Possible questions:
**How many empty spaces are there? How many more do we need to make 20?*

Add Two Dice
Students write a set of 4 numbers in the range of two to twelve on a mini whiteboard.
The teacher rolls two dice and, after looking at/counting larger number, the teacher covers the dots (to encourage visualisation of number of dots) and the children count on from that number. After adding the two dice the student crosses off a number when its total has been rolled. The game continues until all the numbers have been crossed off.

How Many Counters?
Place 5 counters in your open hand. Ask the students to identify the amount you are holding. Model count them. Cover them with a cloth/paper.
Say, "I am putting 3 more in my hand. How many have I got altogether? How did you work that out"
If correct, start by placing 8 in your hand.

Domino Dice
Use a six dot die. And a number dice 1-6. Children have five dominoes in front of them. Roll the two dice. Children find a domino from their pile that equals the sum rolled. Hold it up to their forehead.

Maths tipping
Students stand in a space in the room. Ask individual students to say the number before, or after, simpls addition or subtraction – level of difficulty can be aimed at certain children. The students must answer within a designated time, for example, three seconds. A correct response allows the student to take one step in any direction to attempt to touch another student on the shoulder. If tipped, the student must sit down. If a student states an incorrect answer to the question, he or she must also sit down.
Continue the process until one student remains standing.

Friends Of Ten Playing Cards
Teacher keeps a set of 1-9 playing cards and hands out another 3 sets of 1-9 cards until all students have a card. Teacher holds up one card from his/ her pack and states the number asking, "Who are my friends?" All the students with numbers that add to make ten stand up. Can be extended to friends of 20 with the teaching holding up a ten and a number between 1 and 9.

Diffy towers
Organise students with a supply of Unifix blocks. The teacher rolls the die and makes his/her tower. A die is rolled for the students, who take a corresponding number of Unifix blocks from a central pile and build a tower with them. Then compare the two towers to see who has the most blocks and determine the difference (use the word difference) between the two towers. A tally is kept of the difference to see if the teacher wins or the students collectively win.

Addition Posting Box

Students silently count while the teacher drops a collection of blocks into a box one at a time. Students record the total number of blocks, compare and discuss their totals with others. The teacher adds more blocks slowly (2 or 3). The students count silently and record the new total.
Possible questions include:

how did you find the total number of blocks?

Students should be encouraged to hold the starting number in their head and count forwards from that number to determine the total.

Subtraction Posting Box

The teacher holds an opaque container of counters and presents the following scenario:
'There are ten counters in this container. I am going to take some of the counters out, one at a time. Then I want you to record how many counters are left in the container.'
The teacher removes some of the counters (eg four) and the students record the number of counters remaining. Students discuss their strategies.
Possible questions include:

can you give another example using the same numbers?

eg 'I had 10 and then I took away 6 and there are 4 left now.'

how can you record what you have done? Can you record it in a different way?

Build A Tower DENS 1p169

Start with a tower of 10 unifix cubes plus some extra to total 20 altogether. Roll the dice and follow the instructions +1, +2, +3, -1, -2, -3. The aim is to get a tower of 20 to win

Teen and Tens Activities

Use hands as tens cards/students.
Model counting 13 on hands then 30 etc.
Weave the narrative. Talk about teenagers. Talk about cups of tea. Model drinking tea as you count the tens numbers.

Ty and Teen Bingo

17	30	18	40
15	60	13	80
19	70	14	16

Making Numbers

Chosen student selects other students to help them make numbers with their fingers e.g if the number is 17, student selects 1 child to hold up 10 fingers and another to hold up 7. 25 – 2 students hold up 10 fingers and another 5.

Dot Pattern Cards

Construct dot patterns or mini ten frames for dots 1-9, with 2 copies of 5. Have students in 2 teams – match each student with another of similar ability. Place cards in 2 piles. Pairs of students in teams turn over 1 card each and add cards together. First student to say correct answer scores a point for the team. If cards equal 10, team scores a bonus point (to encourage friends of 10 recognition). Encourage students to count on from larger number.

Variation

Construct dot patterns or mini tens frames for dots one to nine and numbers 1-9, with two copies of card 5. Place the cards where they can be viewed by students. The students, in teams, take turns to turn over two cards and add the two cards together.
If the total is "ten" the student keeps the two cards. If the cards do not equal "ten" they are returned to the table. Encourage students to count on from the larger number.

Activities for Students at Counting On and Back Stage

Thirty Frame Flash
Flash a thirty frame card to your students and ask them to identify how many dots they saw. To challenge students ask them to identify one more or one less than the number of dots they saw.
Possible questions:
**How many empty spaces are there? How many more do we need to make 30?*

Bucket Count On
Teacher tells students there are a certain number of counters/blocks/teddies in a container. Students initially count on by 1s as teacher drops more objects in. Later blocks, etc are given a specified number value so students must count on by 2s, 3s 5s ,etc. Later a number value is allocated for each colour and students count on a different number depending on the colour of the object added e.g blue = 2, red = 10, etc

Hidden Numbers
Ask students to sit in a circle. Place a bucket upside down , in the middle, for all to view. Place 3 towers of 10 interlocking cubes on top of the bucket.
Tell students to close their eyes. Place e.g.17 cubes under the bucket.
Ask students, "How many cubes are now on top of the bucket?" Can you work out how many cubes I have placed under the bucket? How did you work it out?

Friends Of Ten Playing Cards
Teacher keeps a set of 1-9 playing cards and holds out another 3 sets of 1-9 cards until all students have a card. Teacher holds up one card from his/her pack and states the number, asking, "Who are my friends?" All students with cards that add to teacher's to make 10 stand. Can be extended to friends of 20 with the teacher holding up a 10 plus a number between 1-9.

Ten strips and hundred charts
Using ten frames instead of dot strips
Display the ten frame of four dots. Ask the students:
"How many dots?" Place a complete ten frame below the four dots and repeat the question. After the students determine the answer, indicate the corresponding numeral on the hundred chart. Continue by adding one ten frame at a time and locating the total on the hundred chart.

Fly Swat Activities

Make flies with numerals attached – more than 1 of each numeral.
Use commercial fly swats.
Play in teams. Score points for team.

Fly Swat Numeral Identification
Attach flies to board/wall in random order. Teacher calls out number and pairs race to swat that numeral.

Fly Swat Number Before/After/2 Before/2 After
Attach flies to board/wall in random order. Teacher calls out number and pairs race to swat the number before/after/etc.

Fly Swat Number Addition and Subtraction
Attach flies to board/wall in random order. Teacher calls out addition or subtraction question and pairs race to swat the number that is the total.

Domino Fly Swat
Flies have domino patterns on them – teacher calls out the total and students have to swat the flies with dominoes whose ends added together equal total called.

Add 2 Dice

Students select 6 numerals in the range of 2-12 and teacher writes them on whiteboard. Students roll 2 dice and calculate total – encourage putting larger number in head and counting on smaller number, but have students discuss strategies used. If total is one of the numerals on whiteboard it can be crossed out.

•Can be played in teams with different teams selecting their own numerals – see which team crosses all selected numerals out first.

•Try to beat score for smallest number of rolls of the dice it took to eliminate all numerals.

Counting-on Cards

Part A

The teacher prepares a set of number cards (a selection of numbers ranging from 20 to 50) and a set of dot cards (1 to 10). Each set is shuffled and placed face down in separate piles.

In two teams, one student turns over the top card in each pile

Eg Students add the numbers represented on the cards together, and state the answer. The first student to give the correct answer turns over the next two cards.

Variation: Students are asked to subtract the number on the dot card from the number on the number card.

Part B

Students discuss the strategies used in Part A. The teacher models recording strategies on an empty number line

Eg: Students are given the cards from Part A and are asked to turn over the top card in each pile and record their strategies using their own empty number line. Students share their strategies.

I Wish I had... (Materials: dot cards)

Teacher keeps 1 whole collection of dot pattern cards 1-10 and distributes collections of dot pattern cards 1-10 – 1 to each student. Teacher holds up a dot card (i.e. 5) and says, "I wish I had 7". Record number sentence with missing addend. The students who have a 2 card stand. Complete number sentence.

Domino Count On

Draw a domino on the board. Draw some dots on 1 side. Say 'The total is 12. How can we work out the total?' Students explain their thinking. Teacher writes it as a number sentence.

Grab Bag

Students have a brown paper bag and put 10-12 unifix cubes inside. Student reaches in and grabs a handful of cubes – they can count the number of cubes in the handful and calculate how many must be left in the bag. Or partner looks in bag and says number of cubes of each of 2 colours and friend must calculate the total. Students record number sentences – if played in pairs, both students record all number sentences.