



# ASHGROVE PRIMARY SCHOOL

“An exceptional whole school approach to the teaching of thinking.”

Thinking Matters Report



Thinking  
Schools  
Network

Hub  
School

# Effective Questioning & Metacognitive Tools

How do we use our metacognitive tools to promote effective questioning & higher order thinking?



**A Culture of  
Whole School Metacognition**

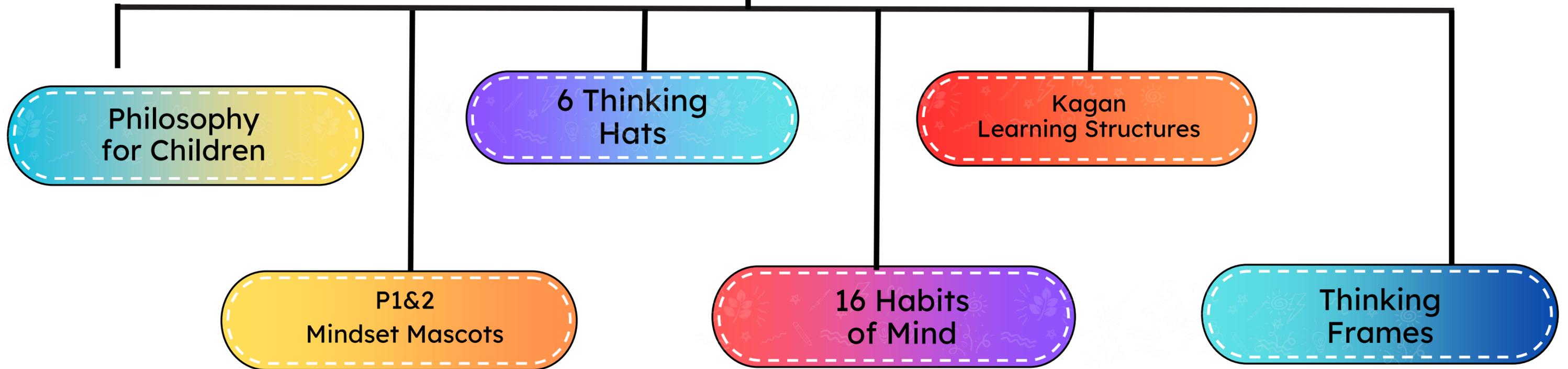
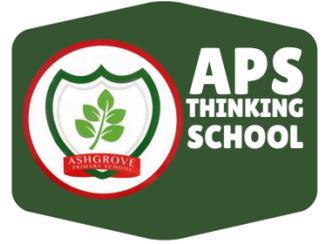
**Common Vision**

**Common Language**

**Common  
Tools/Strategies**

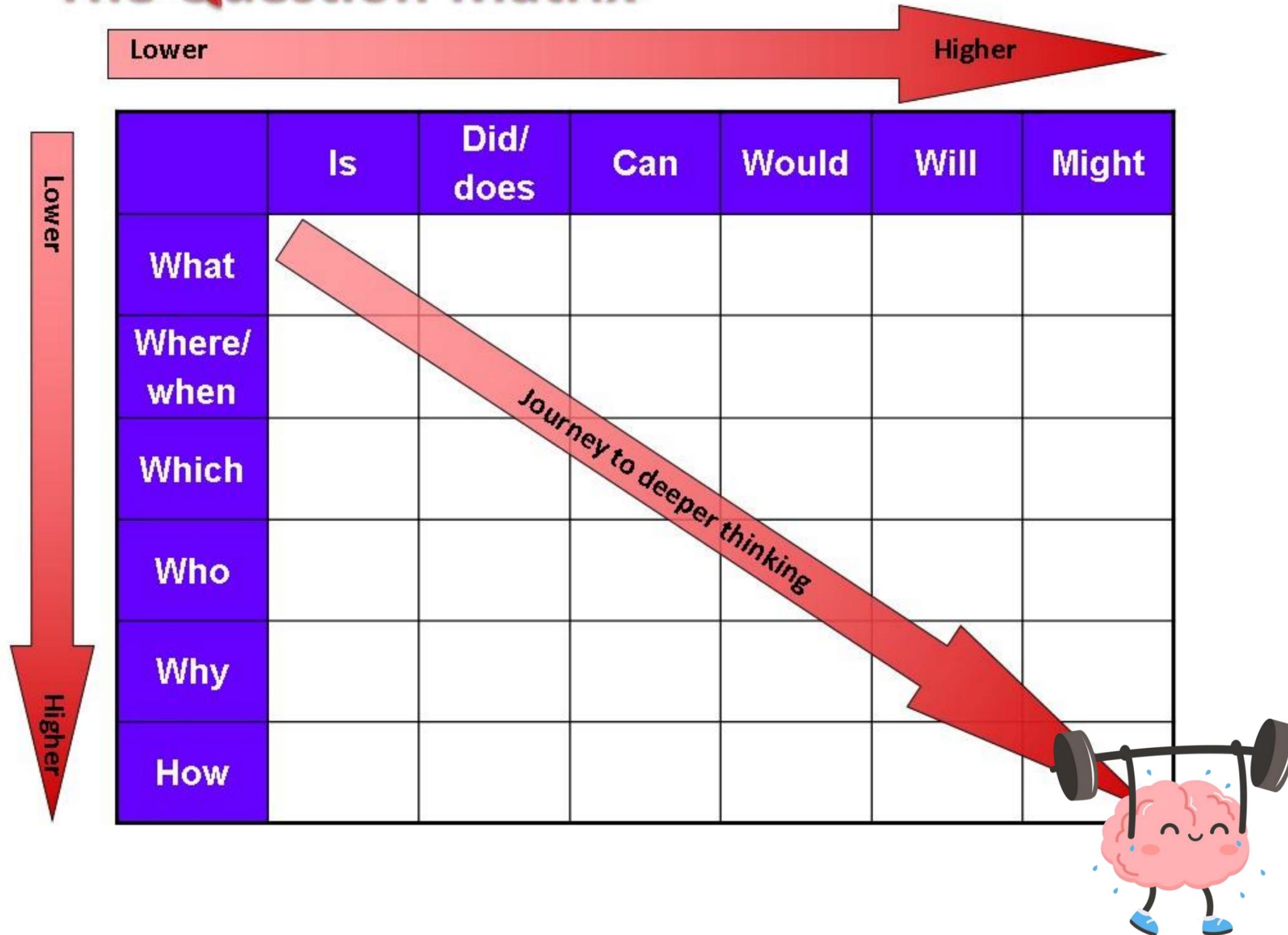
**Research-informed Evidence**

# Our Thinking School Toolkit



# Q Matrix

## The Question Matrix



This matrix can be used by pupils and teachers to generate questions to stimulate different types of thinking.

Pupils can construct increasingly more complex questions that challenge them to think critically.

# Metacognitive Questioning & Knowledge- pupils

## Knowledge of task

- Is this task too challenging (or not challenging enough for me?)
- What are the most difficult aspect of this?
- Are there easy bits I can get done?
- How much time should I devote to this task?

## Knowledge of self

- Is this task asking for subject knowledge I can remember?
- Do I understand the concept(s) that underpin this task?
- What can I do to keep myself focused?
- Am I motivated to stick at this tricky task?

## Knowledge of strategies

- Are my notes effective for understanding this task?
- What strategies can I deploy if I am stuck?
- What can I do to remember what I have learned?

## Slow thinking...

Art Costa and Benna Kallick crafted a strategy that encourages slow thinking...

**PAUSE** - wait time before responding.

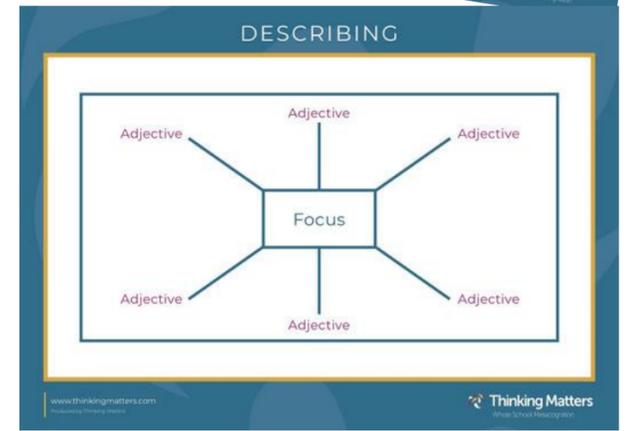
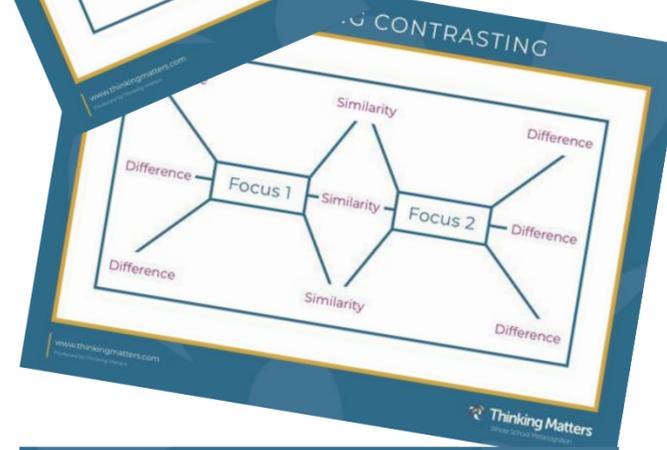
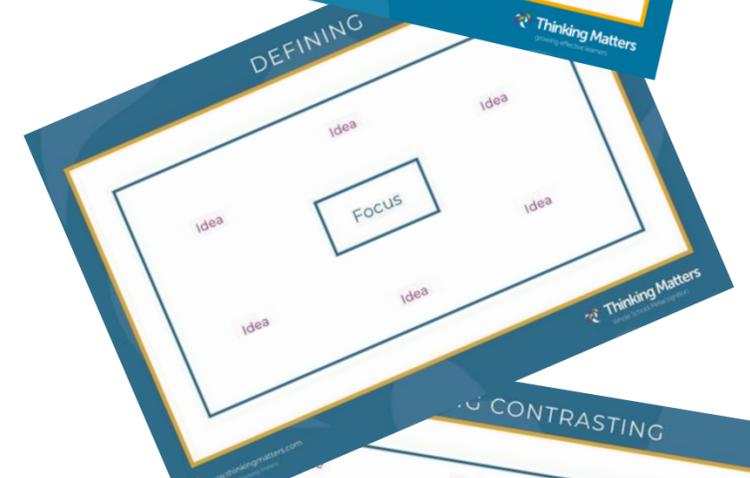
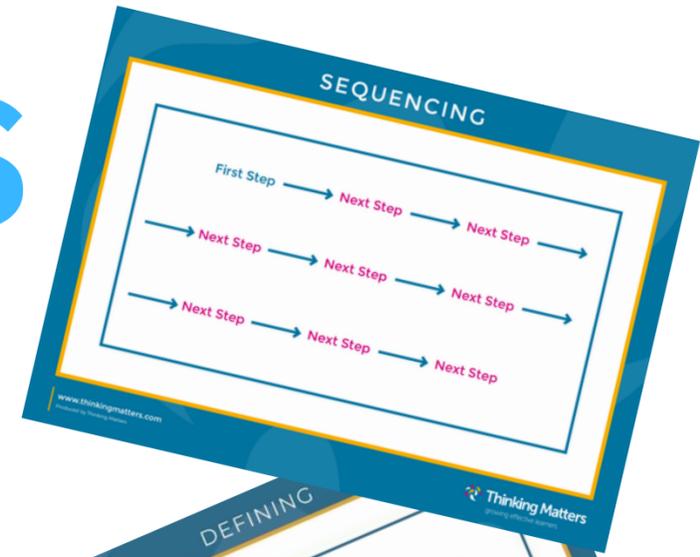
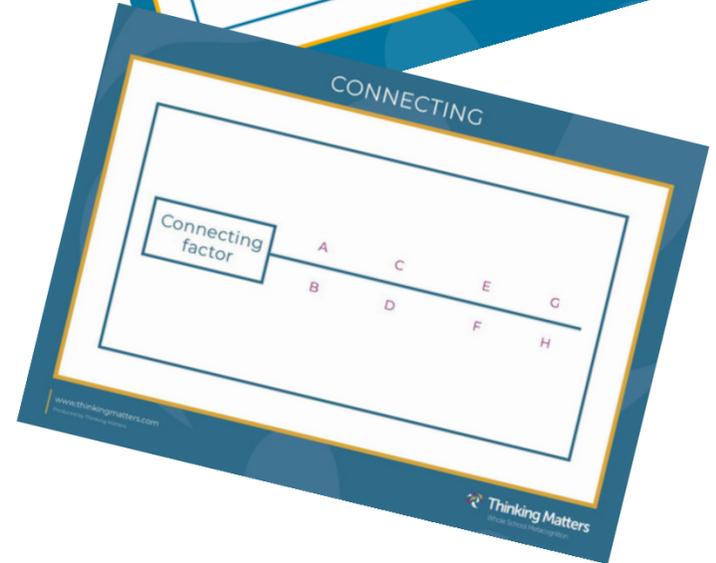
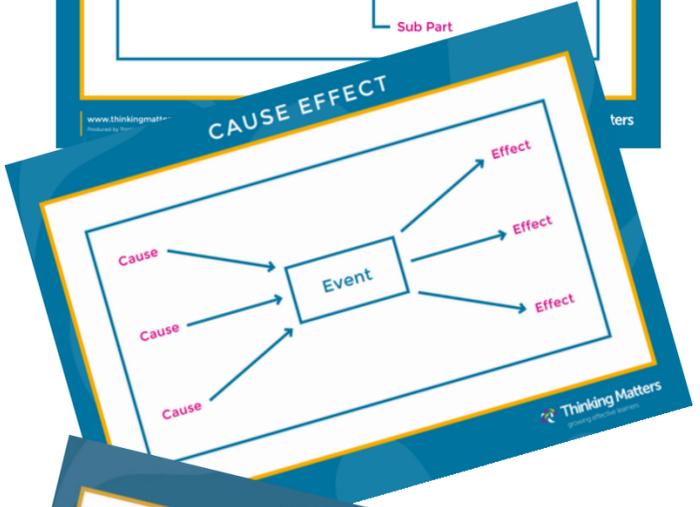
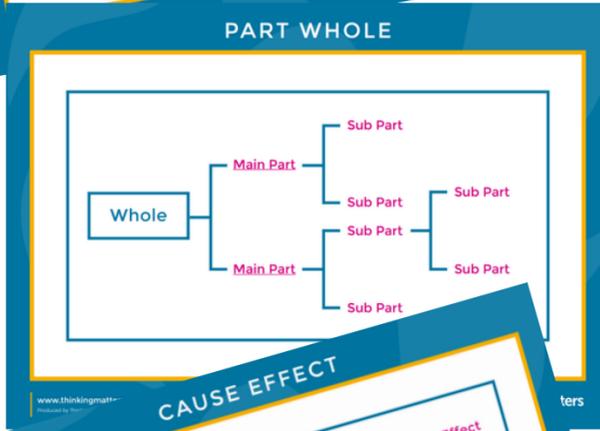
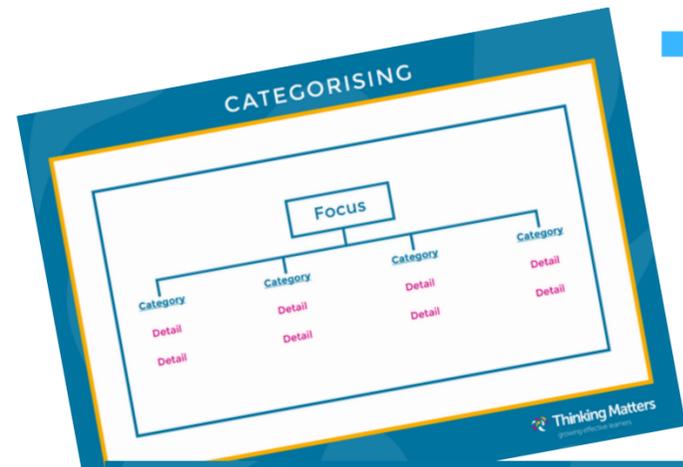
**PARAPHRASE** - repeating in your own words often provides clarity.

**PROBE** - questions that inquire & clarify.

# Thinking Frames

In Ashgrove we use 8 Thinking Frames to help structure our Thinking and approach to learning

The eight Thinking Frames are: Defining Frame, Describing Frame, Compare & Contrast Frame, Whole Part Frame, Cause & Effect Frame, Sequencing Frame, Connecting Frame and Categorising Frame.





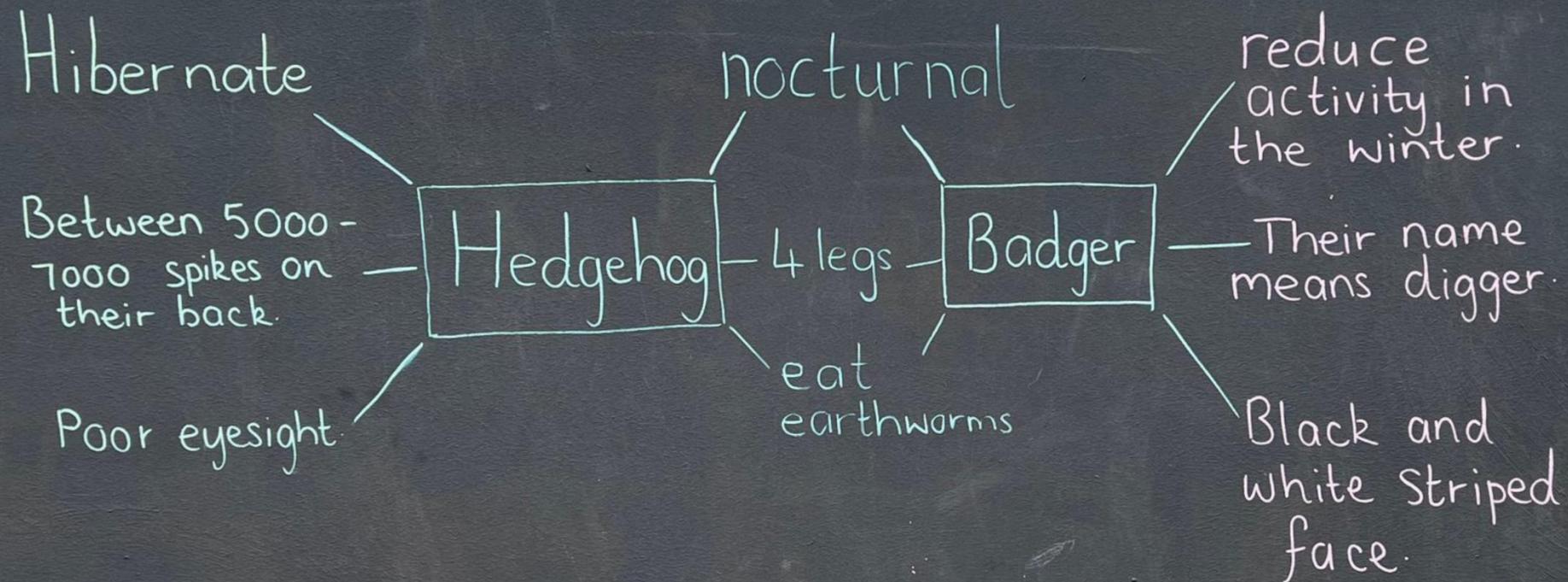
During Outdoor Play, P2 made 2 Thinking Frames. Categorising Frame was used to sort materials into Natural and Man-made. A Sequencing Frame was used to sequence multiples of 5.

Is  
equivalent  
to

	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{1}{3}$	$\frac{2}{3}$	$\frac{1}{3}$	$\frac{1}{5}$	$\frac{3}{5}$
	$\frac{4}{8}$	$\frac{3}{12}$	$\frac{9}{12}$	$\frac{8}{24}$	$\frac{4}{6}$	$\frac{19}{57}$	$\frac{14}{70}$	$\frac{27}{45}$
	$\frac{5}{10}$	$\frac{6}{24}$	$\frac{15}{20}$	$\frac{6}{18}$	$\frac{24}{36}$	$\frac{30}{90}$	$\frac{12}{65}$	$\frac{15}{25}$
	$\frac{2}{4}$	$\frac{100}{400}$	$\frac{15}{20}$	$\frac{7}{21}$	$\frac{26}{39}$	$\frac{15}{45}$	$\frac{37}{185}$	$\frac{9}{15}$
	$\frac{10}{20}$	$\frac{1000}{4000}$	$\frac{21}{28}$	$\frac{2}{6}$	$\frac{40}{60}$	$\frac{3}{9}$	$\frac{100}{500}$	$\frac{24}{40}$
	$\frac{100}{200}$	$\frac{1}{36}$	$\frac{30000}{40000}$	$\frac{9}{27}$	$\frac{12}{18}$	$\frac{100}{300}$	$\frac{100}{5000}$	$\frac{21}{35}$
			$\frac{30}{40}$					olivier

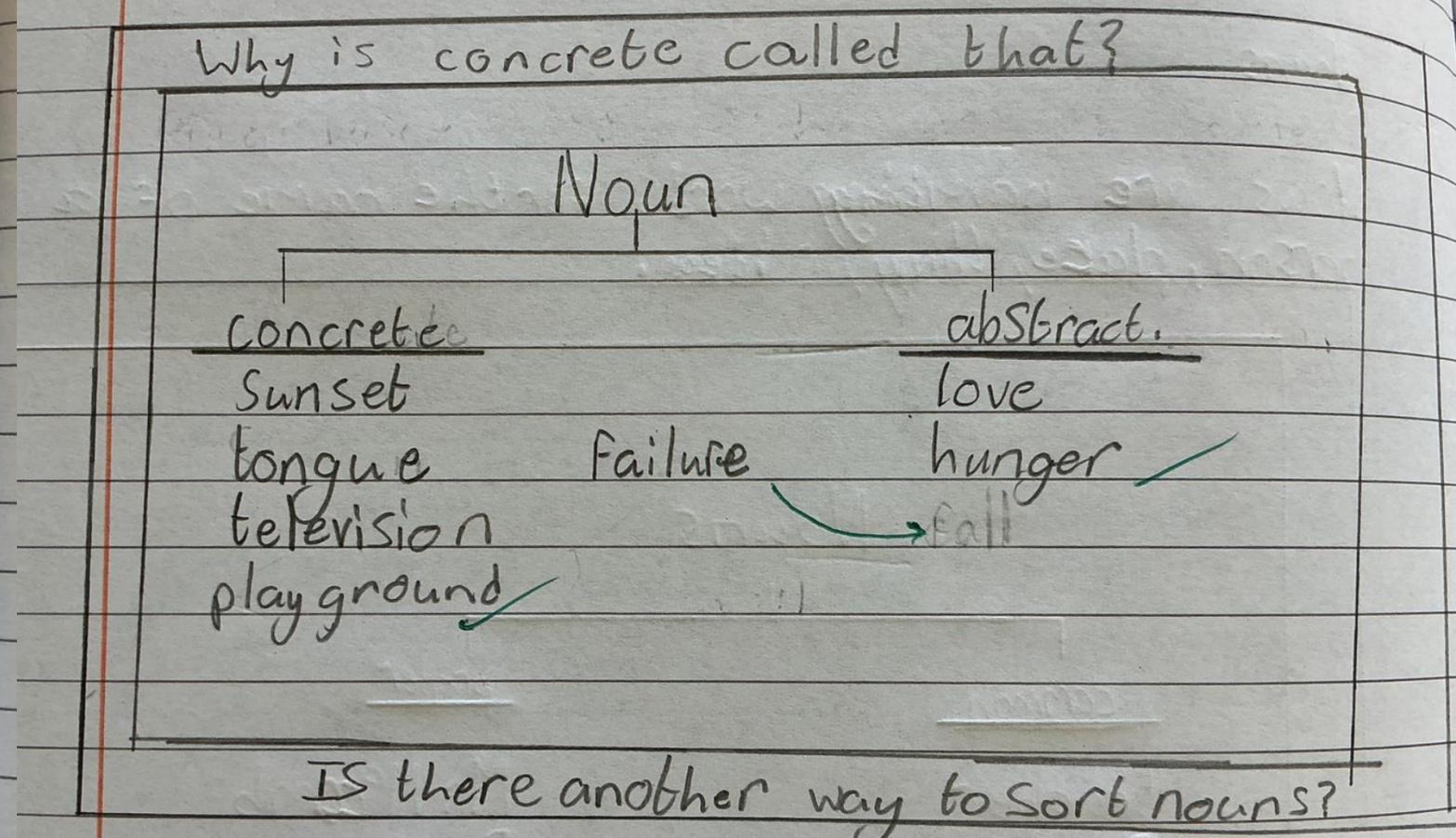
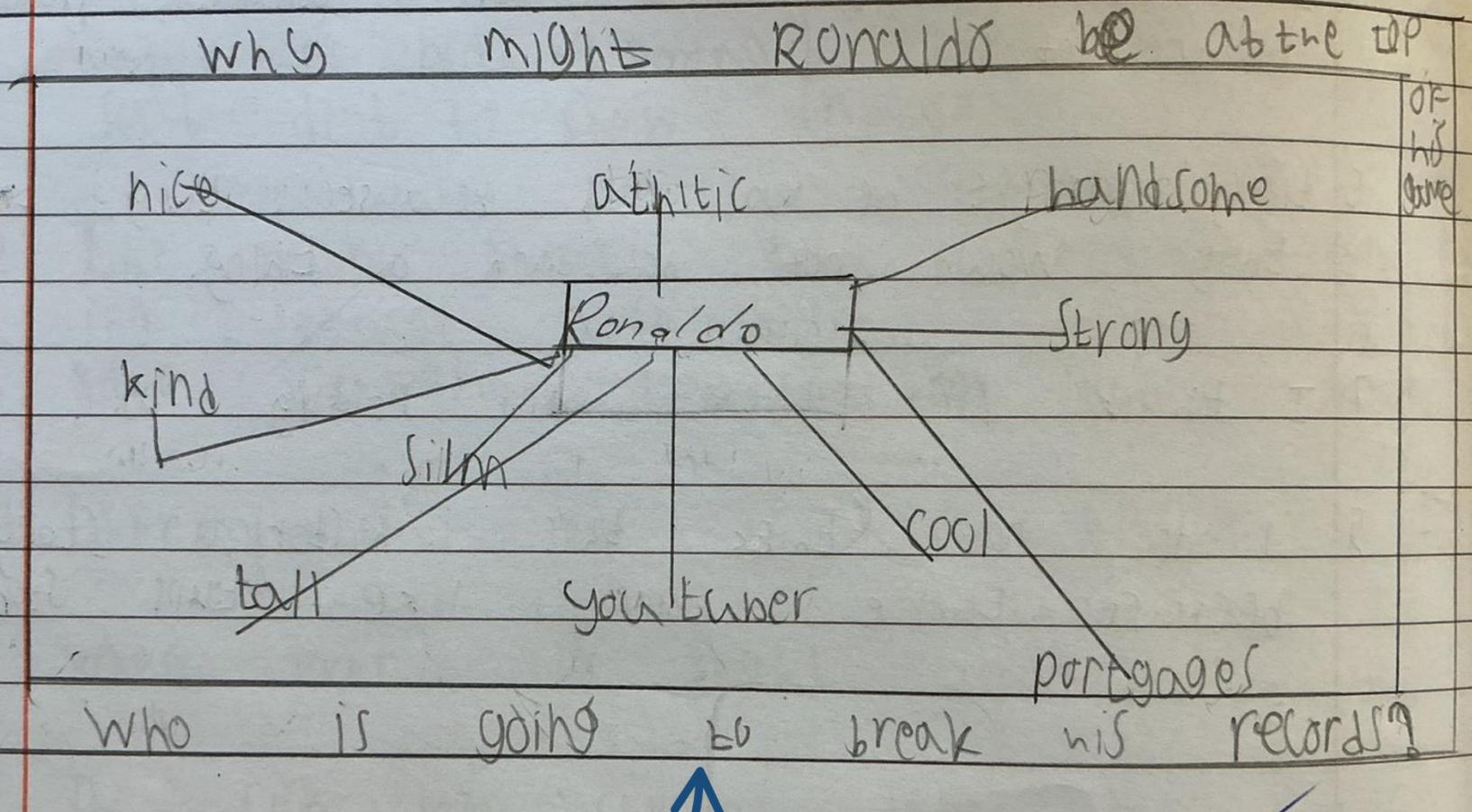
In Numeracy, P7  
pupils used a  
Connecting Frame to  
find Equivalent  
Fractions.

Can you compare and contrast two woodland animals?

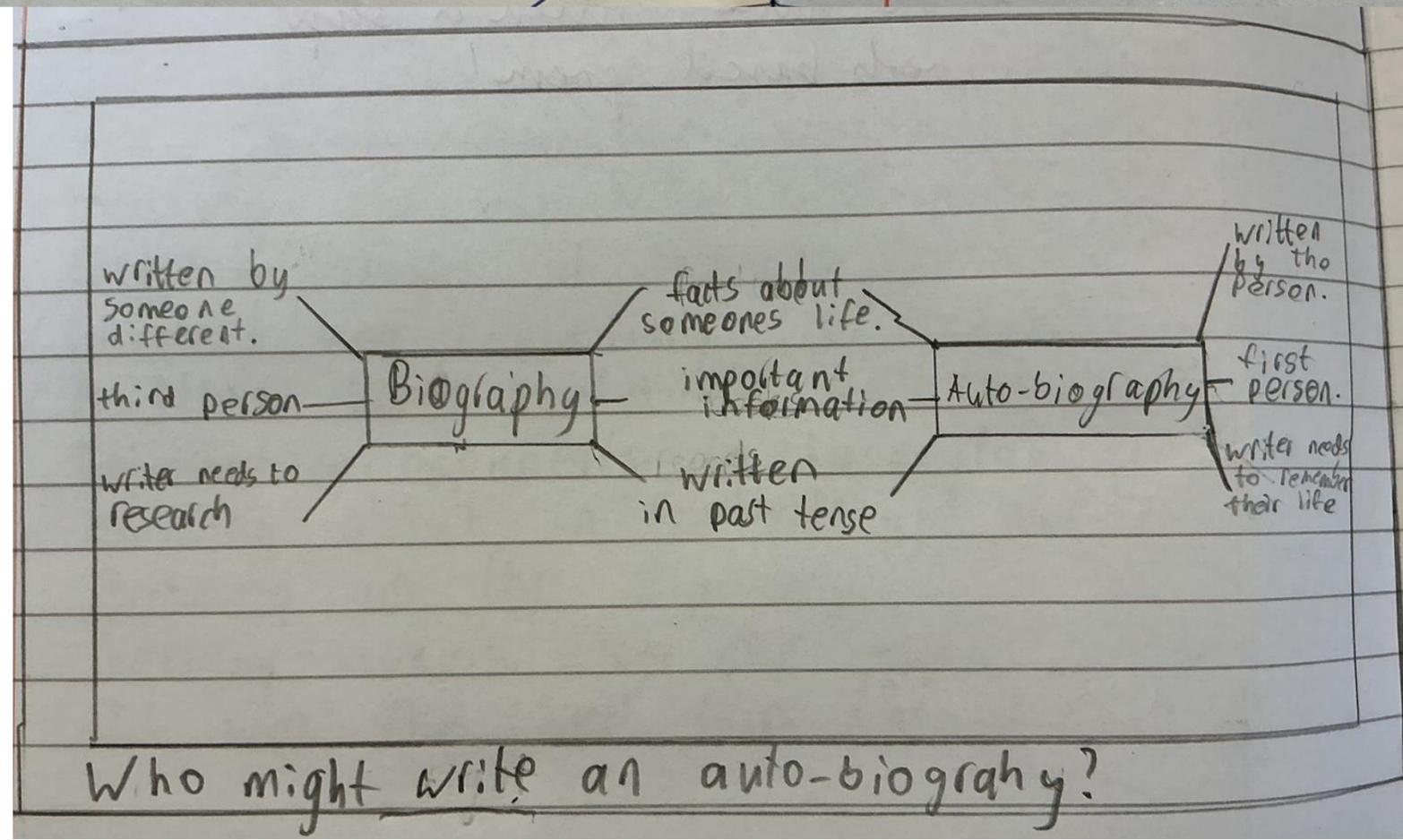


P3

As part of our Forest Schools work, P3 made a Compare and Contrast Thinking Frame on two animals.

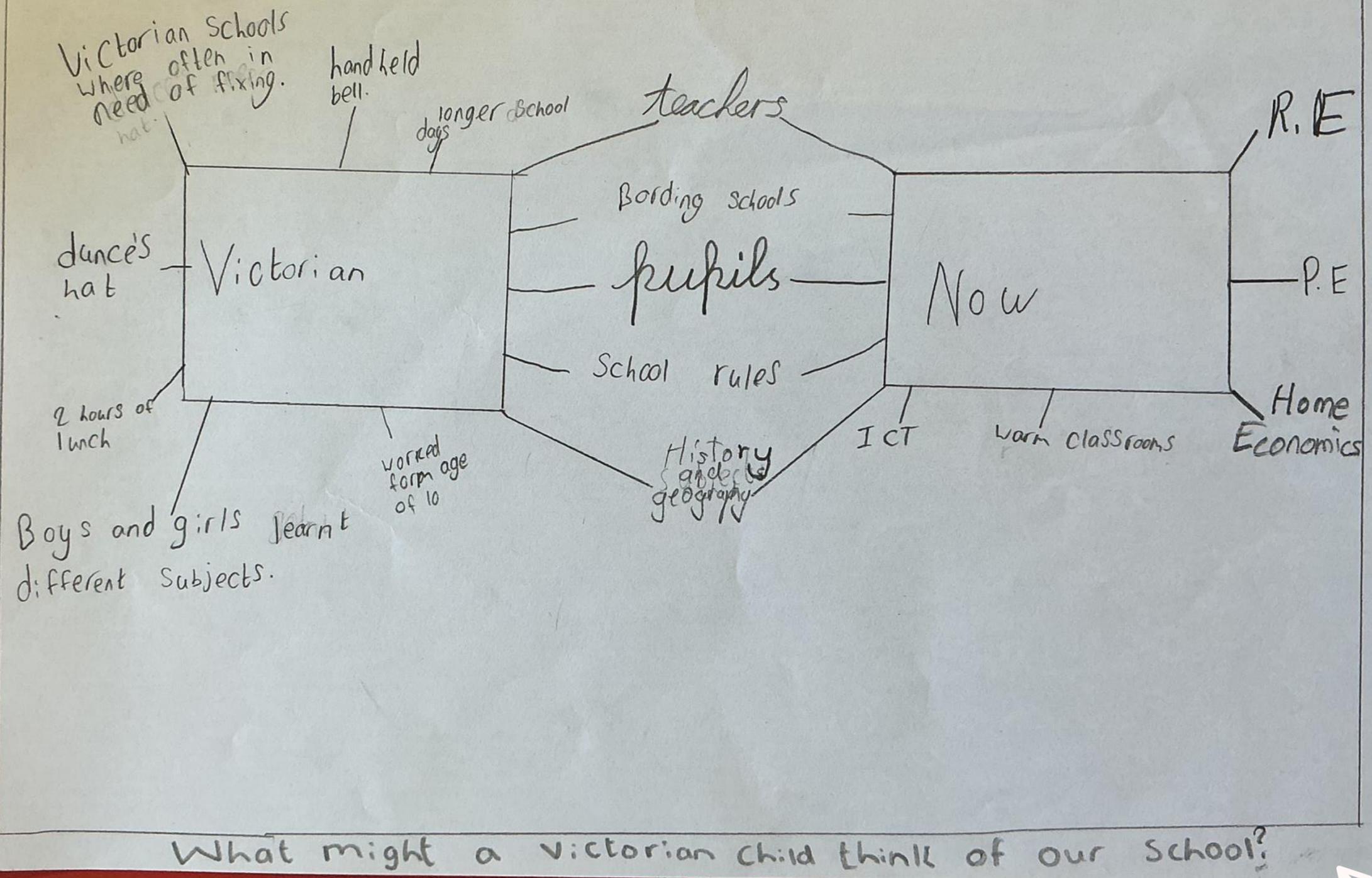


Who is going to break his records?

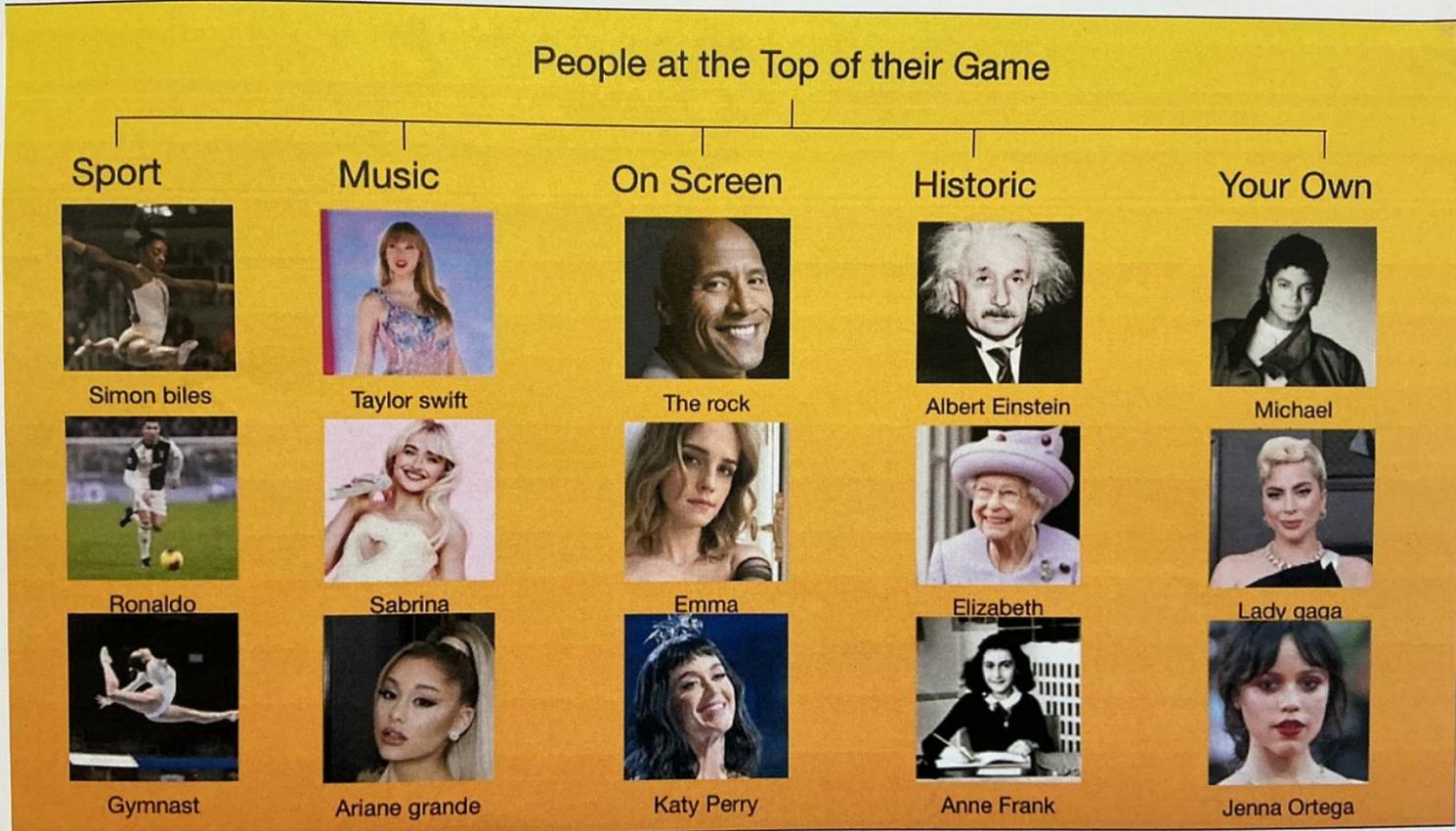


Is there another way to sort nouns?

Who might write an auto-biography?



What might a Victorian child think of our school?



Are all these people trying to be at the top of their game?

Are all of these people trying to be at the top of their game?

Do you have to be famous to be at the top of their game?



Do you have to be famous to be at the top of your game?



# 16 Habits of Mind

Habits of Mind are a set of 16 dispositions and behaviours identified by Art Costa and Bena Kallick. They help us to approach problems and challenges in the classroom and in everyday life. These 16 skills also encourage us to have a positive mind-set, self-belief and to set high aspirations for ourselves.

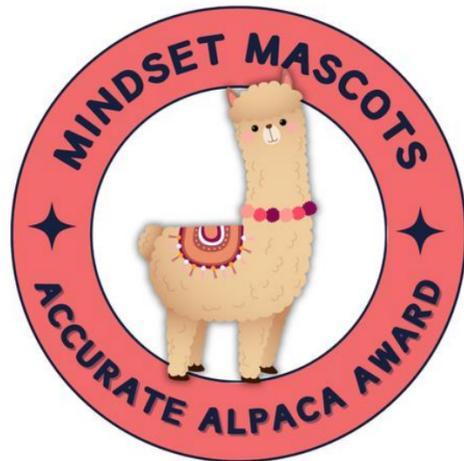
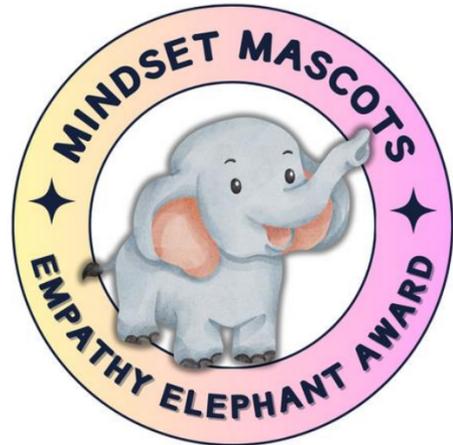




# Foundation Stage Mindset Mascots



In Ashgrove School where children play,  
Resilient Robin leads the way!  
Through tests and trials, some big, some small,  
She rises above to meet them all!

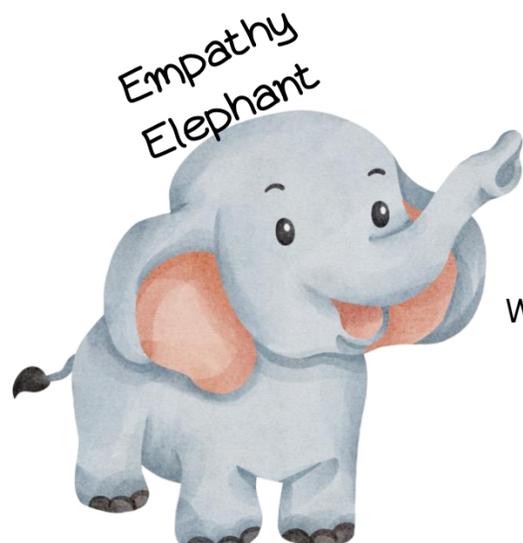




Communicating Camel



Persistent Penguin



Empathy Elephant



Resilient Robin



Questioning Queen Bee

Accurate Alpaca



In Ashgrove school where children play,  
Resilient Robin leads the way.  
Through tests and trials, some big, some small,  
She rises above to face them all!

Meet Accurate Alpaca so wise and neat,  
Who always has her homework complete.  
With careful steps and steady hand,  
She aces each task, just as she planned!

Communicating Camel with much to share,  
Speaks in class with thoughtful care.  
He helps his friends with every word,  
Making sure that they are heard.

Empathy Elephant with caring smile,  
Comforts others all the while.  
She listens close to understand,  
Always there with a helping hand.

Questioning Queen Bee, so full of cheer!  
Asks her teachers, "Why?" and "How?" each year.  
Curious and eager, she's keen to explore,  
Always hungry to learn more.

Persistent Penguin is brave and keen,  
Who works so hard, she's rarely seen.  
She never does quit, no matter the test,  
Always striving to be her best!

In Ashgrove school, where each one grew,  
We all learn together, with this special crew.  
With heart and mind, we all achieve,  
Showing what we truly believe!  
Ashgrove Primary School



Questioning Queen Bee

**Ask good questions!**

**Questioning Queen Bee!**



# Philosophy for Children (P4C)

- What is it?
- Why teach it?
- How do we teach it?
- Does it work?





sun

butterfly

Avocado

BUT MARTINI!

The children's Hospital

Growing up

ASHGROVE PRIMARY SCHOOL

ASHGROVE



Education  
Endowment  
Foundation

EEF

- 96% of intervention teachers felt that pupils had improved their level of respect for others' opinions
- 93% felt that pupils had improved their ability to express their views clearly

## Ashgrove PS



- Pupils much more confident in expressing opinions
- Pupils have improved ability to justify their beliefs and reason with their classmates
- A culture of respect and understanding is growing

# Cooperative Learning Kagan Structures



“Small groups of learners working together as a team to solve a problem, complete a task, or accomplish a common goal”

Artz & Newman 1990

“Cooperative learning is the instructional use of small groups so that students work together to maximize their own and each other's learning.”

Johnson & Johnson 1999

*Kagan*

# How do we use them?



Timed  
Pair Share

Rally Robin  
&  
Round Robin

Rally Table  
&  
Round Table

Rally Coach

Quiz Quiz Trade

Numbered  
Heads  
Together

# Quiz Quiz Trade



Pupils quiz each other, then swap cards

1. Teacher or pupils generate question cards.
2. Stand up, mix up, pair up.
3. Partner A asks their question.
4. Partner B responds.
5. Partner A coaches or praises.
6. Switch roles.
7. Swap question cards and pair up with someone else.



# Do they work?

- ✓ 100% student engagement
- ✓ Students develop self esteem and increase motivation for learning
- ✓ Reluctant students get to 'practise' in a small setting with a partner before speaking to the whole class
- ✓ Develops metacognition, social skills and social relations, and can decrease discipline issues







I see a  
castle  
PIM

I think there  
is a storm  
PIM

The painting  
makes me  
feel calm  
because  
everything looks  
quiet and the  
stars are  
twinkling

I think  
Its night  
Its a village

I wonder ...

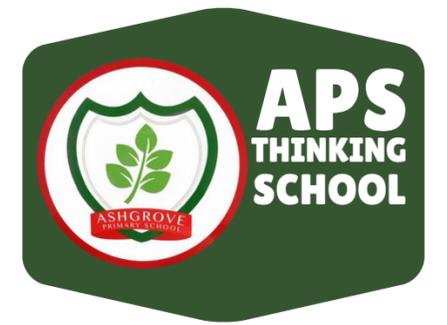
- What's happening?
- If the black wavy thing is fire?
- If there are fireworks happening?
- What is in the sky?
- Where the people are?
- If it is really windy there?
- What the blue in the corner is?

P30

I wonder  
what time it is,  
how people live there  
what country is it.



# The Impact...



## Impact: Academically & more broadly

PTM & PTE surpassed  
pre COVID attainments.

Children more articulate  
with common language  
about thinking.

Education Endowment  
Foundation (EEF).

## How do we measure impact?

Myself As Learner Scale  
(MALS)

Explicit foci on Thinking in teacher  
evaluations

Children in KS2 expected to  
reflect critically and evaluate the tools  
they choose to adopt

**SDP  
2025  
2028**



**EMBED** advanced creative and critical thinking



**ENRICH** our pastoral provision, ensuring an emotionally healthy, happy and safe school for all



**EVOLVE** the creative use of UICT to enhance teaching and learning

# MALS Effect Size. Test 1, Test 2 & Test 3

Converting Effect Size to months development...

Months' development	Effect Size from...	...to	Description
0	-0.01	0.01	Very Low or No Effect
1	0.02	0.09	Low
2	0.10	0.18	Low
3	0.19	0.26	Moderate
4	0.27	0.35	Moderate
5	0.36	0.44	Moderate
6	0.45	0.52	High
7	0.53	0.61	High
8	0.62	0.69	High
9	0.70	0.78	Very High
10	0.79	0.87	Very High
11	0.88	0.95	Very High
12	0.96	>1.0	Very High

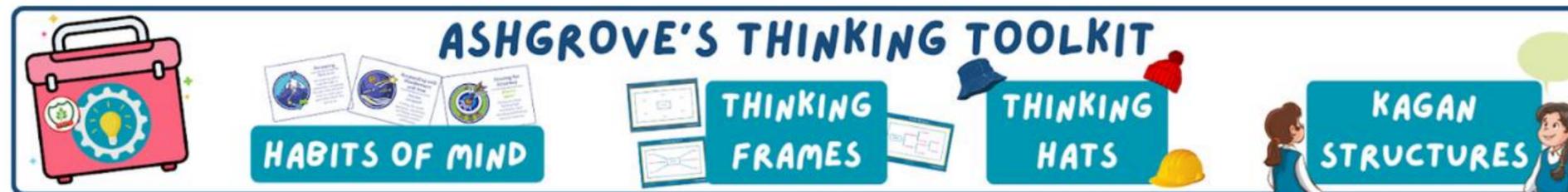
“To thrive in the ‘fourth industrial revolution’ we will require humans to be able to adapt and to do so quickly.

We need a toolkit of learning strategies to make fast improvements. This metacognitive tool is crucial for future proofing students beyond the school gates.”

# Our Thinking School Toolkit



As an Accredited Thinking School we have a clear focus on developing metacognition - helping our pupils develop clear thinking skills and habits. In Ashgrove we have our Thinkers Tool Kit which contains lots of strategies to make our thinking explicit and creative.



<input type="checkbox"/> Persisting <input type="checkbox"/> Managing impulsivity <input type="checkbox"/> Striving for accuracy <input type="checkbox"/> Questioning and problem posing <input checked="" type="checkbox"/> Responding with wonderment and awe <input checked="" type="checkbox"/> Applying past knowledge to new situations <input type="checkbox"/> Thinking and communicating with clarity and precision <input type="checkbox"/> Thinking about your thinking	<input type="checkbox"/> Listening with understanding and empathy <input checked="" type="checkbox"/> Thinking flexibly <input type="checkbox"/> Thinking interdependently <input type="checkbox"/> Gathering data through all senses <input checked="" type="checkbox"/> Creating, imagining and innovating <input type="checkbox"/> Taking responsible risks <input type="checkbox"/> Finding humour <input type="checkbox"/> Remaining open to continuous learning	<input checked="" type="checkbox"/> Defining <input type="checkbox"/> Describing <input checked="" type="checkbox"/> Sequencing <input type="checkbox"/> Compare / contrast <input type="checkbox"/> Categorising <input type="checkbox"/> Cause /Effect <input type="checkbox"/> Whole / Part <input type="checkbox"/> Connecting	<input type="checkbox"/> Blue (Conductor) <input checked="" type="checkbox"/> White (Facts) <input checked="" type="checkbox"/> Red (Emotions) <input type="checkbox"/> Yellow (Optimist) <input type="checkbox"/> Black (Judge) <input type="checkbox"/> Green (Creator)	<input type="checkbox"/> Rally Robin <input checked="" type="checkbox"/> Round Robin <input type="checkbox"/> Rally Table <input type="checkbox"/> Round Table <input checked="" type="checkbox"/> Quiz Quiz Trade <input checked="" type="checkbox"/> Timed Pair Share <input type="checkbox"/> Rally Coach <input type="checkbox"/> Numbered Heads Together
---	--	---	--	--

Find out more on our website:

[www.ashgroveprimary.com](http://www.ashgroveprimary.com)

[info@ashgroveps.newtownabbey.ni.sch.uk](mailto:info@ashgroveps.newtownabbey.ni.sch.uk)

02890 848 734

