Table of Contents

NUMBER SKILLS

Quick Summary

Revise and consolidate basic number skills using these quick and fun activities.

Learning Objectives on:

- Addition
- Subtraction
- Multiplication
- Division
- Money
- Coin/Note Recognition
- Skip Counting
- Fractions
- Factors
- Ordinal Numbers
- Number Bonds
- Place Value

Equipment Includes:

- Pen
- Pencil
- Paper
- Coloured pencils or markers
- Dice
- Fake money
- Ruler
- Ball
- Playing cards

1 More or Less

Addition, Subtraction

Quick Summary

A quick game to test students' understanding of more/less

Learning Objectives

- Understand concepts of more/less
- Ordering numbers

Equipment

If necessary, pen and paper

How to play!

Step One	Player 1 thinks of a number.
Step Two	Students take turns to guess the number.
Step Three	Player 1 states more or less in relation to the number.
Step Four	Repeat until the number is guessed.

Extension Activities

- Start with numbers 1-10. Further extend to 1-100, 1-1000 etc.
- Use negative numbers.
- Add parameters eg You cannot choose an odd number; must be a multiple of three, cannot be a perfect square.

2 Maths Challenge

Addition, Subtraction, Multiplication, Division

Quick Summary

Simple maths questions to consolidate knowledge of the four operations + - × ÷.

Learning Objectives

- Accurately solve one step equations
- Ensuring accuracy by checking work
- Consolidate basic use of four operations

Equipment

Pen and paper – for teacher and students to record answers

How to play!

Step One	Write or type 10-100 basic equations using one of or a mixture of + - × ÷ ÷ eg 5+4, 5-4, 5×4.
Step Two	Each student is handed a set of questions that remain face down.
Step Three	Students have a set time, eg 2 minutes, to answer as many questions as possible. Students must stop when the time is up.
Step Four	Students check their answers then swap papers and correct their peer's work.

Extension Activities

- Use + - × ÷ to consolidate understanding. Incorporate current or past topics accordingly however ensure that questions can be quickly solved.
- Rather than supply students with written questions, read the questions aloud.
- Each week delegate one student the task of Quiz Master. They create the quiz questions and present them to the class, preferably verbally.

3 Missing Numbers

Addition, Subtraction, Multiplication, Division, Algebra

Quick Summary

Show how the four operations + - × ÷ interact with each other using their inverse operation.

Learning Objectives

- Accurately solve one step equations
- Identify inverse operation
- Consolidate basic use of four operations

Equipment

Pen and paper – for teacher and students to record answers

How to play!

Step One	Write or type basic equations using + - × ÷ leaving one number missing eg *_ + 3 = 10.*
Step Two	Explain to students how to solve equations by working backwards eg *10 – 3 = 7.*
Step Three	Explain to students how the operations interact with each other eg +/- and ×/÷.
Step Four	Invite students to create their own equations for others to solve.

Extension Activities

- For easier questions, use number bonds 1-10 eg *_ + 3 = 10*.
- Use double digit and single digit number bonds from 1-100 eg *56 + _ = 60*
- Introduce subtraction eg *33 - _ = 30* multiplication eg *4 × _ = 32* and division eg *32 ÷ _ = 8*.

By asking what the unknown or missing number is, this process can also be used to introduce basic algebra.

4 Subtraction Bowling

Addition, Subtraction, Multiplication, Division

Quick Summary

Understanding addition and subtraction while 10-pin bowling.

Learning Objectives

- Understand concepts of more/less
- Subtract single digit numbers from 10
- Use number bonds 1-10

Equipment

A ball and bowling pins. Cardboard cylinders or wooden pegs can be substituted for bowling pins. Ensure the ball is suitable size to knock down the pins

How to play!

Step One	Set up 10 pins in a V formation ie 1(front row), 2,3,4(back row).
Step Two	Player 1 attempts to knock over pins by rolling a ball from a set location eg 2metres away.
Step Three	Player 1 counts how many pins they knocked down and writes a subtraction equation to represent how many pins remain standing eg *10 - 3 = 7.*
Step Four	Either have a second turn or set the pins up for another player. Repeat the process as many times as you see fit.

Extension Activities

- Use more or less pins to vary the difficulty of calculations.
- Calculate averages and predict future scores
- Create a class score chart.

5 Equation Triangles

Addition, Subtraction, Multiplication, Division, Square and Square Roots, Algebra

Quick Summary

Demonstrates the relationship between numbers and inverse operations in a two-step equation.

Learning Objectives

- Accurately solve one step equations
- Identify inverse operation
- Consolidate basic use of four operations

Equipment

Pen, paper and equation triangle – found in appendix

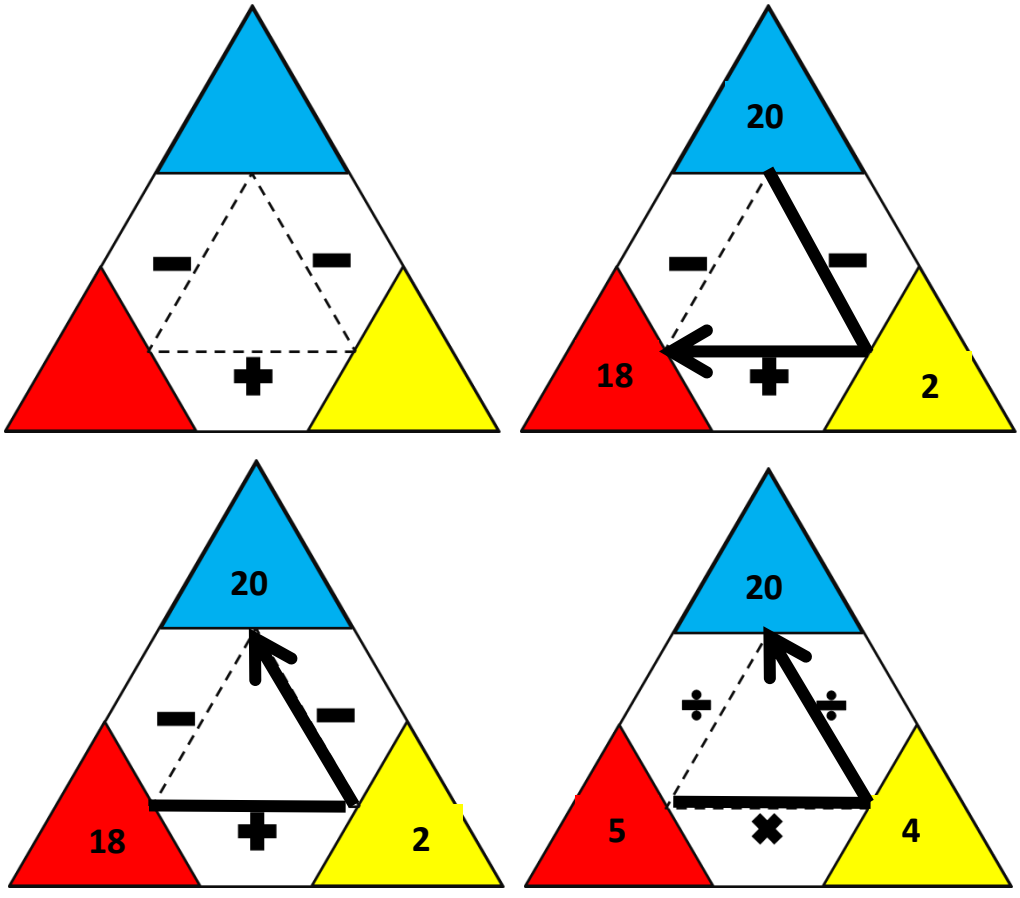
How to play!

Step One	Select a blank +/- or ×/÷ equation triangles and create copies as required copies.
Step Two	Write a number in the blue triangle eg *20*. Next are the red and yellow triangle.
Step Three	For addition: Write a set of numbers that add to the number in the blue triangle eg *18* and *2* For multiplication: Write two factors of the number in the blue triangle eg *4* and *5.*
Step Four	Students connect the triangles to create equations where they can see the inverse operation.

Example shown on following page.

Extension Activities

- For easier questions, use addition and subtraction number bonds 1-10 eg *7 + 3 = 10*.
- Extend this by using double digit and single digit number bonds from 1-100 eg *56 + 4 = 60.* Providing the created equations are accurate, any combination of numbers eg *152 + 44 = 196 can be used*.
- Try multiplication eg *4 × 8 = 32*.
- The relationship between a perfect square (placed in the blue triangle) and its roots (placed in the red and yellow triangles) can also be accessed by replacing the ÷ symbol with √.
- Following the equation backwards demonstrates the relationship between inverse operations.
- By leaving a red or yellow triangle blank, equation triangles can also be applied to basic algebra.



6 Maths Around the World

Addition, Subtraction, Multiplication, Division

Quick Summary

Competition pitting students in one-on-one arithmetic battles.

Learning Objectives

- Mentally solve equations while under pressure

Equipment

Non required.

How to play!

Step One	Students sit at their desks or in a circle with two adjacent students standing.
Step Two	Teacher states an equation suitable to the level of all students. It can be what is currently being studies or a revision of the four operations.
Step Three	First student to correctly answer wins and proceeds to next student in line. Other student sits.
Step Four	Repeat process. Winner is the student who is unbeaten after challenging all students one-on-one.

Extension Activities

- Begin with one step equations eg *7 + 8* then progress to two and three step equations eg *5 + 6* or *5 + 6 + 7*.
- Chose equations suitable for students in your class, whether it is what is currently being studied or revision of the four basic operations.
- Select a student to state the questions.
- Create a finally challenge between student and teacher to see it they have what it takes.

7 Roll them Bones

Number Formation, Place Value, Money Skills

Quick Summary

Understanding the place value of numbers using dice.

Learning Objectives

- Identify place value of numbers eg units. 10s, 100s, 1000s etc.
- Correctly write place value of numbers eg 534 not 50034.

Equipment

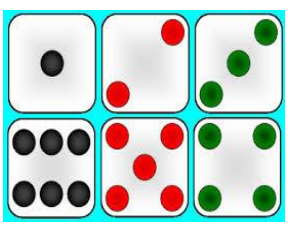
Two, three or four different coloured dice, preferably 10 sided, pens/pencils and paper. Use one set for the whole class or share a set of dice between small groups (2-5) of students.

How to Play

Step One	Teacher shows students the dice and explains that each dice has a different value eg the black is 100s, red is 10s and green is units.
Step Two	Teacher/students roll the dice.
Step Three	Dice are arranged in order of place value and the number is written down
Step Four	Repeat process as many times as necessary ensuring place values are correct.

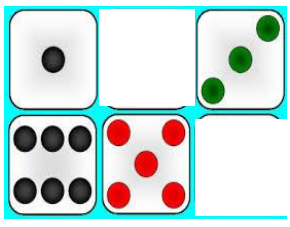
Extension Activities

- Add 1000s and 10,000s if required and see how many different numbers students can make.
- Remove one or two dice eg removing the red dice will make *103* or *604*. Extend to decimals eg *543* will be *5.43* or create monetary values $, £ or €.



→ 123

→ 654



→ 103

→ 650

8Solve them Bones

Order of Operations, Addition, Subtraction, Multiplication, Division

Quick Summary

Creating two, three or four step equations using dice.

Learning Objectives

- Understanding order of operations
- Solve two, three and four step equations

Equipment

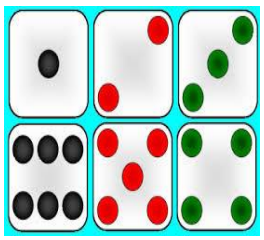
Two, three or four dice, preferably 10 sided, pens/pencils and paper. Use one set for the whole class or share a set of dice between small groups (2-5) of students.

How to play!

Step One	Teacher/students roll the dice.
Step Two	Students use + - × ÷ to create and solve equations.
Step Three	Students use operations in different manner to create different equations. Who can make the highest/lowest number.
Step Four	Repeat process as many times as necessary.

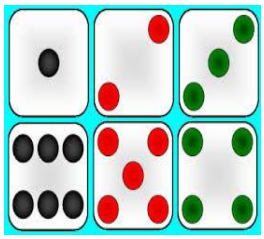
Extension Activities

- Use brackets to create different questions.
- Add more dice to create longer equations. Use 10,12,20 sided dice to create more challenging equations.



→ *1 × 2 + 3 = 5*

→ *6 - 5 + 4 = 5*



→ *1 + 2 - 3 = 0*

→ *6 × 5 - 4 = 26*

9 Backwards Black Jack

Addition, Subtraction, Multiplication, Division

Quick Summary

Use cards to mentally solve equations.

Learning Objectives

- Quickly solve basic equations using the four operations.

Equipment

One deck of cards, with court cards removed, per group (Ace = 1). To create a shorter game, remove all diamonds and clubs.

How to Play!

Step One	Teacher states a starting number eg 50. Teacher explains that black cards are addition and red cards are subtraction.
Step Two	Students turn a card over and mentally add or subtract face numbers from starting number (Ace = 1) eg 6♠ so *50 + 6 = 56*.
Step Three	Students turn a second card over and mentally add or subtract face numbers from previous answer eg 2♥ so *56 - 2 = 54*.
Step Four	Repeat process until all cards have been turned over. The final number will be the starting number.

Extension Activities

- Combine multiplication and addition or multiplication and subtraction.
- To implement division, remove all odd numbered cards and introduce a set of court cards, eg Jacks, which represent ÷ by *2*. For ÷ by *3*, begin on a multiple of *3* eg *36* and only use *3*, *6* and *9* plus a picture card which represents ÷ by *3*.

10 Creative Cards

Order of Operations, Addition, Subtraction, Multiplication, Division

Quick Summary

Create equations using + - × ÷ and a deck of cards.

Learning Objectives

- Understanding order of operations
- Solve two, three and four step equations

Equipment

Timer, paper and pencil for each student and one deck of cards, with court cards removed, per group (Ace = *1*).

How to play!

Step One	Using the cards from A to 10, deal four cards out with the numbers showing.
Step Two	Using all four cards and any combination of + - × ÷ each player creates as many different numbers as they can 5 minutes.
Step Three	Students compare answers, ensuring accuracy.
Step Four	Repeat process as many times as necessary.

Extension Activities

- Begin with addition and subtraction
- Progress to multiplication and division.
- Introduce negative numbers eg all red cards a negative numbers or make all numbers decimals with 10 = 1.

11 Patience Columns

Addition, Subtraction, Multiplication, Division

Quick Summary

Create equations using + - × ÷ and a deck of cards.

Learning Objectives

- Solve basic equations using the four operations.

Equipment

One deck of cards, with court cards removed, per group (Ace = *1*).

How to play!

Step One	Shuffle cards and turn over top five cards to create "bases". These are placed in horizontal line with each base representing 10, 20, 30, 40, 50.
Step Two	The pupils then take turns to turn over cards from the pack which must be placed on one of the bases. The shown number is added to the base number on a cumulative basis.
Step Three	When a column of cards totals to make 10, 20, 30, 40, 50 it can be turned over.
Step Four	Students compare answers, ensuring accuracy and repeat process as many times as necessary.

Extension Activities

- Change the base numbers higher or lower. Introduce subtraction, multiplication and division. Move into decimals and negative numbers.
- Note, the numbers are added, subtraction, multiplied, divided in the order they are turned is ignored.

12 Shopping Trip

Addition, Subtraction, Multiplication, Division, Money Skills, Measurement – Weight, Budgeting

Quick Summary

Create a fake shopping trip for students to buy items.

Learning Objectives

- Solve equations using the four operations.
- Implementing learned skills in practical situations

Equipment

Fake money, envelope to put money in, pen and paper to create price tags and shopping lists, items to sell eg fruit, toys, pencils.

How to play!

Step One	Assign each student a job: Shopper or Clerk.
Step Two	Hand each student an envelope with an equal amount of money and assign prices to various items in the classroom.
Step Three	Students go shopping for items, exchanging money for good.
Step Four	Once students have purchased items, refill the envelopes and swap roles.

Extension Activities

- Begin by giving student single denominations eg $1/£1 and price everything at that amount.
- Increase the amount given and change the denominations. Change the prices to include decimal amounts.
- Students can calculate change and use addition and multiplication to purchase more than one of the same priced item.

13 Catalogue Budget

Addition, Subtraction, Multiplication, Division, Money Skills, Measurement – Weight, Budgeting

Quick Summary

Give students a budget to purchase items they desire.

Learning Objectives

- Solve equations using the four operations.
- Implementing learned skills in practical situations

Equipment

Fake money, envelope to put money in, various catalogues, pen and paper and/or scissors and glue.

How to play!

Step One	Assign each student a job: Shopper or Clerk.
Step Two	Hand each student an envelope with an equal amount of money and assign prices to various items in the classroom.
Step Three	Students go shopping for items, exchanging money for good.
Step Four	Once students have purchased items, refill the envelopes and swap roles.

Extension Activities

- Begin by giving student single denominations eg $1/£1 and price everything at that amount.
- Increase the amount given and change the denominations.
- Change the prices to include decimal amounts.
- Students can calculate change and use addition and multiplication to purchase more than one of the same priced item.

14 The Guessing Game

Subtraction

Quick Summary

Solve how many objects are missing.

Learning Objectives

- Solve basic subtraction equations.

Equipment

Anything that can be counted eg coins, pens, pencils.

How to play!

Step One	Place five or more counters on the table.
Step Two	Students close their eyes or turn away while teacher removes several counters.
Step Three	Teacher asks how many counters they have in their hand.
Step Four	Repeat process as many times as necessary.

Extension Activities

- Once the correct answer has been given, encourage students to state the equation.
- Give the students a chance to play the game with the teacher as the guesser, and let them play the game with each other.
- When using money, guess the amount of money is missing.

15 Colour Coded Pages

Skip Counting, Common Multiples, Factors

Quick Summary

Number pages in different colours to assist with times tables

Learning Objectives

- Skip count forwards various intervals eg 2,3,5,10
- Skip count backwards various intervals eg 2,3,5,10
- Find common multiples

Equipment

Students' maths writing books, black marker and various bright markers or highlighters.

How to play!

Step One	Using the black marker, students label the bottom corner of each page in their writing book in sequential order eg 1,2,3,4…100.
Step Two	Students select another colour, eg green, to write the multiples of 2 ie on page 2,4,6 etc.
Step Three	Students select another colour, eg red, to write the multiples of 5 ie on page. Continue for 3, 10 or any other number deemed necessary.
Step Four	If a number has common multiples eg 15 (5and3), write the number in a different colours.

Extension Activities

- To ensure accuracy, begin by labelling numbers 1-20, then work forwards using times tables.
- Allow students to create equations to represent each page number eg *25* may become 5^2 or *55* becomes 5×11.
- Label other books, newspapers or magazines.

16Count to One Billion

Addition, Multiplication, Division, Time

Quick Summary

Solve how long it will take to count to one billion.

Learning Objectives

- Adding values of time
- Multiplying values of time
- Dividing/Segmenting values of time

Equipment

Pen, paper, stop-watch, calculator.

How to play!

Step One	Using a stopwatch, time how long it takes to count to 100 eg it may take 30 seconds.
Step Two	Students calculate how long it will take to count to *1000. 10×30 = 300seconds = 5minutes.*
Step Three	Students calculate how long it will take to count to *10,000, 100,000, 1 million* etc. Continue process until students reach 1 billion.
Step Four	Students then calculate the number of minutes, hours, days, weeks, years by dividing the appropriate measure.

Extension Activities

For an easier method students can be given a set time eg on million. Extend by counting by 2,5,10 etc.

1000 = 300 10,000 = 3000 100,000 = 30,000

1million = 300,000 10million = 3million 100million = 30million

1billion = 300million seconds = 5million minutes ≈ 83,333 hours ≈ 3472 days ≈ 9.5 years note: approximately equal ≈

- There are 31,557,600 seconds in one year.

17 Equation Bingo

Number Recognition, Addition, Subtraction, Multiplication, Division, Exponents, Multiples, Number Bonds, Fractions

Quick Summary

Bingo using maths equations.

Learning Objectives

- Dependant on type of equations are utilised.

Equipment

Bingo cards (see appendix), pen, whiteboard marker or tiddlywinks.

How to play!

Step One	Chose a learning objective eg + - × ÷ etc. This will form the basis of the Bingo Questions.
Step Two	Depending on learning objective chosen, write the seventy-five different equations on the Bingo Question cards eg 15 + 5, 40 – 4. Randomly write the answers to the questions 5×5 Bingo Answer cards eg 20, 36.
Step Three	Distribute the answer cards and a marker to all students. Shuffle the question cards.
Step Four	Turn over a question cards and state the equation eg 15 + 5. Students mark the answers eg 20 on their 5×5 answer card. The first to have a line of five shouts BINGO and is the winner.

Extension Activities

- To change the learning objective, create new question and answer cards eg squares $3^2 = 9$, fractions ¼ of 16 = 4.
- Write questions on the 5×5 answer card and state the answer eg what equals 20? 15 + 5.

Notes

- This game requires preparation time.
- To ensure durability, laminate all cards.

18 Double Trouble

Addition, Multiplication, Exponents

Quick Summary

Double numbers to practice mental addition skills.

Learning Objectives

- To accurately double numbers using addition.
- Recognise exponents of 2.

Equipment

Paper or whiteboard, pen, whiteboard marker.

How to play!

Step One	Students write the number 2 in the top corner of their whiteboard.
Step Two	Students double 2 and write 4, then double 4 and write 8.
Step Three	The process continues for 60 seconds.
Step Four	The winner is whoever accurately surpasses the number attained by the teacher.

Extension Activities

- Double the numbers 3 or 7 instead of 2.
- Accompany the doubled answers with the exponentials of 2. eg $2 \times 2 \times 2 \times 2 \times 2 = 32 = 2^5$.

Cheat

2^1=2, 2^2 =4, 2^3=8, 2^4 =16, 2^5 =32, 2^6 =64, 2^7 =128, 2^8 =256, 2^9 =512, 2^{10} =1024, 2^{11}=2048, 2^{12} =4096, 2^{13} =8192, 2^{14} =16,384, 2^{15} =32,768 2^{16}=65,536, 2^{17} =131,072, 2^{18} =262,144, 2^{19} =524,288, 2^{20} = 1,048,576.

3 6 12 24 48 96 192 384 768 1536 3072 6144
12,288 24,576 49,152 98,304 196,608 393,216
786,432 1,572,864 3,145,728 6,291,456 12,582,912 etc.

19 Centipede Shoes

Addition, Subtraction, Factions

Quick Summary

Reinforce number bonds using the legs of a centipede.

Learning Objectives

- Solve numbers bonds 1-10 and beyond.

Equipment

Drawn centipede with sufficient legs, pen, coloured markers.

How to play!

Step One	Create a centipede with 10 legs, with 5 legs on each side.
Step Two	Students give the centipede shoes by colouring in a set number of legs eg 4.
Step Three	Students count how many legs remain, eg 6, and create an equation eg 6 + 4 = 10.
Step Four	Use a new centipede and create a new number bond.

Extension Activities

- Increase the number of legs to create different number bonds eg for number bonds to 20, have 10 legs on each side.
- Colour half the legs to represent a fraction eg half of 10 is 5. For quarters use four different colours eg a quarter of 20 is 5.
- For subtraction, fold legs underneath the centipede eg the centipede took off 4 shoes, how many shoes remain? Ensure a stump remains so students can see the initial amount of legs.

Note

Centipede found in Appendix.

Photocopy centipedes with different number bonds.

20 Skip Counting

Skip Counting, Addition, Subtraction, Times Tables

Quick Summary

Skip counting in small groups.

Learning Objectives

- To skip count in various multiples.

Equipment

None required.

How to play!

Step One	Create groups of up to 5 students.
Step Two	One student begins by stating 2. The next student states 4. Students take it in turns to count by 2s
Step Three	The first student to make a mistake or take too long to answer is out.
Step Four	Continue from the previous number until all students are out.

Extension Activities

- Skip count in different multiples eg 3, 4, 5.
- Begin on a number that is not a multiple of counted number eg count by 3s but begin on 2 or 34.
- Skip count backwards from a given number that is a multiple eg count backwards by 3s from 60.
- Skip count backwards from a given number that is not a multiple eg count backwards by 3s from 61.

21 Switching Sevens

Skip Counting, Addition, Subtraction, Times Tables

Quick Summary

Learn multiples of 7.

Learning Objectives

- To learn multiples of 7.

Equipment

None required.

How to play!

Step One	Create groups of up to 7 students.
Step Two	One student begins by stating 1. The next student states 2 and so on.
Step Three	When it gets to a number with 7 in it eg 17, 72, or a multiple of 7, eg 14, 49, the student whose turn it is states SWITCH and the direction is reversed.
Step Four	Continue from the next number until a student makes a mistake. Once all students are out then game ends.

Extension Activities

- Switch in different multiples eg 6,8,9. Lower numbers do not work as they switch too frequently.

Cheat

1 2 3 4 5 6 S 8 9 10 11 12 13 S 15 16 S 18 19 20 S 22 23 24 25 26 S S 29 30 31 32 33 34 S 36 S 38 39 40 41 S 43 44 45 46 S 48 S 50 51 52 53 S 55 56 S 58 59 60 61 62 S 64 65 66 S 68 69 S S S S S S S S S 80 81 82 83 S 85 86 S 88 89 90 S 92 93 94 95 96 S S 99 100 101 102 103 104 S 106 S 108 109 …

22 Desk Number Lines

Place Value, Number Skills, Decimals, Fractions

Quick Summary

Learn place value by creating a number line on a desk.

Learning Objectives

- To learn place value of numbers.

Equipment

Post-it notes, pen or marker.

How to play!

Step One	Set a range for the numbers, eg 0-100, place a labelled Post-it note at either of the range. This represent a number line.
Step Two	Label numerous Post-it notes with numbers falling within the set range eg 12, 34, 50, 97.
Step Three	Students take turns to place their Post-it notes on the number line according to where they think their number falls, eg 50 would be half way between 0-100.
Step Four	Students are encouraged to justify the placement of their number.

Extension Activities

- Set the range for the numbers from 0-1 and use label the Post-it notes with decimal values eg 0.1, 0.25, 0.255 etc.
- Set the range for the numbers from 0-1 and use label the Post-it notes with fractions values eg ½, ¼ etc.
- Incorporate negative numbers and set the range for the numbers from -100-0 or -10 -10 . Label the Post-it notes with negative values.

23 What Doesn't Belong

Number Skills, Place Value

Quick Summary

A quick game to consolidate numbers skills.

Learning Objectives

- To recognise basic numbers patterns.

Equipment

Whiteboard marker, pen, paper.

How to play!

Step One	Write a set of 5-10 numbers of the whiteboard ensuring all but one are correlated eg 5, 45, 40, 15, 25, 50, 77, 35 – 77 is not a multiple of 5.
Step Two	Students write which number in the set is not correlated to the remaining numbers.
Step Three	Students justify their response eg 77 is not a multiple of 5.
Step Four	Repeat the process as many times as necessary.

Ideas for Correlated Sets

- Prime numbers
- Multiples
- Factors
- Exponents
- Odd and even numbers
- Equivalent fractions

24 Money Roll

Money, Skip Counting, Multiplication, Addition

Quick Summary

Add multiples of currency by counting on.

Learning Objectives

- Skip count using coins/notes
- Add values of money

Equipment

2 or more dice (6, 10 or 20 sided), pen/pencil, paper, fake money.

How to play!

Step One	Select a monetary denomination eg $10.
Step Two	Roll the dice. The number rolled is how many coins/notes you take eg 3 and 4 rolled, take 7 $10 notes.
Step Three	Students calculate how much money they have and record the result.
Step Four	Repeat the steps using the same denomination or repeat using a different denomination.

Extension Activities

- Use different coloured dice to represent different denominations eg white die is $5 and red die is $10. Total the amount.
- Add more dice and/or more denominations.
- Introduce 10 or 20 sided dice.

25 Off the Number Charts

Multiples, Skip Counting, Addition, Times Tables

Quick Summary

Create 100s squares showing multiples of numbers.

Learning Objectives

- Locate multiples of a given number eg 2, 3, 4, 5 etc.

Equipment

Pen, coloured markers,100s square (see appendix)

How to play!

Step One	Distribute 100s squares.
Step Two	Students colour all multiples of 2 in red.
Step Three	Distribute a second 100s square. Students colour all multiples of 3 in blue.
Step Four	Repeat process with other numbers.

Extension Activities

- Highlight common multiples eg of 3 and 5: 15, 30, 45.
- Highlight exponents eg 2^2, 3^2, 4^2, 2^3, 2^4, 3^3.
- Highlights multiples of 2, 3, 4 and 5 on the one square. Identify where the common multiples.

26 Number Snap

Number Skills, Number Recognition, Addition, Subtraction, Multiplication, Division, Fractions

Quick Summary

A game of Snap using Maths questions to strengthen mental arithmetic skills.

Learning Objectives

- Mentally solve maths equations specific to topic.

Equipment

Old or cheap deck of cards, white sticky labels, marker pen.

How to play!

Step One	Divide the cards into number value ie create 13 groups of 4 cards – use Jokers if desired.
Step Two	Place a sticky label on the face of each card.
Step Three	Take one pile of 4 cards and write 4 equations, one on each card, ensuring that the answer is the same eg 4+5, 6+3, 7+2, 8+1. Repeat for the remaining 12 groups.
Step Four	Students play Snap by matching equations with similar answers.

Extension Activities

- Increase the difficulty accordingly.
- Incorporate a variety of questions using + - × ÷.
- Incorporate fractions eg: ½ of 8, ¼ of 16, 1/3 of 6, 1/5 of 10.

27Connect the Dots

Skip Counting, Times Tables

Quick Summary

Connect-the-dots by skip counting.

Learning Objectives

- Skip count by a given number.

Equipment

Connect-the-dots picture, black marker, Tipp-ex or whiteout.

How to play!

Step One	Use the Tipp-ex or whiteout to remove the numbers from the connect-the-dots picture. Be careful not to get lost.
Step Two	Replace the numbers with sequential multiples eg replace 2, 4, 6, 8 instead of 1, 2, 3, 4.
Step Three	Photocopy the puzzle once completed.
Step Four	Students connect the dots counting by the given number eg 2, 4, 6, 8.

Extension Activities

- Skip count by a different number eg 3, 6, 9.
- Write simple equations instead of numbers eg for 1 write 0+1, 2 write 1+1. Students then connect-the-dots accordingly.

28 Money Breakdown

Money, Equivalence, Addition, Division, Multiplication

Quick Summary

Compartmentalise money to find equivalent values.

Learning Objectives

- Calculate equivalent value of money.

Equipment

Fake money or photocopies, cardboard, ruler, marker, glue.

How to play!

Step One	Beginning at the top of the page, divide the cardboard horizontally into four equal rectangles. Half the proceeding rectangles
Step Two	Chose a value of money to compartmentalise eg $20 and stick the amount into the top rectangle.
Step Three	Students place half the value of the initial amount into each half of the second rectangle eg $10 and $10
Step Four	Students place the equivalent value into the below quarters and eighths rectangles.

Extension Activities

- Change the initial amount of money and find equivalent values eg $1, $10.

<table>
<tr><td colspan="8">$20</td></tr>
<tr><td colspan="4">$10</td><td colspan="4">$10</td></tr>
<tr><td colspan="2">$5</td><td colspan="2">$5</td><td colspan="2">$5</td><td colspan="2">$5</td></tr>
<tr><td>$2.50</td><td>$2.50</td><td>$2.50</td><td>$2.50</td><td>$2.50</td><td>$2.50</td><td>$2.50</td><td>$2.50</td></tr>
</table>

29 Unifix Money

Money, Equivalence, Addition, Division, Multiplication

Quick Summary

Compartmentalise money to find equivalent values.

Learning Objectives

- Calculate equivalent value of money.

Equipment

Unifix blocks or equivalent, fake money, sticky tape.

How to play!

Step One	Explain that each Unifix block is worth eg $1.
Step Two	Connect the blocks to form bonds eg 5 blocks makes $5.
Step Three	Tape the amount of money to the block.
Step Four	Create further amounts using different amounts of money.

Extension Activities

- Change the value of each block eg 5c, 10c, 50c.
- Colour code the block eg red blocks are $1, green blocks are $5. Connect these to create higher values eg 4× green blocks = $20.
- Construct a chain of Unifix blocks the length of a student and calculate their *value*.

30 Mental Maths

Addition, Subtraction, Multiplication, Division

Quick Summary

Simple maths questions to consolidate knowledge of the four operations + - × ÷.

Learning Objectives

- Accurately solve one step equations
- Consolidate basic use of four operations

Equipment

Pen/pencil, paper, die (6, 10 or 20 sided),

How to play!

Step One	Students begin at 0.
Step Two	Roll the die and students add the number to 0.
Step Three	Roll again and students add to the previous answer.
Step Four	Repeat process until satisfied.

Extension Activities

- Begin at a different number eg 10.
- Being at a higher number eg 50 and subtract the die value.
- Roll two dice.
- Begin at 1 and multiply the die value.
- Remove the pen and paper with students to solve questions mentally.

31 Number of the Day

Number Skills, Addition, Subtraction, Multiplication, Division, Fractions, Factors

Quick Summary

Consolidate number skills by analysing a specific number.

Learning Objectives

- Accurately solve one step equations
- Understand concepts of more/less
- Identify place value of numbers eg units

Equipment

Pencil or pen, number of the day template (to be created)

How to play!

Step One	Construct a template with the title: Number of the Day. Include a box for the number and sections such odd/even, 1 more, 1 less, 10 more, 10 less, 10s and units, written in words.
Step Two	Save the template for future use.
Step Three	Each day, provide students a different number. Students complete each section of the sheet.
Step Four	Add or remove questions as required.

Extension Activities

- Begin with 1 digit, then extend to 2, 3 and 4 digit numbers.
- Add/subtract 100, 1000.
- Halve the number.
- Double the number.
- Find the factors.
- Round to nearest 5, 10, 100.
- Shoe the number using money ie notes and coins.
- Construct a number line.
- Find the sum of the digits.

32 Multiplication Magic

Multiplication

Quick Summary

Tricks to mentally solve times tables.

2×

Double the number eg 342×2 = 342+342 = 684.
The answer is always even.

3×

Double the number then add the number eg 12×3 = 24+12 = 36.
eg 342×3 = 684+342 = 1026

4×

Double the number then double it again eg 342×4 = 684+684 = 1468. The answer is always even.

5×

Multiply the number by 10 then halve the answer eg 342×5 =3420÷2 = 1710. The answer will always end in 0 or 5.

6,7,8×

These are somewhat harder. Solve in an easier manner then add answers eg 342×8 = 342×5 + 342×3 = 1710+1026 = 2736.

9×

Hold up two hands. Starting from the left, each finger has a number 1-10. Let's do 9×4. Curl the 4th finger on your left hand. 3 stay up to the left and 6 to the right. The answer is 36.

142857×

What pattern can be seen when you work through from 1-9 × 142857?

10×

Add a 0 onto the end of the number being multiplied eg: 15×10=150
The answer always ends with 0.

11×

<10: write the number twice
eg: 3×11=33.
>10: Separate the number to create book ends. Add the numbers together and place the answer in the middle. That is the answer
eg: 15×11=1_5 and 1+5=6 so 165.

12×

Partition 12 into 10s and units ie 12=10+2. Multiply the number by 10, then 2 and add the answers eg: 8×12 = 8×10 + 8×2 = 80+16 = 96.

× two numbers between 11-19

Partition the numbers into 10s and units. Multiply the units, remember that number. Add the units and multiply the answer by 10, add that number to the other answer. Then add 100. That is the answer. It is best shown by an example.

eg1 17×14 = (10+7) ×(10+4) = 100 + 10×(7+4) + 7×3 = 100 + 110 + 28 = 238

eg2 18×16 = (10+8) ×(10+6) = 100 + 10×(8+6) + 8×6 = 100 + 140 + 48 = 288

GEOMETRY

Quick Summary

Revise and consolidate basic geometric skills using these quick and easy activities.

Learning Objectives on:

- Symmetry
- Direction
- Movement
- Compass Points
- Angles
- Patterns
- Shapes

Equipment Includes:

- Pen
- Pencil
- Paper
- Coloured pencils
- Coloured markers
- Scissors
- String
- Ruler
- Straws

33 Flag Favourites

Symmetry

Quick Summary

Draw lines of symmetry on flags.

Learning Objectives

- Recognise symmetrical aspects of objects.

Equipment

Ruler, pencil, different flags, mirror (if required), coloured markers.

How to play!

Step One	Create a template of flags, 4 to a page. Any flag can be used. Ensure there is a mixture of symmetrical and non-symmetrical flags.
Step Two	Students use a mirror to see the reflections of flags and decide if they are symmetrical.
Step Three	Students rule a line designating an axis where the flag is symmetrical. If a flag is not symmetrical, no line is drawn.
Step Four	Repeat using different flags.

Extension Activities

- Begin with flags that have one line of symmetry, eg Belgium. Extend to flags that have two or more lines of symmetry, eg Jamaica. Include flags that have patterns or logos, eg South Africa. Finally include flags that are not quite symmetrical, eg Great Britain.
- Cut symmetrical flag in half and allow students to complete the remaining half using coloured markers.
- Provide students with the opportunity to name the countries associated with the flags.

34 Butterflies

Symmetry

Quick Summary

Create symmetrical butterflies or ink blots.

Learning Objectives

- Understanding symmetry and reflection.

Equipment

Paper, different coloured paint.

How to play!

Step One	Fold a piece of paper in half, A4 or A3.
Step Two	Draw an outline of a butterfly or other object eg a jug or picture frame. Or just leave the page blank.
Step Three	Drop different coloured blots of paint or ink on one half of the page. Precision is not important though do not use too much paint.
Step Four	Fold the page in half and press tightly. Unfold and compare the sides which should be close to symmetrical.

Extension Activities

- Compare the symmetrical and non-symmetrical aspects or each side. Ask students what they believe their pattern represents.
- Staff or students use coloured pencils or markers to colour one half of the butterfly. Students complete the butterfly copying the symmetrical aspects.

35 Symmetrical Smiles

Symmetry

Quick Summary

Attempt symmetrical drawings using faces.

Learning Objectives

- Identify symmetrical aspects of faces

Equipment

Camera, photos of faces, scissors, glue, ruler, pencil, coloured pencils.

How to play!

Step One	Take close-up photos of students' faces. Print the faces (colour or black and white) on A4 size paper.
Step Two	Fold the face in half between the eyes straight down the middle of the nose. Cut the face along the fold to create two halves. Keep both halves.
Step Three	Stick one half on a separate sheet of A4 paper. Students then draw the other half of their face by comparing the symmetrical aspects of their face eg eyes, nose, mouth.
Step Four	Paste the top 1cm of the remaining half of the face above the drawing. Compare the actual face to the drawing and identify symmetrical and non-symmetrical aspects.

Extension Activities

- Use a rule to measure the length of facial features eg nose, mouth, eyes.
- Add colour to the picture.

36 Patterned Pupils

Symmetry, Patterns

Quick Summary

Create patterns using students and objects in the classroom

Learning Objectives

- Identify and create patterns.

Equipment

Students, objects in the classroom.

How to play!

Step One	Split into two teams.
Step Two	Instruct students that they are to make a pattern using themselves eg boy, girl, boy, girl.
Step Three	Opposite team attempts to solve the pattern.
Step Four	Once solved, teams swap.

Extension Activities

- Students can alternate by eye colour, hair colour, handedness, sock colour, alphabetical order of first/last names.
- Choose objects in the classroom eg stapler, pen, scissors, phone, shoe – the pattern is s-p-s-p-s.
- Use numbers and create number patterns.

37 Pattern Paper

Symmetry, Patterns

Quick Summary

Create an art piece using patterns

Learning Objectives

- Accurately create a pattern.

Equipment

Graph paper (1cm^2 preferable), coloured markers or pencils, scissors to cut paper in half.

How to play!

Step One	Allows students to choose 3 or more different colours eg red, blue, green.
Step Two	Students arrange these colours in their preferred order.
Step Three	Students colour the squares on the graph paper using their pattern eg [redacted]
Step Four	Repeat until sheet is full.

Extension Activities

- Increase the number of colours eg [redacted]
- Add in colour variants eg [redacted]
- Alternate colours eg [redacted]
- Add random colours as bookends to the pattern eg [redacted]
- Create different pattern or colour combinations for each line eg [redacted]

38 Blind Maze

Direction, Position, Movement, Compass Points, Angles

Quick Summary

Test directions and movement by following instructions when blindfolded.

Learning Objectives

- To follow movement and direction instructions.

Equipment

Blindfolds, 20-50 coloured cones or witches hats, chalk

How to play!

Step One	Take students to a large, open space that is free of obstacles eg hall, sports field.
Step Two	Students get in pairs. Instruct students that one will be blindfolded while the other will verbally direct them to coloured cones using basic commands such as forward, left, right, stop.
Step Three	Students decide who is blindfolded and the coloured cones are randomly placed around the area.
Step Four	The student who can see directs their partner towards the cones eg five steps forward, turn right, three steps forward, stop, pick up the cone. Repeat the process until all the cones have been retrieved.

Extension Activities

- Use four compass points as directions ie N, S, E, W. Extend to eight points ie N, NE, E, SE, S, SW, W, NW.
- Use angles as direction eg turn left/right 45°, 90°, 180°, 270°.
- Using the chalk, draw a path on the ground. Students direct their partner along the path.

39 Street Smarts

Direction, Position, Movement, Compass Points

Quick Summary

Test knowledge of movement and direction on a map.

Learning Objectives

- Understand direction by reading a street map.

Equipment

Street map, ruler, pencil.

How to play!

Step One	Photocopy a street map, either of the local area or another place. Ensure shops, landmarks and attractions are included.
Step Two	List the location of shops, landmarks and attractions. Students begin at a certain point, eg the school.
Step Three	Students use the ruler to measure how far they are to travel and record the direction and distance to the location eg follow the street for 5cm, turn left, follow the street for 3cm.
Step Four	Compare results and repeat the process to a different location.

Extension Activities

- Find the shortest route between locations.
- Alternate beginning locations.
- Give students a starting location. Verbally direct them to a location on the map eg follow the street for 5cm, turn left, follow the street for 3cm. Students need to find the location.

40 Playground Compass

Direction, Position, Compass Points

Quick Summary

Use knowledge of eight compass points to locate objects.

Learning Objectives

- Accurately use eight points of the compass.

Equipment

Chalk, list of objects/places in the school yard eg staff room, slide, football pitch, tree.

How to play!

Step One	Take students to a large, open space eg the playground.
Step Two	Provide them with a list of objects/places in the school yard eg staff room, slide, tree.
Step Three	Find north and using chalk draw a large compass in the middle of the yard.
Step Four	Using the compass points, students write the location of the object/place on their sheet. Once complete, compare answers.

Extension Activities

- Use four compass points as directions ie N, S, E, W. Extend to eight points ie N, NE, E, SE, S, SW, W, NW.
- Instead of the school yard, locate items in the classroom.
- Change the centre point and compare findings. Highlight how objects/locations will differ when standing at a different centre point.

41 Shape Robots

Regular 2D Shapes, Symmetry

Quick Summary

Create a symmetrical robot using coloured 2D shapes.

Learning Objectives

- Identify symmetrical aspects of shapes.
- Identify 2D shapes.
- Create a symmetrical robot.

Equipment

Scissors, glue, coloured paper shapes, A4 paper, 2D shape stencil.

How to play!

Step One	Obtain a mixture of 2D shapes in a variety of colours, eg red squares, yellow hexagons. If not are available make your own or get students to make them using stencils.
Step Two	Create a robot using the glue to stick the shapes on the A4 paper eg the legs can be rectangles, eyes can be hexagons, head can be a square.
Step Three	Check for symmetry.
Step Four	Arrange the robots for students to compare symmetrical aspects.

Extension Activities

- Create half a robot for students to replicate.
- Students create half a robot for their peers to replicate.
- Give students a set number of shapes they have to use. To increase the difficulty, add more shapes.

42 Shape Bingo

Regular and Irregular 2D Shapes

Quick Summary

Test student knowledge of regular and irregular 2D shapes.

Learning Objectives

- Identify regular and irregular 2D shapes by their properties.

Equipment

Shape bingo card, markers, shape descriptions.

How to play!

Step One	Create a list of the different shapes that have been studied eg square, octagon, irregular hexagon, rhombus etc.
Step Two	Draw different shapes or write their names on the bingo cards.
Step Three	Describe each shape in random order eg I have four sides of equal length and four right angles, I have eight sides of different lengths
Step Four	Students cross off the described shape on their bingo cards. The first to finish shouts BINGO. Repeat the game.

Extension Activities

- Begin with regular shapes.
- Extend to irregular shapes.

43 Tangrams

Regular 2D Shapes

- Include angles, lines of symmetry and parallel lines in the descriptions.

Quick Summary

Create a tangram.

Learning Objectives

- Create and name regular shapes.
- Create and name irregular shapes.

Equipment

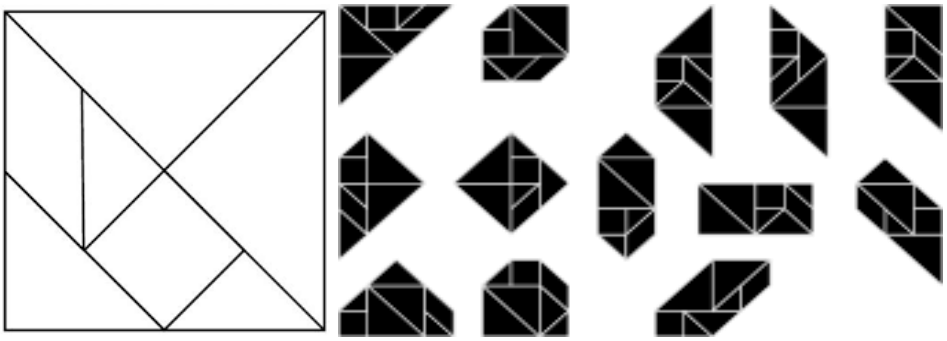
Ruler, pencil, cardboard, scissors, coloured markers.

How to play!

Step One	Distribute a 20x20cm square of cardboard to students.
Step Two	Students use the ruler to draw five straight lines across their square, creating triangles and quadrilaterals.
Step Three	Add colour to each created shape and then cut them out.
Step Four	Shapes are jumbled and students attempt to reconstruct the square or create different shapes.

Extension Activities

- In order to create more shapes, use a larger square eg 30x30cm and add more lines.



44 Straw Shapes

Regular and Irregular 2D Shapes

Quick Summary

Create regular and irregular shapes using straws.

Learning Objectives

- Create, name and describe the properties of regular shapes.
- Create, name and describe the properties of irregular shapes.

Equipment

String, straws, scissors.

How to play!

Step One	Cut the straws at different lengths and thread onto a piece of string. Tie a knot at either end of the string to ensure the straws remain attached.
Step Two	Instruct students to use 3-8 straws to create various shapes eg triangle, hexagon.
Step Three	Manipulate the string and straws to create different shapes.
Step Four	Repeat and create a variety of different shapes.

Extension Activities

- Include straws of the same length to create regular shapes.
- Include straws of different lengths to create irregular shapes.
- Identify right angles and parallel lines within the created shapes.
- Students play the role of straws by lying on the floor to create different shapes.

45 Shape Constructor

Regular and Irregular 2D Shapes

Quick Summary

Create regular and irregular shapes using icy pole sticks.

Learning Objectives

- Create, name and describe the properties of regular shapes.
- Create, name and describe the properties of irregular shapes.

Equipment

Icy pole sticks (coloured or plain), black marker, coloured markers, glue, cardboard (coloured or plain), scissors.

How to play!

Step One	Brainstorm different shapes and angles with students. Students create a list from this.
Step Two	Instruct students to use 3-8 sticks to create various shapes eg triangle, hexagon. Use the glue to stick each stick at the corner.
Step Three	Using a marker, label each shape.
Step Four	Using the created shape, trace an outline on the cardboard. Cut out the stencil and stick it to the back of the created shape. Hang in classroom.

Extension Activities

- Describe the properties of the shape.

Notes

- If using coloured sticks then designate a colour for each shape eg triangles are green, hexagons are yellow.
- If using plain sticks then label each shape using different coloured markers

46 Elastic Shapes

Regular and Irregular 2D Shapes, Fractions

Quick Summary

Create regular and irregular shapes using elastic bands.

Learning Objectives

- Create, name and describe the properties of regular shapes.
- Create, name and describe the properties of irregular shapes.

Equipment

Elastic bands (coloured or plain), wooden board or pin board, nails, hammer, graph paper (preferably 2x2cm), sticky tape.

How to play!

Step One	Tape the graph paper to the wooden board.
Step Two	Using the graph paper as a guide, hammer the nails into the wooden board to form a 10x10 grid. Remove the paper.
Step Three	Using the elastic bands, students create different shapes on the board by using the embedded nails as pivots/corners.
Step Four	Students create new shapes as required

Extension Activities

- Describe the properties of the shape.
- Use further elastic bands to segment shapes into halves, thirds quarters and eighths.

Notes

- Larger boards can be created as required eg 20x20, 50x50.
- Students can create individual boards or there can be one large board for the class to use.

47 Geometric Dictionary

Regular and Irregular 2D and 3D Shapes, Angles

Quick Summary

Create a dictionary to describe shapes and angles.

Learning Objectives

- Describe regular and irregular 2D and 3D shapes by their properties.

Equipment

Small note book, pen/pencil, ruler, coloured markers,

How to play!

Step One	Brainstorm different shapes and angles with students. Students create a list from this.
Step Two	Arrange list in alphabetical order or order shapes according to number of sides.
Step Three	Distribute notebooks. Students create a cover and designate a page to each listed shape and angle.
Step Four	Using a ruler, students draw each shape or angle, describing its properties underneath eg SQUARE: a plane figure with four equal straight sides and four right angles.

Extension Activities

- Begin with regular 2D shapes.
- Students can add new shapes as they are learnt.
- Describe acute, obtuse, reflex and right angles.
- Link properties of shapes eg a cube has six faces, all of which are squares.

48 Scavenger Hunt

Regular and Irregular 2D and 3D Shapes

Quick Summary

Search for shapes around the school.

Learning Objectives

- Create, name and describe the properties of regular shapes.
- Create, name and describe the properties of irregular shapes.

Equipment

Camera, pen/pencil, paper.

How to play!

Step One	Create a list of geometric terms and make sure that students understand each.
Step Two	Students use a camera to photograph examples of geometric objects around the classroom or school.
Step Three	Students can write a list of the objects' locations or compare pictures.
Step Four	Complete for homework with students finding objects at home or in the community.

Extension Activities

- Begin with 2D shapes eg computer screen is a square, windows frames are parallel and have right angles.
- Extend to 3D objects eg witches hat is a cone, shed is a prism.

MEASUREMENT

Quick Summary

Revise and consolidate basic measurement skills using these quick and practical activities.

Learning Objectives on:

- Time
- Elapsed Time
- Length
- Mass
- Capacity
- Estimation

Equipment Includes:

- Pen
- Pencil
- Paper
- Coloured pencils or markers
- Scissors
- String
- Ruler
- Tape measure
- Stop watch
- Yellow educational clocks

49 The Human Clock

Time

Quick Summary

Create a human clock to tell the time.

Learning Objectives

- Tell the time on an analogue clock.
- This can be to the hour/half/quarter/five minutes.

Equipment

Large numbers 1-12 eg floor mats, print outs

How to play!

Step One	Sequentially place the numbers in a large circle on the floor to represent a clock face.
Step Two	Chose two students. They will represent the hour and minute hands.
Step Three	Write or state a time. Students place their feet in the centre of the circle and use their bodies to point to the specific time.
Step Four	Repeat process and change students as required.

Extension Activities

- Write the time in word form.
- Alter the way the time is stated eg instead of stating 12:45 state a quarter to 1.
- To incorporate teamwork skills, create a clock face with a larger diameter and use three or four students as clock hands.

Note

- If there are too many students, create additional clock faces.
- If the classroom is too small, play outdoors or in a larger room such as the school hall.

50 Predicting Time

Estimating Time, Elapsed Time

Quick Summary

Estimate how long one minute is.

Learning Objectives

- Estimate how long one minute is.
- Compare differences in elapsed time.

Equipment

Stop watch. Remove clocks and watches.

How to play!

Step One	All students stand at their desk.
Step Two	Instruct students that they are to sit when they believe one minute has passed.
Step Three	Distract students by asking them questions.
Step Four	Do not inform students when one minute has passed, simply note who sat down closest to one minute.

Extension Activities

- Increase the time frame eg 2 minutes.
- Create a task to complete at the same time eg times tables equations. Students will be distracted while answering the equations however they are still required to sit when they believe one minutes has elapsed.

51 Sand Timers

Elapsed Time

Quick Summary

Create individual sand timers students.

Learning Objectives

- Create a visual representation of elapsed time.

Equipment

Large, clear jar, paper/plastic/Styrofoam cup, clean, dry sand, stop watch.

How to play!

Step One	Poke a hole in the base of the cup and place it over the jar.
Step Two	Pour the sand into the cup. Use the stop watch to time the sand falling through the hole. When the desired time is reached, eg 1minute, remove the sand.
Step Three	Remove the sand from the jar and repour into the cup. This will be the timer.
Step Four	Create different timers with more or less sand.

Extension Activities

- Use different coloured sand eg blue is 1minute, yellow is 5 minutes.
- Use the timers when cleaning the classroom.
- Use the timers when completing other timed activities.

52 Clock Creator

Time

Quick Summary

Create individual analogue clocks.

Learning Objectives

- Move the hands of an analogue clock to represent time.

Equipment

Coloured cardboard, scissors, black marker, brass split pin fastener.

How to play!

Step One	Cut a circle out of the out of the cardboard. Cut a large and small hand out of two different coloured pieced of cardboard.
Step Two	Draw the numbers 1-12 on the circle to represent a clock face.
Step Three	Using the brass split pin, connect the clock hands to the clock face.
Step Four	Move the hands to specific times.

Extension Activities

- Include minute segments.
- Include a second hand.
- Write Roman Numerals I-XII instead of 1-12.

Note

- Laminate the clock face and the clock hands for extra durability.

53 Train Times

Elapsed Time, Time

Quick Summary

Read a train schedule to calculate elapsed time.

Learning Objectives

- Calculate elapsed time.

Equipment

Train timetable, pen, analogue learning clock

How to play!

Step One	Create a train timetable with various routes, departure and arrival times.
Step Two	Students use the analogue clock to find the departure time.
Step Three	Students move the hands forward to the arrival time counting the elapsed minutes.
Step Four	Students calculate difference between departure and arrival time.

Extension Activities

- Create arrival and departure times of varying elapsed time eg 60minutes, 90minutes, 100minutes.
- Include train delays eg the train was delayed 15minutes, how long was the journey?
- Combine journeys and waiting time eg a passenger caught the 11:00 train from Brighton which arrived at London at 12:00. The passenger waited at the station for 15minutes then caught another train to Bristol which arrived 45minutes later. What time did they arrive?

54 The School Day

Elapsed Time, T Time

Quick Summary

Create a time table depicting the beginning and end of each lesson with the elapsed time.

Learning Objectives

- Calculate elapsed time.

Equipment

School timetable, blank timetable, different coloured pens, ruler, analogue learning clock

How to play!

Step One	Photocopy the blank timetables.
Step Two	Students input their lessons and breaks including the start and end time.
Step Three	Students use analogue clocks to calculate time elapsed during each lesson.
Step Four	Repeat the process and record the time for each lesson.

Extension Activities

- Create a weekend timetable where students record what they do during the same timeframe as school eg 09:30-10:30, Lesson 1, ate breakfast and showered.
- Create a TV, fitness or games timetable where students record what they do during the same timeframe as school eg 09:30-10:30, Lesson 1, ran 5km and did 50 push ups.
- Calculate second and minutes.

55 Weighing Sands

Elapsed Time, Time

Quick Summary

Weigh specific mass using sand.

Learning Objectives

- Weigh specific mass.
- Add or remove mass to create a specific weight.

Equipment

Weighing scales, sand, pen and paper.

How to play!

Step One	Write set weights for students to create eg 100g, 1000g.
Step Two	Add an amount of sand to the scales eg 500g.
Step Three	Students add or remove sand until they reach the desired weight.
Step Four	Calculate the difference and then weigh the next amount.

Extension Activities

- Write amounts in grams, kilograms, decimals eg 0.5kg or fractions eg ½ kg.
- Create smaller weights eg 10g.

56 Time Bingo

Analogue and Digital Time

Quick Summary

Play Bingo by telling the time.

Learning Objectives

- Tell the time on a digital/analogue clock.
- This can be to the hour/half/quarter/five minutes.

Equipment

Bingo cards (see appendix), analogue clock used for telling time (commonly yellow), pen, whiteboard marker or tiddlywinks.

How to play!

Step One	Chose a time frame to cover eg hour/half/quarter/five minutes.
Step Two	Write various times in digital form on the Bingo Answer cards. The cards need to be reduced to 3×3 when using the hour or half hour.
Step Three	Distribute the answer cards and a marker to all students.
Step Four	Teacher shows class the time on the analogue clock eg 12:45. Record the times shown. Students mark the corresponding time on their answer cards. The first to have a line of three or five shouts BINGO and is the winner.

Extension Activities

- Use analogue clock faces on the answer cards and state the time.
- Write the time in word form on the answer cards eg a quarter to five.

Notes

- This game requires preparation time.
- To ensure durability, laminate all cards.

57 Measurement Bingo

Distance, Mass, Capacity

Quick Summary

Play Bingo by matching corresponding measurements.

Learning Objectives

- Converting units of measurement.
- Dependant on type of measurement utilised.

Equipment

Bingo cards (see appendix), pen, whiteboard marker or tiddlywinks.

How to play!

Step One	Chose a measurement topic to cover eg distance, mass, capacity.
Step Two	Depending on learning objective chosen, write the seventy-five different equations on the Bingo Question cards eg 1cm, 500g 1000ml. Randomly write the answers to the questions 5×5 Bingo Answer cards eg 10mm, 0.5kg, 1L.
Step Three	Distribute the answer cards and a marker to all students. Shuffle the question cards.
Step Four	Turn over a question cards and state the equation eg 1cm. Students mark the corresponding measurement eg 10mm on their 5×5 answer card. The first to have a line of five shouts BINGO and is the winner.

Notes

- This game requires preparation time.
- To ensure durability, laminate all cards.

58 What's in the Box?

Comparing and Estimating Weight

Quick Summary

Compare and estimate the weight of objects.

Learning Objectives

- Calculate elapsed time.

Equipment

Train timetable, pen, analogue learning clock

How to play!

Step One	Create a train timetable with various routes, departure and arrival times.
Step Two	Students use the analogue clock to find the departure time.
Step Three	Students move the hands forward to the arrival time counting the elapsed minutes.
Step Four	Students calculate difference between departure and arrival time ie the journey time.

Extension Activities

- Create arrival and departure times of varying elapsed time eg 60minutes, 90minutes, 100minutes.
- Calculate seconds and minutes.
- Include train delays eg the train was delayed 15minutes, how long was the journey?
- Combine journeys and waiting time eg a passenger caught the 11:00 train from Brighton which arrived at London at 12:00. The passenger waited at the station for 15minutes then caught another train to Stansted which arrived 45minutes later. What time did they arrive?
- Use the created clocks.

59 Weigh the Room

Mass, Comparing and Estimating Weight

Quick Summary

Read scales by weighing objects in the classroom.

Learning Objectives

- To accurately weigh objects
- To accurately read weighing scales

Equipment

Scales, pen, paper, various objects of differing mass.

How to play!

Step One	Instruct students to select five different objects in the classroom.
Step Two	Students estimate their mass by placing the objects in order from heaviest to lightest.
Step Three	Students weigh objects on the scales and record the data.
Step Four	Select different objects and compare to those already weighed.

Extension Activities

- Buy ten different fruits or vegetables and compare their mass.
- Calculate the difference in mass eg compare the pineapple and the orange, how much more does the pineapple weigh?
- Half or quarter the objects, calculate the mass of the divided objects.
- Add more objects. How much will is weigh if there were three objects?
- Add a price per kilogram for each object. Instruct students to calculate the cost of each object according to the mass.

60 Order the Parcels

Mass, Comparing and Estimating Weight

Quick Summary

Estimate weight of parcels.

Learning Objectives

- Estimate the weight of different parcels.

Equipment

Parcels of different sizes, pen, paper, local postal costs.

How to play!

Step One	Create five packages of different size and mass.
Step Two	Hand students a copy of the postage costs for sending packages. This can be obtained online.
Step Three	Students compare the mass to the postage costs and record the price to send each package.
Step Four	Repeat the process for the other packages.

Extension Activities

- Send the packages to different locations eg overseas, via express post. Calculate the different costs.

61 Desk Measuring Line

Distance, Estimation, Place Value

Quick Summary

Estimate length by creating a number line on a desk.

Learning Objectives

- To estimate length to 1metre.

Equipment

Post-it notes, pen or marker, 1m ruler, 30cm ruler, masking tape

How to play!

Step One	Use to masking tape to mark a 1metre length on each students desk.
Step Two	On the board, write various measurements in random order eg 50cm, 11cm, 91cm, 4cm.
Step Three	Students place their Post-it notes on the number line according to where they think the measurement falls, eg 50cm would be half way between 0-100.
Step Four	Students are encouraged to justify the placement of their number.

Extension Activities

- Measure a 5metre segment in the classroom where students have to estimate where different measurements fall eg 1.5m, 4.8m etc.
- Use millimetres or decimal values of a metre instead of centimetres eg 600mm or 0.6m.

62 Pencil Lengths

Length, Comparison

Quick Summary

Compare and order the length of pencils.

Learning Objectives

- To differentiate length of similar objects.

Equipment

Pencils of different lengths, ruler.

How to play!

Step One	Distribute 5-10 pencils of different lengths.
Step Two	Instruct students to order the pencils from shortest to longest.
Step Three	Get students to check their peers' measurements.
Step Four	Use a ruler to measure the lengths.

Extension Activities

- Begin with pencils with obvious difference in length then progress to pencils with small differences. Ensure pencils are in correct order and get

63 Table Slide

Distance, Addition

- students to notice the small difference in length.

Quick Summary

Measure length by playing cards.

Learning Objectives

- Measure to the nearest cm or mm.
- Add numbers.

Equipment

Cards, ruler, pen/pencil, paper

How to play!

Step One	Sit around a rectangular table and divide the deck of cards evenly among students.
Step Two	Student take turns sliding cards along the table. The goal is to slide the card so that it's as close as possible to the edge of the table.
Step Three	Students use a ruler to measure the distance their card is from the end of the table. If a card falls off, students incur a 30cm penalty.
Step Four	Students have five turns each with each distance measured and recorded. The winner is the student with the lowest accumulated distance.

Extension Activities

- Measure in centimetres or millimetres.
- Increase the length of the table.
- Subtract bonus points for cards hanging over the table.

64 Area of the Room

Length, Width, Area, Volume Comparison

Quick Summary

Calculate the area of objects in the classroom.

Learning Objectives

- Accurately calculate area

Equipment

Ruler or tape measure, pen/pencil, paper, calculator, various objects in the classroom.

How to play!

Step One	Provide students with a list of five objects in the classroom eg table, ruler, computer screen.
Step Two	Students estimate their area by placing the objects in order from heaviest to lightest.
Step Three	Students measure the length and width of the objects and calculate their area.
Step Four	Select different objects and compare to those already measured.

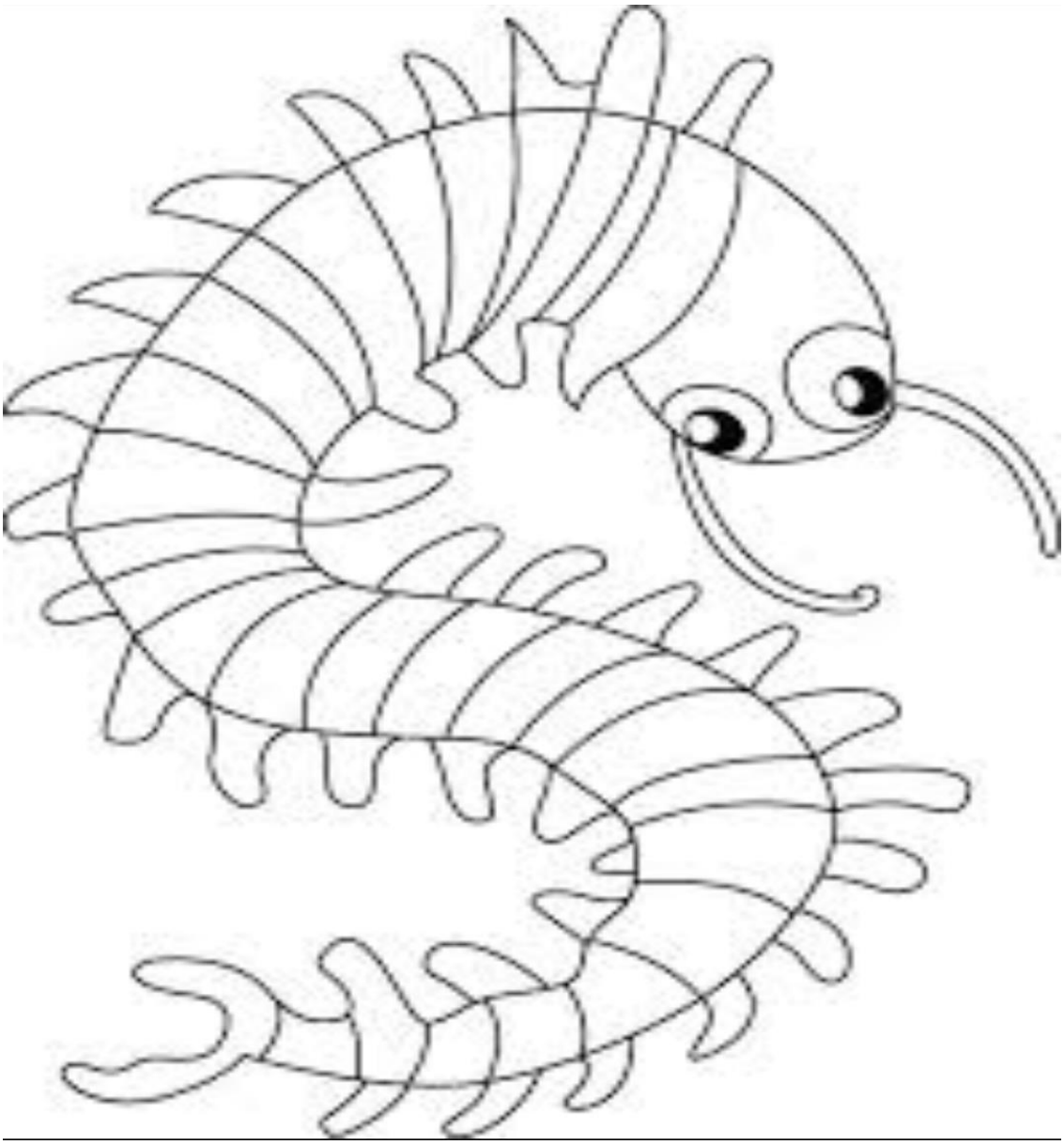
Extension Activities

- Calculate the area of larger objects eg window, door
- Calculate the volume of objects eg the classroom, box of tissues, basketball.
- Add a price tag to each object and calculate their cost eg the table is valued at \$5 per cm^2.

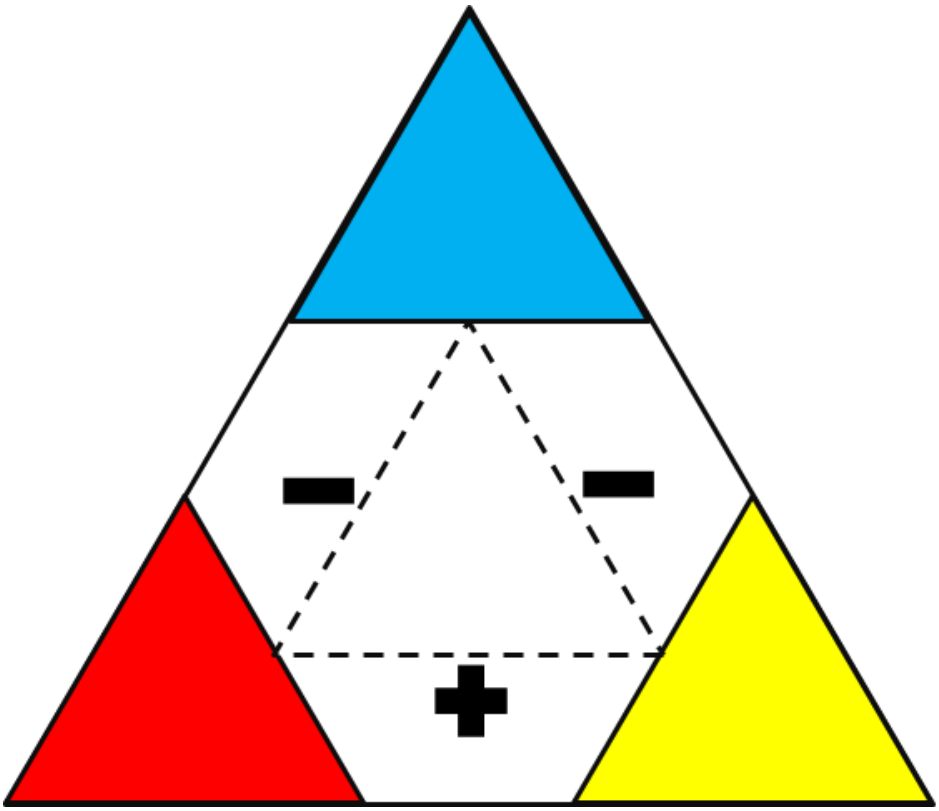
Appendix

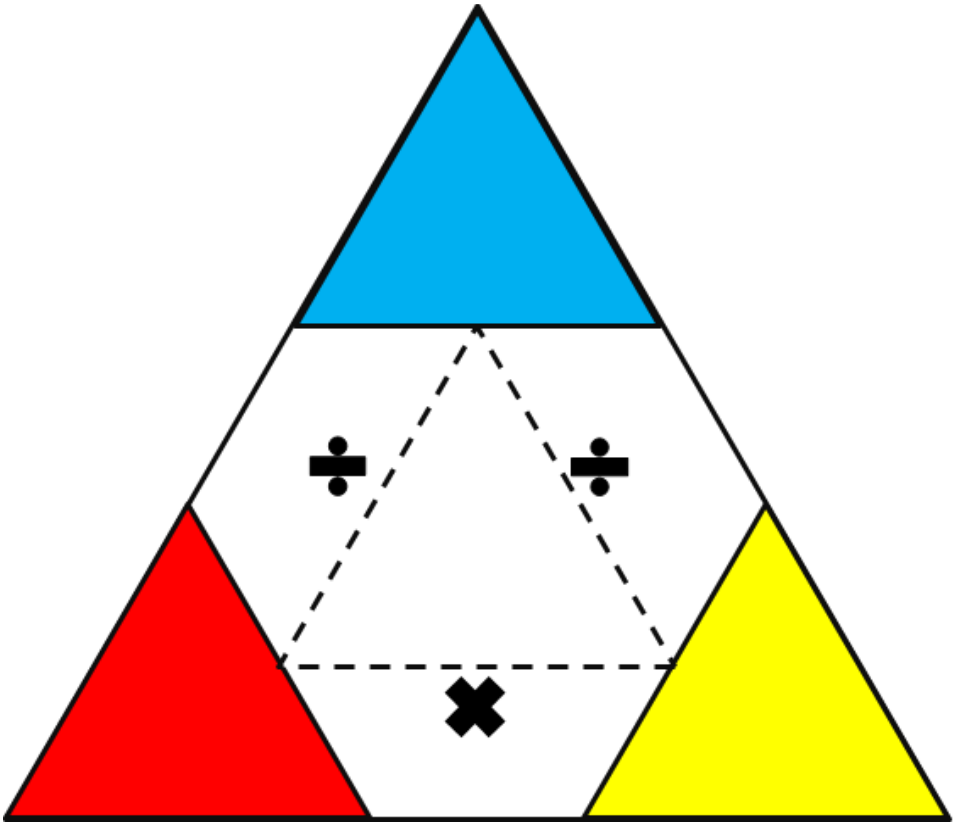
1. Centipede Shoes
2. Equation Triangles
3. Bingo question and answer cards
4. 100s square

Centipede Shoes



Equation Triangles





Bingo Question and Answer Cards

100s Squares

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	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100