Outdoor Classrooms Ltd

Learning Through Play Pack Handbook

For maths, communication, science learning- and *much* more.



Sets of solid wooden resources, for use inside, or outdoors and adaptable in a wide range of areas of learning. Designed to be hands-on, visual and fun!

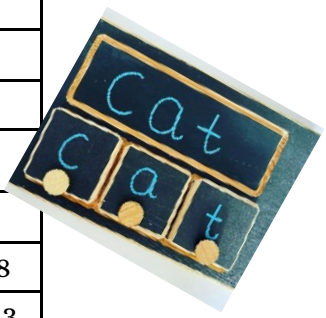
For children 36 months and over.

Outdoor Classrooms Ltd

Learning Through Play Pack

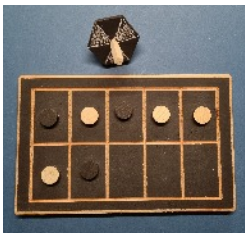


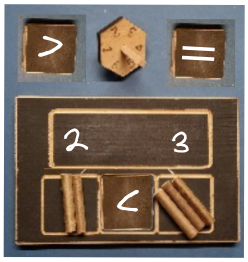




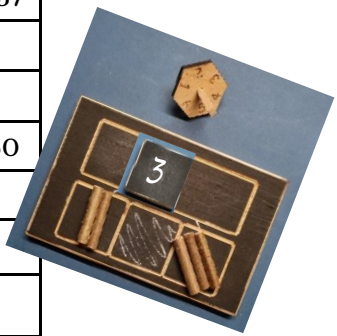












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Learning Through Play Pack

This booklet has been written with the help of teachers and 'Learning Through Play' professionals and provide informative ideas for parents and teachers alike.

AIM:

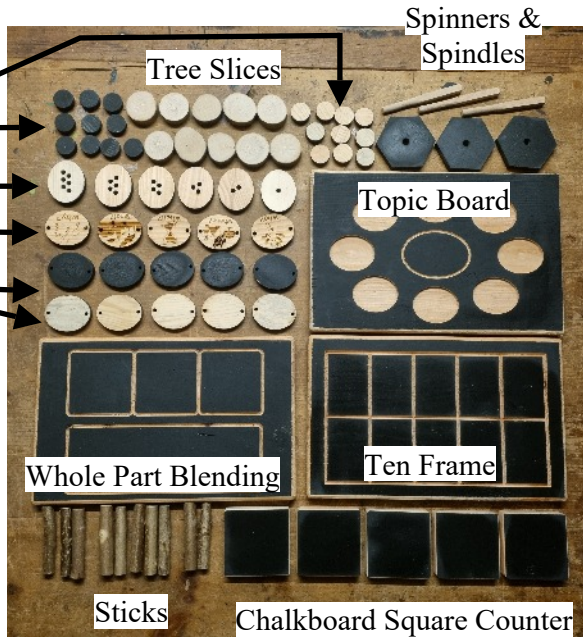
- To give every child the opportunity to reach their own personal potential.
- To support children's health and development through their use of natural wooden resources.

Objectives:
The main objectives when using the 'Learning Through Play Pack' are to;

- Promote the use of natural resources, in place of artificial, synthetic or chemically treated materials.
- Reduce the presence of environmental toxins within Educational Gardens,i.e. not to use weedkillers or chemically treated timbers.
- Provide the information and resources needed to enable educational settings to demonstrate best practice to their wider community.
- Provide well thought-out educational resources, constructed from natural, sustainable UK wood and tested to high CE/CA Toy Standards.
- Be an excellent resource, supporting effective, fun,stress free and high quality teaching and learning.

Each Learning Through Play Pack Contains:

1 x Chalkboard Ten-Frame /Number Line Board;
20 x Chalkboard 'Button Counters';
6 x Oval dot number counters (1-6);
5 x Double-Sided Story Counters;
15 x Chalkboard 'Oval Counters';
1 x Whole-Part Blending Board;
1 x Double Sided Topic Board;
10 x tree slices;
10 x 10cm sticks;
6 x 10 x 10 x 2cm Chalkboard Squares;
4 Spinner Spindles;
3 x Double sided spinners
-(1-6 numerals on one side and chalkboard on reverse)
1 x Double sided, number spinner



Acknowledgement

The Booklet was written with the help of Karen Beard (BA Professional Studies in Playwork); Leona King (EYFS Primary Teachers); Danielle Ingram (EYFS Primary Teacher); Michelle Hague (Head teacher); Jenny Elvins (Primary Maths Specialist); Abbie Birch (KS1 Primary teacher); and many others.

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Learning Through Play Pack

Care and Safety Instructions:

Please keep these instructions for further reference.

Warning: May contain small parts - Choking Hazard
Not suitable for children under 36 months
For children aged 3-12 years
Do not allow the children to put any of the loose parts in their mouths.

The adult is responsible for risk-assessing each Pack, making a judgement relative to the age and developmental stage of each child. After such assessment, if necessary, remove any small wooden pieces from the child's reach and continue to supervise appropriately. Do not allow the children to throw the pieces.

This is a natural product which may (or may not) contain bark. If the bark peels off, remove it completely and check that the surface underneath is smooth. (If necessary, use sandpaper to smooth it over). Should any pieces become damaged or broken, *these must be removed immediately*. Those pieces with sharp edges must be discarded, or the wood smoothed over with sandpaper.

Use only chalks with the chalkboard pieces. Chalk is easily wiped off using a damp or dry cloth. If the chalkboard becomes marked, it can be easily refreshed by lightly rubbing it down with fine sandpaper and carefully applying another coat of blackboard paint. DO NOT USE PENS OR MARKERS on any of the 'Activity Pack' pieces; this would permanently mark the wood. If the components become dirty from outdoor use, any dried mud should be carefully brushed off, then the component wiped with a damp cloth – or lightly sanded, using fine sandpaper.

To use the spinners, place the side you wish to use facing upwards. Put the oak dowel through the central hole. To secure, push firmly with a slight twist or turn the spinner upside down and tap the spinner lightly. To change or pack away, turn right side up and, holding the spinner, tap gently.

These Packs are made from natural and durable UK-grown wood – pine, ash, oak, larch or western red cedar – containing no toxic chemical treatments. They are ideal for both indoor and outdoor use. All the wood and blackboard paint has been passed to stringent toy standards CA/CE EN71-2 and EN71-3.

It is not advisable to store the equipment away wet, damp, or in a wet bag, especially for long periods of time, e.g., holidays. It is also recommended that the components are not placed on or near excessive heat, e.g., next to a heater, as this can stress and damage the wood.

Encourage the children to place the items away at the end of each session. Consistently doing this will familiarise them with the concept of quantities, as well as keeping the set safe and ready to use again. This 'Activity Pack' provides great versatility when exploring/consolidating a broad range of maths, language and science subjects. It is suitable for children aged 3 - 12 years, and enhances their understanding throughout the stages of learning. The 'Activity Packs' are practical, fun and offer real-life learning. *We are sure you will find them useful and enjoyable.*

Many of the 'Activity Pack' components are Design-Right protected.

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Learning Through Play Pack

Activity Ideas

Language and Literacy



Reading and Story Creation

May resources in the 'Learning Through Play Pack' are ideal to use in the development of language skills. The *solid wooden 'Story Counters'* especially help with story-telling and the retelling of stories. They're useful in the enactment of popular traditional tales and in the creation of the children's own stories. They encourage, gross motor skills and the exploration of a range of emotional aspects, like empathy.

The 'Story Counters' can be used alongside other resources i.e. the SENCO pack or props like bowls and spoons, e.g. when telling the Goldilocks story. Using these props support the children in recalling familiar and loved stories, enabling them to better remember the narrative, with each pertinent section located in its correct sequence of 'beginning', 'middle ' and 'end'. The 'Story Counters' play a prominent role in encouraging the children to compose their own stories.

When utilising this type of open-ended play, children aren't just having fun – they're also strengthening their speech sounds and language development and their creativity and social skills. This type of play boosts a child's self-confidence by supporting him (or her) to build upon their own imaginative ideas. Using the *'Counters'* and other props makes it easier for a child to express themselves verbally or, if verbal expression is a challenge, then to nod or point to the relevant *'Counter' or prop.*

Retelling Familiar Stories



1. Familiar Stories -

Activity: Read a familiar story to the children, then ask relevant questions about it - using the *'Story Counters'* as visual prompts.

Focus: *Sequencing, recalling, story language*

Extension ideas: The children read the story aloud - along with you, or retell the story together, from memory. Ask them about the *'beginning', 'middle', and 'end'* of each story.

2. Your Journey -

Activity: Talk with the children about familiar journeys they make, i.e., their journey to school. Use the *'start', 'middle' and 'end'* counters, in order to sequence this journey. Encourage the children to draw each part of their journey. For example, their *'start'* may be a picture of their house, the *'middle'* is the journey itself, and the school is the *'end'*.

Focus: *Sequencing, recalling, story language*

Extension ideas: Choose a character from a familiar book and reproduce its own journey. Use the counters *'start', 'middle' and 'end'* to sequence this character's own journey.

Story Creation

3. Story Adventures -

***Activity*:** Use *'The Outdoor Classrooms'* wooden characters, i.e., *'The Three Bears', 'Fred'* or any other toy character, chosen by the children. Use them to support the children in composing their own stories. Take the characters to a particular place to begin their adventure, i.e., a garden, a classroom, or anywhere accessible and safe. Encourage the children to develop their own narrative, being careful *not* to steer the story along in the way that *you* think it should go.

Focus: *Creativity, flexible thinking, narrative building*

***Extension*: Ask open-ended questions (recalling the 'who', 'what', 'where', 'when', 'why', and 'how').** Such questioning opens up new pathways, e.g., "**What** are the *'pigs' going* to do?" **It's important to remember, and to emphasise to the children, that there are NO wrong answers.**



For Pre-Schoolers use: *'start', 'middle' and 'end'.*

For Reception children use; *'Who?', 'When?', 'Where?' 'Why?', 'What?' and 'How?'*

For KS1 use; '*Who?', 'When?', 'Where?', 'Why?', 'What?'* ... and *'Problem' and 'Solution'.*

For example, if the children want a chosen character to fly to a tree, ask, "**Why** are they flying to that tree?" and "**How** do they fly there?" "**What** do they see from the tree?" "**Where** do they go next?" and so on.

Wooden characters like the 'Three Bears', the 'Three Pigs' and the 'Owl Family', all available from Outdoor Classrooms Ltd.

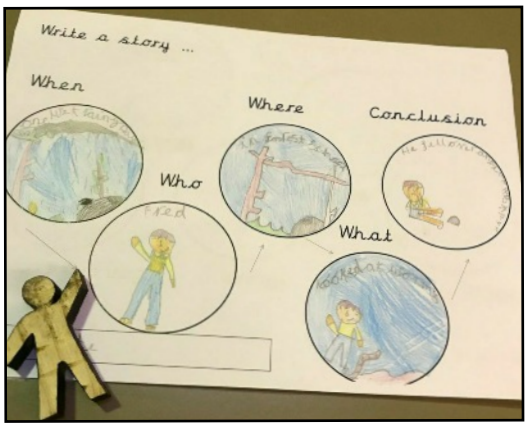
4. Story Creation Recording -

Activity: Encourage the children to make new adventures (using the above steps as a guide). The *Story Counters* are used as visual aids - supporting the children to recall and retell their created story, i.e. " **Where** was your story set?" **Who** was in your story?" **How** did the story begin, and **how** did it end?" It may be worthwhile, at this point, to record the children's stories - either in written or drawn form. Use the *'Story Counters'* to structure the retelling, drawing or writing of the story.

Focus: *Creativity, flexible thinking, narrative building*

Extension: The children *perform* their new story – using their chosen 'character' or, why not create a puppet show area!





5. What Goes in the Bag? -

Activity: Bring a chosen object into the classroom and place it into the bag. Encourage the children to ask questions about it; using the, **'who', 'what', 'when', 'where', 'why' and 'how'** format. If it's a bag, for example, "Who does the bag belong to?" i.e. the Three Bears. "**What** are the *Bears* putting inside their bag?",

Focus: *Creativity, flexible thinking, narrative building*

Extension: Provide a bag for the children to gather a range of items to use for their chosen character. Encourage their imaginative play as they act out their character's adventures.

6. *'Hot Seating'* the '*Story Counters*' -

Activity: A child takes on the role of an owl (or any other chosen character). The other children (using the *'Story Counters'*) ask whatever questions they wish, i.e., '**What** are you doing?', '**Where** are you going?' They could base their questions on familiar stories i.e. 'Little red Riding Hood'.

Focus: *Speaking in role, asking/answering questions*

Extension ideas: The children take turns to adopt the role of an alternative character, i.e., *Goldilocks'* from *'The Three Bears'* or the *'wolf'* from the *'Three Little Pigs'.*

7. Group story –

Activity: Compose a story as a group. The *'Story Counters'* offer a great introduction to descriptive language. Begin by having a general conversation, using the *'Story Counters'* as visual aids. Record the children's ideas and debate which ones would best fit the narrative. (This provides a great opportunity to teach the children about differences, respecting others' opinions, sharing and teamwork). Refrain from the temptation to lead or steer the children to one particular narrative. **This is their story, and it has to be created by them.** By all means, help them to make sense of all of their ideas and discuss which ones to use.

To prevent a child from being disheartened if their idea is not used, encourage them by saying, "I love that idea - do you mind if I write it down for next time?" Or "Maybe you could draw that in a picture for me?"

Ask the children to choose the characters '**who**' they wish to use in their story. Each child becomes the 'voice' of their chosen character. Encourage the characters to converse with each other.

Focus: *Vocabulary, sentence structure, intonation, building dialogue,*

Extension ideas: **1.** Add props to extend conversations. **2.** Introduce *'speech bubbles'* inside which the children can write or draw.

8. Guess the Character -

Activity: Give one child the, **'Who?'** counter, and ask that they choose a character – but they don't tell the other children! (The child may whisper to you (their teacher) the character they have chosen, if that is helpful). The other children ask questions, requiring a *'yes'* or *'no'* answer, to work out which character it is.

Focus: *Questioning, listening, logical thinking.*

Extension ideas: For older child, repeat the above idea but use the **'where'** counter /concept instead of the **'who'**.

9. Scene in a Box -

Activity: Use a tray/box with a scene and props (owls, door, etc.) for children to explore and describe.

Focus: *Vocabulary building, descriptive language, imaginative storytelling*

Extension ideas: Ask extension questions beyond what the children can see, feel, etc. **Why** do they think the characters are there? **What** are they doing? **Where** are they going?

10. How Are They Feeling?-

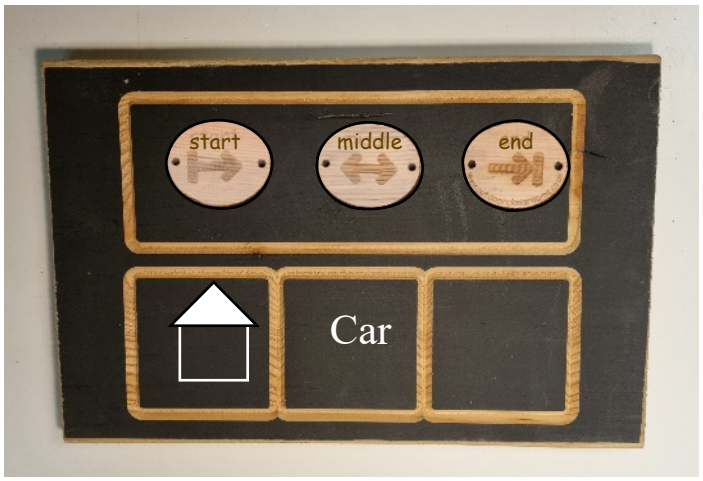
Activity: Read familiar stories and ask **'How'** the '*characters'* might be feeling in any given situation. Alternatively, pass the **'How'** *counter* around, and ask how the child might be feeling today and **'Why'**? Be mindful of any child protection (safeguarding) issues which may become apparent and follow the relevant procedures, should the need arise.

Focus: *Emotional literacy, empathy, expressive vocabulary*

Extension ideas: **1.** Children tell you the narrative of their story and how the characters are feeling. Children play together in groups. (Be alert for possible safeguarding child protection issues). **2.** Link to children's own experiences, i.e., "When have you felt left out/scared?".

11. Tell Of Your Journey -

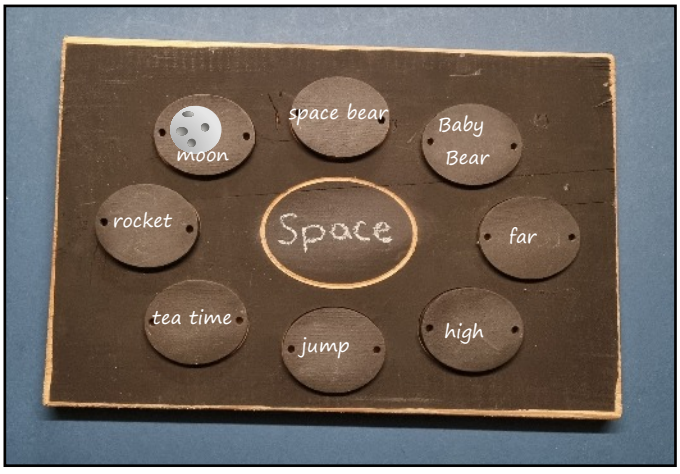
Activity: Use the *'start', 'middle' and 'end'* counters as helpful visual clues. ***' The Whole-Part Blending Board'*** is a good base for this activity. Place the *'start', 'middle'* & *'end'* counters above the squares. Ask the children to write, draw or sign about their journey to school (or another trip). Alternatively, write the 'start, middle and end, at the top of a sheet of paper.



12. Subject Story -

Activity: Use the **Topic Board**. Write down the main subject in the middle oval area (see picture below), i.e., *Space, The Romans* or *Fred and the Bears*. Place the other *chalkboard ovals* in the surrounding spaces. Ask the children to tell you of any words which have come to their minds, centred upon the main subject. Record these on the *chalkboard ovals*. Once done, turn the **Topic Board** over, and position the *'Story Counters'* - ' **'who', 'what', 'where', 'when', 'why', and 'how'** in the top row. Place the *chalkboard oval* words underneath the relevant counters. For example, '*Space'* may have generated words like*, 'rocket', 'astronaut', 'cold', 'stars'*. 'Rocket' might be the **'how'** to get into space, 'astronaut' the '**who'** goes into space, etc. Questions like these prompt the children to create and structure their own storyline. The above activity can also be achieved using the *chalkboard squares* (see middle picture).







Phonics – Letter/Sound Recognition and Writing

DEFINITION – **Phonics** is the teaching of sounds associated with letters which form words. By hearing these sounds, children learn how to work out how new and unfamiliar words are read and spoken. Sound letters like *'a'* have a separate sound, whereas groups of letters have their own sounds, i.e., *'sh', 'th', 'wh',* and *'air'*. The '**Whole-Part Blending Board**' enables children to make written marks (using chalk) underneath a particular word. This familiarises them with basic writing and language skills. Using the **Chalkboard Spinner Set**, makes phonics learning fun!

CVC words:- **C**onsonant, **V**owel, **C**onsonant: three-letter/sound words i.e. *'sat', 'pin', 'mum', 'dad',* and *'cat'*. These types of words are the first words taught to children and are some of the easier ones to read by learning and understanding the letter sounds.

Phonemes:- Sounds comprised from a single letter, i.e. 'a', 'b', and 't'

Grapheme:- sounds comprised from a combination of one or more letters, i.e. *'ai', 'oo', 'igh', 'ure', 'eigh', 'ough',* and *'ie'*.

Sound Button:- Where a single letter making up a sound, (i.e. 'a', 'b' or 't') is shown as a dot underneath the letter.

Digraph:- Two letters positioned together that make a particular sound, i.e., *'ai', 'oo', 'ck',* and *'ff'*, as in 'train', 'cook', 'clock', and 'coffee'. **Digraphs** are clearly shown by a line underneath the two letters (This is called a sound bar).

Trigraph:- Three letters positioned together that make a particular sound, i.e., *'igh', 'ure',* and *'tch'* as in *'sigh', 'sure',* and *'ditch'*. **Trigraphs** are clearly shown by a line drawn underneath the three letters (This is called a sound bar).

Quadgraphs:- Four letters positioned together to make a particular sound, i.e., *'eigh', 'ough',* and *'augh'*, as in 'eight', 'tough', and 'laugh'. **Quadgraphs** are clearly shown by a line drawn underneath the four letters. (This is called a sound bar).

Split Digraph:- Where the combination of two letters in a word make a particular sound, but each letter is split from the other by another letter/sound between, i.e., *'i'* and *'e'*, each side of '**k**', as in 'like'. **Split digraphs** are clearly shown by a rainbow bar drawn underneath the letters, starting under first of the two letter, finishing under the second letter (This is called a splitter).

Alien Words:- Letters put together that constitute a word (with familiar sound rules) which has no meaning in the English language, e.g., *'doil', 'roil',* and *'geat'*.

Tricky Words:- Words that cannot be pronounced by 'sounding out' the letters/sounds, because they do not fit into the standard rules of sounds. These words need to be learnt by rote as a single unit. For example, *'the', 'into',* and *'could'*.

Common Exception Words:- Words where the common sounds (or spelling rules) are not followed, i.e., *'ai'* is pronounced differently in 'pain', and 'main' as opposed to 'said'.

High Frequency Words:- Commonly used words that occur most frequently in a sentence. For example, 'the' and 'like'.

Chalkboard CVC Spinner Set Activities

1. CVC Spin and Build -





Instructions: Spin each of the three spinners—one for the *initial sound*, one for the *medial vowel*, and one for the *final sound*. The children search for the matching letters on the chalkboard *oval* and build up a CVC word. This visual way of learning show the segmenting and blending of words. It encourages interactive conversations around the meaning of the words – breaking them up into their separate parts, then blending them to form the completed word.

Focus: *phonemic awareness, blending, letter recognition, and fine motor manipulation.*

Extension ideas: 1. Sort words into *real* and *nonsense.*

2. Choose a child's favourite word and draw it.

2. CVC Spin, Build and Find -



Instructions: Spin each of the three spinners—one for the initial sound, one for the *medial* vowel, and one for the *final* sound. The children search for the matching letters on the *chalkboard oval* to build up a CVC word. Then they search for a matching picture card (or object) that represent that word.

Focus: *early reading comprehension, phoneme-grapheme correspondence, vocabulary building.*

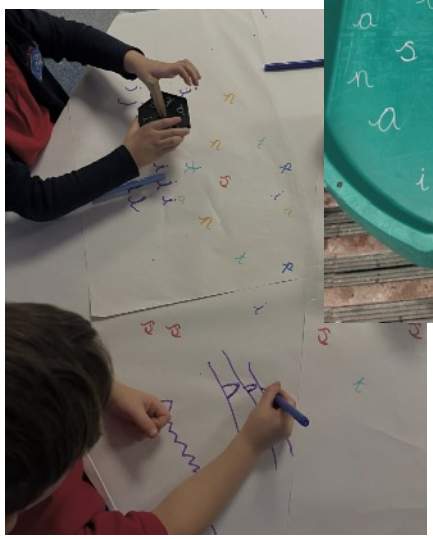
Extension ideas: 1. Hide picture cards around the room for a "CVC treasure hunt" or within a sensory tray to encourage sensory play and fine motor practice.

2. Extend vocabulary by describing the newly found picture card.

3. Label the features of the picture. Write a simple caption about the picture (*e.g. the red mat*)



3. CVC Spin, Build and Write -



Instructions: Spin each of the three spinners—one for the *initial sound*, one for the *medial vowel*, and one for the *final sound* to build a CVC word. They then write the resulting CVC word on chalkboards or recording sheets. (Choose letters for the spinner that will always make CVC words, or if not look at "*alien*- no sensical words" with the children)

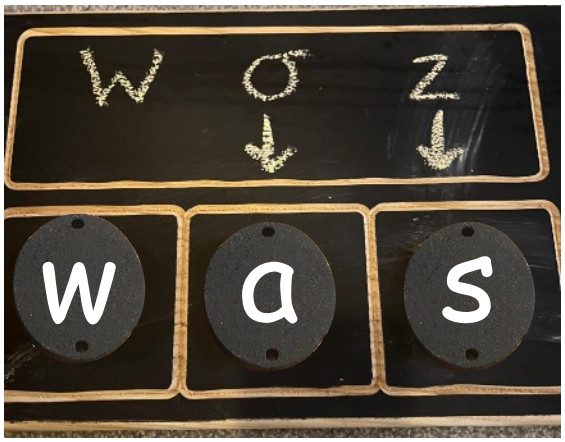
Focus: *handwriting, phoneme segmenting, blending, spelling, tripod grip.*

Extension Ideas 1. Write a simple caption containing the CVC word (*"I see a cat"*). Sort the words into 'real' or 'nonsense' (alien words)

CVC words – using the Blending Boards

The '**Whole-Part Blending Board**' is ideal for the short, often easier CVC (*Consonant, Vowel, Consonant*) phonic words. The '**Topic Board**' and '**Ten-Frame**' work well with the longer, more complex words. The '**Whole-Part Blending Board**' clearly shows the number of syllables present in each word because these letters which comprising that word are easily seen. The child sees the breakdown of the word and identifies the syllables and their component parts (the *sound buttons*). Each single word is broken down by either counting the sounds, (i.e., *s a t*; *l oo k* or *d u ck)*; viewing it in terms of '*start, middle* and *end*' or using *sound buttons* and *bars*.

4. Phase 3 Blending and Segmenting Practice. -



Activity: Write (in chalk on the '**Whole-Part Blending Board**') the CVC word and its corresponding sound. The children will readily see how three single letters make up one sound.

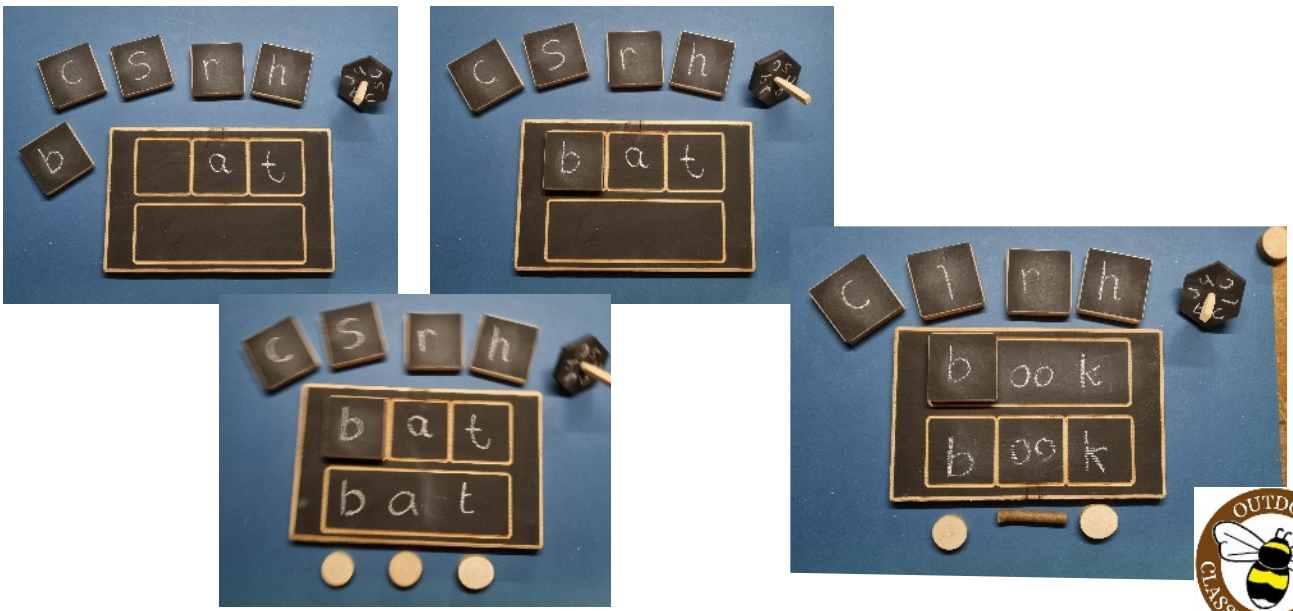
Children can't rely solely upon 'rote-learning' in order to read and spell correctly. They need to know why some words are 'tricky' and some are not. In the example right, the 'a' makes an 'o' sound and the 's' makes a 'z' sound. Using the '**Whole Part Blending Board**' supports the children in seeing each letter clearly, repeating the sounds and then talking about any which may be 'tricky'.

Extensions Ideas: As their confidence grows, ask the children to match other sounds and letters together. Do this by writing different letters on the *chalkboard ovals* (or the *chalkboard squares*) – so they can match/change a single letter, (or groups of three letters) to their corresponding sound.



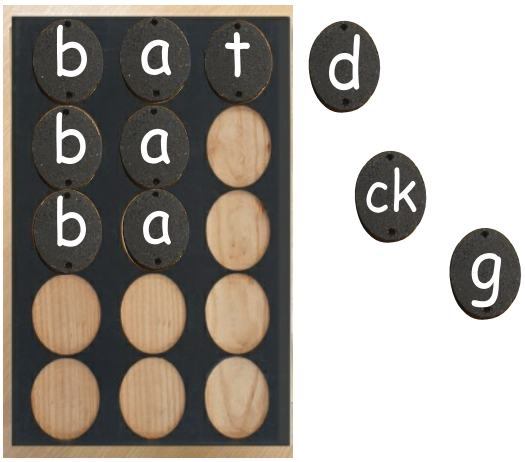
5. Round the World -

Activity: Chalk on the 'Whole Part Blending Board' common word endings like 'at' .... as in *bat, cat, fat, hat, mat, rat, sat*. Chalk some of the possible initial letters/sounds on the chalk side of the spinner and some *chalkboard squares* (or *chalkboard ovals)*. The children spin the spinner to find the letter and add it to the Board to form the word. Encourage the children to 'sound out' the word and write it underneath. (The tree slices and sticks are useful to mark the *sound buttons* or *sound bars*.)

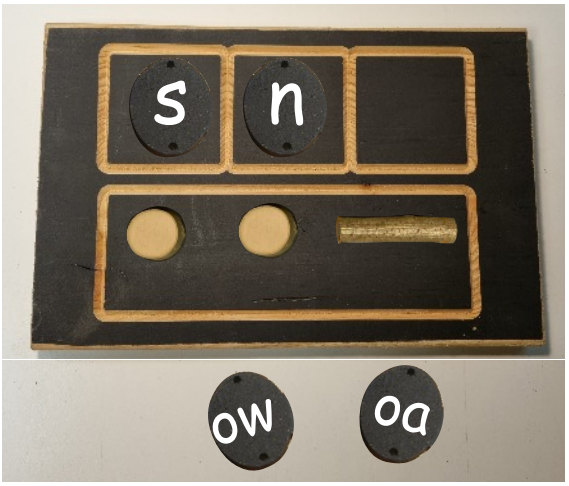


The reverse side of the '**Topic Board**' can also be used for **CVC** phonic word games – as can the **'Ten-Frame'**.





Extension Idea: Chalk on the 'Board' common word <u>beginnings</u> like 'ba' .... as in *bat, bag, bad,* and *back*. Chalk some of the possible ending letters/sounds on the chalk side of the spinner and some *chalkboard squares* (or *chalkboard ovals).* The children spin the spinner to find the letter and add it to the Board to form the word. Encourage the children to 'sound out' the word and write it underneath. (The tree slices and sticks are useful to mark the *sound buttons* or *sound bars*.)



6. Phase 4: Blend and segment longer words -

Activity: Consolidate CVC, CCV, CCVC, CCVCC and CCCVC word knowledge. Use the ' **Topic Board**' with 5 spaces for phase 4 and beyond. Repeat the previous activities (4 & 5). This time introduce more complex sounds (**graphemes**), i.e. sounds made from two letters (**digraphs**) as in 'oo', 'ow', 'ee', or three (**trigraphs**), and so on. (See the example, 'sn o w'. Choose the correct **grapheme** to complete the word 'snow').

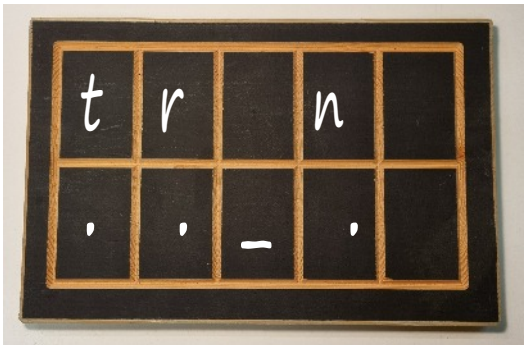




Extension Idea: Use chalk marks (or tree slices and sticks) to represent the *sound buttons* and *sound bars*. (See pictures above)

7. What is the Correct Word? -

Activity: Write down a more complex word, this time omitting a central **digraph**. Write several different sound options on some *chalkboard ovals*. The children add in the correct missing sound. This activity can be done either with a **'Chalk Board Ten-Frame'** or the reverse of the **'Topic Board'**, along with the *'Chalkboard Ovals'.*





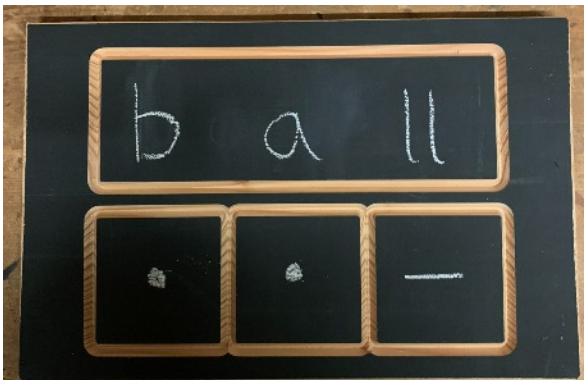
8. Word Structure -



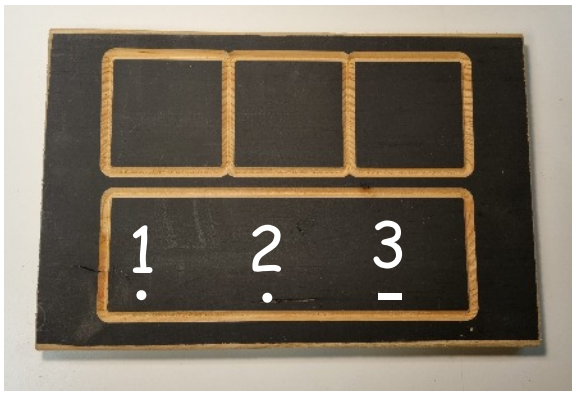
Word structure (using sound buttons and sound bars) has already been mentioned as part of other activities; however, spending time to focus on this as the main aim of an activity is definitely worthwhile.

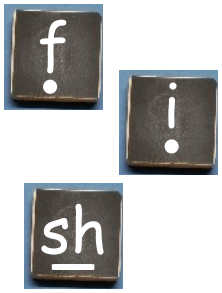
Activity: Using the three square segments on the **'Whole Part Blending Board'**, chalk a CVC word. Chalk one sound of the word *per square,* each square then differentiates the separate sound buttons. Model to the children the structure of the word by marking the sound buttons/bars, alternatively number the sounds or mark the start, middle and end' sound. The children to mark the sounds buttons etc., themselves. (See pictures above and below)

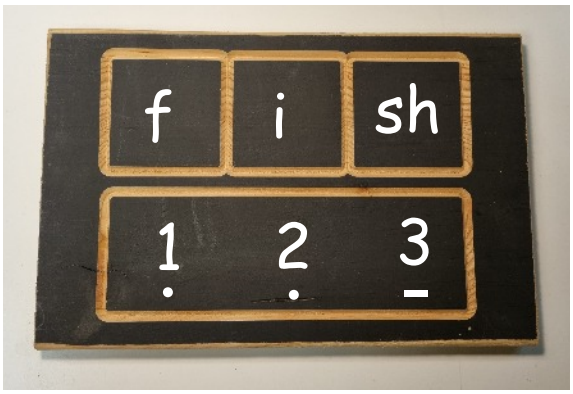




Extension Idea- Decide on a word. Chalk each sound and the corresponding *sound buttons/bars* on *'Chalkboard Squares'*. On the **'Whole-Part Blending Board'** chalk only the *sound buttons* and *sound bars* in order. The children need to match up the tiles with the *sound buttons/ bars* until they can make a real word.









9. Reorder -

Activity: Chalk a word on the **'Whole-Part Blending Board'.** Write the individual sounds of the word, using one square per *sound button/bar* (separate sounds). The children need to place the sounds in the correct order to successfully form the whole (and real) word. As the sounds are placed, the children can speak each sound aloud, and finish by saying the completed word.

Extension Idea: Repeat the sounds, chalk on, (or use tree slices, *button counters* and sticks) to represent the *sound buttons* and *sound bars.*

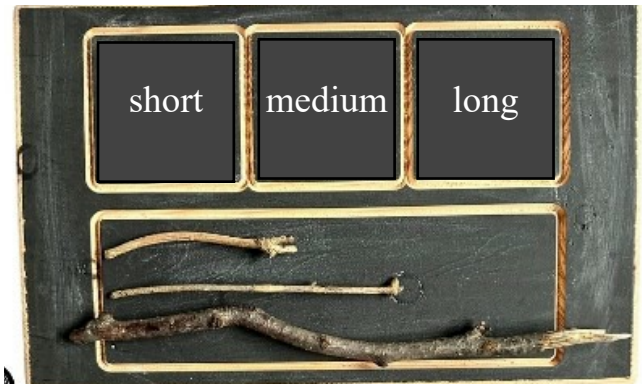
Language Comprehension



10. Word Recognition Bingo! -

Activity: Using the '**Whole Part Blending Board**' and *chalkboard squares* or the '**Chalkboard Ten-frame**' and *Chalkboard Ovals,* chalk words or images on the boards. Draw matching images or words on the chalk squares or ovals. A wide range of word groups/subjects can be used. For example, using emotion words, use words such a sad, shy and happy. Ask the children to find a word which describes an emotion similar to feeling upset. The child will look for, then removes the word, *'sad'* from the board. Next, ask them to find the word to describe how they may feel meeting someone for the first time. The child removes the word 'shy'. Continue with similar meanings/words. The first child with an empty board wins.

This game can be played the opposite way around too. This time, by matching onto the board words or images, for example matching the sad face with the word that means feeling upset. The first child with a completed board wins.







(Oval emotion *counters* are available from Outdoor Classrooms.)

These games are a fun way for the children to show/develop both their ability to read basic words and understand the meaning of these words.

Extension Idea: Repeat this game using different concepts like sound, size or length.

Writing Skills

The **Whole-Part Blending Board** is ideal for copying each letter and each whole word.

1, Pre-Writing Skills -

Activity: Encourage the children to use chalk to draw/write on the chalkboard.

Extension Ideas: – Ask the children about their favourite things, i.e., food. Write a sentence about their favourite thing. Read this with the children. Ask the children to draw that item.

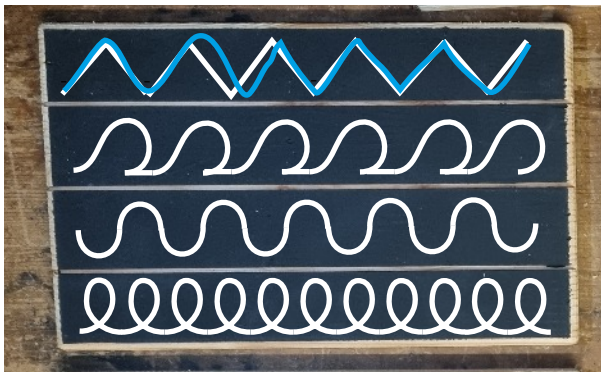


2. Shape Formation -

Activity: Use the reverse of the '**Whole Part Blending Board**', and use white chalk to draw pre-writing shapes. Ask the children to trace over these shapes using a different coloured chalk.

Extension Idea- Use the front (or the back) of the '**Whole-Part Blending Board**'. Draw (using chalk) pre-writing shapes in the top section of the board. The children then use the bottom section of the board to copy these shapes.



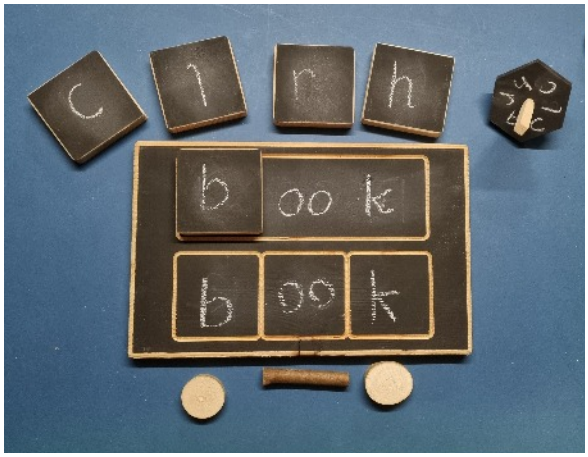


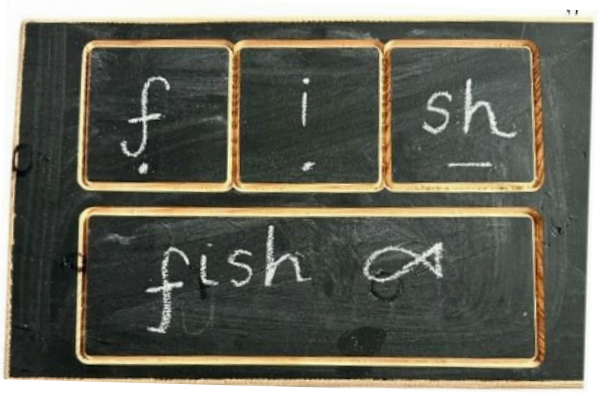
Letter Formation and Writing Words

3. Letter Formation -

Activity: Write a CVC word in the top section of the '**Whole Part Blending Board**'. The children then copy out the completed word underneath. ...







Sentence Comprehension and Writing.

Sentence writing now presents of most phonics sessions and often forms part of each week's planning for teachers. The '**Whole-Part Blending Board**' is ideal when choosing words and writing sentences.



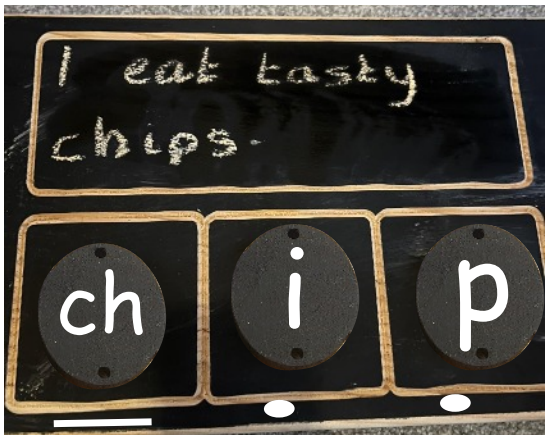
4. Sentence Comprehension and Writing.

Activity: Write a question on the '**Whole-Part Blending Board**', e.g. '*Can you find …?*' or '*What colour are these items?*' Read this sentence aloud to the children. They need to answer the question or complete the requested task.



5. Object Sentence Writing –

Activity: Either you or the children choose 3 objects and place one in each square. Create and write out a sentence (with the children) about these objects.



6. Make a Word From…

Activity: Chalk a word in the bottom section of the '**Whole-Part Blending Board**' (or on the reverse side of the '**Topic Board**'). The children form a sentence which includes this word, and then write it down. Seeing the word on the **Board** will help them to spell it correctly.



Sentence Breakdown -

Activity- Write a sentence and ask the children to and break it down into its separate components. Use the '**Story Creation Counters**' - *'Who', 'What', 'Where', 'When',* and *'Why'.*





Outdoor Classrooms Ltd

Learning Through Play Pack

Grammar and Sentence Composition

The understanding of the grammatical structure of a sentence is very important. Children need to correctly compose their own sentences, adapting and changing them into different tones and situations. (The Definitions below are from the Oxford English Dictionary.)

DEFINITION -

Verb:- a word (or group of words) that expresses an action either physical i.e., '*run*', '*make*' or '*eat*'), or mental (i.e., 'think', 'understand' or 'believe')

Adverbs:- a word that modifies verbs, adjectives, or other adverbs. In '*speak kindly*', and '*too quickly*', the word '*kindly*', and '*too*' are all adverbs.

Noun: a word that refers to a person or thing, i.e., '*car', 'dog', 'child or 'Leeds'.*

Adjective:- a word that describes a person or thing, e.g., *'big', 'blue'* and *'clever';* as in a *'*big *house', 'blue sky'* and a *'clever idea'.*

Pronoun:- a word used in place of a noun, e.g., *'he', 'it', 'hers', 'me', 'them'*, etc.

Preposition:- a word (or group of words), e.g., *'in', 'from', 'to', 'out of',* used before a noun or pronoun to show place, position, time or method.

Conjunction:- a word that joins words, phrases or sentences, e.g., *'and', 'but', 'because'.*

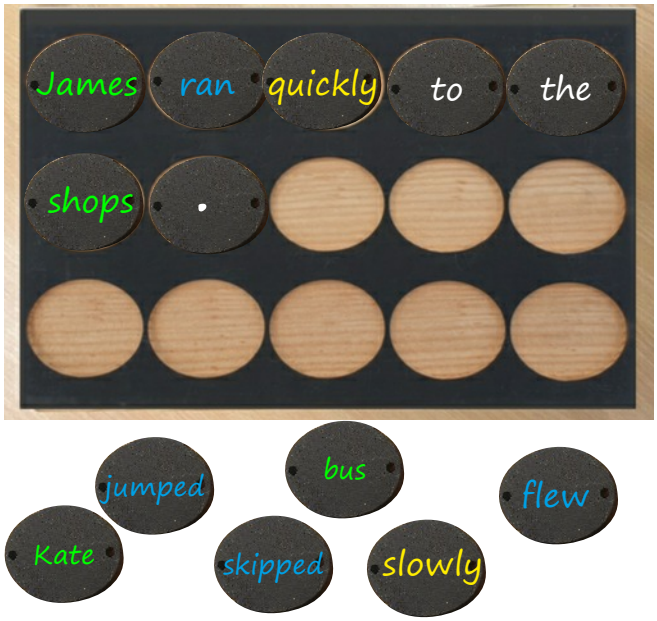
Interjection:- a short sound, word or phrase spoken suddenly and expressing emotion. Oh!, Look out! and Ow! are interjections.

1. Making and Changing Sentences -

Activity: Use the reverse of the '**Topic Board**' and the *oval counters* (chalkboard-side up). Chalk a sentence, i.e., 'James ran to the shops.' Use one word per *oval counter*. Choose the grammar component, i.e., the Verb. (To begin with, chalk this in a different colour). Read the sentence. The children can change the verb (i.e. skipping) and reread the new sentence.







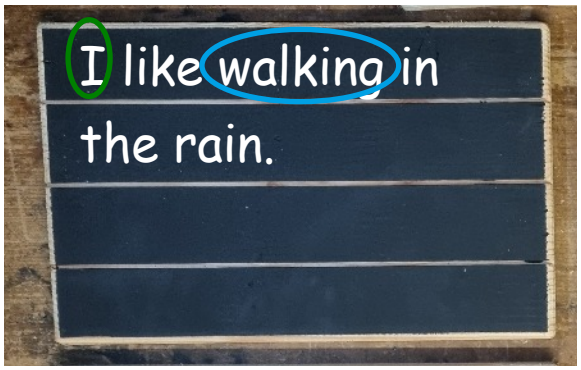
Extension Ideas: 1. Using chalk on the reverse of the **'Whole-Part Blending Board'** , the children write each new sentence.

2. The children write verb words onto the *oval counters* to add to the sentence.
3. Increase the number of different grammar components i.e., nouns, adverbs, etc., Use a different colour for each type) and use these in the sentence. Change a number of the words in the sentence with others of the same colour and reread the sentence. (See picture left)

2. What is What? -

Activity: Use the **'Topic Board'** or the reverse side of the **'Whole-Part Blending Board'**, to chalk on a sentence. Refer to the Definition for the types of grammar words used in each sentence. (Use a different colour for each type.) The children underline or circle a word, e.g., all the verbs in blue.

Extension Ideas: Can the children expand this sentence further by adding adverbs? E.g. 'I like walking **slowly** in the rain.



3. Grammar Pairs Game -

Activity: Write on *chalk ovals* a verb word and the actual word, 'verb'; a noun word and the actual word 'noun'. Turn these pairs all chalkboard-side down and mix them up. Children take turns turning two over; if they match, the children have won that pair. As they turn them over, read each word aloud and talk about the grammar type and its meaning, i.e., **Noun** – a word that names a person, place or thing.



Maths – Definitions

Fact Family:- A group of numbers that are related when using either *addition and subtraction* or *multiplication and division*. For example (2, 3, 5 are related in that 2 + 3 =5 ; 3 + 2 = 5; 5 - 2 = 3; 5 - 3 =2. Similarly (4, 5, 20) are related in that - 5 x 4 = 20; 4 x 5 = 20 ; 20 ÷ 5 = 4 ; 20 ÷ 4 = 5

Number Bonds:- Two single numbers that go together to make another number. For example, 6 can be made of 1 and 5; 2 and 4; 3 and 3; 4 and 2; 5 and 1. Number bonds demonstrate the relationships between numbers, and are a good precursor to addition and subtraction.

Number Sense:- The ability to work flexibly with numbers, i.e., estimating, comparing and understanding the relationships between objects, and groups of objects. Number sentence is important for the successful development of maths skills. It is a biologically inbuilt ability, present in humans and many animals, and can be helped (or hindered) through opportunities and experiences.

Number Sentence:- The written symbolic representation of physical maths, using numerals and maths symbols, i.e. **25 + 15 = 40.**

Subitising:- The ability to recognise a correct number of objects without actually counting them, by recognising the pattern that group of objects makes. E.g. when throwing a dice, the 'dot pattern' of '3' is recognised without counting each dot for every throw.

Perceptual Subitising:- The ability to immediately recognise a number of up to 5 objects without actually counting them, by recognising the pattern that group of objects makes.

Conceptual Subitising:- The ability to see two groups of objects and combine them together mentally to find the total. Or to see a larger group and recognise it as a combination of smaller groups of objects. For example, seeing 7 counters and understanding it is made of a combination of 5 counters and 2 counters.

Ten-Frame:- A 2 x 5 grid to visual represent number up to ten. It is used as a teaching add to help with basic counting, number recognition and much more

Whole/Part/Part Models:- These are similar to Number Bonds. They are visual way of demonstrating how a whole number can be broken down into its smaller component parts. A **'Whole/Part /Part Model'** is a number broken into 2 parts. A **'Whole/Part/Part/Part'** Model is a number is broken down into 3 parts.

Subitising & Counting

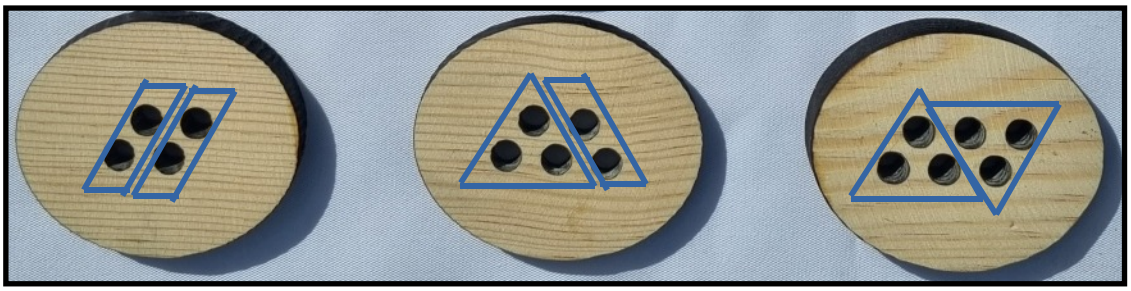
Maths Spinner and Counter Set:

A simple, yet elegant set of counters and a spinner to explore numbers 1-6.



The double-sided spinner is an excellent tool to begin fine-motor manipulation and co-ordination. Practising spinning with either hand develops even greater skill levels – it's really fulfilling to gain a satisfying, spinning motion! The spinner has 1-6 numerals printed on one side and a chalkboard on the reverse (to record anything of your choosing!).

The oval counters represent numerals as holes, which can be felt (and counted) from either side, and are really useful when 'subitising'. The holes allow natural sunlight (or torch light) to shine through them, clearly displaying their dot pattern. These patterns have been configured in such a way as to copy the 'triangle positioning' of eyes and mouth. Babies use this in-built *triangle* pattern to identify their parent's face. This configuration also helps children to quantify (through visual subitising) different groupings of dots. The dot patterns provide a tactile and visual way of recognising the components of numbers - important when accurately assessing quantities and number bonds. The children learn to recognise the repeating patterns of smaller amounts, making for easier identification of larger amounts (here up to six). Larger quantities are broken down into smaller groups)of ones, twos and trees), through subitising.



The oval dot counters are compatible with a larger 'Oval Counters' product range, which uses a 'cam lock' feature. The 'cam lock' is designed to work across several **Boards**, so broadening-out the range of learning and making maths concepts easier to understand.

Maths Set Activity Suggestions:

1. Spin Mastery -

Activity: The children practise spinning the number spinner. Can they make it spin successfully? Encourage the use of both the left and the right hand.

Focus: *fine motor skills (hand-eye and bilateral coordination, tripod grip and strength); concentration; patience and self-regulation.*

Extension Ideas: 1. Count how long it takes for the spinner to stop spinning.
2. Compare spinning times. 3. Teach a friend how to spin.

2. Quick Recognition -

Activity: Spin the numbered spinner and name the number that it lands on, start with the 1 - 6 spinner then move on to the 1 to 10 spinner.

Focus: *number recognition, counting, fine motor skills.*

Extension Ideas: 1. Write down the number, using various tools (i.e. chalks, pencils, sticks) and on different surfaces (i.e. sand, chalkboard, mud).
2. Make a body movement to match the number spun (e.g., 3 star jumps or 4 hops).

3. Spin and Match -

Activity: Spin the spinner, using the numeral side, 1 - 6 spinner for younger, 1 to 10 spinner for older children. Alternatively, add a dot pattern to represent each number, using a chalk pen on the chalkboard side of the spinner. Find the corresponding *oval counter* to match the number shown on the spinner. Begin with the dots and progress to the numeral side as the children develop numeral recognition.

Focus: *number recognition; subitising; matching; fine motor skills.*

Extension Ideas: 1. Write down the number, using various tools (i.e. chalks, pencils, sticks) and on different surfaces (i.e. sand, chalkboard, mud).
2. Hide the *oval counters* inside a 'sensory tray' (e.g., a nature or sand tray.) Ask the children to find and match them.

4. Spin and Count -

Activity: Spin the spinner and count out the number of '*button counters*' to match.

Focus: *Number recognition; one-to-one counting; subitising; fine motor skills.*

Extension Ideas: 1. Write down the number, using various tools (i.e. chalks, pencils, sticks) and on different surfaces (i.e. sand, chalkboard, mud).
2. Hide the *button counters* inside a 'sensory tray' (e.g., a nature or sand tray). Ask the children to find and match them to the number seen on the spinner.

5. Spin, Count and Build -

Activity: Spin the spinner and count out the matching number of '*button counters*', then stack them into a balanced tower.

Focus: *Number recognition; one-to-one counting; fine motor skills; persistence; spatial awareness.*

Extension Ideas: 1. Spin the spinner twice and build two towers. Build each tower with the correct quantity of counters to match the number landed on when the spinner has spun. Compare the number of counters in each tower and the height of each tower.
2. Experiment with the structure of the towers. Can they be built/balanced with counters in different ways, e.g., by changing their shape and height?

6. Spin and Add -

Activity: Spin the spinner twice, recording each amount (using the '*button counters*' or the '*oval dotted counters*') to represent each amount. Add each number together by counting the holes in the *oval counters* or adding up the number of *button counters*. Record this final number.

Focus: *Number recognition; subitising; counting; addition; combining two groups; fine motor skills.*

Extension Ideas: 1. Write down the number sentence to match the number problem, using various tools (i.e. chalks, pencils, sticks) and on different surfaces (i.e. sand, chalkboard, mud).2

2. Hide the '*button counters'* and *oval dot counters* inside a 'sensory tray' (e.g., a nature or sand tray). Ask the children to find and match them to the two numbers the spinner landed on, show ing the final total.

7. Spin and Compare -

Activity: Spin the spinner **twice,** recording each amount by counting out the '*button counters*' (or the dot in the '*oval dot counters*'). Compare the amounts. Which is more? Which is less?

Focus: *Number recognition, counting, subitising, comparing quantities, vocabulary (less, more, equal, same as), and fine motor skills.*

Extension Ideas Spin the sinner **3 times** and record 3 amounts. Place these in order – from the smallest to the largest amount (or vice versa).

8. Explore Sharing -

Activity: Spin the spinner, recording each amount. Find the number of counters to match. Explore further: can the be shared evenly into two groups.

Focus: *Number recognition; counting; early division; 'grouping' vocabulary (even, odd, equal); fine motor skills.*

Extension Ideas: 1. Write down the number sentence to match the number problem, using various tools (i.e. chalks, pencils, sticks) and on different surfaces (i.e. sand, chalkboard, mud).
2. **'Doubles'** (see below) can be explored here whenever the children find numbers that have been shared evenly.

9. Doubles -

Activity: Spin the spinner, recording the amount. Find its **'double'** - using the counters.

Focus: *Number recognition; counting; doubling; early multiplication; fine motor skills.*

Extension Idea: Once the **'double'** has been created, write down the number sentence to match, , e.g., 5 + 5 = 10).

10. Number Bonds to 6 -

Activity: Spin the spinner and count out the number of '*button counters'* to match the numeral the spinner has landed upon. (Use both the numeral and dotted sides of the spinner). Then, encourage the children to find the additional '*button counters'* needed to add up to 6 in total.

Focus: *Number recognition, counting, subitising, number bonds, part-whole understanding, fine motor skills.*

Extension Ideas: 1. Place the 'Number Bond' into a **'Whole-Part Blending Board'**.
2. Write down the number sentence to match the number problem, using various tools/surfaces.

11. Tactile Counting (Mystery Match) -

Activity: Place the *'oval dot counters'* into a small bag. Spin the spinner, then try to feel for the correct counter to match the numeral on the spinner. (The child needs to 'feel' for the holes in the counter). No peeking!

Focus: *Number recognition; subitising; tactile discrimination; fine motor skills.*

Extension Idea: Write down the number, using various tools/surfaces.

12. Shadow Play -

Activity: Use the maths set outdoors in the sunlight (or with a torch) with white paper or a fabric sheet. Hold the oval counters between the **sunlight** (or **torchlight**) and the paper/sheet. Can the children count the dots created by the shadows that appear? Once this concept has been understood, spin the spinner again and see what number it lands upon. Can the children find the correct *oval counter* whose shadow dot pattern matches the number?

Focus: *Number recognition; counting; subitising; light and shadow exploration; visual representation.*

Extension Ideas: 1. Explore further by moving the oval counters closer/further away from the white paper or a sheet surface. 2. Draw over the shadow created and write the numeral to match.
3. Explore pattern making, using a few of the *oval counters* together and drawing over the shadows they create.

Subitising and Number Sentence

These activities are designed to support early mathematical development, through hands-on, engaging experiences, using the *button counters* and *sticks*. The focus is upon developing children's number sense, comparison skills, pattern recognition, and spatial reasoning.

1. Early Number Sense and Subitising -



Activity: Use the small *button counters* or *tree slices* to support subitising (see definition). Start with perceptual subitising (instantly seeing one group). Place out 5 counters in a pattern, ask the children how many counters they are (without counting them).

Show small quantities in familiar patterns (e.g., dice, ten-frame) and other random arrangements or items, i.e. leaves, twigs.

Extension Idea: Progress to conceptual subitising (seeing two groups or visualising hidden amounts and combining them together to find the total).





Hide some of the five sticks or counters underneath an upturned bowl, e.g., three logs hidden and two that the children can see. Inform the children that there are five logs altogether. Ask them to suggest how many are hidden.

2. Comparison and Measurement -

Activity: Fill a basket with a variety of counters and sticks. Ask the children to select two and compare them, using vocabulary like *'bigger', 'smaller', 'heavier', 'lighter', 'longer', 'shorter', 'wider',* and *'thinner'.*



Extension Idea: Encourage estimation: ask the children to *suggest* how many *counters* tall an object might be (i.e. a tower) or how many smaller *counters* equal one larger stick.

3. Conservation and Numerosity -

Activity: Ask children to choose six *button counters* (or *sticks*) and arrange them in different patterns and orientations.

- Use this to develop understanding of conservation: the quantity remains the same even when the arrangement changes.

Extension Idea: Use a variety of *counters* – all shapes and sizes (i.e., large, small, wide, and narrow) – to explore numerosity – to make a pattern; six is still six, regardless of the size or shape of the objects.



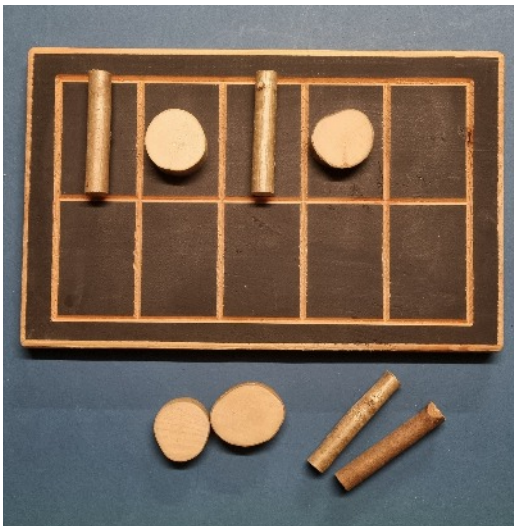




4. Hidden Object Games -

Activity: Play a quick memory game using the '*button counters*' and '*sticks*'. Place out a number of counters and sticks. Shuffle them and hide a selection underneath a bowl. Briefly lift the bowl and ask: '*How many did you see?'* Repeat this time removing some, '*How many did you see?' Or* '*How many are missing?'*

Pattern Making

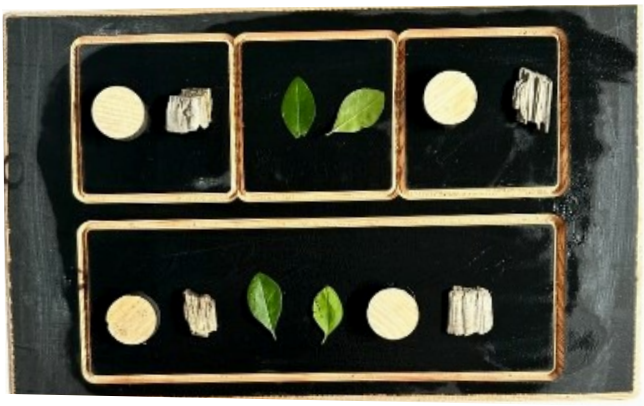


1. Pattern Making -

Activity: Use counters and sticks to create and extend patterns (e.g., AB, ABC, ABB). Begin by providing a pattern for the children to continue, then challenge them to create their own.

Extension Ideas Include intentional errors in patterns and invite the children to spot and fix them. Begin with linear patterns and progress to more complex arrangements, i.e., circular patterns.

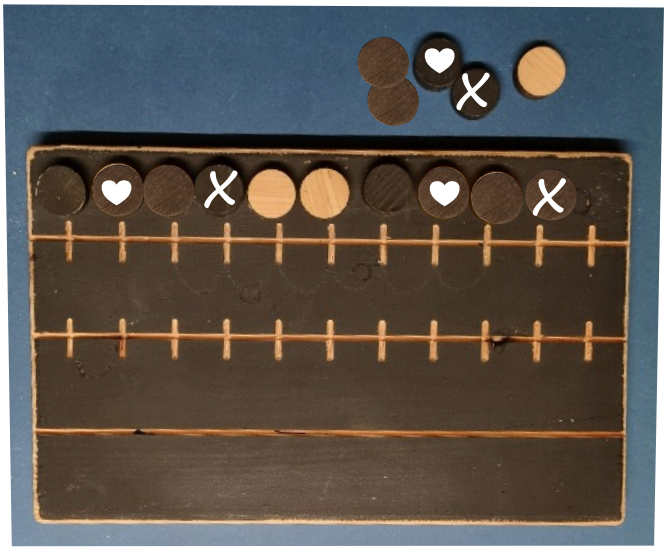


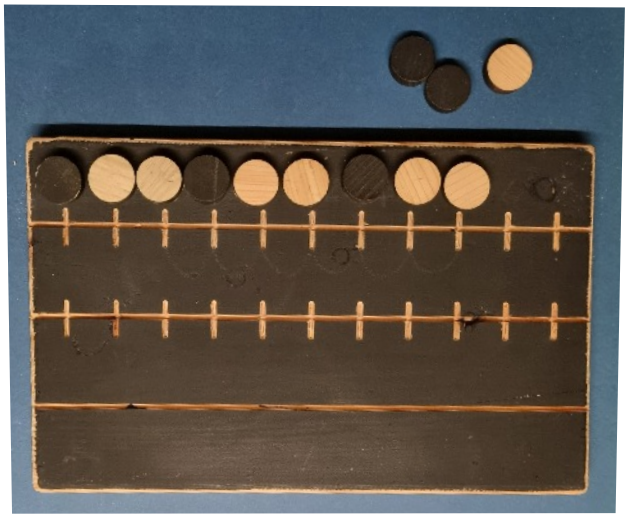




2. Complex Patterns -

Activity: Use the '*button counters*' to create and extend patterns (e.g., AB, ABC, ABB, ABCBED).
Begin by providing a pattern for children to continue.
Make the pattern more complex.





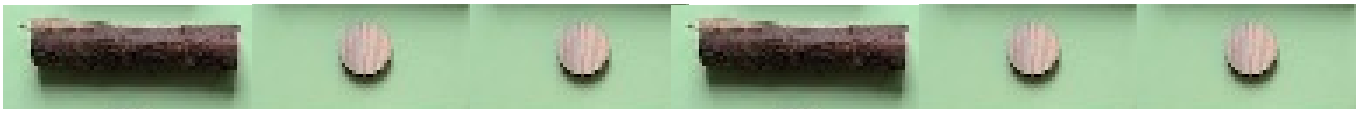
Sound & Music

6. Sound Game -

Activity: Use something which produces a distinct sound, i.e., a drum or a cymbal. Tap out several notes, then ask the children to place '*round button counters*' in the **'Ten-Frame'** to represent each note. Count the total number of *'counters'* at the end. By doing this the children are learning to transpose 'heard' groups into 'visual' groups,-a complex, yet worthwhile skill. They need to concentrate and listen!

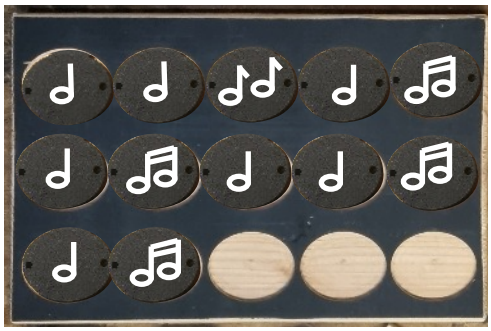
Extension Idea: Once this first game has been mastered (and especially for the older child), move on to varied sounds, i.e., loud/quiet or long/short sounds. This pattern of 'heard' sounds is then represented by using the '*button counters*' for short sounds and '*small sticks*' for longer sounds (see pictures right and below) visually the short/long or repeated patterns. The children will notice visual patterns when looking at the button counters and sticks. These patterns are a direct result of the sounds heard. The pattern of sounds can be repeated by flowing the patterns

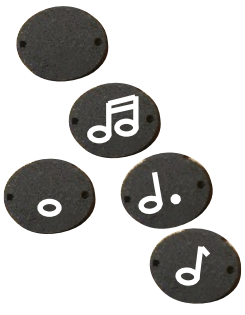




7. Music Notes Game -

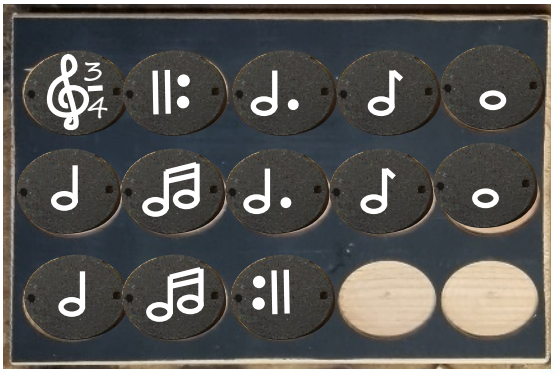
Activity: Use something which produces a distinct sound, i.e., a drum or a cymbal. Write (using chalk) various musical notes onto the chalkboard *oval counters*. (*Pre-made musical notes oval counters* are available to purchase from Outdoor Classrooms Ltd). Place these on the reverse side of the **'Topic Board'**. Clap (or drum out) the number of musical notes. Alternatively, could chalk musical notes onto the chalkboard spinner. Spin it and match the musical oval counters to the note the spinner landed on. (See picture left)





Extension Ideas: 1. Once this first game has been mastered (and especially for the older child), rearrange the *counters* and change the rhythm. Then clap (or drum out) a new tune/rhythm.

2. Add more complex musical notations, i.e. pauses and repeats.



Counting With Ten-Frames



The '**Chalkboard Ten-Frames**' can be used inside or outside.

1. Find and Count -

Activity: Collect a variety of items (i.e. leaves, flowers, pine cones), and '*button counters*'. Place them in the '**Ten-Frame**', one item per section, and count the total seen. The children will quickly begin to recognise the pattern that a number of items makes.





2. Can you find me this many objects? -

Activity: Use a 'chalkboard square'; chalk on the amount you wish the children to find. Ask them to collect items to match that amount. They place the items on the **'Ten-Frame'** one per section. Count them with the children.





Extension Idea: Without counting the items, ask how many items there are? If they correctly say there are 10 items, 'How do they know this?' One possible answer, the children may give would be: *All the spaces on the ten frame are full.*

3. Count and Write -

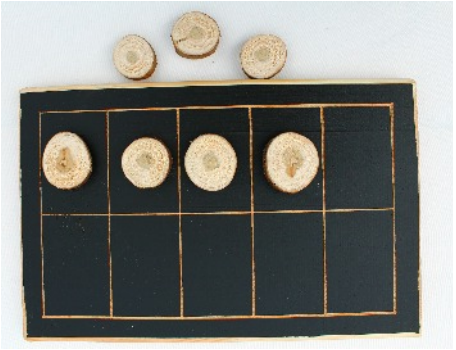
Activity: Place several items on the '**Ten-Frame**'. Ask the children, "Can you count and write the number of stones I have found?" To start with, the children may count each of the items in one-to-one correspondence. However, as they become accustomed to the '**Ten-Frame**' the children will be able to recognise the pattern of the objects (and the blank spaces) and what number that relates to, *without counting*. Provide a '**Chalkboard Square**' and chalk to record the answer



Extension Idea: Add some more stones. "How many more are there?, 'How many in total?

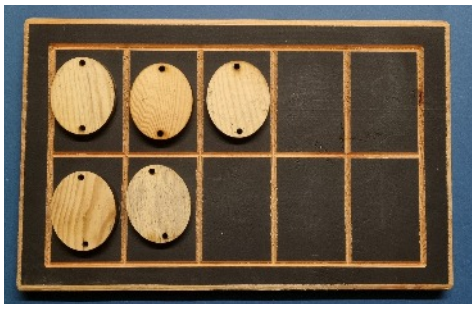


2. Spin And Find



Activity: Show the children some items e.g. tree slices, then hide around the classrooms (or the outside area). (The amount hidden must be more than the highest number on the numbered spinner). The children spin the spinner to choose the amount of items to be 'hunted'. The children find them and then place the items they've found onto the '**Ten-Frame**', one in each section. By repeating this activity the children will begin to identify how many items are present simply by looking at the pattern they have produced on the frame. Is this definitely the correct amount? If needed to count them to check.

Extension Idea: If they have too few, ask the children how many more items they need to find. (i.e., if you have spun 7 items and they have found only 4, then they need to find the remaining 3.) If they have too many, ask how many they need to remove.



Once the children become familiar with various number patterns, change the pattern configuration of each number. (This improves pattern recognition and helps children to develop a more flexible way of thinking).

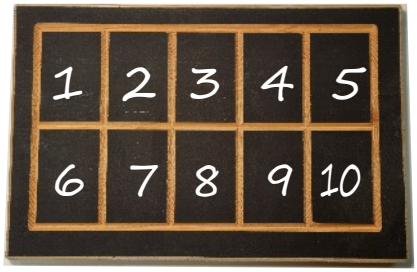
These activities can also be achieved on the reverse of the **Topic Board**.



The '**Ten-Frame**' is ideal for many learning activities, such as number lines and number sequences; early addition and (please see following pages).

Numeral Recognition & Numeral Order

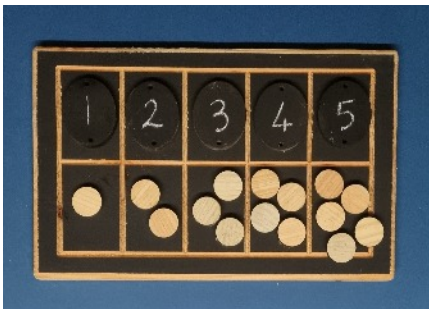
1. Number Recognition-

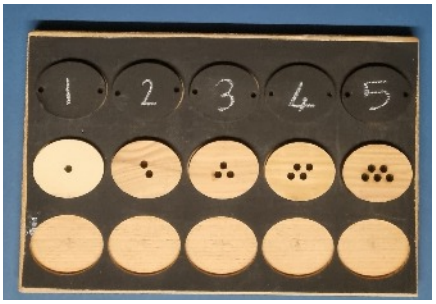


Activity: As the children become confident in using the **'Ten-Frame'** and are recognising the amounts placed on it. Chalk the numerals onto the **'Ten-Frame'**. Ask the children the name of the number on which they are placing their counter.

2. Number Line Matching -

Activity: The children write, numbers (in numerical order) in the top half of the '*Ten Frame'*. (Alternatively, they can write down them on the *chalkboard ovals* and place these in the top half of the **'Ten-Frame'** or on the reverse of the '**Topic Board**'). They can then match the *dot-pattern ovals* to their correct numeral.





3. Numeral Understanding -

Activity: Write numbers in numerical order in the top half of the **'Ten-Frame'** (or place the dot pattern ovals on the top half of the **'Ten Frame'** or on the reverse of the **'Topic Board'**). Alternatively, write down the numbers on the *chalkboard ovals* and place these in the top half of the **'Ten-Frame'**, or on the reverse of the '**Topic Board**'. The children then match the numeral with the correct amount of counters. A variety of items can be used, i.e., round counters, sticks, and chalk marks.

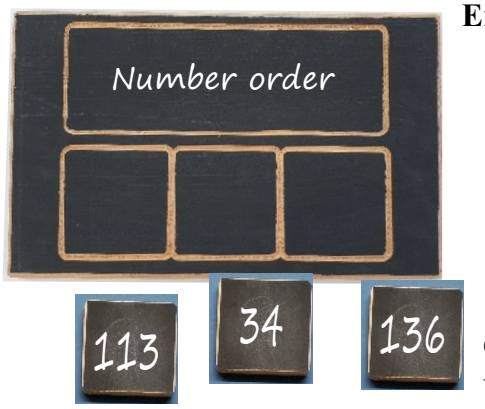
Extensions Idea: Once confident, the children begin the Number Line at a different point, i.e., beginning at 4 and finishing at 9. Or they count backwards i.e. from 5 to 1. (By doing this them are learning to recognition make and sense of the numerals themselves rather than on relying a learned sequence.



4. Reordering -

Activity: Write numbers on the chalkboard squares (or chalkboard ovals). Mix up the order. Ask the children to rearrange the numbers into the correct numerical order.





Extension: **1.** Provide number that are not an obvious/usual number order, so, i.e. instead of 1, 2 , 3 the numbers are 3 , 6, 8. The children need to place these numbers in order smallest to the largest in numerical order..

2. Provide 3 number of 2 or 3 digit longer. The children need to place them in order, from the smallest to the largest numerical value.
3. Provide 3 or more numbers, this time the children need to place them in revere order the largest to the mallet numerical value.

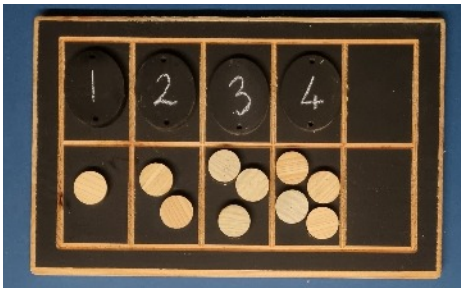
Once the children have gained confidence with the number order, build upon this knowledge by asking them to extend the number sequence or add in a missing number.

Numeral Recognition

5. What's Next? -

Activity: Chalk a **Number Line**, missing out the **final number**. The children need to work out the missing number using *button counters* (or the *dot pattern counters*).

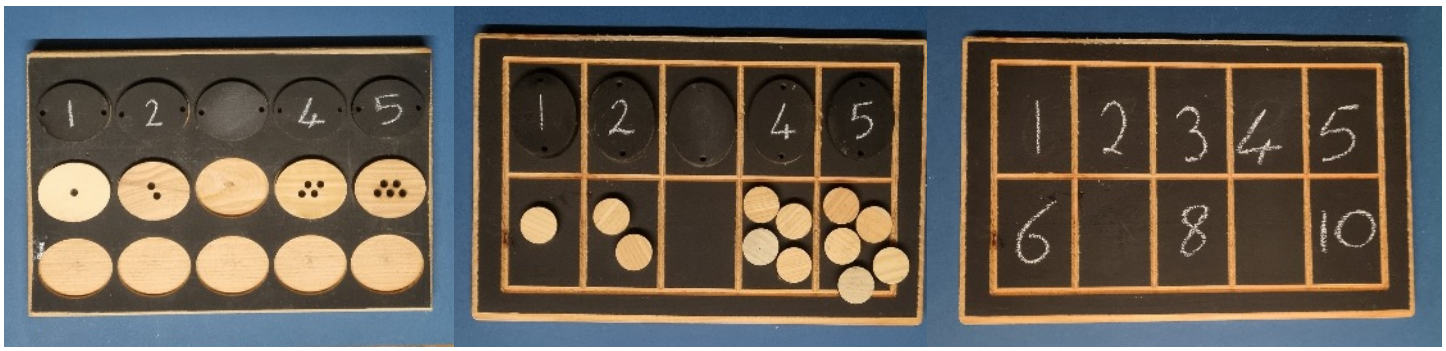
Extension Idea- Use chalk to record the missing number.



6. What's Missing? -

Activity: Chalk a **Number Line**, missing out a **middle number**. The children need to work out the missing number, using *button counters* (or the *dot pattern counters*).

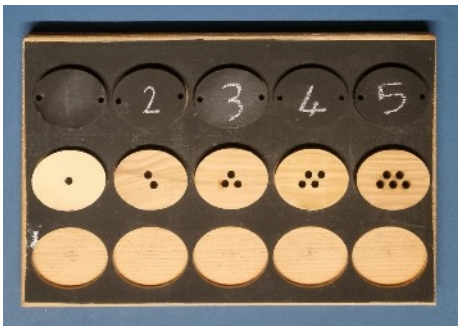
Extension Idea: Use chalk to record the missing number.



7. What's The Start? -

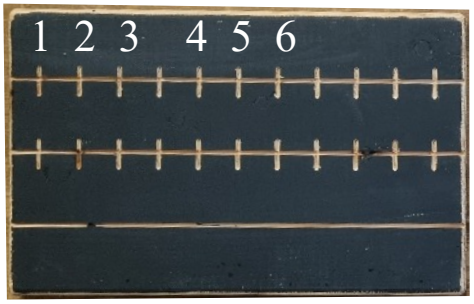
Activity: Chalk a **Number Line**, missing out the **first number**. The children need to work out the missing number, using '*button counters*' (or '*dot pattern counters*').

Extension Idea: The children use chalk to record the missing number.



A pre-designed **Number Line** pattern, ready for your own numbers to be added in chalk, is located on the reverse of the **'Chalkboard Ten Frame'**. This is especially useful for the older child-due to its smaller sections - allowing work for with larger numbers.

8. Write a Number Line -

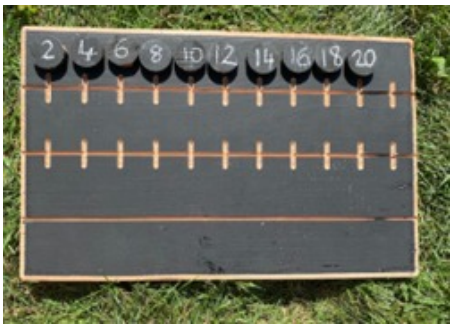


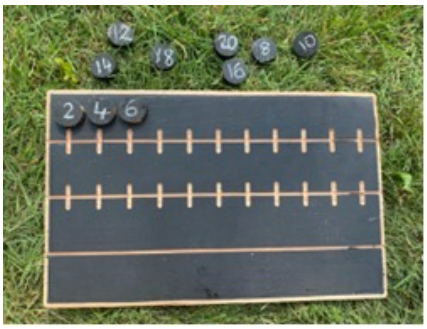
Activity: Use the **Number Line** pattern (located on the reverse of the '**Chalkboard Ten Frame**'). Deliberately miss out a number. Ask the children to record the missing number

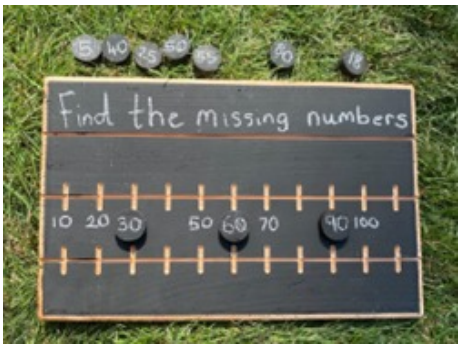
Extension Idea: Use the second **Number Line** to continue this numerical sequence into increasingly higher numbers.

9. Counting in 2s, 5s and 10s, -

Activity: Use the **Number Line** on the back of the 'Ten-Frame' board. Chalk on *button counters* a sequence of numbers, one on each counter; for example, i.e., 2, 4, 6, 8, 10, 12. Place the start of the sequence on the **Number Line,** leaving the rest of the line blank. Ask to children to continue this particular sequence - in this case, of even numbers.





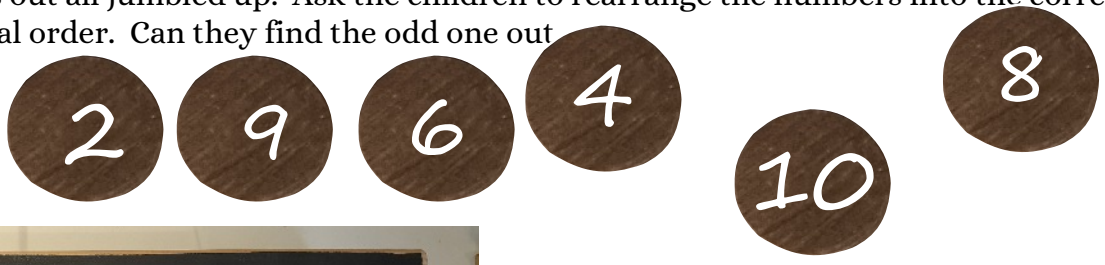


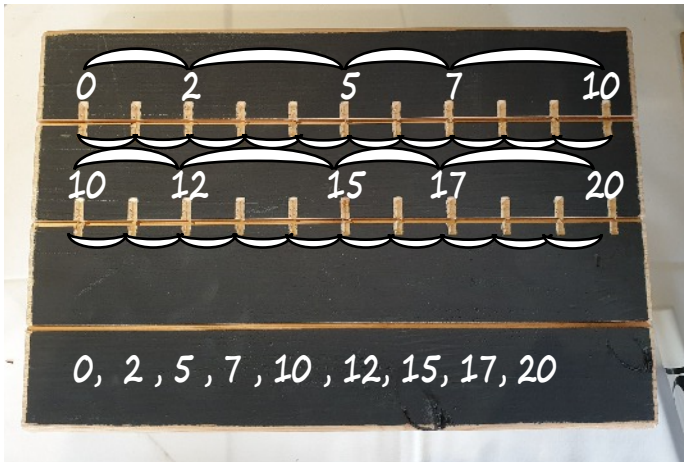
Extension Ideas: **1.** Leave one or two squares in the sequence blank, for the children to fill in the missing numbers. For example: 2,4, ..., 8, ..., 12, 14, 16, etc.

2. Do the same activities for 5s and 10s. Find the missing numbers is a great way to address misconceptions (e.g. when counting in 5s children often count convert into their 10s by accident)

10. The Odd One Out-

Activity: Write a numbers sequence on the chalkboard button counters (or chalkboard ovals). For example, 2, 4, 6, 8, 10). Add one number that is not in this sequence, for example, 9. Place the counters out all jumbled up. Ask the children to rearrange the numbers into the correct numerical order. Can they find the odd one out





11. 2/3 Counting Pattern -

Activity: Use the **Number Line** to count on, first in 2 steps then 3, then 2, then 3. Mark each number landed on. Write this sequence of numbers below.

Extension Ideas: Change the requested pattern which the children need to work from i.e. 3, then 5 - or repeat the above, only This time working backwards.

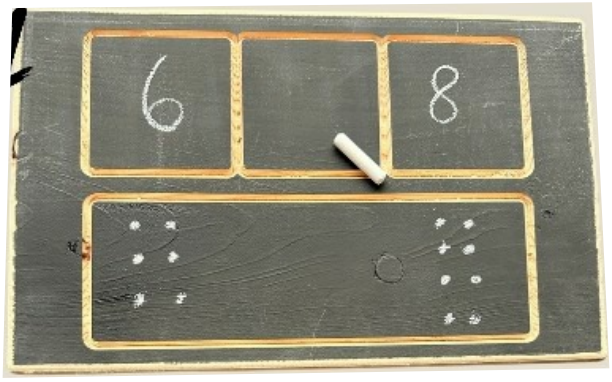
Outdoor Classrooms Ltd

Learning Through Play Pack

The **'Whole-Part Blending Board'** is perfect to use when introducing the basics of a wide array of learning exercises. Other really useful interactive resources i.e. phonics, mathematics, data collection and even nature studies! … can be added to the **Board.** (Available to purchase from Outdoor Classrooms Ltd). Some examples follow below.

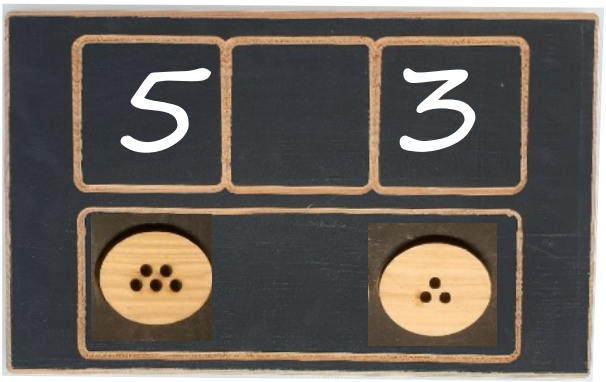
Number Comprehension and Recognition

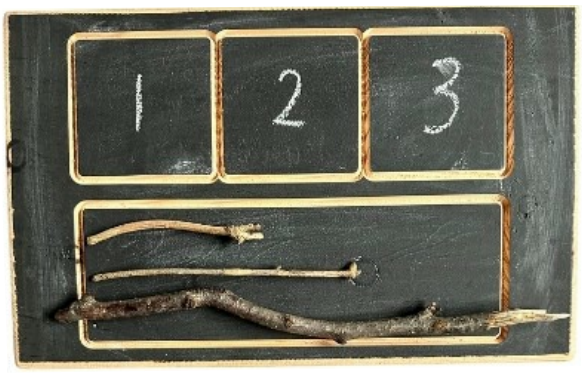
1. Match the Number -

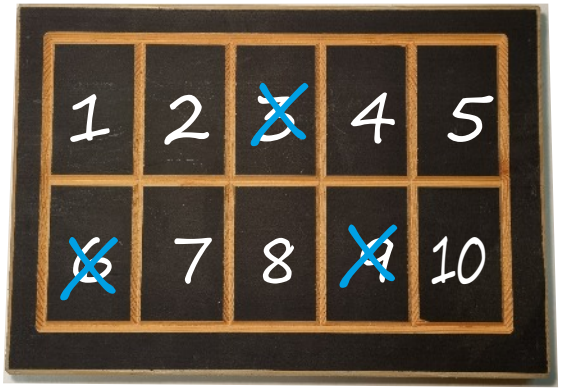


Activity: Spin the spinner and chalk a numeral(s) on the Board. The children record with chalk (or add the correct number of counters below) to represent that numeral. (Alternatively, they can use the corresponding *dot pattern counter* to represent the numeral).

Extension Idea: Chalk several dots, place counters (or dot pattern counters) on the board and ask the children to write the corresponding numeral.





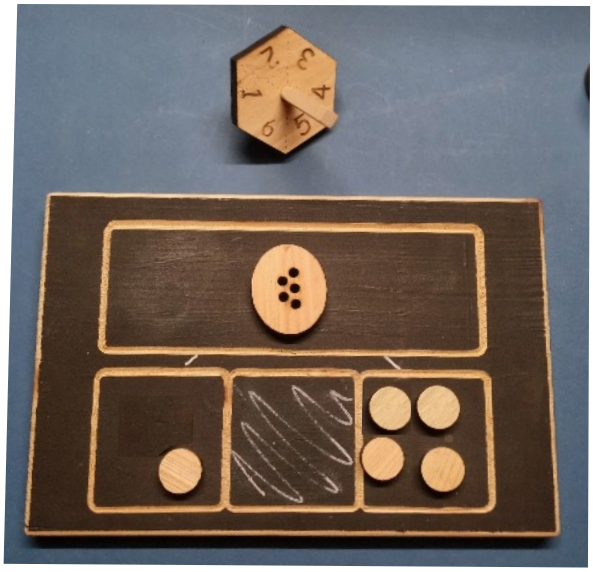


2. Bingo -

Activity: Mark the **'Chalkboard Ten-Frame'** with numerals. Spin the number spinner, children mark off each number that it lands on.

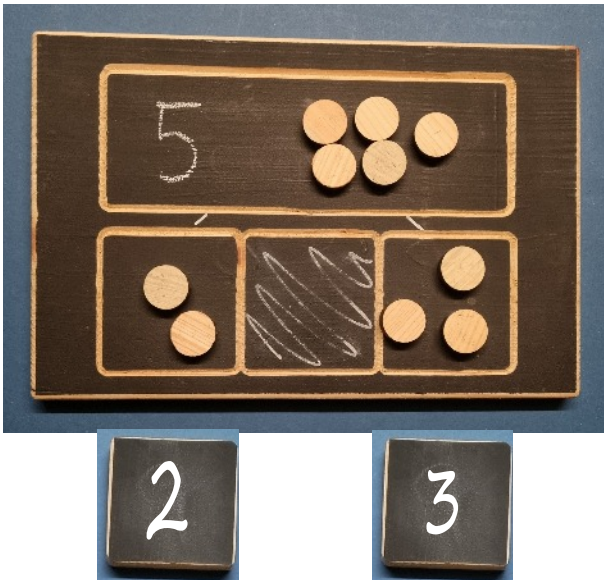
Whole/Part/Part Models

'Whole/Part/Part Models' can be practised in several ways by using the **Whole Part Blending Board.**

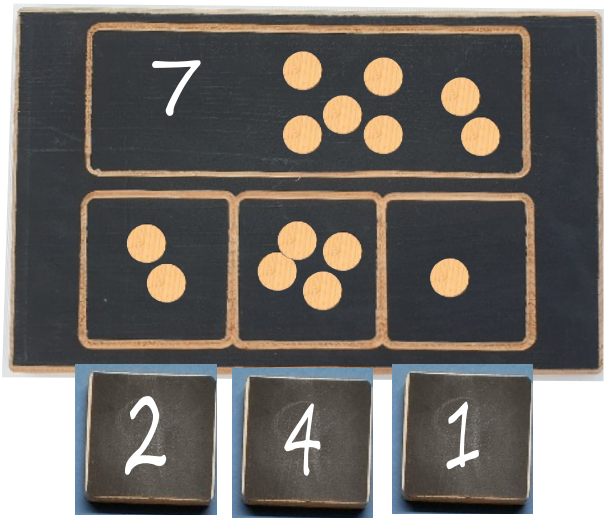


3. Whole/ Part / Part Model -

Activity: Use the **'Whole Part Model Board',** crossing out the middle section of the 3 squares with chalk. Spin the numbered spinner. Match the *oval dot counter* to the numeral that the spinner has fallen upon. Place it in the large top section of the **Board** (see picture left) or chalk the numeral, or do both. Count out the *button counters* to match, place them next to the *oval dot counter* in the top section. The children then divide the amount of counters into the two bottom squares in different ways. See how many ways they can break up the number.







Extension Ideas: **1.** After the children have divided the number into *whole part/part* as above. They record their results in chalk, either on the squares (see picture bottom right)- or onto the '*chalkboard squares*'. (See picture above)

2. For older children, practise *whole / part / part / part* models'. Look at the different ways in which the amount can be broken down into 3 amounts. (See picture left)

Addition Chart -

Activity: Use the reverse of the '**Chalkboard Ten Frame**'. Chalk an additional line to those already there to make rows and columns. (See Fig. 1) A small number of rows and columns for younger children, for older children, add more lines to make more squares in the chart. Chalk numbers in the top row and far column. In the top left corner add an addition symbol. Where the horizontal and vertical lines meet, add in the appropriate addition. i.e., 4 + 3 = 7.

+	4
3	7

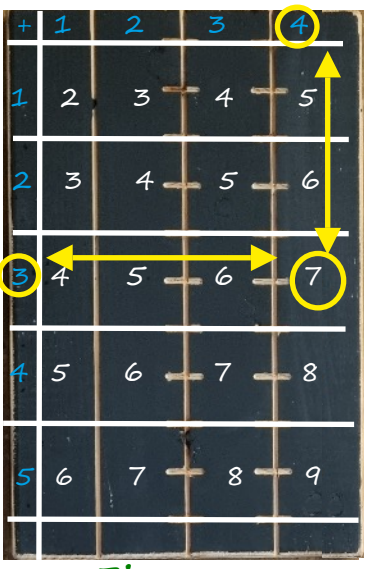
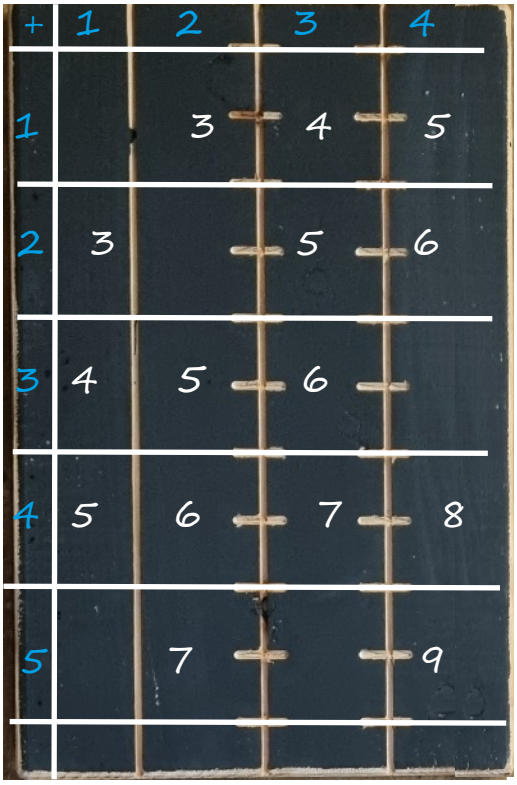


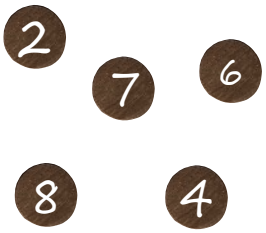


Fig. 1

Once the concept has been understood, the children can complete off the Table.

Extension Idea: Erase some of the additions. Chalk the missing numbers on the *button counters*. The children work out the missing numbers and place the correct counter in the spaces on the Chart. Alternatively, erase some numbers, and the children chalk in the correct missing answers.





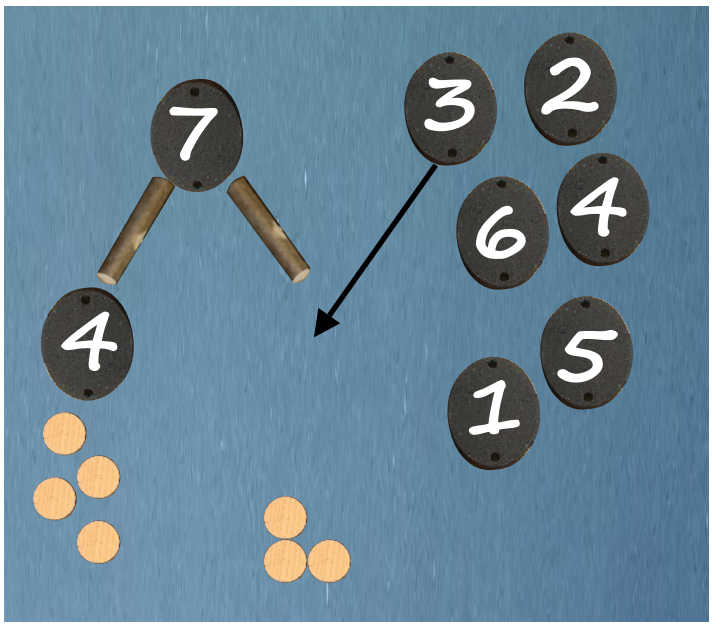


Fact Family

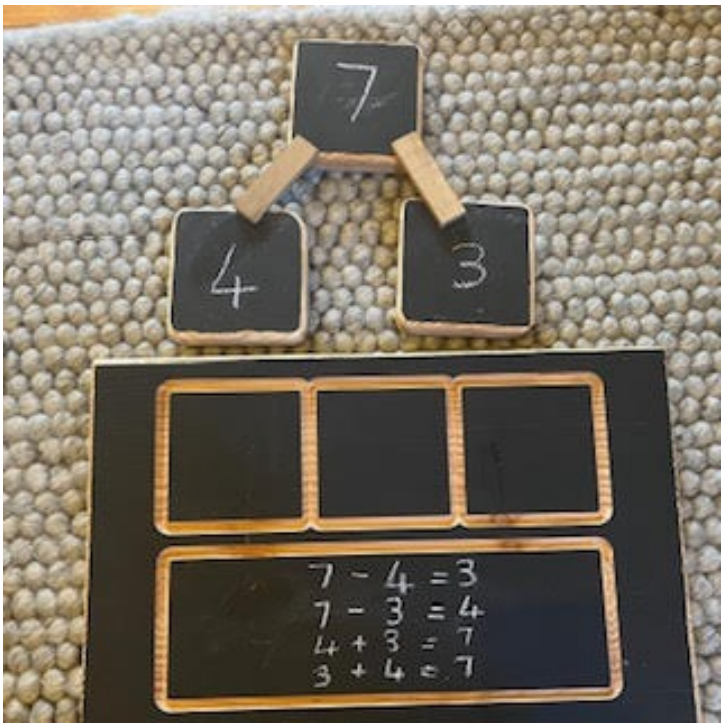
Fact Family maths games encourage children to work out the numbers that are found together in groups of maths problems in selection to, like **addition and subtraction**, <u>or</u> **multiplication and division**. For example, the numbers 4, 6 and 10 are found in 4 + 6 = 10; 6 + 4 = 10; 10 - 6 = 4; 10 - 4 = 6. The *'Fact Family' (see definitions page 19)* looks at this relationships present between these groups of 3 numbers. This relationship is also seen in the Addition Table (Fig. 1 page 33) where related numbers become apparent where vertical columns and horizontal rows meet,

4. Fact Family (Addition / Subtraction)

Activity: Use the '*Chalkboard Squares*' or '*Chalkboard Ovals*' to record the related numbers. The example given below uses the related numbers (7, 4, 3). To begin, place one or two of the three numbers on top of a surface. The children need to find the missing number. They can use the round button counters to work out which is the missing number. Record the possible number of *'family'* sentences.







Extension Idea: 2. Repeat the above activity, this time with only one number placed out. The children then find the other two numbers. With only one number placed out, there are more possible correct related answers. For example, for 7; it could be (7,3,4) or (7,1,6) or (7,2,5).

(This game can also be done using the '*Chalkboard Squares*' and '**Whole-Part Blending Board**'.)

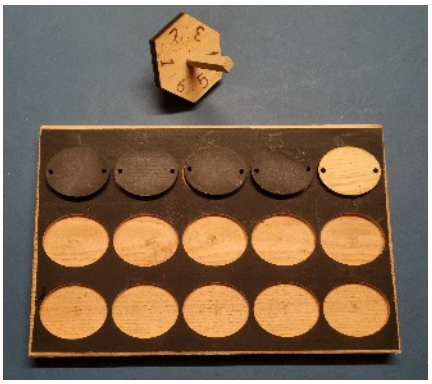
Number Bonds

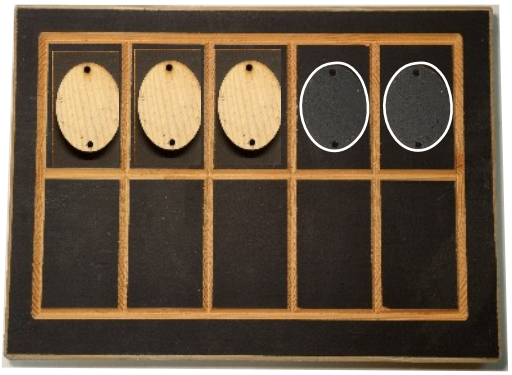
Number Bonds are a set of 2 numbers that, when added together, make a whole number e.g., 5 = 3 + 2; 5 = 1 + 4; 5 = 5 + 0. Number bonds are ideal to use with mental arithmetic. The light/dark counters and boards (available in the 'Learning Through Play Pack') are ideal when practising such number bonds.

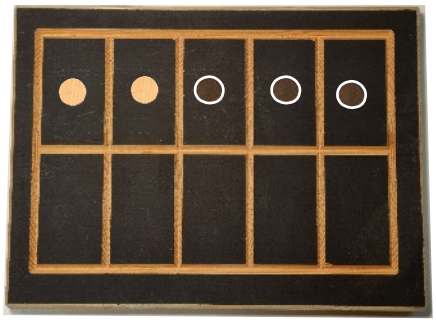
5. Number Bonds -

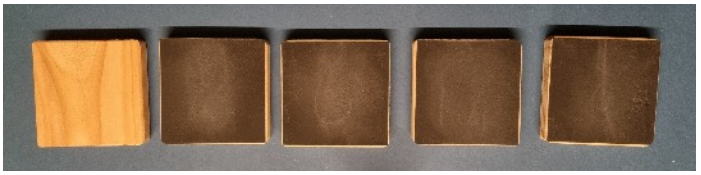
Activity: Choose a number and then break it down into its component parts. (The children can spin the spinner to determine this number). Use the light/dark counters. Gather up the correct number of counters, corresponding to the chosen number. Place all these *counters* into one of the Ten-Frames. (The counters can also be used on their own, without a board). To begin with, keep them all the same side up. Turn the counters over to show the other colour as the children advance in the breakdown of the number. The children need to count each of the two groups that make up the whole number.





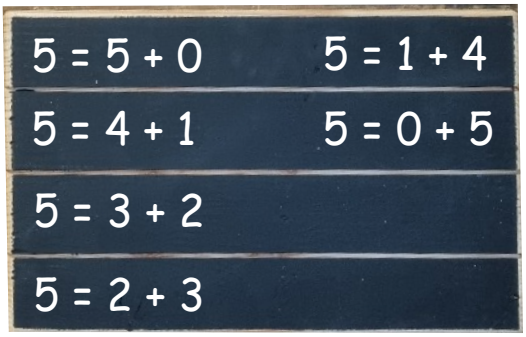












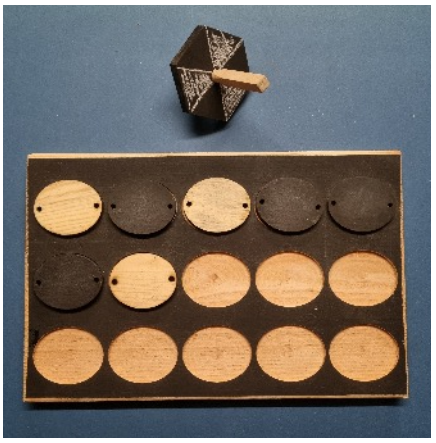
Outdoor Classrooms Ltd

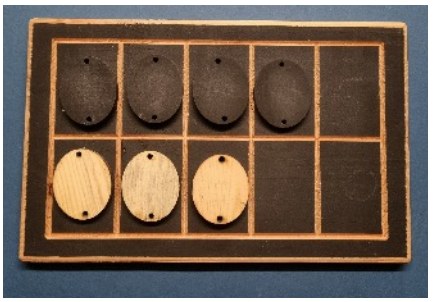
Learning Through Play Pack

Addition

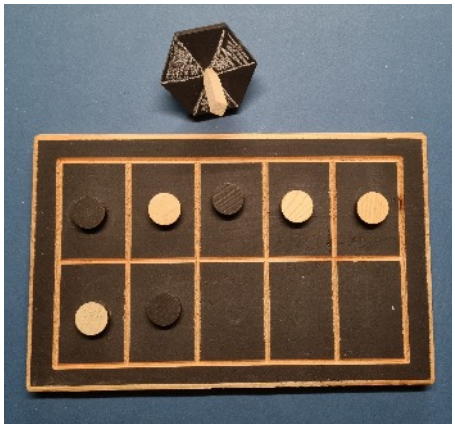
1. Light / Dark Addition Game -

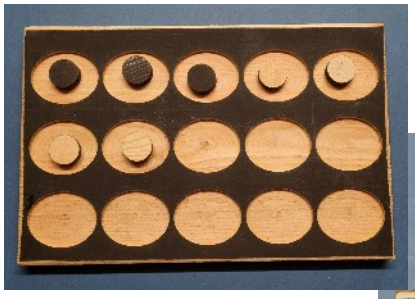
Activity: Use the chalkboard side of the spinner. Use chalk (or a chalk pen) to mark alternate light/dark spinner segments. First, spin the spinner. If it lands on a dark segment, place a counter (dark side up) into the **Ten-Frame** (or the reverse side of the **Topic Board**). If it lands on a light segment, place a counter, light side up. Repeat this several times. Tailor the number of spins to the age/ ability of the children. Count: how many light segments there are, how many dark segments and how many in total. When working with younger children, use one of the other boards as a second board, to transfer the counters onto, in order to rearrange similar-coloured counters grouping them together. In this way, the children can easily see the number sentence they are forming. (See picture below)





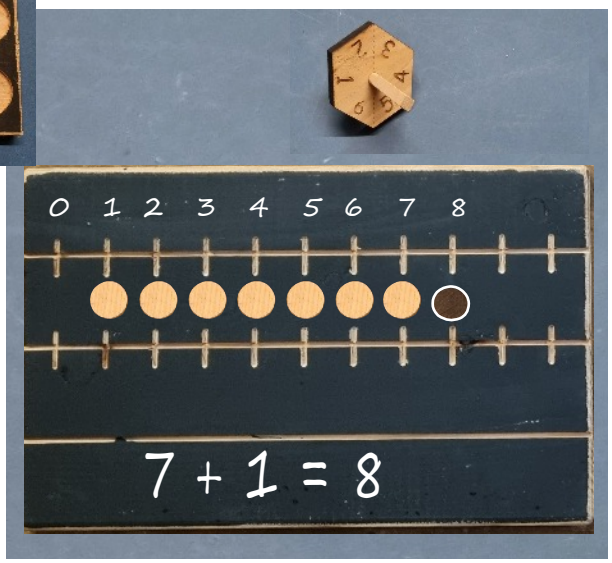
Extension Idea: A number sentence can be represented by using chalk to write on the chalkboard i.e. 3+2=5.

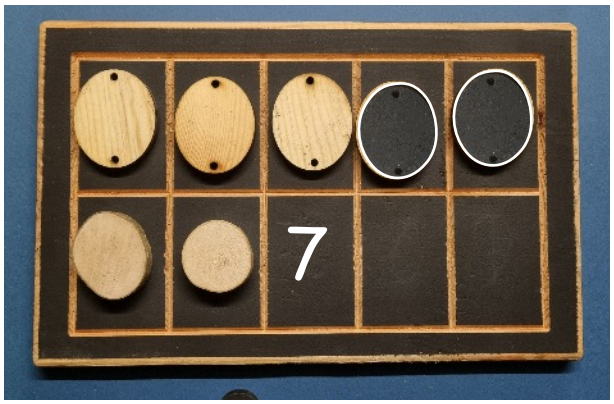




One More-

Activity: To make it more fun, use the number spinner to determine how many *counters* are needed to start the game. Place the *counters* on the **'Ten-Frame'** (or the **'Topic Board)'** to match the amount spun. Ask the children to '*add one more*', then they need to count (or subitise) to determine the total amount. Request a child to write the new total amount on the chalkboard.

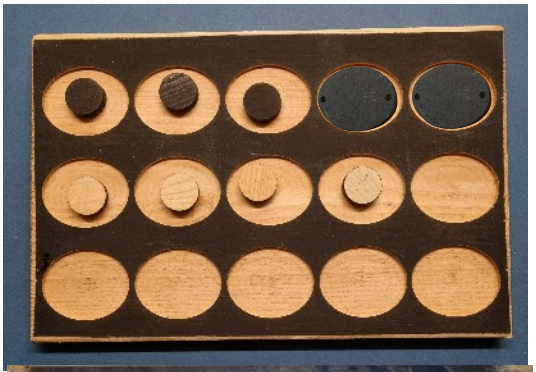


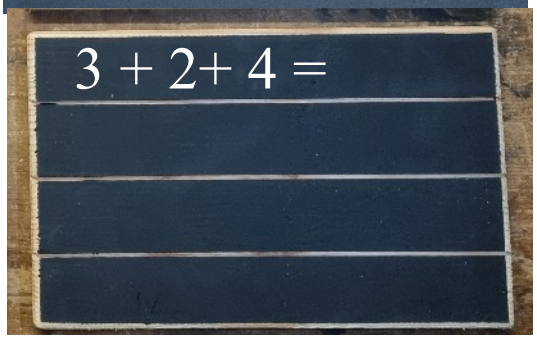


Extension Ideas:- 1. As the children's confidence grows, add larger amounts to the original number, for example "add '**2' more**". Use different style of counter to represent each separate number group. Doing, this will keep each part of the sum clearly defined.

2. Add the additional amount more than once. In this example, 5 + 2 + 2 = ? (See picture left). Each time record the new total

3. Number Spinners Addition Game -

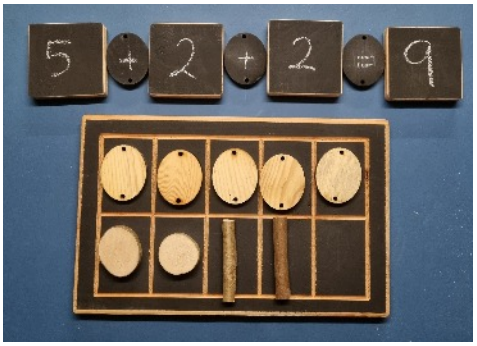




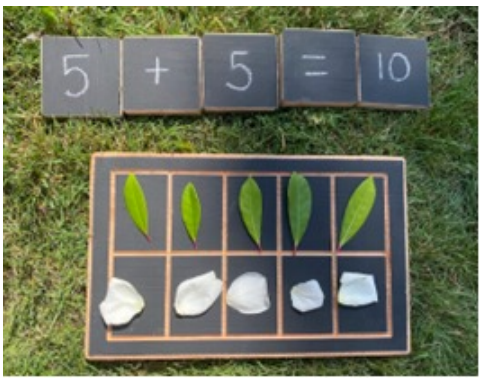
Activity: As the children's confidence grows, increased the number of spins. E.g. spin twice in order to add numbers together. Once the first number has been spun, place the corresponding *chalkboard oval* (or the *button counters)* inside the **Frame**. Use the light side for one group of counters for the first number spun - and the dark side for the second. In this way, the components of the sum (which has now been developed) can clearly be seen.

Extensions - **1.** Spin 3 times (or more) to add more numbers together. (Use a different types of counter to represent each number separately). Doing this will keep each component of the sum clearly defined. E.g., 3 + 2 + 4 = ? (See picture right)

2. Start introducing number sentences by recording the completed number problem, Use chalk and the '*Chalk Squares*' (or the back of the '**Whole-Part Blending Board)**, Explain to the children the meaning of the maths symbols for addition (+) and equals (=), etc..



4. Working From a Number Sentence -



Activity: To make it more fun, use a number spinner to determine how many *counters* are needed to start the game. Once a number has been spun, use chalk to write the number on a '*Chalkboard Square*'. Next chalk the addition symbol (+) on another square, (because the children are going to ADD these two numbers together. Spin the spinner again and record the second number on another chalkboard square. Then, on another, write the equals sign. Place one more *Chalkboard Square* ready for the children to record the answer. Working from the number sentence, the children need to collect the required *counters* and position them in the **'Ten-Frame'**. It is preferable to use different *counters* (or different coloured sides of the counters) for each separate two amount to be added; by using different counters, the children can continue to see each part of the number sentence as well as the total final amount. Record the total on the blank *Chalkboard Squares*.



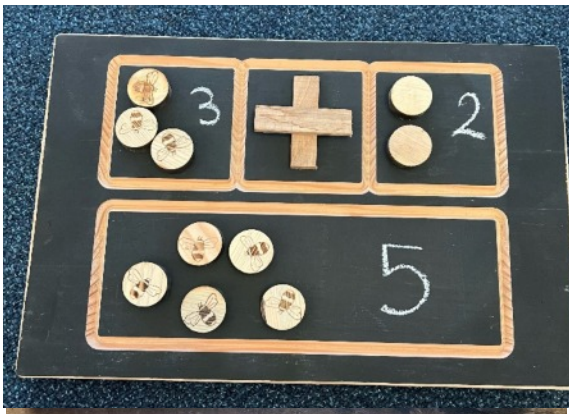
Extension Idea: A great extra challenge involves moving the tiles around to explore the different ways sums can be written. A common misconception, (often present in Year 1) is in the child's understanding of the equals sign (=) when it appears at the *start of a number sentence*. The flexibility of these resources makes it easier to address this difficulty and deepen child's understanding of mathematical relationships.

Addition of Groups

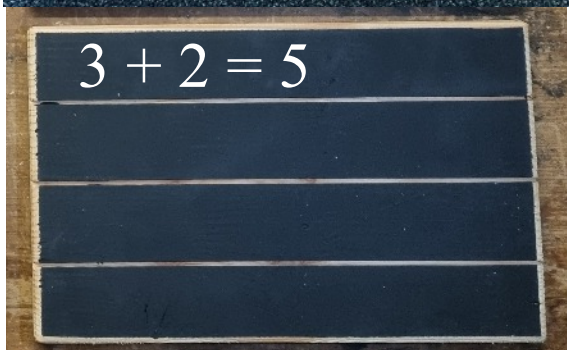
As the children gain confidence when adding groups of numbers, they may no longer need the help of the **Ten-Frame**. Simple addition and subtraction can be achieved by using the **Whole/Part Board,** chalk and/or counters.

4. Two Groups Addition -

Activity: Spin the spinner (using the number side). Record the first spun number on the **Board**. Add the '+' sign in the middle. Spin again, and add the second. (Alternatively, write the numbers you wish to add and the '+' sign in the middle). The children collect the correct number of counters relating to each spun number. Each group of counters is added together to find the total.







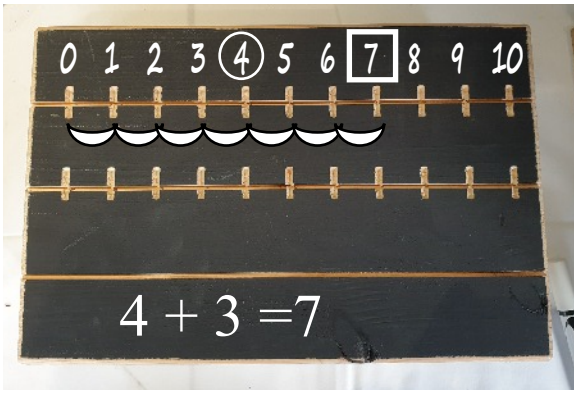
Extension Idea: Repeat the activity, this time reversing the numbers. So, 3 + 2 = 5 becomes 2 + 3 = 5. Doing this will help the children to understand the total is the same regardless of which of the two numbers you start with.

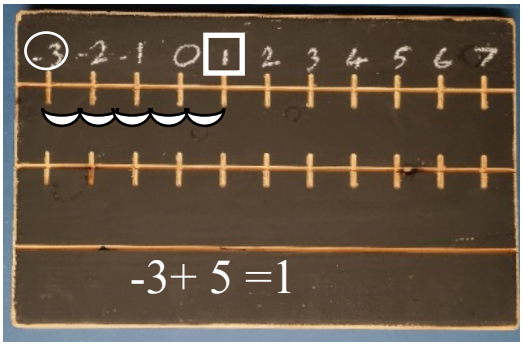
Number Line Addition

5. Number Line Addition -

Activity: Use a chalk pen to write a **Number Line** on the chalkboard side of the '**Ten-Frame**'. Spin the spinner - then count on from 0 to the first number spun. . Repeat the game and record further additions.

Extension Idea: Record the numbers and their total in a number sentence underneath. (See picture right).





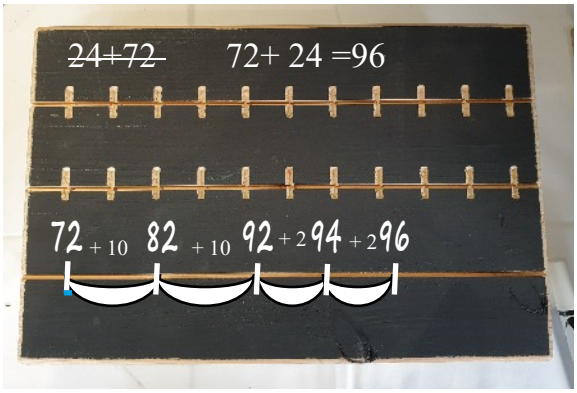
6. Addition from Minus Numbers -

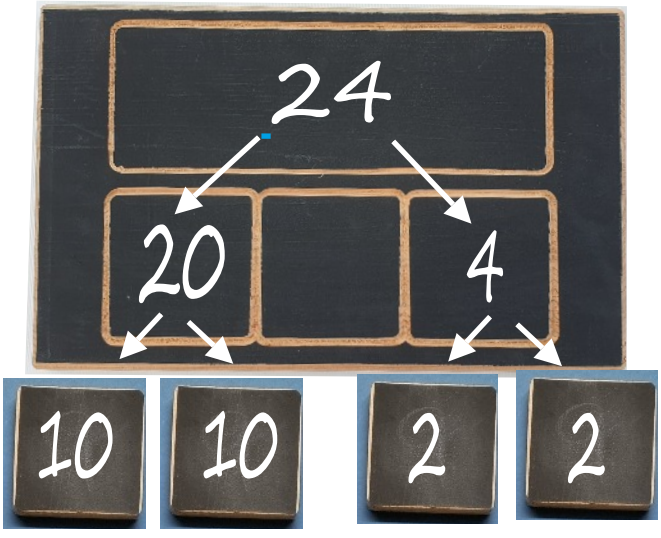
Activity: Use a chalk pen to write a **Number Line** on the chalkboard side of the '**Ten-Frame**', starting with minus numbers. (Circle the number you are to begin counting). Spin the spinner and count on by the amount of the spin, from the starting (circled) number. (See picture left)

Extension Ideas **- 1.** Write the number sentence underneath.
2. Repeat spinning the spinner and work with the new numbers spun.

7. Addition of Large Numbers -

***Activity*:** As the children gain in confidence, they use the 'bottom line' of the **Board** to create their very own **Number Line.** First, create a number problem, i.e., 24 + 72 =? Begin with the largest number first (72) and record this at the start of the **Number Line**. Count onwards by breaking the second (smaller) number to be added into smaller, easier parts *, i.e. (24 = 10 + 10 + 2 + 2). Use these components of 24, as 'jumps', to 'count onwards' from 72. As they progress, write the new amount at each 'jump'. 72 + 10 = (82) + 10 = (92) + 2 = (94) + 2 = (96).



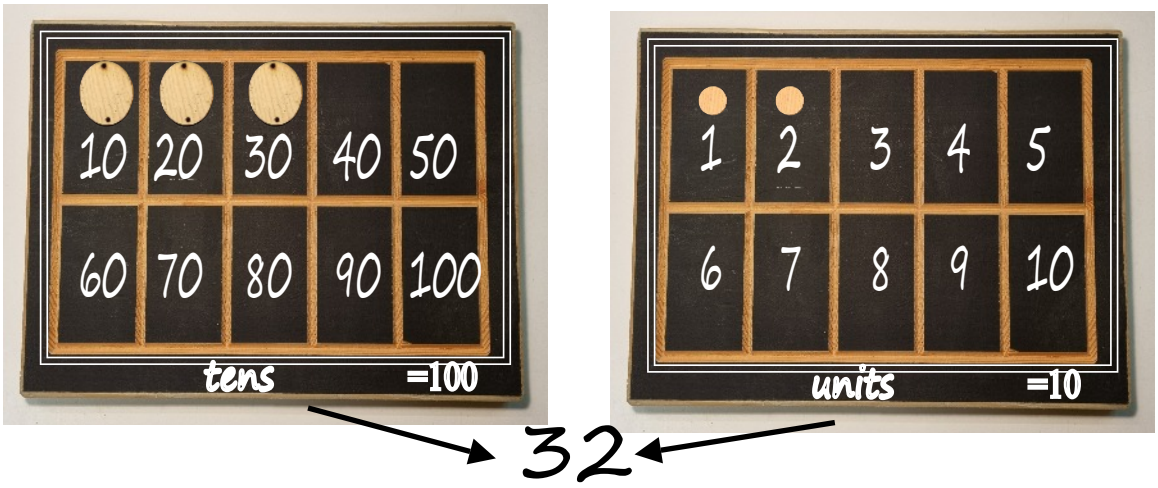


* If the children need help breaking the large number to be added down into smaller parts. It may be helpful use the **Whole-Part Blending Board**' to break the number down into smaller parts. (See picture left).

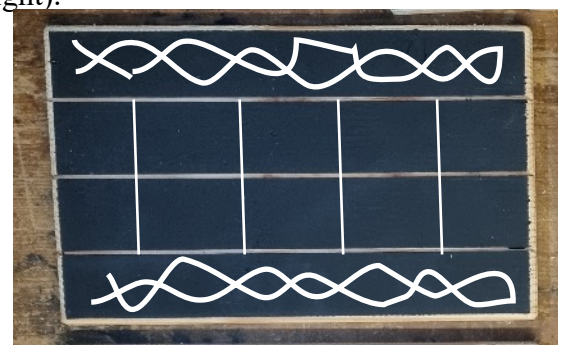
(See page 32 to better understand the breakdown number - **Whole-Part Models**.)

Addition Tens and Units

Once the children have gained confidence (when counting to ten and over), begin to handle tens and units as individual components. Achieve this by using two Ten-Frames (see pictures below). The right Ten-Frame a 1 - 10 unit. Explain that each of the sections on the right represents one unit and each of the sections on the left represent one 'ten' unit. So the right '**Ten-Frame**' represent units up to ten (1-10), one single section on the left is equal to one complete **Ten-Frame** on the right.

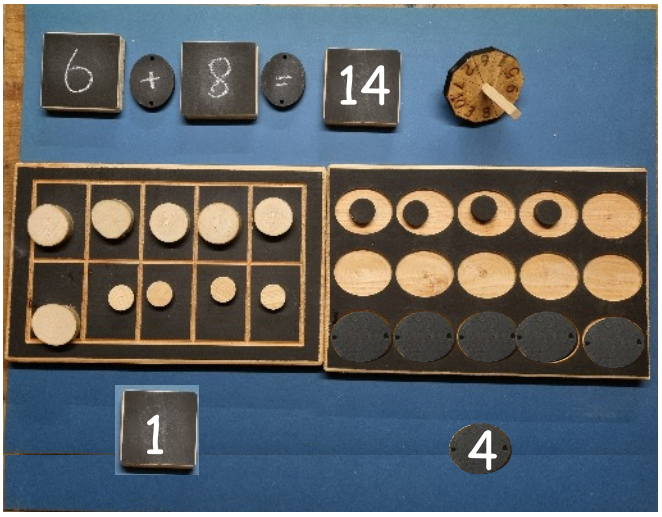


These activities require an additional '**Ten-Frame**' (available from *Outdoor Classrooms Ltd*). Alternatively, make additional Ten-Frames from other Boards. Do this by using the reserve side of the '**Whole-Part Blending Board**'. Chalking on a five-by-two grid (See picture bottom left). (Or use the reverse of the '**Topic Board**'; along with the *chalkboard ovals* to hide the bottom line, so only a five-by-two grid show (see picture bottom right).





8. Tens And Units Addition -

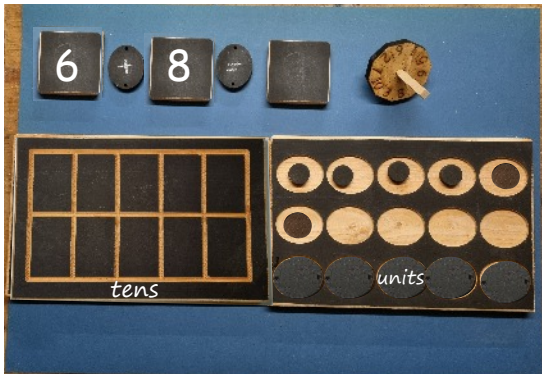


Activity: Place two **Ten-Frames** side-by-side, (See above). Gather the amount of counters that accurately represent the first figure and place them in the left Ten-Frame, one counter per compartment. (The number for this first amount can be determined by you or by spinning the spinner, number side up). Repeat for the second amount, continuing to add one *counter* per compartment until the left **Ten-Frame** is full. Then continue adding further counters on the right **Ten-Frame**. (Use similar counters for the first amount and *different* ones for the *second*. The different type of counter will enable the children to clearly to see each component of the number problem). Count the total.

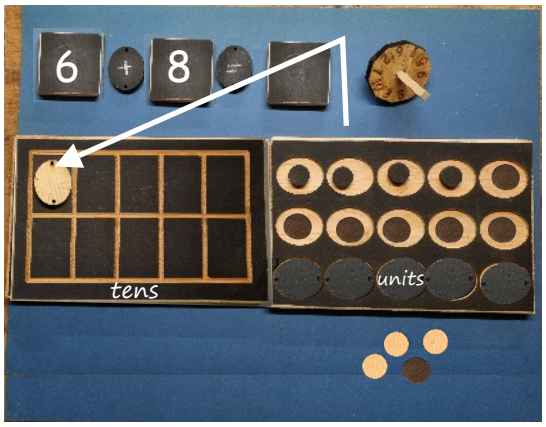
Extension Idea: Explain that as the left **Ten-Frame** is filled, it becomes 1 whole Ten-Frame (10), While the right Ten-Frame is part-filled and represents the units (in this case '4' units. Therefore, the sum total is **1 ten** and **4 units** = **14.** Write the maths sentence; you can use the '*chalk squares'* or *'Chalkboard Ovals'* underneath, to record the answer in numerals (see picture above.)

9. Tens And Units Alternative -

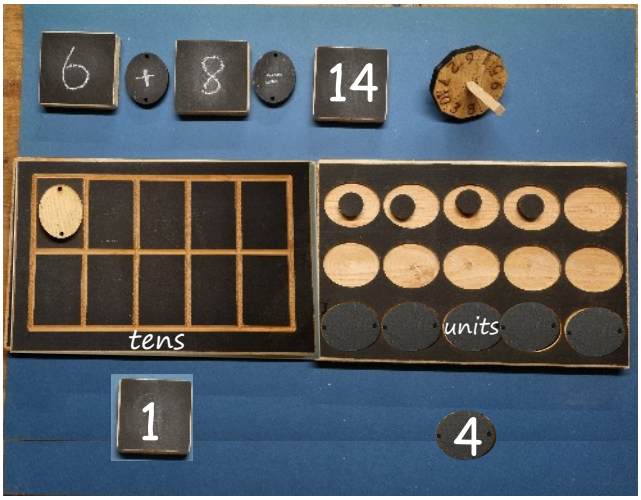
Activity: Begin with two '**Ten-Frames**' side-by-side. Determine the first number for this addition maths problem, yourself or spinning the spinner, number side up. Repeat for the second number. Write the number sentence. (6 + 8 =) Use *button counters* to represent units and *oval counters* to represent tens of units. Place the correct amount of counters to represent the first figure (6) into the right **Ten-Frame**, one counter per compartment.



Repeat for the second amount (8), continuing to add one counter per compartment until the right **Ten-Frame** is full. Then remove all ten of these button counters (units) and exchange them for 1 *oval counter* (ten). Place the oval counter in the left **Ten-Frame**. Continue adding the remainder *button counters* into the *right* **Ten-Frame.**



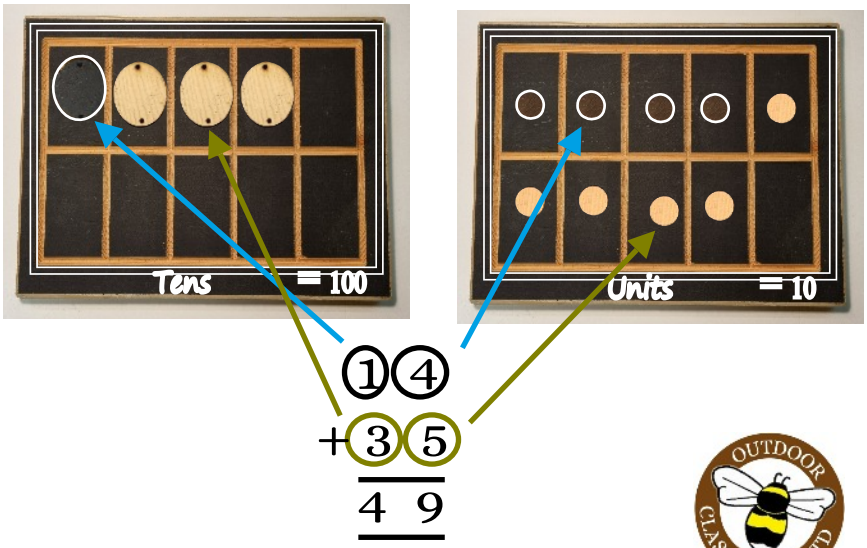
Count the total tens and units counters. Complete the maths sentence. (6 + 8 = 14)



Extension Idea : Repeat the above process - adding a third amount, i.e. 6+8+7=

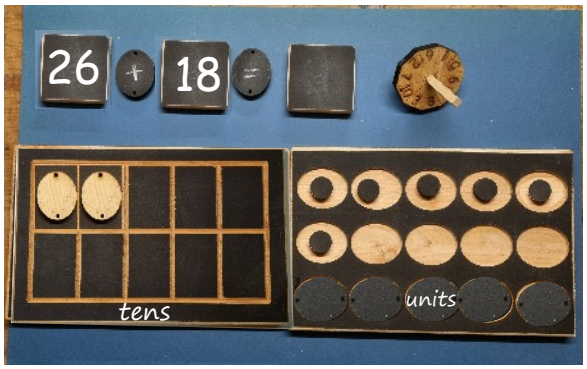
The children will become familiar with different style *counters* representing units and tens of units. These differences will enable them to them to visualise counting tens and units together in a maths problem.

As in:-



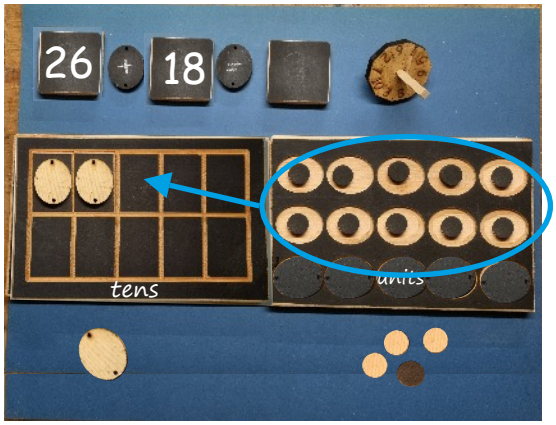
10. Hundreds / Tens / Units Addition -

Activity: Begin with two Ten-Frames side-by-side and generate an addition number problem to solve. For example, (26 + 18 =). The number needs to be broken down into '*tens*' and '*units*'. E.g. 26 becomes (2) tens and (6) units. The children collect the correct amount of *oval counters* (2) for the tens and *button counters* (6) for the units for the first amount. They place the units (*button counters*) into the left **Ten-Frame** and the tens(*oval counters*) (2)into the right **'Ten-Frame'**. (See picture right)





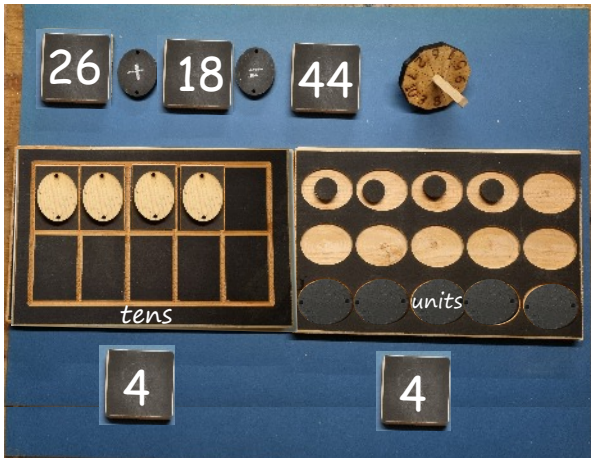
Collect the correct amount of counters for the second amount 18 becomes (1) tens '*oval counter*' and (8) units '*buttons counters*'. These are to be added to the first number. Place these counters adjacent to their corresponding **'Ten-Frame'**. Ovals (tens) next to the left **'Ten-Frame'**, and '*button counters*' (units) next to the right **Ten-Frame.** (See picture left)



Now place the '*button counters*' into the right **Ten-Frame** until it is full. Gather up all of these ten counters from the right **Ten-Frame** and exchange them for one oval counter. Place that in the left **'Ten-Frame'**.



Continue to place the remainder of counters into each of the corresponding **'Ten-Frames'**. (See picture left). Count the total of the tens and units counters. Complete the maths sentence (26 + 18 = 44)

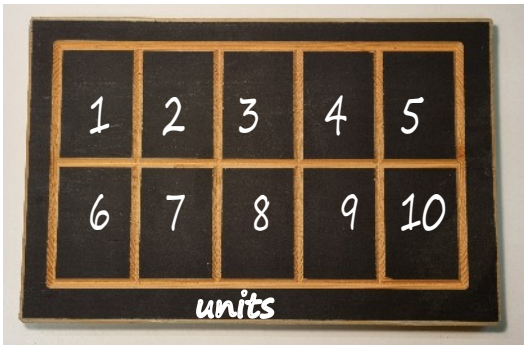


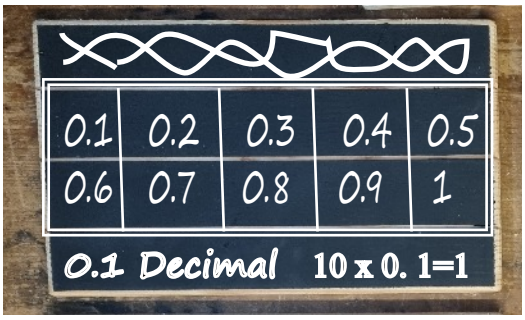
Extension Ideas: 1. Repeat with a 3rd amount.

2. Add a 3rd Ten-Frame to represent 100's, and add up even larger numbers.

11. Addition of Decimal Numbers -

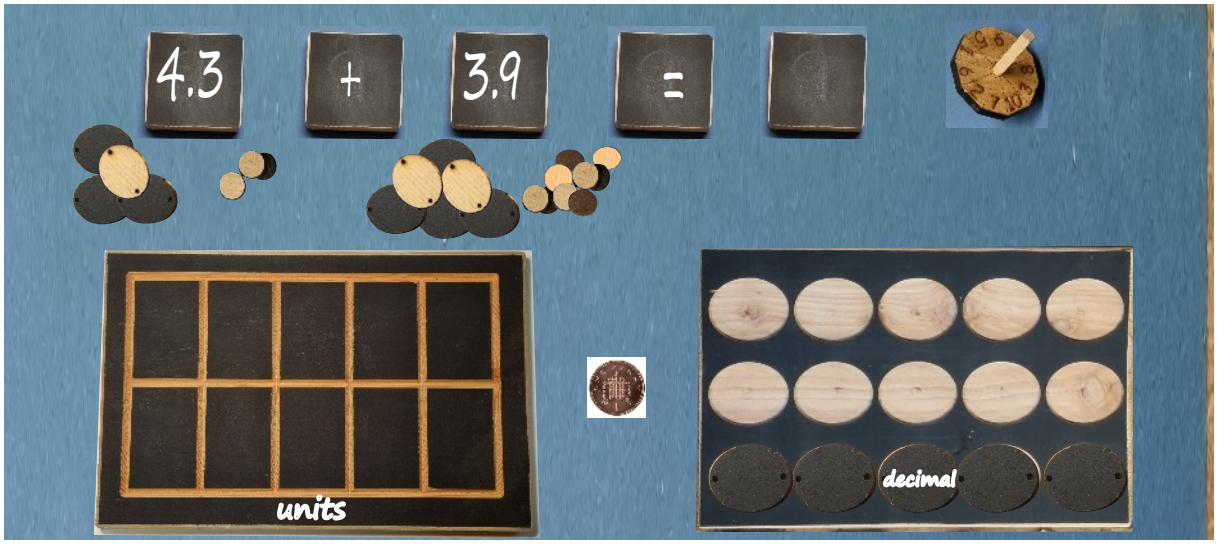
Activity: Place two Ten-Frames next to each other with a slight gap between. Place a coin (or something else round - not a *counter* so the children are not confused) to represent the decimal place. Use the left **Ten-Frame** for the 'whole numbers' and the right **Ten-Frame** for the 'part numbers'. Each square of the left **Ten-Frame** represents one whole unit (1). A *completed* right **Ten-Frame** represents *one whole unit broken down into 10 pieces*, each of the individual square represents 0.1.



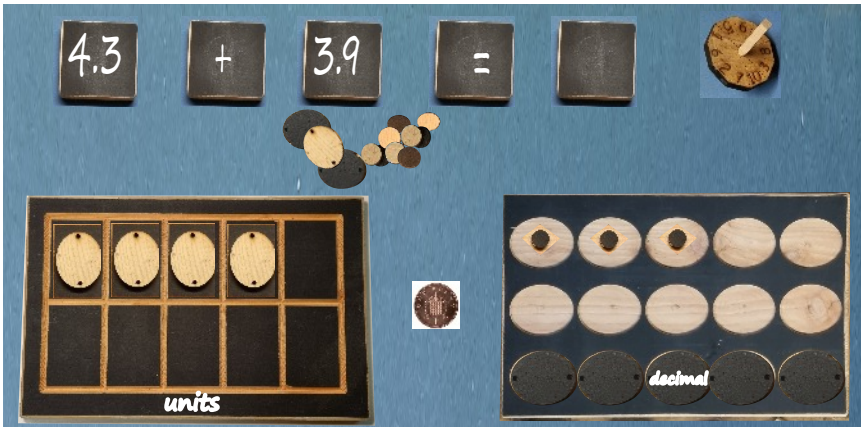


Generate a number problem. Use a number spinner to help generate the numbers for this problem if you wish. e.g., 4.3 + 3.9 = ... Use the *chalk ovals* to represent the '*whole numbers'* and the button counters to represent the decimal numbers. Begin with the first number (4.3). The children collect 4 *oval counters* for the 4.3 and 3 *button counters* for the 4.3 .

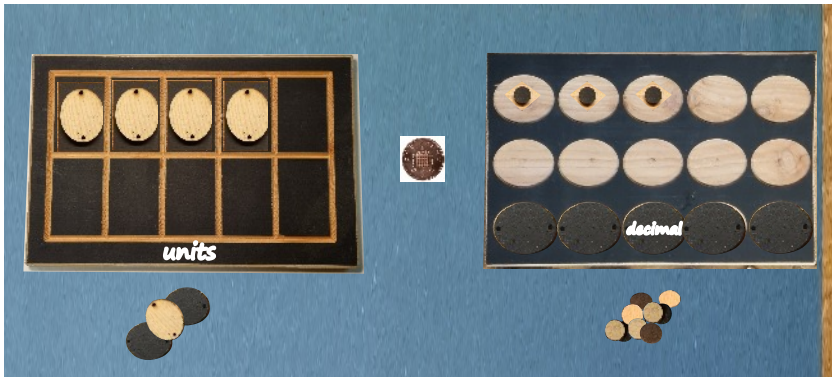
.



Begin with the *button counters* (decimal numbers). Place one counter per section into the right **Ten-Frame**. Place the *oval counters* (whole number) into the right **Ten-Frame**.

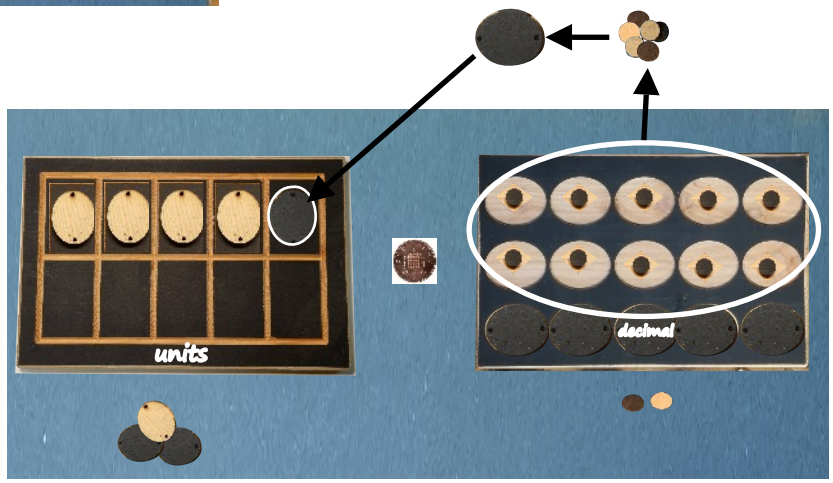


Now move on to the second number (3.9). Collect the correct number of '***oval counters***' to match the **whole number** (**3**). Place them next to the left '**Ten-Frame**'. Collect the correct number of ***round button counters*** to represent the **part number** (**9**) and place them underneath the right **Ten-Frame**.

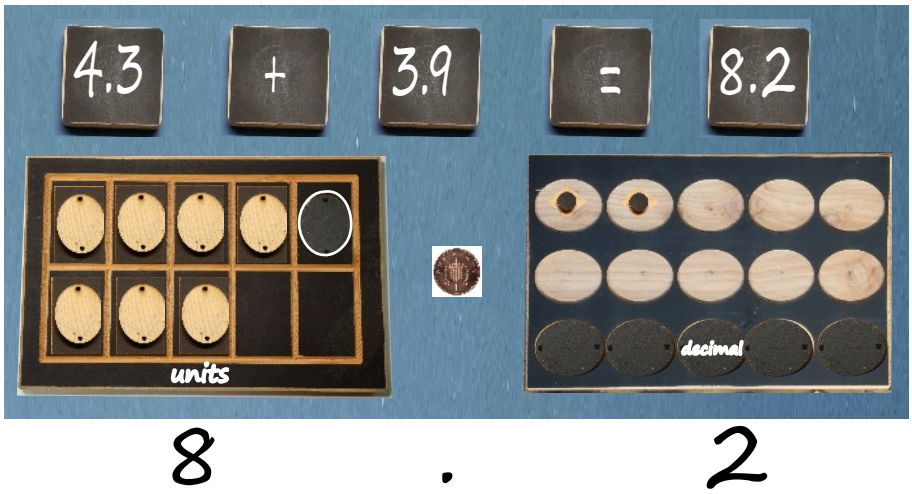


Begin adding the second amount to the first by, starting with the **decimal counters** (***button counters***). Add these onto the right '**Ten-Frame**'.

Whenever the right '**Ten-Frame**' is full, exchange the **10 button counters** (**10 x 0.1 units**) for **one oval counter** (**1.0 unit**). Place oval counter this in the left **Ten-Frame**. (See picture below)



Finish placing the rest of the button (decimal) counters in the right **Ten-Frame**. Then add the remaining **oval (whole number) counters** into the left Ten-Frame. Count the counters in the Ten-Frames to determine the answer. (See picture below)



With experience, the children will become quicker at collecting the correct number of *counters* to add to each **Frame**. Then by looking at each Frame they will be able to calculate the totals. Then representing with the relevant number and math symbol, written in chalk, on the *chalkboard squares*, or on the back of the **Whole Part Blending Board** the resulting number sentence. The number sentence can be written before of after the practical maths. You can make a game of this maths by spinning the numbered spinners to find the numbers to add together.

Extension Idea: Add a third **Ten-Frame** to add a further decimal point to the numbers problem i.e. 4.35 + 3.92 =

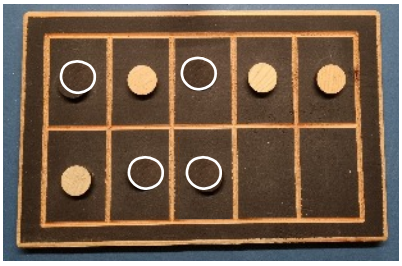
Outdoor Classrooms Ltd

Learning Through Play Pack

Number Comparisons

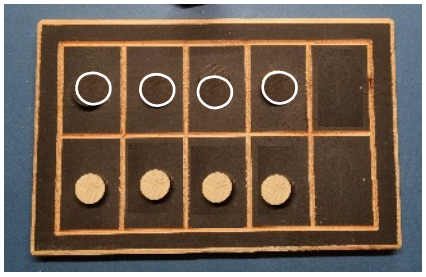
Use the chalk squares, the '**Whole Part Model Board**', or the reverse of the '**Topic Board**' to look at '>' (greater-than), '<' (less-than), or '=' (equal to).

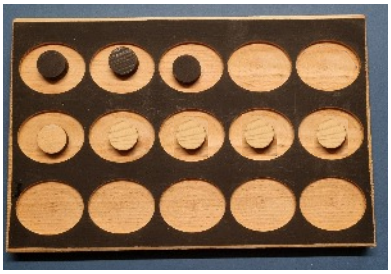
1. More (>) or Less (<) Groups-





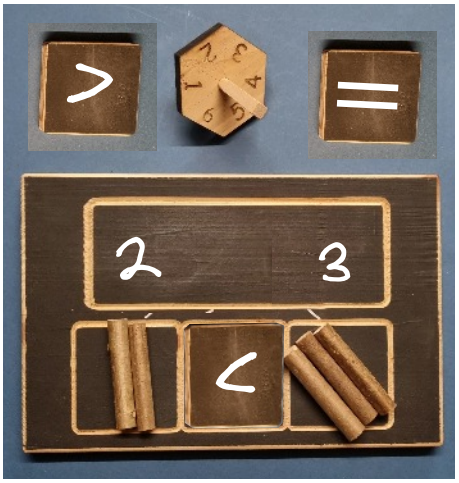
Activity: Encourage a child to share this activity with an adult or another child. Using the chalkboard side of the spinner, chalk alternate light/dark spinner segments (see picture right). Use the '**Chalkboard Ten-Frame Board**' for one person, and the reverse of the '**Topic Board**' for the other person. Take turns to spin the light/dark spinner. If it lands on dark, place a counter (dark side up) onto the Ten-Frame or the back of the '**Topic Board**'. If it lands on light, place a counter, light side up. The other person then, takes their turn to spin the spinner and place the count onto their 'Board'. Repeat this several times. When finished, compare the two '**Boards**'. Which have the *most* dark counters? Which have the *least* dark counters? To make it clearer reposition the matching counters together inside each 'Board'.





Extension Idea: Mark three '*chalkboard square*' counters, one with the '>' (greater-than), one with '<' (less- than), '=' and one with (equal-to) symbols. Ask which of the '**Boards**' have *more*, *less* or *equal to* dark counters in relationship to the dark counters in the other boards. They then place the correct symbol between them. Repeat this action for the light counters/total number of counters.

2. Greater-than or Less-than (Numbers)



Activity: This activity is similar to the 'More or Less (Groups), but uses the number (0-5) side of the spinner. The spinner is spun and the corresponding number of *counters* is placed in a '**Ten-Frame**'. The spinner is spun again and the correct number of counters is placed on the other '**Ten-Frame**' (or the back of the '**Topic Board**').

Alternatively, record the numbers being compared onto one '**Whole/Part Blending Board**' square. Use the spinner to choose the numbers. Place counters or sticks corresponding to the first number into the square below. (Or, use the correct dot pattern counters.) Repeat for the repeat for the second: Is the second number is *greater*, *less- than*, or *equal* to the starting number?

Compare the two quantities/numbers, using maths language keywords like *'greater', 'more than', 'less than', 'fewer', 'the same',* and *'equal to'.* Can the children compare the two amounts/numbers? Which is more? Which is less? Select and place the correct maths symbol between the amounts/numbers? (The maths symbols are pre-written by you on chalkboard squares).

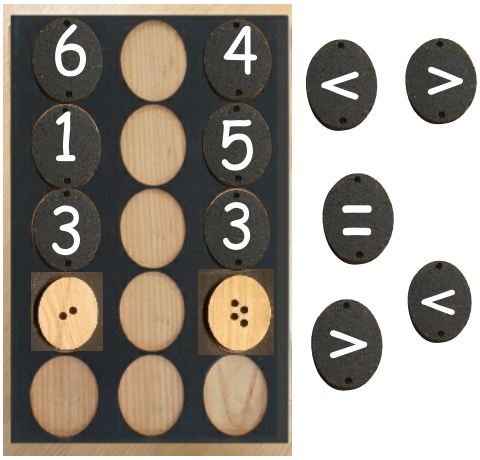
Extension Ideas: 1. Record the numbers on the chalkboard squares with <, > or = between them.

2. Compare the two numbers. How many more must be added to the smaller amount to make it equal to the larger amount? How many must be taken away from the larger amount to make it the same as the smaller amount? (See picture right).



3. Quick Compare -

Activity: Use the reverse of the '**Topic Board**' and '*Chalkboard Oval*' counters. Spin the numbered spinner; for each spin, write the number on a *chalk oval* (or select the relevant *dot pattern oval* counter). Place the counters on the **Board**, *top left* then *top right*, leaving a blank in the middle. Repeat for several rows. Chalk some '*oval counters*' with the symbols '>' (greater-than), '<' (less-than), or '=' (equal to). The children place the correct symbol in the middle of each pair of numbers. (See pictures below)





Extension Idea: Time the children to see how quickly they can place the correct symbol between the two numbers.

4. More or Less Game -

Activity: Use the back of the '**Topic Board**', '*Chalkboard Ovals*', '**Chalkboard Spinner**' and '**Number Spinner**'. With chalk (or a chalk pen), divide the chalk spinner into 3 sections, marking a '>', '<' or '=' symbol, one per section. (See picture bottom left). Spin the numbered spinner and write that number on the oval counter; place this into the left side of the '**Topic Board**'. Spin the '*chalkboard spinner*' and chalk the maths symbol on an oval; placing it next to the number. (See picture right). Write numbers on more chalk ovals and place them face downward on the table. The children then take turns up turning an oval and using its number to decide whether it will complete one of the number sentences, if it does add it into the appropriate place on right side of the board. (See picture bottom right)

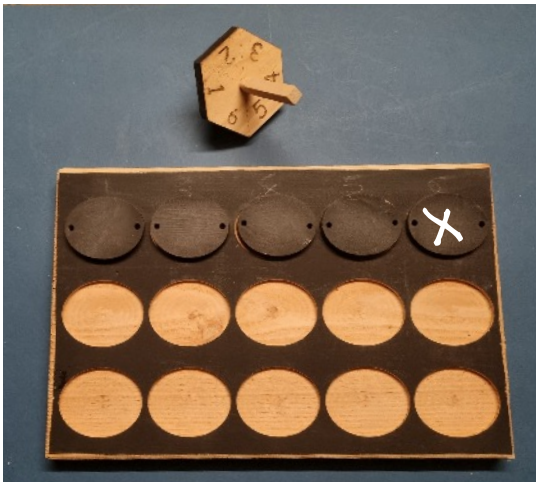




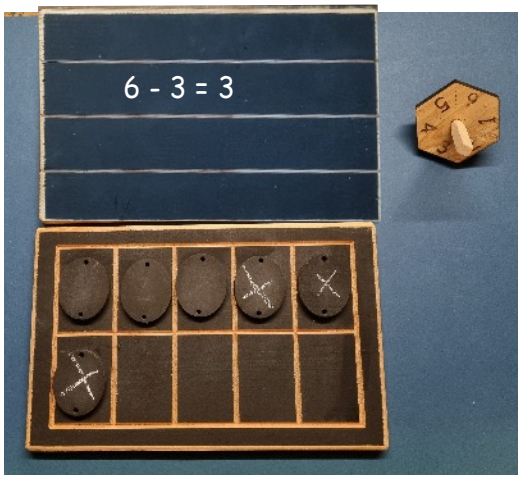


Subtraction

Subtracting sums can be practised in several ways. The '**Chalkboard Ten Frame**', the '**Whole-Part Blending Board**', the reverse of the '**Topic Board**', *counters* on their own, and items from your school or garden can all be used to visually learn about subtraction. Many configurations for '**Boards**' and *counters* can be used to create different calculation scenarios. E.g. using the chalkboard counters to turn them face down, cross some out, or place them to one side, as you subtract an amount, so that the children can still see the components of the sum. (See the picture on the right, an example of **5 - 1 = 4** The original **5** counters; the one taken remains. The **1** taken away is crossed out, and **4** are left).



1. Take One Away -

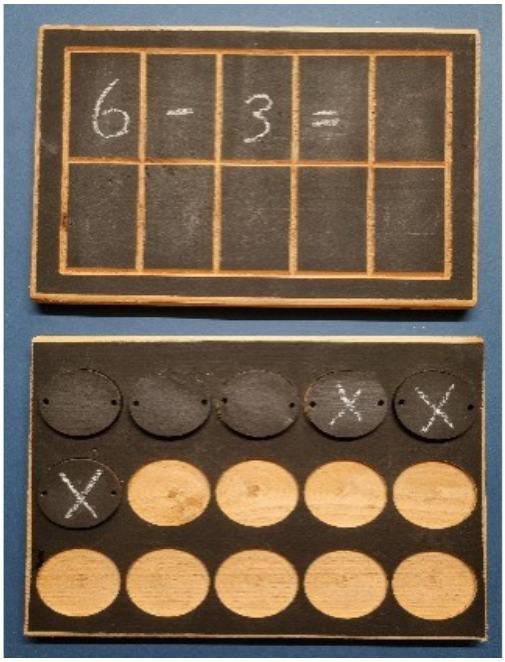


Activity : Use the spinner to begin. Place the corresponding number of counters on the '**Ten-Frame**' or '**Topic Board**' to match the amount spun. *'Take one away'*, then count (or subitise) the total.

Extension Idea: Can they write the new total amount on the chalkboard?

2. Subtraction -

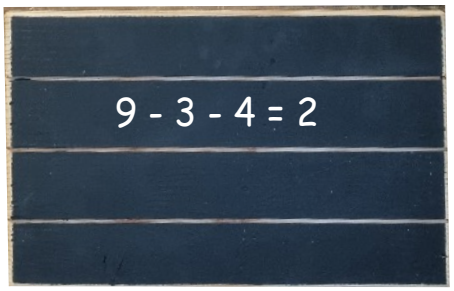
Activity: Choose a number from which to subtract, then choose the amount to subtract. Alternatively, spin the spinner (number side up to generate the starting amount, and spin again for the subtraction amount). Place the *chalkboard square* (*or chalk oval counters*) chalk side up, equal to the amount of the starting number. Chalk a cross (X) on each square equal to the amount to be subtracted, (or until zero is reached, if the second number is greater than the first). If using the *chalk ovals*, place them onto the **Ten-Frame** or the reverse of the **Topic Board**, to help children with a structure for counting the amounts.

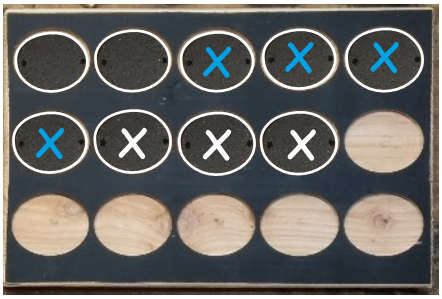


Extension Ideas: **1.** First generate the number sentence; - using the numbered spinner to determine the amounts to be used in the sum. The number sentence can be chalked onto the reverse of the '**Whole-Part Blending Board**'. Use the relevant 'counters' to visually show the components of the number sentence.

2. Alternatively, work on the physical maths problem first (*counters* representing the amounts) and ask the children to write the number sentence afterwards.

3. Subtracting More Than One Amount-





Activity: Choose a starting amount from which to subtract, then choose the amount to subtract. Spin the spinner (number side up) to generate the starting amount. Place the *button counters* (or *chalkboard oval*) chalk side up, equal to the amount of the starting number. Spin again for the subtraction amount. Chalk a cross on a counter equal to the first amount to be subtracted. Repeat for the second amount to be subtracted (ideally cross out the corresponding counters using a different coloured chalk). Record the resulting maths sentence, including the answer.

Extension idea: First, generate and record the number sentence using the spinner to generate the amount to use in the sum. The number sentence can be chalked onto the reverse of the '**Whole-Part Blending Board**'. The children then work from this written maths sentence, to create the physical maths (counters representing the amounts), in order to solve the maths problem.

As the children gain confidence in subtracting (using **Ten-Frames**) and subitising (recognising the patterns in numbers of objects), move on to using the '**Whole-Part Blending Boards**'. These provide a structure to visualise each group. The children will need to use their learned subitising skills.

4. Subtraction-using groups of counters -

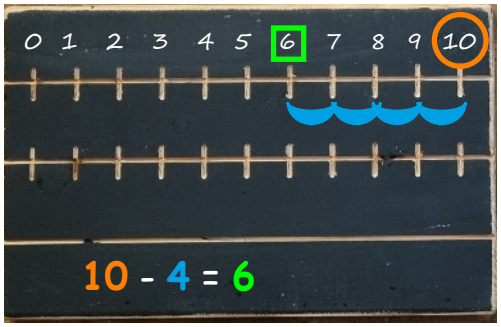


Activity: Use the '**Whole-Part Blending Board**'. Select a starting amount from which to subtract and the amount to be subtracted. (Or spin the spinner, number side up, to generate the starting amount, and then spin again for the subtraction amount). For example, 5 - 1 =

Collect button counters to match the starting amount, (5) and place the amount into one square. Place the amount to be *taken away* (1) in the other square. Mark the subtraction symbol (-) in the middle square. To solve this subtraction sum, remove from the left square, the <u>same</u> amount of counters seen in the right square. Now remove all counters in the right square. How many are left? (5 - 1 = 4).

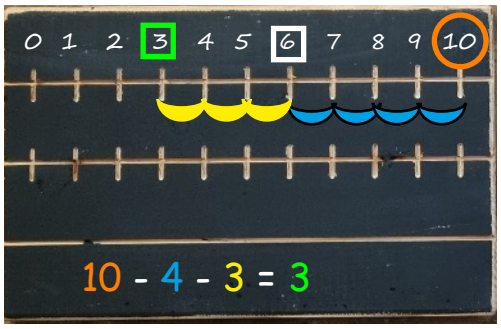
Extension Idea: First generate the number sentence. (Or use the spinner to generate the amounts to be used in the sum). The number sentence can be chalked onto the base of the **Board**. Create the physical (visual) maths from this number sentence. Alternatively, decide the physical maths problem first, then record the number sentence.

5. Subtraction using a Number Line -



Activity: Use the **Number Line** on the reverse of the '**Chalkboard Ten Frame**'. Select a starting amount from which to subtract and the amount to be subtracted. (Spin the spinner, number side up to generate the starting amount, and spin again for the subtraction amount). For example, 10 - 4 = Chalk out a number line which covers the needed range. Chalk a circle around the starting amount.

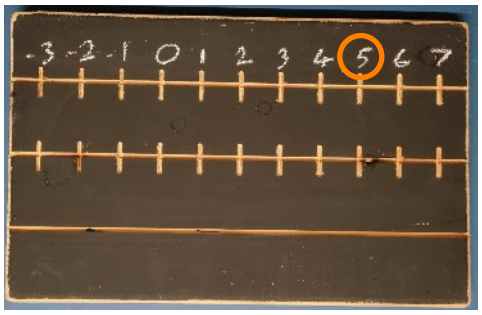
Using a chalk, place it on the starting number. Then, working backwards, mark off the number of sections to be subtracted. Mark the finishing number. (See picture top right). Record the number sentence with the answer.



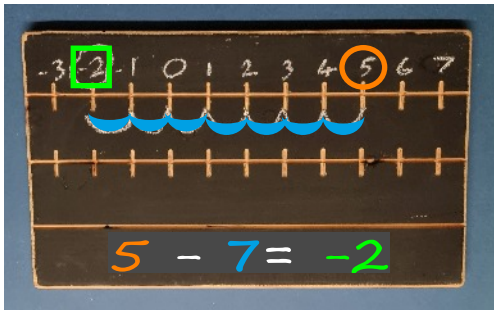
Extension ideas: 1. First, generate the number sentence; the spinner can be used to generate the amounts. The number sentence can be chalked onto the base of the board. The children then work from the number sentence, to create the physical maths (use the number line).

2. Generate a second number to be subtracted: 10 - 4 - 3 = . Repeat the steps as previously. Ideally use a different coloured chalk; this helps the children to clearly see each part of the number problem. (See picture right).

6. Subtraction into minus numbers -

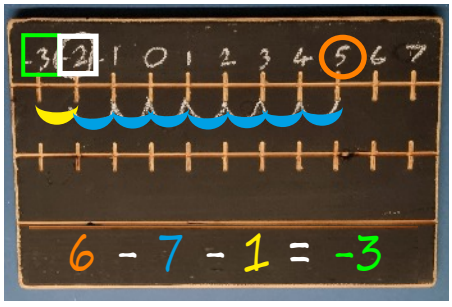


Activity: Generate a starting number and the amount to be subtracted. For example, 5 - 7 = chalk on a **Number Line** that covers the needed range. Chalk a circle around the starting amount. (5) Keep the chalk placed on the starting number. Working backwards, they mark off the number of sections to be subtracted (7). Mark the finishing number (-2). Express the number verbally and record the answer. (See pictures right)

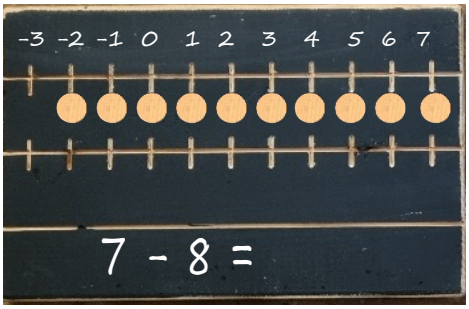


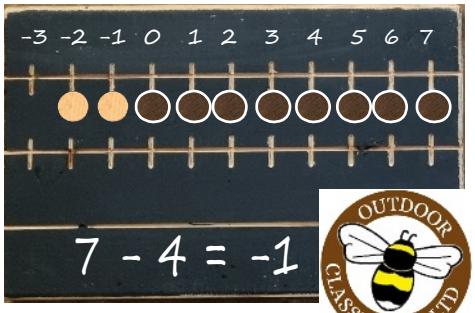
Extension Idea: First generate the number sentence; the spinner can be used to generate the amounts to be used in the sum. The number sentence can be written in chalk onto the base of the board. The children then create the physical maths from the number sentence. Alternatively, they work on the physical maths problem first, and then write the number sentence afterwards.

Generate a second number to be subtracted, e.g., 5 - 7 - 1 = . Repeat the above steps. Ideally, use a different coloured chalk; this support the children to clearly see each part of the number problem. (See picture bottom left)



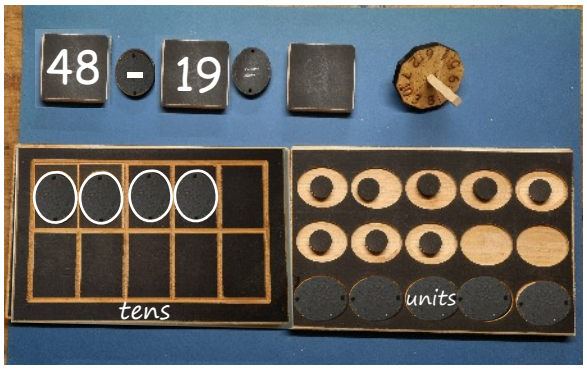
The small button counters can also be used along with the **Number Line**, to achieve similar results as above by turning the counters over rather than chalking a jump. (See pictures below)

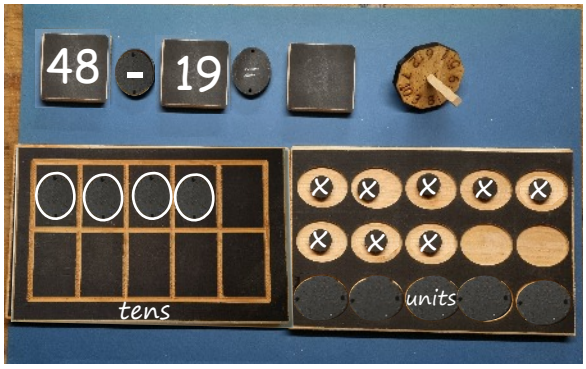




10. Hundreds / Tens / Units Subtraction -

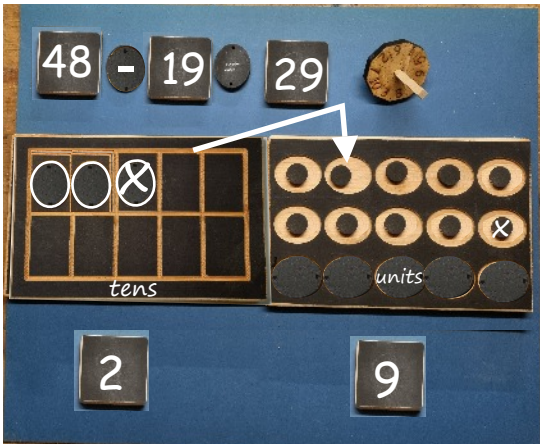
Activity: As previously, begin with two Ten-Frames side-by-side, (see Addition, Units and Tens p40). Generate a subtraction number problem to solve. E.g., (48 - 19 =) First, the children break down each number into its '**tens**' and '**units**'. 48 becomes (**4**) tens and (**8**) units. Place the units (*button counters*) chalk side up into the right **Ten-Frame**, and the **tens (oval counters)** chalk side up into the right **Ten-Frame**.





Start with the units ('*button counters*'); Place a cross (X) on each counter to match the amount subtracted. If all the unit counters available have been crossed out and there is more to subtract, i.e., 48 - 19, then break down one of the tens counters into more units counters, so you can finish subtracting all the units. (E.g., 48 - 19 the 8 available unit counters have been crossed out, one more unit counter needed to be subtracted to make the 9)

To do this, first, remove all the button counters from the right **Ten-Frame** which have already been subtracted (crossed out). Next remove one of the oval (1 'tens') counters from the left **Ten-Frame** and exchange it for ten button counters (10 'units'). Place these ten units in the right **ten-frame**. (See picture right). Then continue to cross out the remaining units to be subtracted, (In this case 1 unit) then the cross out the tens (**1**9). Count what is remaining.

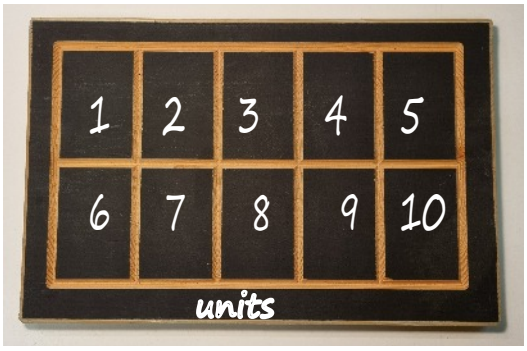


Alternatively, remove any subtracted counters (instead of crossing them out), placing them next to the **Ten-Frames.**

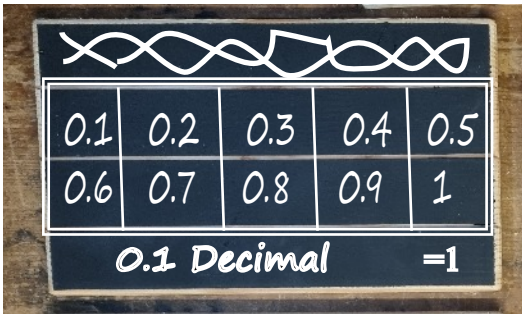
Extension Ideas: 1. Repeat with a 3rd amount.
2. Add a 3rd **Ten-Frame** to represent 100's, in order to subtract even larger numbers.

Subtraction of Decimal Numbers -

Activity: Place two **Ten-Frames** next to each other with a slight gap between. Place a coin (or something else round in shape, not a counter so the children are not confused) to represent the decimal place. Use the left **Ten-Frame** for the whole numbers and the right **Ten-Frame** for the part numbers. Explain that each section of the left ten-frame represents one whole unit (1), and a completed right ten-frame represents one whole unit broken down into 10 pieces, so each of the individual sections represents 0.1.

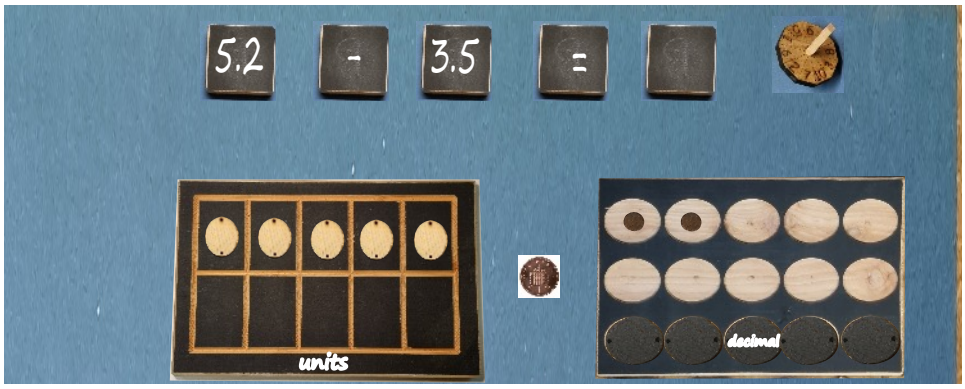






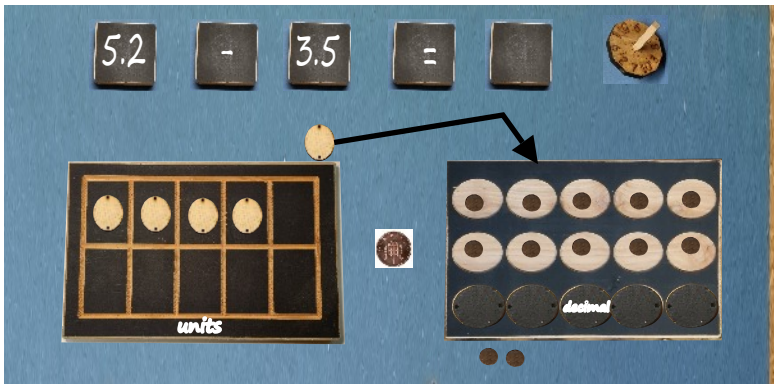
Generate a number problem. (Or use the number spinners to generate the numbers) for this h, e.g., 5.2 + 3.5 = ... Use the *chalk ovals* to represent the whole numbers to be counted and the *button counters* to represent the decimal numbers to be counted.

Collect the correct number of counters to match the first amount: e.g. 2 *button counters* for the decimal 5.2 and 5 *oval counters* for the whole units 5.2. Place counters equivalent to the first number into the Ten-Frames: oval counters into the left ten-frame and button counters into the right Ten-Frame.



Begin subtracting (3.5) from 5,2. Start with the decimal amount (*button counters*), 3.5, first. Remove the counters from the frame and place them below the board.





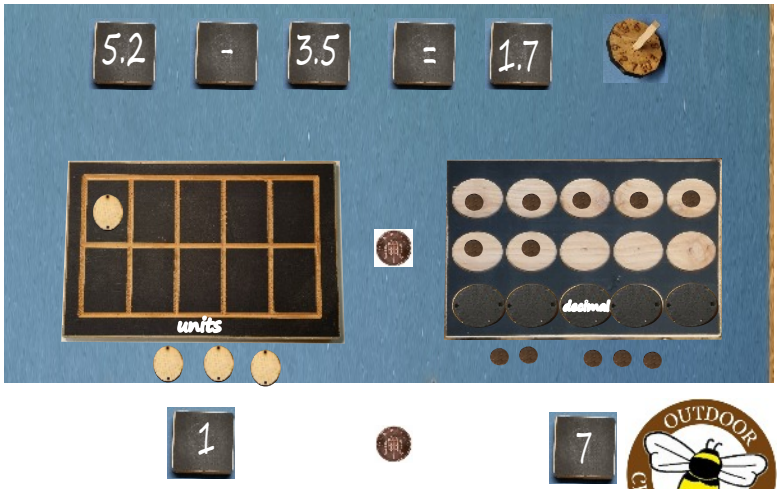
If there are not enough counters before the subtraction is complete, swap 1 oval (whole unit) counter for 10 button (decimal) counters. Remove completely the one oval counter from the left Ten-Frame and place the 10 button counters into the right Ten-Frame.

Continue to remove the remaining number of decimal counters to be subtracted, until the correct amount has been removed. (Place these removed counters below the Ten-Frame so the children continue to see exactly how many they have removed). Then subtract the whole number (*oval counters).* Once the correct amount of ovals have been subtracted place them below the Ten-Frame. Count how many of the ovals and button counters are left in the Ten-Frames.

For this example of 5.2 - 3.5 you should have;
3 oval counters and 5 button counters removed from the frames (3.5),
leaving 1 oval counter and 7 button counters (1.7) left in the Ten-Frame.

5.2 - 3.5 = 1.7

(See picture right)



Multiplication

Although it is really useful to memorise basic 'Times Tables,' it's also important to grasp the concept of multiplications itself. A visual method makes this much easier to understand, i.e., using colour, shape or natural items to introduce 'sets' and 'groups' to further instil this multiplication. Helpful activities follow...



1. Treasure Hunt Groups -

Activity: Set up a treasure hunt in the garden (or classroom). Hide button counters, pine cones etc.. (Alternatively, use natural items found in the garden, e.g., leaves.) Use the numeral side of the spinner to determine the first amount to be found. Spin again and gather a second amount. Place the two resulting groups onto the '**Chalkboard Ten-Frame**' (or on the reverse of the '**Topic Board**')- one item inside in each square. Count the Total. (See pictures right and below)

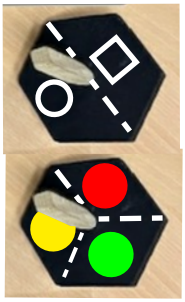
Expansion Idea: As the children gain in confidence, begin using the'**Whole-Part Blending Board**' of the '**Ten-Frame**'. (See picture below)





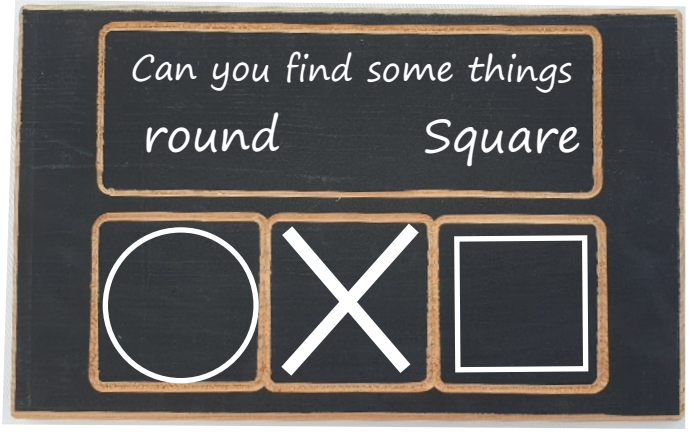


2. Can you find? game.-



Activity: Use the chalkboard side of the spinner. Use a chalk pen divide it equally into 2 or 3 sections. Mark each section with a request for something to be found, i.e., something *round* or *square* (sets/groups of 2); or something *red, yellow* and *green* (sets of 3).

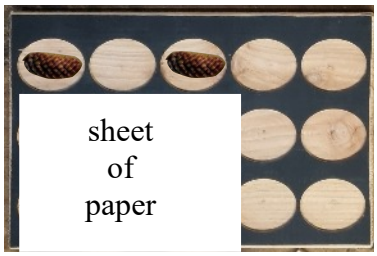
Spin the spinner; and ask the children to search for and collect items that match. Place the found items together in 'sets' or 'groups', i.e. square objects, green leaves.



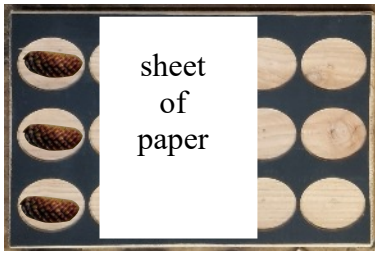


Extension Idea: Use the number side of the spinner; whatever number it falls upon (i.e. 5), fill each square on the '**Whole-Part Blending Board**' 5 object. Count the total.

2. Sets of 2 & 3 -



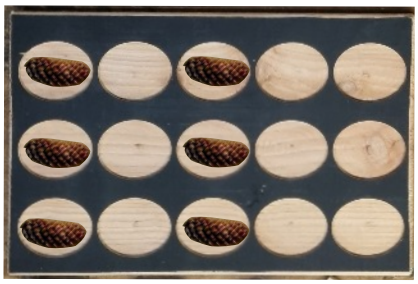
2 sets…..



…..of 3

Activity: Place sets/groups of *counters* onto the '**Ten-Frame**' or reverse of the' **Topic Board**'. How many are there in each set. Initially make this easier by hiding the other sets and leaving just one visible. (See pictures left) Finally, uncover everything and ask how many sets there are. (See picture below right)

Calculate how many there are in total.

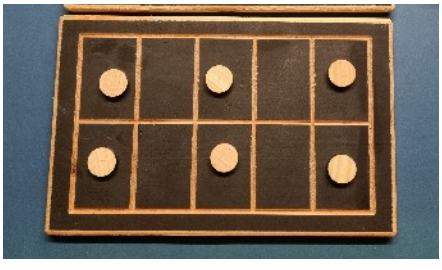


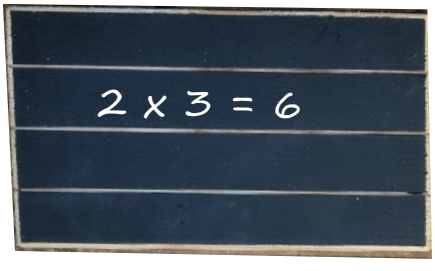
2 sets of 3 = 6

2 x 3 = 6

Extension Ideas: 1. Use sets of 3.

2. Represent these sets with the corresponding written number sentence. 2 x 3 = 6



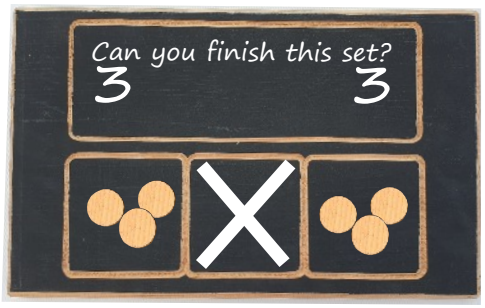


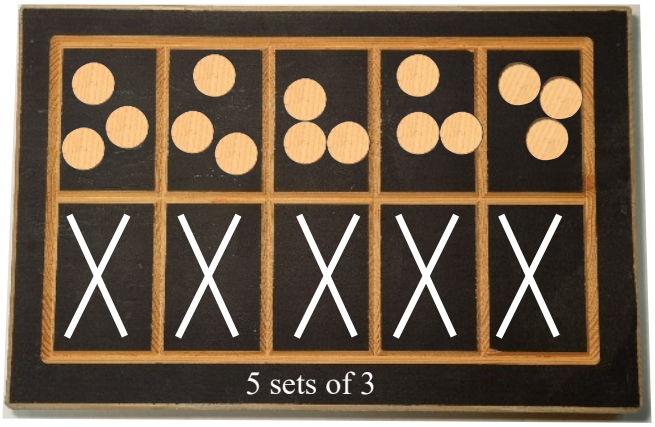
3. Continue to Add Sets -

Activity: Use the **'Whole Part Blending Board'** (for sets of 2 or 3) and the **'Ten-Frame'** for sets up to 10. Decide how many sets the children are going to make. Cross out (with chalk) any unwanted sections. E.g. to make 2 sets, cross out the middle square of the **'Whole-Part board'**, (See picture right).



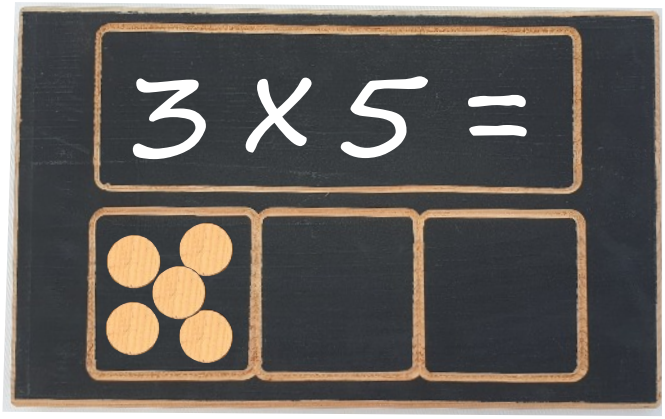
Place button counters in the first section. Match this amount by adding the correct number of counters in the remaining of the sections.

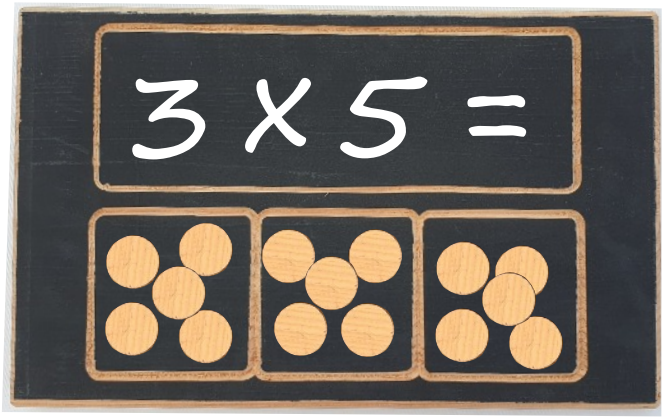




Extension Ideas: **1.** Count the total.

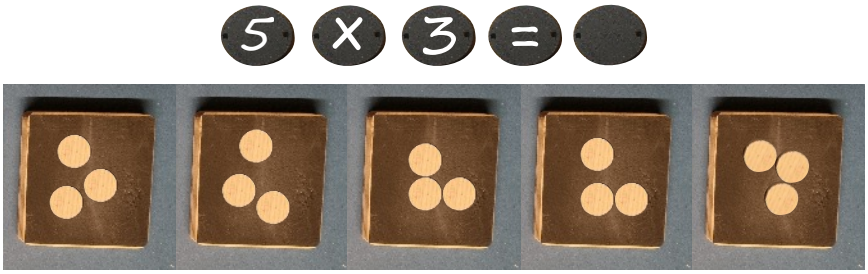
2. Place a number of counters into one section of a **'Whole-Part Blending Board'** or **'Ten-Frame.'** (See picture bottom left). Write out a number sentence. Ask the children to complete the sets themselves. (They need to work out how many more squares to fill with the correct number of counters). (See picture bottom right).





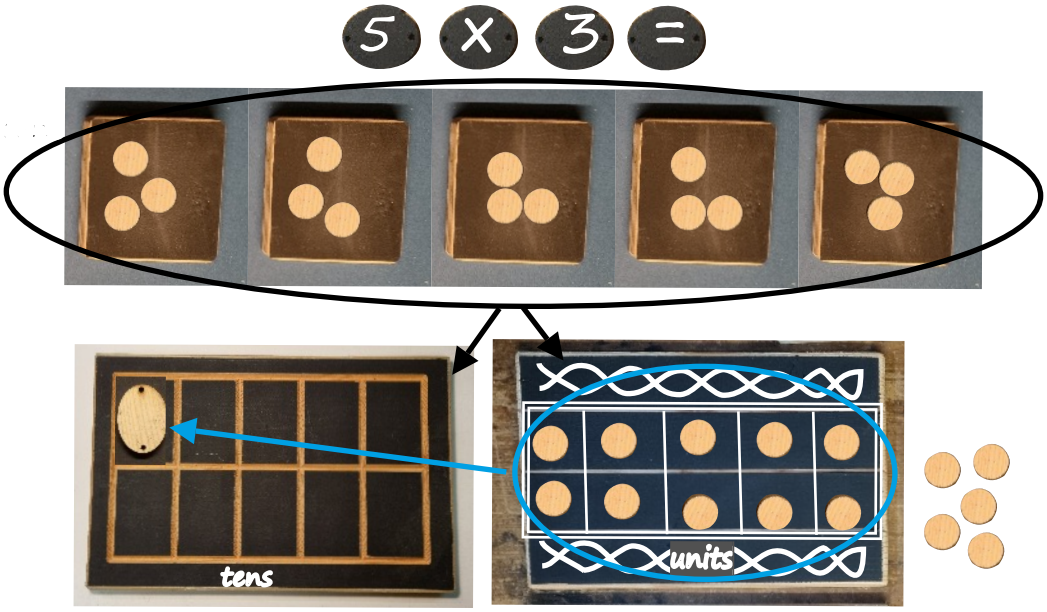
4. Multiplication -

Activity: Spin the number spinner, to determine the multiplication problem. I.e. if it lands on 5 (5x). Place out 5 *chalkboard squares* (either way up) to represent the number of sets (5) in the multiplication. Spin again; example 5 x 3 = . The number sentence can be chalked on the oval counters. Place (3) button counters onto each tile. Count the total number of counters. (See picture below).



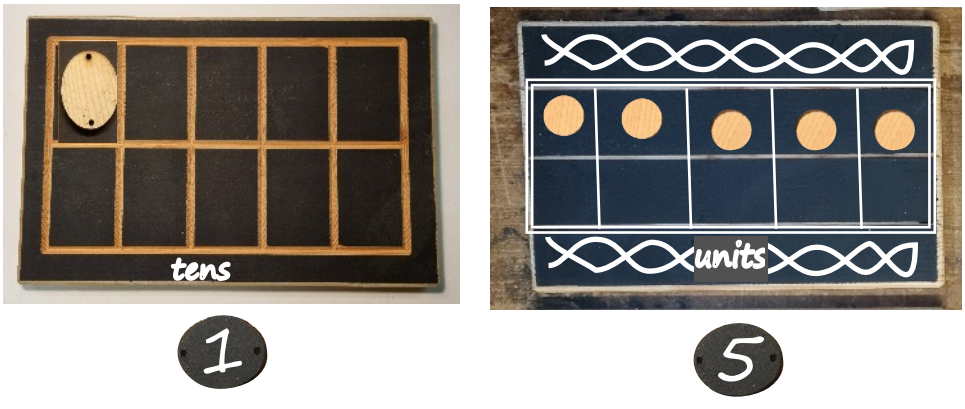
If extra help is needed to calculate the total, use the '**Chalkboard Ten-Frame**' to reposition the counters onto the '**Ten-Frame**'; one counter per section (see below). (If the total amount is more than 10 use a second **Ten-Frame** (or chalk an additional Ten-Frame on the reserve of the '**Whole-Part Blending Board**' as described in the previous section Addition, Units and Tens!)

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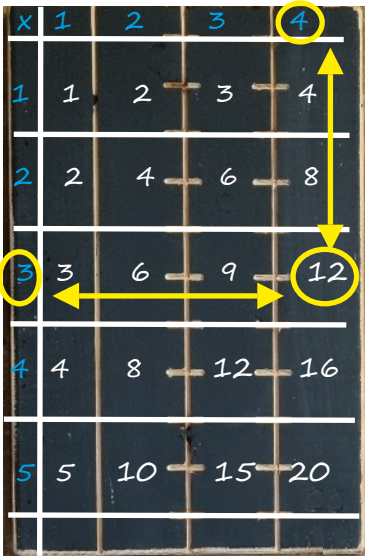
Begin by adding the counters into the right '**Ten Frame**'. Once the right **Ten-Frame** is filled, exchange the ten *button counters* (10 units) for 1 *oval (tens) counter*. Place this **oval** counter in the left **Ten-Frame**. (See above picture). Continue placing the remainder of the counters in the right **Ten-Frame**. (See picture below)

Write out the full number sentence, including the answer.





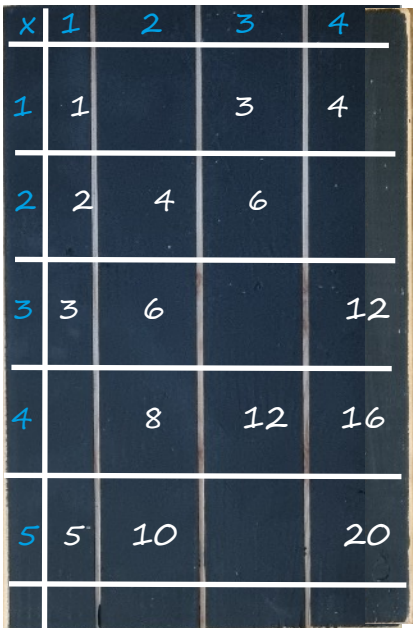
Times Table Chart





Activity: Use the reverse of the '**Chalkboard Ten-Frame**', '**Whole-Part Blending Board**, or both. Chalk additional lines to those already there to make a grid. For older children, add more lines to make more squares, so making a larger Times Table chart. (See picture far right) Using chalk, mark numbers on the top row and far left column. Where the row and column meet, add in the appropriate multiplication, i.e., 4 x 3 = **12**. With the children work out some of the multiplication sums by finding *2* amounts to multiply and finding where these intersect. (See pictures right)

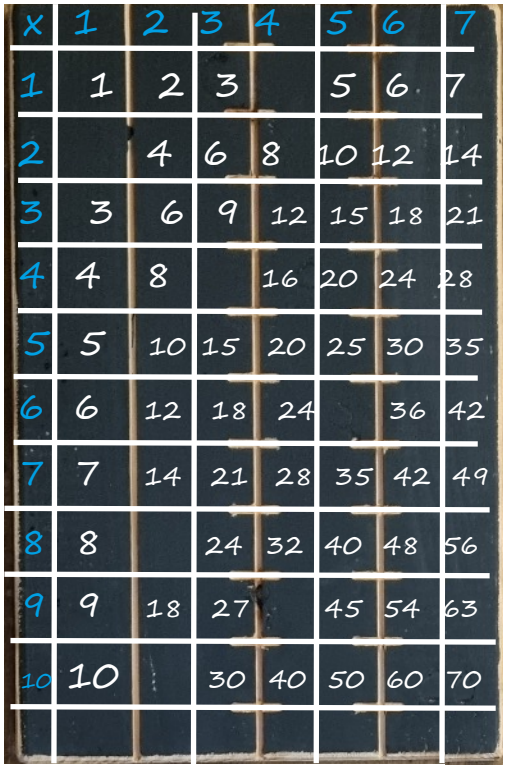
x	4
3	12



Extension Idea:s **1.** Rub out some of the multiplications. Chalk the missing numbers onto *button counters*. Ask the children to place the correct counter in its place on the Chart. (Alternatively, rub out some numbers and ask the children to chalk in the correct missing answers.

2. Once the children have understood the concept, they can make their own Times-Table Chart.





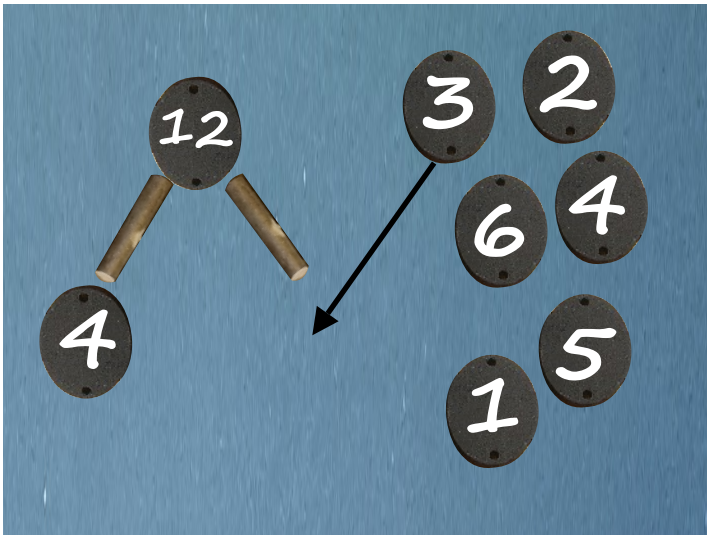
Note: This chart also works in the opposite direction for division, i.e., 12 ÷ 3 = 4

Fact Family (Multiplication & Division)

Activity: This maths game supports children in working out multiplication and division *'fact family'* relationships between 3 numbers. (These answers are also clearly seen in the 'Times Table' multiplication Chart (see page 56).

Use the 'Chalkboard Squares' or 'Chalkboard Ovals' to record on the 'related' numbers. The example given below uses the related numbers 12, 4 and 3.

To begin, place one (or two) of the three numbers onto a firm surface. Ask the children to find the missing number. (See picture below left). Use the *button counters* to work out which number is missing, (i.e, collect 12 button counter, divide into 4 groups of **3**).





Extension Idea: Record the possible number of *'family'* sentences.



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Learning Through Play Pack

Division – *'Chalkboard squares'*, '**Whole-Part Model Boards**' and '*Spinners'* can all be used as aids to division.

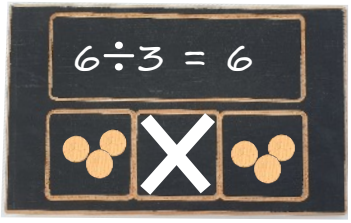
1. Sharing -

Activity: A small group (e.g., 5 children) sit in a circle. Collect several *button counters* a total of which divide equally by the number of children present (e.g. 15). With the children, count the total number of counters. Hand one to each child around the circle; repeat until none are left. Ask the children how many they each have (3). 15 ÷ 5 = 3.

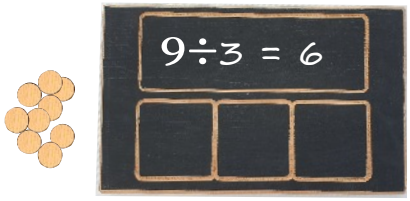
Extension Idea: A small group of children, e.g., 5, sit in a circle. Using the numbered spinner. Each child spins the spinner and collects the number of *counters* that match the amount landed upon. E.g., spins of **5, 2, 6 , 3, 2**. Place all of the *counters* together into a single pile. Count the total **18** in this case. Count out counters to match the number of children present (5), distribute one to each child. Continue until a whole group of five counters cannot be achieved. Count how many counters each child has, and how many are left over. In this case, each child has a total of **3** counters, with **3** left over. 18 ÷ 5 = 3 r3.

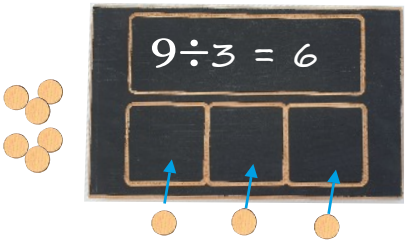


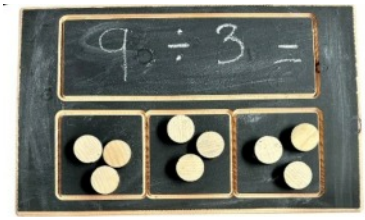
1. Division by 2 or 3 -



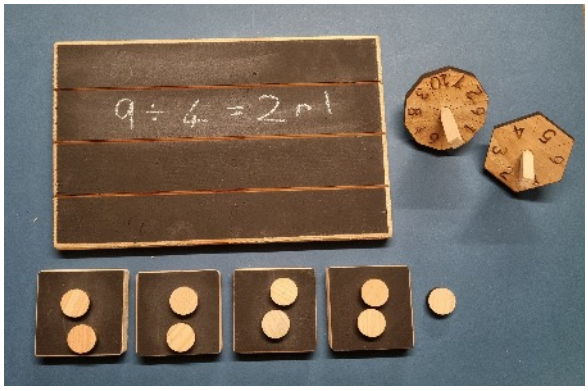
Activity: Use the **'Whole-Part Blending Board'.** If dividing by two, cross out the centre square (See picture right). If dividing by three, leave all three squares open. Spin the spinner to determine the number to be divided (**9**). Use chalk to record the umber sentence (**9 ÷ 3 =**) . Gather (9) counters and position these counters to the side of the **board** (see picture below left). Place one counter under each square. If the full row of **3 counters**) can be placed, put these counters onto the chalk squares, one per square. (See picture below middle). Repeat until (or if) a full row cannot be placed. (See picture below right)







Extension Idea: Division of more than 3: Use the number spinner to determine which numbers to use for this particular maths problem. E.g., (9 ÷ 4 = ?). Gather together total number of counters (9) that are to be divided.



Position '*chalkboard Squares*' onto a firm surface. The number of '*chalkboard squares*' to match the number to be divided into, i.e., 4. Keep them spaced out so it's obvious that *totals* are not being counted out.

Place one counter underneath each chalkboard square. If the full row of 4 counters can be placed, put these counters onto the chalk squares, one per square. Repeat until a full row can no longer be placed. If any are left over, there is a remainder (r), e.g. (**9 ÷ 4 = 2 r 1**) (See picture left)

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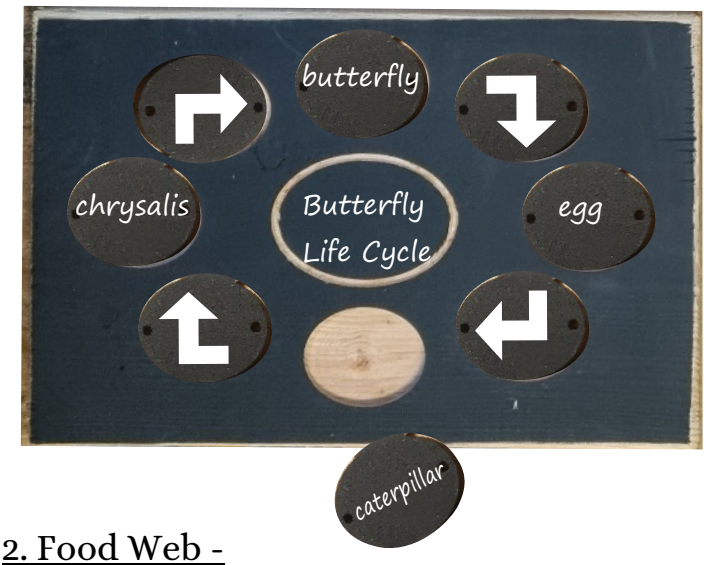
Learning Through Play Pack

Science – Nature, Weather & Time

1. Life Cycle -

Activity: Illustrated and written Life Cycles are available from *Outdoor Classrooms Ltd.* (See picture right). Alternatively, draw arrows onto 4 *'chalkboard oval'* counters and place them onto the front of the '**Topic-Board**'. Write (or draw) the life cycle stages of different animals, insects, etc., onto 4 other *chalkboard oval* counters. Then place them in the correct order. (See pictures below)

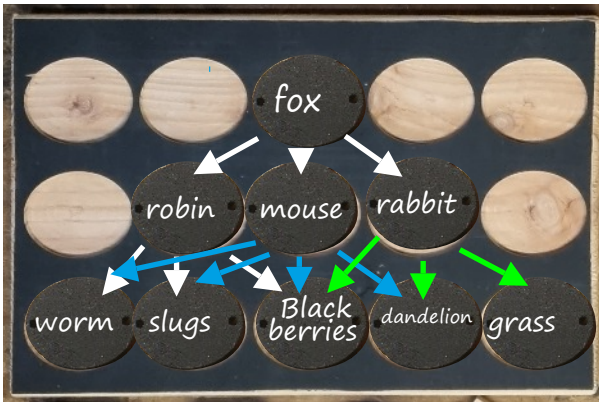






2. Food Web -

Activity: Illustrated and named '*oval counters*' are available from '*Outdoor Classrooms Ltd*'. (See picture below right) Alternatively, use the reverse of the '**Topic Board**' and the '*chalkboard ovals*'. Write (or draw) a range of animals, insects, or plants. Use books (and other research material) to identify what each animal eats and place the correct counter onto the reverse of the '**Topic Board**', in its correct place. Use different coloured chalks to link the various parts of the food web (see picture below left).







Wildlife Studies and Data Collection

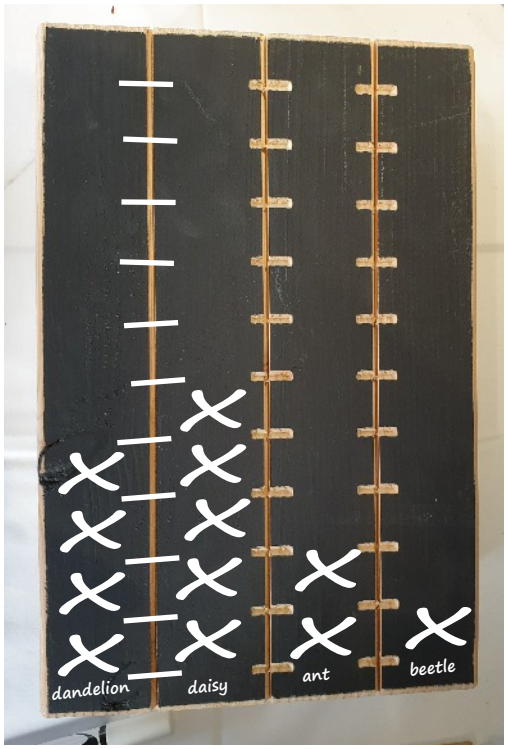


3. Bird Watching -

Activity: Take the **'Whole Part Blending Board'**, and *chalkboard squares* outside into the garden/school yard. Write down the species of bird you are likely to see. Then begin to look for them. Use one chalk square per bird; record a line on the appropriate square, each time the bird is identified. (See picture right). Compare how many types of each bird is seen.

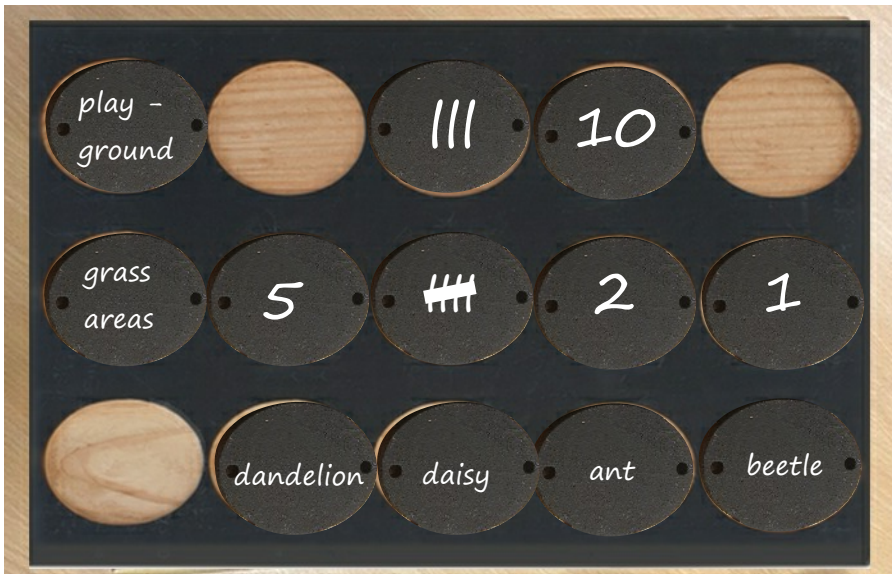
Repeat this activity for mini-beasts.

Extension Idea: Repeat the activity for different animals, in different environments. E.g. in relation to mini-beasts, look under logs, in bushes and under leaves. Also, look for them in different seasons, times of the day and in a variety of weather conditions. Do the results differ from one season to the nest - or when it's sunny or raining? What are the results telling you?



4. Biodiversity Study -

Activity: Choose a ring (or frame of standard size like a hula hoop or the 'O*utdoor Classrooms Ltd' surrounds).* Place it on a grassed surface. Identify and the plant and animal life located inside the frame, record all life and quantities present. For example, grass, dandelion, daisy, ant, and ground beetle. Repeat this activity in a different area. To record the findings use the reverse of the **'Ten-Frame'** or **'Topic Board'**. (See picture left and below).



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Learning Through Play Pack

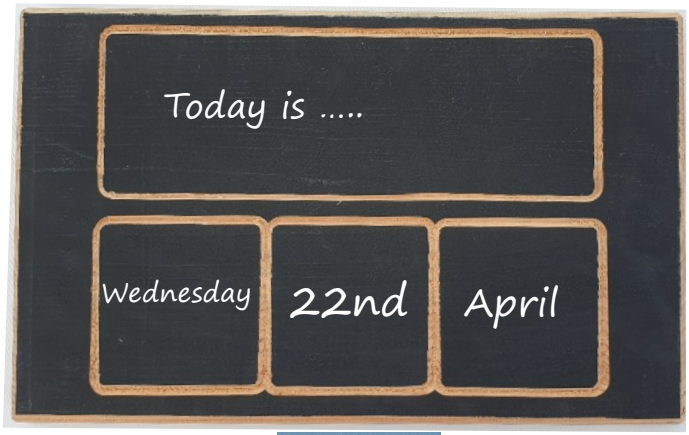
1. Calendar -

(Pre-written *Days* and *Numbers* are available from *Outdoor Classrooms Ltd.*) Alternatively....

Activity: Use the compartments present in the '**Whole-Part Blending Board**'. Chalk today's date on the board.

Extension: Chalk some days onto the 'Chalk Squares'; - easier to do this using a chalk pen. The children take turns to find the correct day and date, position these on the '**Whole-Part Blending Board'** Calendar.

Wipe off and update daily.









2. Weather Board -

Pre-drawn/written *Days*, *Numbers* and *Weather* ovals are available from *Outdoor Classrooms Ltd*, (see picture bottom left). Alternatively....

Activity: Use the reverse of the '**Topic Board**'. Write (using chalk/chalk pen) on the *chalkboard ovals* the days of the week, the months, numerical dates, and the types of weather. Work with the children to fill in the date and weather for each day. (See picture below right).





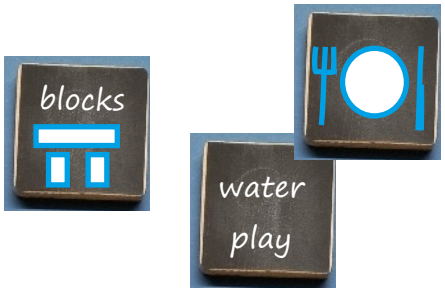


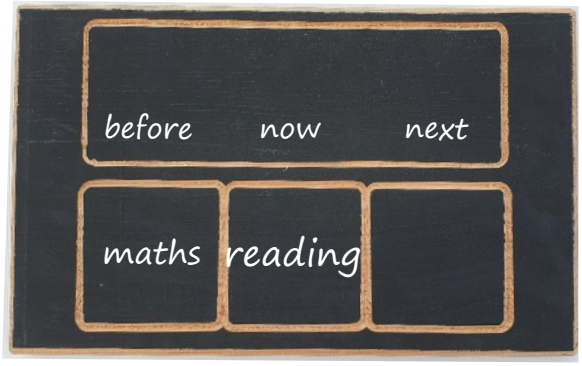
Timetables

Visual timetables help many children by showing what to expect in advance, what will happen next and by providing a daily structure. This is especially true for many children with SEND. The understanding of what is happening and when, reduce anxiety and improves behaviour. Visual Timetables may also be used as part of a reward system, with time slots for children's own choice of activities. A combination of words, drawings, Makaton or PECs symbols (as part of the daily timetable) support children to better understand their day, as well as communicate their choices and needs.

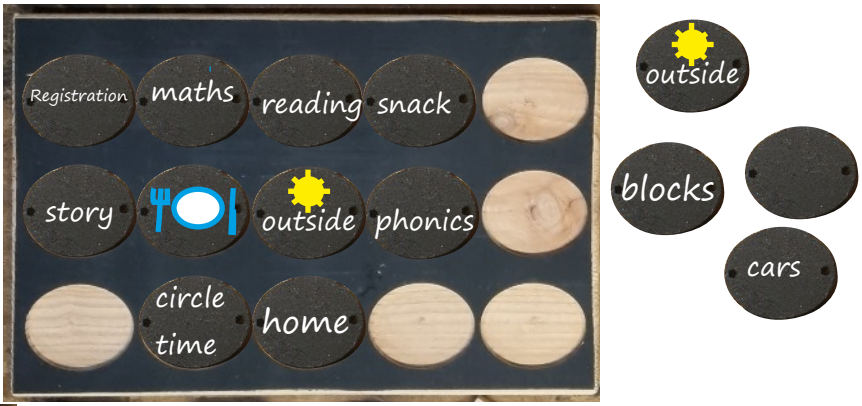
1. Before, Now, Next -

Activity: Using the '**Whole-Part Blending Board**', chalk inside the top rectangle, the following words: *before, now, next*. Use the *chalk squares* (*or chalk ovals*) to chalk words, symbols or images that represent the relevant tasks. E.g. circle time, lunch, playtime. Use this activity as an incentive where, after the required tasks are completed, the child can choose (from a few fun options) what the next activity will be.





Extension Idea: Use the reverse of the '**Topic Board**' in order to expand the Timetable, showing a longer time scale. Leave some sections deliberately blank, ready for the child's own choices. (See picture right)





2. Self-Registration -

Activity: Use the reverse of the '**Topic Board**' and '*Chalkboard Ovals*'. Use chalk, write the children's names on the *chalkboard ovals*. Place the '**Topic Board**' and the ovals on an entrance table. When they arrive, each child finds their name own and adds it into the board.

Extension Idea: Count the number of registration ovals, count the number of children there and compare the two. Check if everyone is signed in!

These are just some ideas on how best to use the 'Play To Learn Pack'. We're sure you will have a great many more!

Outdoor Classrooms Ltd - Bespoke Education Gardens


Maths resources

Mini-Maths Set

Signs

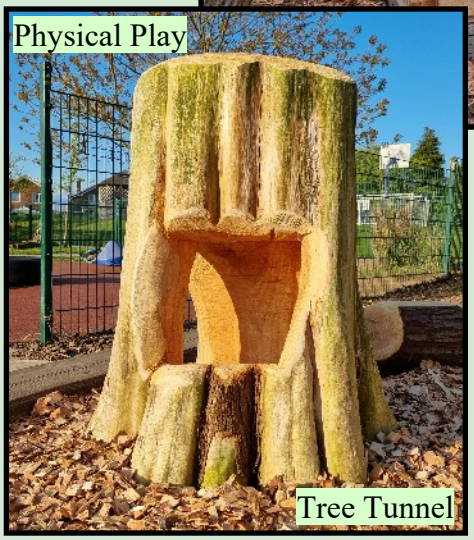


Can You Find? Boards


Carvings


Timber Framed Buildings

Care Cabins


Physical Play

Tree Tunnel

Language & Literacy Resources


Pre-writing Boards


Spiral Climber

Natural, Beautiful, and Sustainable, SEND friendly resources!

Outdoor Classrooms Ltd - Bespoke Education Gardens

Outdoor Classrooms Ltd is dedicated to offering innovative and engaging outdoor educational experiences for you and your children. Our goal is to create captivating environments that foster creativity, encourage curiosity, and promote a love of nature and learning. Our unique approach encourages children to explore and learn in a natural setting, where they acquire important skills and a deeper understanding of the world around them. All our timber is harvested in Yorkshire by our team of woodland and wildlife experts.

We have a huge range of products—here is a small sample:


Physical Play Area

Compass Balancer

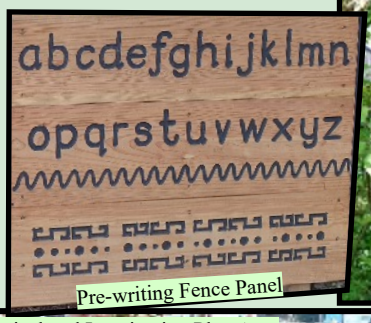

Climbing Stumps


Outdoor Classroom

Double Glassed and Insulated Timber Framed Building.


Outdoor Classroom

Rustic Shelter



Pre-writing Fence Panel


Physical & Imagination Play Area

Tree Tunnels, Shaped Balancers, Climbing Sculpture, Log Edging and Woodchip


Physical and Imagination Play Area

Climbing Sculpture, Trim Trail and Tree Tunnel

- Bespoke Outdoor Solutions
- SEND Care Cabins
- Sensory Learning Gardens
- Outdoor Seating
- Physical and Imagination Areas
- Shelters & Outdoor Classrooms
- Organic Food Growing Systems
- Wildlife Areas
- Forest School Resources & Furniture
- Outdoor Provision Resources
- Maths & Language Resources



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Facebook: @outdoorclassrooms
Tel: 0113 2556342