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*Karen Douglas*  
Secretary

Professor U. Goswami  
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184 Hills Road  
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CAMBRIDGE

CAMBRIDGE  
PSYCHOLOGY RESEARCH  
ETHICS COMMITTEE

2 January 2008

Application No: 2007.51

Dear Professor Goswami

**Music and Language Project**

The Cambridge Psychology Research Ethics Committee has given ethical approval to your research project: Music and Language Project, as set out in your application dated 23 October 2007.

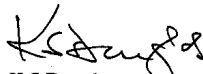
The Committee attaches certain standard conditions to all ethical approvals. These are:

- (a) that if the staff conducting the research should change, any new staff should read the application submitted to the Committee for ethical approval and this letter (and any subsequent letter concerning this application for ethical approval);
- (b) that if the procedures used in the research project should change or the project itself should be changed you should consider whether it is necessary to submit a further application for any modified or additional procedures to be approved;
- (c) that if the employment or departmental affiliation of the staff should change you should notify us of that fact.

Members of the Committee also ask that you inform them should you encounter any unexpected ethical issues.

If you would let us know that you are able to accept these conditions, I will record that you have been given ethical approval.

Yours sincerely

  
K S Douglas

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October 2009

***Music and Language Project***

Dear Parent,

(*Name of head*) has given us permission to write to you to ask whether you would permit your child to be included in a research project examining the development of listening skills. The purpose of this study is to investigate how the structure of simple songs and nursery rhymes might increase children's understanding of syllables and rhymes in their pre-literacy development. For example, we will investigate the impact of different speeds and melody in establishing rhythmic awareness and decision making (the ability to predict when a rhyme occurs in a song).

Each participating child will be given a set of computer-based tasks. Your child will be asked to tap along, either on bongos or chime bars, with some music played at different speeds and to complete the rhymes in simple nursery rhymes as they occur in the songs.

It is expected that all individual tasks, including four simple tests to check how well your child is doing in school (rhyme and syllable awareness and another two about general ability) can be completed in 8 short sessions of approximately 15 minutes, to be given at convenient times during the school day. The research period will be from October to May 2010.

All tasks will be administered by John P. Verney, a trained developmental researcher in the Faculty of Education. We are happy to feed back to you any data concerning your child that you might wish for, however this research project may not bring any immediate benefits to your child. Rather, we hope that in due course the information that we obtain will help children's linguistic development and quality of life.

Confidentiality/Ethical Approval

All data will be identified by a code, with names kept in a locked file. Results are normally presented in terms of groups of individuals and will be presented at conferences and written up in journals. If any individual data were to be presented, the data would be totally anonymous, without any means of identifying the individuals involved. This project has been approved by the Cambridge Psychology Research Ethics Committee.

Participation/Withdrawal

A consent form is attached to this letter. If you are willing for your child to take part in this study, please complete it and return it to your school via the class teacher or school secretary. If you would like any further information, please do not hesitate to contact John P. Verney at [jpv28@cam.ac.uk](mailto:jpv28@cam.ac.uk), or via the school.

Please note that you may withdraw from the project at any stage without explanation.

Yours sincerely,

## Consent Form

### *Music and Language Project*

Have you read the information sheet about the study? YES  
/ NO

Have you received sufficient information about the study? YES  
/ NO

Do you understand that you are free to withdraw from the project at any time and without giving a reason for withdrawing? YES  
/ NO

**Do you agree to your child taking part in this study?** YES  
/ NO

Signed \_\_\_\_\_ Date \_\_\_\_\_

Parent's name (in block letters)

\_\_\_\_\_

Contact telephone number/ e-mail

\_\_\_\_\_

Child's name (in block letters) -

\_\_\_\_\_

Child's School & Class

\_\_\_\_\_

Child's Date of Birth

\_\_\_\_\_

**Thank you for your time and interest!**

John P. Verney

Dear parents

John P. Verney, a PhD student from Cambridge University, is hoping to conduct some research tests in our school with children in the reception class, and would like to ask your permission to work with your child.

John has considerable experience of working with young children in Northumberland schools, and was assistant head of Northumberland Music Service until he retired two years ago. His responsibilities included working with young children and their teachers to improve the musical curriculum in their classrooms.

His research at Cambridge is to find out if the strategies that worked successfully in the classroom could work with many more children because they are grounded in scientific principles.

This is the third year of research. In the first year he worked with 40 children and their teachers in three local schools. Last year he worked with 120 children from the reception classes in 7 schools and in this final year of the project he would like to work again in Felton, Shilbottle, Swarland, Broomhill, Red Row, Amble First and add St. Cuthbert's R.C school in Amble to the schools. He will then have results from over 250 children to make his findings relevant to schools across the country.

### **What is it for?**

By engaging with simple songs and nursery rhymes we hope that some children will be able to listen more carefully, and in so doing improve how they hear rhymes and syllables. With this increased understanding they should be able to improve pre-reading skills.



### **What does it involve?**


- In October John will introduce himself to the class and bring along some drums and bongos and his cuddly toy 'Pat the Panda' to tell them about the activities. Then he will embark on some simple and enjoyable computer tasks with the children (outlined in the accompanying consent form letter)
- He will come along and work with most of the children for a 30 minute session a week during the Spring Term.

I do hope you feel confident to allow your child to take part in these activities and will fill in the form and return it to John via your class teacher or school secretary.

We also have a newsletter in school from the Centre for Neuroscience in Cambridge explaining what other exciting work is being researched to help improve children's learning in Literacy, Mathematics and to help them cope with dyslexia. It is all of international significance, so it is great that our school in Northumberland can contribute to knowledge that could go all round the world.

**Research Student:** John Parker Verney, M.Ed, (Cambridge University: B.Phil. (Newcastle upon Tyne). Cert Ed. (Chester College of Education) Post graduate diploma in – Language and Communication Needs (Newcastle upon Tyne) LTCL guitar LTCL viola ALCM double bass.


**Current enhanced CRB check**



# Bongo Phonics


## Phonological Awareness Tests—Music

**Devised and composed by John P. Verney**




<b>Tapping tests</b>		
1	Practice piece - Sputnik	600 milliseconds
<b>Tune Set 1</b>		
2	Metronome Task	500 ms/ 400ms/ 666ms/ 1000ms
3	Marching through the jungle	500ms
4	Music Day	400ms
5	Soldiers Song	666ms
6	Snake	1000ms
<b>Tune Set 2</b>		
7	Rover had a rag	500ms
8	The Race Song	400ms
9	Ladybird	666ms
10	Kite Song	1000ms
<b>Singing Tests</b>		
<b>Singing in Time</b>		
11	Practice Piece – Hello Mr. Verney	
12	1 2 3 4 5 6	500ms
13	Hello Pat the Panda	666ms
14	Hello Mr Dinosaur	1000ms
15	Hello Mr Duck	400ms
<b>Rhyme + Music</b>		
16	Hickory, dickory, dock	1000ms
17	Twinkle, twinkle little star	666ms
18	Baa Baa Black Sheep	400ms
19	Miss Polly	500ms
<b>Post Test</b>		
24	<b>Metronome Task</b> (500ms/ 400ms/ 666ms/ 1000ms) <b>Tracy</b> (500ms) <b>Bear</b> (1000ms)	
<b>Rhyme - Music</b>		
20	Hickory, dickory, dock	
21	Twinkle, twinkle little star	
22	Baa, baa black sheep	
23	Miss Polly	

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## Marching through the jungle

John P. Verney

$\text{♩} = 120$

The musical score is written for a four-part setting (Soprano, Alto, Tenor, Bass) in 2/4 time. It consists of two systems of staves. The first system includes a key signature change to one sharp (F#) and a common time signature change to 2/4. The second system includes a repeat sign and a final cadence. Roman numerals I, V, and IV are placed below the staves to indicate chord changes.

## Original Lyrics

Marching through the jungle; watching all the tigers play.    Marching through the jungle; having a lovely day.  
I'm a baby elephant marching with my friends.    We march every evening, and stop when the daylight ends.

# It's nursery music day

John P. Verney

♩ = 150

The musical score is written for four staves. The first staff is in treble clef with a 4/4 time signature. The second staff is in bass clef. The third and fourth staves are in treble and bass clefs respectively. The music consists of a melody and a bass line. Chord symbols I, IV, and V are placed above the staves. The score includes a key signature change from one sharp (F#) to one flat (Bb) in the middle section.

## Original Lyrics

It's nursery music day. What music shall we play? What is the sound of the big bass drum? - Boom Boom Boom  
 What is the sound of the tambourine? Jingle Jingle Jingle. What is the sound of the indian bell? Ding Ding Ding.  
 It's nursery music day.

# The Soldier's Song

John P. Verney

♩ = 90

The musical score for 'The Soldier's Song' is presented in two systems. Each system consists of a treble and bass staff, followed by a single treble staff. The first system includes a key signature change to one sharp (F#) and a common time signature change to 3/4. Roman numerals (I, IV, V) are placed below the staves to indicate chord positions. The melody is simple and march-like, with a key signature change from C major to F# major.

## Original Lyrics

The soldier marched around with a hat upon his head - with a hat upon his head.  
 The soldier marched around with a hat upon his head, and the drums went rat - a - tat.

# Pretty coloured snake

John P. Verney

$\text{♩} = 60$

## Original lyrics

Pretty coloured snake is lying in the sun. He's searched for a warm place so he can have some fun.  
He loves to lie and rest and move when it gets cold, after he has eaten a little frog or toad.

# Rover had a rag

John P. Verney

♩ = 120 light swing

The musical score for "Rover had a rag" is written in 4/4 time with a light swing feel. It consists of two systems of staves. The first system has a treble and bass staff. The second system has a treble and bass staff. The music is in G major (one sharp). The first system ends with a repeat sign. The second system begins with a key signature change to F major (two flats). The score includes various musical notations such as notes, rests, and accidentals.

## Original Lyrics

Rover had a rag he liked the best of all. Rover liked his rag better than a ball.  
If you tried to take it off him he growled an angry growl. He'd pull and pull and pull and pull, then howled a horrid howl.

# The race song

John P. Verney

♩ = 150

Original Lyrics

Have I done enough. This race is really tough.  
Hearts and lungs must work together. I think I must have run forever.

## Ladybird

John P. Verney

♩. = 90

The musical score for 'Ladybird' is written in 6/8 time with a tempo of 90 beats per minute. It features a treble and bass staff joined by a brace. The key signature has one sharp (F#). The score is divided into four systems. The first system includes a 'V' (Verse) and 'I' (Chorus) marker. The second system includes a 'V' marker. The third system includes a 'V' and 'I' marker. The fourth system includes a 'V' and 'I' marker. The melody is simple and catchy, with a repeating chorus.

## Original lyrics

Little ladybirds fly around the flowers, but they're not really birds. Lots of them aren't ladies, so that is quite absurd.  
 Their pretty wings are painted with black spots, but they're not really ill. They're red and spotty insects. Let's watch them; but keep still.

# Fly a kite

John P. Verney

♩. = 60

The musical score for "Fly a kite" is written in 6/8 time with a key signature of two sharps (D major). The tempo is marked as ♩. = 60. The score is composed of two systems of staves. The first system consists of a treble staff and a bass staff. The melody is in the treble staff, and the bass staff provides a simple accompaniment. The second system also consists of a treble staff and a bass staff. The melody continues in the treble staff, and the bass staff provides a simple accompaniment. The score ends with a repeat sign and a first ending bracket labeled 'I'.

## Original Lyrics

Fly a kite up onto the sky. Strings pulled tight; just see how they fly.  
 Red and green and yellow and blue. They fly through the clear air for me and for you..

# Tracy and Thomas

John P. Verney

$\text{♩} = 120$

The first system of the musical score consists of two staves. The top staff is in treble clef with a key signature of two sharps (F# and C#). The bottom staff is in bass clef with a key signature of two sharps (F# and C#). The music features a melody in the treble staff and a supporting bass line in the bass staff. A fermata is placed over a note in the treble staff towards the end of the system.

The second system of the musical score continues the melody and bass line from the first system. It features similar musical notation with a key signature of two sharps and a mix of eighth and quarter notes.

The third system of the musical score continues the melody and bass line. It includes a repeat sign at the beginning of the treble staff, indicating a repeated rhythmic pattern.

Original lyrics  
 Tracy watches tennis: sees the balls fly over the net.  
 Thomas mends tyhe dripping tap: everything is very wet.

# The bear in the wood

John P. Verney

$\text{♩} = 60$

## Original Lyrics

I once saw a brown bear standing by a tree. He growled a growl which really frightened me.  
I ran away as fast as I could. I don't think I'll go back and walk in the wood.

## Appendix E Psychometric and Phonological Tasks

### WPPSI-R<sup>uk</sup> Information Test

Name \_\_\_\_\_ No \_\_\_\_\_ school \_\_\_\_\_

Date \_\_\_\_\_ tester \_\_\_\_\_

Item	Response	Score	
Picture items		1 or 0	
1 Cook			
2 Book			
3 Square			
4 Grow			
5 Hear			
6 Cold			
Verbal items			
7 Nose			
8 Ears			
9 Thumb			
10 Cut paper			
11 Grass			
12 Bottle			
13 Milk			
14 Shines - night			
15 Legs - bird			
16 Wheels			
17 *Three animals			
18 Vegetable			
19 Wood			
20 Letter			
21 After Saturday			
22 Shoes			
23 Days-week			
24 Pence			
25 Seasons			
26 Bread			
27 Sun-set			
Test total (Max = 27)			

All ages  
begin here

Discontinue after 5  
consecutive failures.

\* After the child names two  
animals, say "Tell me another one"

**Comments**

# WPPSI-R<sup>uk</sup> Picture Completion Test

Name \_\_\_\_\_ No \_\_\_\_\_ school \_\_\_\_\_  
Date \_\_\_\_\_ tester \_\_\_\_\_

Item	Response	Score 1 or 0	
<b>Sample Teddy Bear</b>			
1 Teddy bear			
2 Teddy Bear			
3 Doll			
4 Comb			
5 Rabbit			
6 Tricycle			
7 Jacket			
8 Rain Child			
9 Flowers			
10 Ladder			
11 Girls' face			
12 Hand			
13 Pigtailed			
14 Table			
15 Clothes line			
16 Ruler			
17 Clock			
18 Car			
19 Cockerel			
20 Door			
21 Girl running			
22 Duck			
23 Lunch Box			
24 Coat			
25 Scissors			
26 Girl's profile			
27 Screw			
28 House			
<b>Test total (Max = 28)</b>			

Ages  
3.0 - 4-11

Ages 5.0 +  
begin here

Discontinue after 5  
consecutive failures.

\* After the child names two  
animals, say "Tell me another one"

If child of 5+ passes item 3 credit  
them with items 1 & 2

**Comments**

# BAS (British Ability Scales 11) Elliot. C. D (1996)

School

Date

tester

All ages  
begin

Item			
Start age 5:0 – 7.11			
1	the	11	one
2	up	12	cup
3	he	13	wood
4	you	14	bird
5	box	15	clock
6	at	16	ring
7	said	17	water
8	out	18	window
9	jump	19	men
10	fish	20	light

Discontinue after 8 failures in  
each block of 10 words

21	oil	31	coat
22	ship	32	carpet
23	running	33	brick
24	dig	34	thin
25	money	35	building
26	paper	36	tail
27	gat	37	travel
28	knock	38	babies
29	heel	39	writing
30	skin	40	climb

41	collect	51	wreck
42	early	52	favour
43	piece	53	supplies
44	piano	54	encounter
45	whistle	55	universal
46	invite	56	ceiling
47	guest	57	generation
48	electric	58	environment
49	enormous	59	cough
50	shoulder	60	character

61	avenue	71	tentative
62	experience	72	trauma
63	radiant	73	jeopardy
64	statue	74	silhouette
65	audience	75	desultory
66	curiosity	76	reminiscent
67	obscure	77	divulge
68	diameter	78	diplomacy
69	chaos	79	rheumatism
70	boisterous	80	tyrannical

# Word Test Recall Test

From Working Memory Test Battery for Children - Pickering and Gathercole (2001)

Name \_\_\_\_\_ No \_\_\_\_\_ school \_\_\_\_\_

Date \_\_\_\_\_ tester \_\_\_\_\_

Practice list					Score (0 or 1)
A	peach				
B	mad	pill			
C	get	leak	calm		
Span	List				
1	much				
	beg				
	not				
	doom				
	back				
	torn				
2	lip	bag			
	moon	pad			
	numb	pull			
	come	mud			
	peel	dark			
	nap	cool			
3	cut	beak	chip		
	neck	nut	pool		
	lot	palm	tell		
	park	cod	dip		
	chill	dad	bean		
	curl	pork	loop		
4	turn	pen	bill	dart	
	mood	lunch	chart	bed	
	lid	teach	duck	barn	
	tick	chop	led	ban	
	pet	noon	mop	chick	
	cart	pin	luck	met	

Presented at 666 ms = 90 bpm

Stop after 3 mistakes

If child gets four correct – move on

Span								Score
5	lock	lip	let	pack	bird			
	cheek	dig	turn	card	boot			
	guard	tool	jam	check	big			
	neat	men	tap	cook	mark			
	kick	torch	mug	ball	gym			
	dug	pan	bug	man	catch			
6	pop	charm	net	burn	deck	jot		
	lap	corn	bead	pig	bun	ten		
	pat	lad	dot	born	cut	deep		
	mill	but	pin	talk	pet	lead		
	lick	can	god	bit	pall	dog		
	job	gum	cork	learn	bud	pin		
7	ditch	pot	lawn	cat	book	kerb	jot	
	mob	chalk	pit	bell	debt	look	tag	
	got	look	beach	pearl	dull	gap	league	
	top	patch	jug	bad	leg	caught	dim	
	map	peak	nod	team	bat	chin	log	
	done	mat	gun	bark	nude	church	loom	

Word list recall total out of 42  
Span

Comments

# Early years foundation stage profile – assessment scales reference sheet

Personal, social and emotional development				Communication, language and literacy				Problem solving, reasoning and numeracy			Knowledge and understanding of the world	Physical development	Creative development
Scale point	Dispositions and attitudes	Social development	Emotional development	Language for communication and thinking	Linking sounds and letters	Reading	Writing	Numbers as labels and for counting	Calculating	Shape, space and measures			
1	Shows an interest in interaction activities and participates with enthusiasm or participation	Plays alongside others	Separates from main carer with support	Listens and responds	Joins in with rhyming and rhythmic activities	Is developing an interest in books	Experiments with mark making, sound making and drawing meaning to the marks	Says some number names in familiar contexts and recites nursery rhymes	Regards to the reality involved in subtraction in rhymes and games	Experiments with a range of objects and materials, using some mathematical awareness	Shows curiosity and interest in exploring surroundings	Moves spontaneously, showing some control and coordination	Explores different media and responds to a variety of sensory experiences
2	Dresses, undresses and manages own clothing with adult support	Builds relationships through gesture and talk	Communicates freely about home and community	Initiates communication with others displaying a range of emotions in more informal contexts	Shows an awareness of rhyme and alliteration	Knows that print conveys meaning	Uses some clearly identifiable letters and words to communicate meaning	Counts reliably up to three everyday objects	Recognises differences in comparing sets of objects	Sorts or matches objects and talks about sorting	Observes, selects and manipulates objects and identifies simple features and significant personal events	Moves with confidence in a variety of ways, showing some awareness of space	Creates simple representations of events, people and objects and engages in role-making
3	Displays high levels of involvement in self-chosen activities	Takes turns and shares with adult support	Expresses needs and feelings in appropriate ways	Talks activities through, reflecting on and modifying actions	Links some sounds to letters	Recognises a few familiar words	Represents some words in print	Counts reliably up to six everyday objects	Finds one more or one less from a group of up to five objects	Describes shapes in simple models, patterns and pictures	Identifies obvious similarities and differences when exploring and observing objects and working using simple tools and techniques	Usually shows appropriate control in large- and small-scale movements	Tries to capture experiences, using a variety of different media
4	Dresses and undresses independently and manages own personal hygiene	Works as part of a group or class, taking turns and sharing fairly	Responds to significant experiences, showing a range of feelings when appropriate	Listens with enjoyment to stories, songs, rhymes and poems, satirising and responding with relevant questions or actions	Links sounds to letters, naming and sounding letters of the alphabet	Knows that, in English, print is read from left to right and top to bottom	Writes own name and other words from memory	Says number names in order	Relates addition by combining two groups	Talks about, recognises and recreates simple patterns	Investigates planes, objects, materials and living things by using all the senses as appropriate	Moves with confidence, imagination and in safety	Sings simple songs from memory
5	Selects and uses activities and resources independently	Forms good relationships with adults and peers	Has a developing awareness of own needs, views and feelings and is able to express needs, views and feelings of others	Uses language to imagine and recreate roles and experiences	Hears and says sounds in words	Shows an understanding of the elements of stories, such as main characters and sequence of events, and openings	Holds a pencil and uses it effectively to form recognisable letters, most of which are correctly formed	Recognises numerals 1 to 9	Relates subtraction to taking away	Uses everyday words to describe position	Asks questions about why things happen and how things work, looks closely at similarities, differences, patterns and change	Demonstrates fine motor control and coordination	Explores colour, texture, shape, form and space in two or three dimensions
6	Continues to be interested, motivated and excited to learn	Understands that there is a need to be agreed on behaviour for groups of people, including adults and children, to work together harmoniously	Has a developing respect for own, others and those of other people	Interacts with others in a variety of contexts, including sharing, listening and taking turns in conversation	Blends sounds in words	Reads a range of familiar and unfamiliar simple sentences independently	Attempts writing for a variety of purposes, using simple regular words and making attempts at more complex words	Counts reliably up to 10 everyday objects	In practical activities and discussion, uses a range of vocabulary involved in adding and subtracting	Uses language such as 'bigger' or 'smaller' to describe the shape and size of solids and flat shapes	Finds out about past and present events in own community, nationally, locally and other people s/he knows	Uses small and large equipment, showing a range of basic skills	Recognises and explores how sounds can be changed
7	Is confident to try new activities, initiate ideas and speak in a familiar group	Understands that people have different needs, views, cultures and beliefs that need to be understood with respect	Considers the consequences of words and actions for self and others	Uses talk to organise, sequence and clarify thinking, ideas, feelings and events, exploring relevant details and sounds of new words	Uses phonic knowledge to read simple regular words	Retells narratives in the correct sequence, drawing on language patterns of stories	Uses phonic knowledge to write simple regular words and make attempts at more complex words	Orders numbers up to 10	Finds one more or one less than a number from 1 to 10	Uses language such as 'greater', 'smaller', 'heavier' or 'lighter' to compare quantities	Identifies the uses of everyday technology and uses information and programmable toys to support her/his learning	Handles tools, objects, construction and malleable materials safely and with basic control	Uses imagination in art and design, music, dance, imaginative role play and stories
8	Maintains attention and concentrates on their work, cultures and beliefs with respect	Understands that s/he can respect the needs, views, cultures and beliefs with respect	Understands what is right, what is wrong, and why	Sorts clearly with confidence and control, showing awareness of the listeners	Attempts to read more complex words, using phonic knowledge	Shows an understanding of the correct sequence, drawing on language patterns of non-fiction texts to answer questions about where, who, why and how	Attempts to form captions and simple sentences using punctuation	Uses developing mathematical ideas to solve practical problems	Uses developing mathematical ideas to solve practical problems	Builds and constructs with a wide range of objects, resources, tools and techniques, adapting her/his work where necessary	Recognises the changes that happen to her/his body when s/he is active	Recognises the importance of keeping healthy and safe, showing that contribute to this	Expresses and communicates ideas, thoughts and feelings in a variety of ways, including role play, movement, designing and making, and a variety of songs and musical instruments
9	Sustains involvement and perseveres, particularly when trying to reach a satisfactory conclusion	Takes into account the ideas of others	Displays a strong, positive sense of self-identity and is able to express a range of emotions, feelings and beliefs appropriately	Talks and listens confidently and with control, consistently showing awareness of the listeners and relevant detail	Uses knowledge of letters, sounds and words when reading and writing independently	Reads books of own choice with some fluency and accuracy	Communicates meaning through phrases and simple sentences, showing some consistency in constructing sentences	Recognises, counts, orders, writes and uses numbers up to 20	Uses a range of strategies for addition and subtraction, including mental recall of number bonds	Uses mathematical language to describe solid shapes and flat (2D) shapes	Communicates simple planning for investigations and constructions	Recognises, links and adopts simple movements, sometimes commenting on her/his work	Expresses feelings and preferences in response to artwork, drama and music and in her/his work

# Picture Syllable Test (D James 2003)

Name \_\_\_\_\_ No \_\_\_\_\_ school \_\_\_\_\_  
 Date \_\_\_\_\_ tester \_\_\_\_\_

Trial	Target	Choices			Response
1	Sock	worm	envelope	cucumber	
2	Doctor	wall	spider	Shoe	
3	Hand	rainbow	coffee	boat	
4	Daffodil	ship	spaghetti	bow	
<b>Test</b>					
1	0+	Butterfly	ant	bike	<b>pyjamas</b>
2	0+	Nose	needle	perfume	<b>kite</b>
3	0+	Bed	pillow	jumper	<b>dog</b>
4	0-	Teeth	lemon	happy	<b>fence</b>
5	0-	Bird	<b>shop</b>	yo-yo	body
6	0+	Man	monkey	<b>zip</b>	castle
7	0-	Torch	tiger	<b>nurse</b>	camel
8	0-	Sugar	ghost	<b>penny</b>	shark
9	0-	Baby	<b>lego</b>	chin	doll
10	0+	Teacher	boy	tail	<b>carrot</b>
11	0-	Jelly	mouth	witch	<b>table</b>
12	0+	Book	pencil	<b>fish</b>	bucket
13	0+	Crocodile	crane	<b>aeroplane</b>	snake
14	0+	Strawberry	<b>photograph</b>	string	pear
15	0+	Toilet	tin	<b>spider</b>	bus
16	0-	Potato	cheese	<b>museum</b>	switch
17	0+	Elephant	door	<b>computer</b>	grey
18	0+	Leg	<b>cot</b>	tissue	sandal
19	0+	Kangaroo	<b>triangle</b>	cup	red
20	0+	Dolphin	pie	sea	<b>tractor</b>
21	0+	Umbrella	rain	tick	<b>dinosaur</b>
22	0-	Banana	<b>domino</b>	strong	bridge
23	0-	Tomato	church	tights	<b>violin</b>
24	0+	Finger	fan	<b>circle</b>	thumb
25	0+	Bath	<b>comb</b>	button	shampoo
26	0+	Sandwich	<b>trousers</b>	sun	bag
27	0+	Donkey	<b>rubber</b>	pig	dice
				Total	
				Total 0+	
				Total 0-	

## Comments

0- = orthographically incongruent; 0+ = orthographically congruent.

## Oral Syllable Test (after Treiman & Zukowski 1991)

Which does the puppet like best ? – the yes or no pairs  
Which makes him/her happy – waving or crossed arms?

Name \_\_\_\_\_ No \_\_\_\_\_ school \_\_\_\_\_

Date \_\_\_\_\_ tester \_\_\_\_\_

Practice items (yes)						No pairs
A	hammer	hammock	ham	Score 0 or 1		Below - intrude
B	scarecrow	scary	scare			
<b>Part 1 test items</b>						
<b>Beginning is the same</b>						
1	ticket	tickle	1			salad – perfect 2
2	panel	panic	4			orchard – level 3
3	comma	comment	1			fewer – taxi 2
4	jelly	jealous	4			classic – biscuit 3
5	easy	easel				model - toffee
6	dollar	dolly				pillow - rubbish
7	solid	solemn				reflex - mason
8	column	collar				mustache - vinyl
9	survey	service				stomach - zipper
10	butter	button				plastic - heavy
<b>Part 1 total</b>						

Practice items		End is the same		No pairs	
A	raccoon	cocoon	coon	Score 0 or 1	Require - invade
B	compete	repeat	peat		
11	parole	enrol			delight – unique
12	compare	repair			polite – discuss
13	refuse	confuse			behave – conduct
14	object	inject			corral - behind
15	entire	retire			guitar - compose
16	insist	assist			cartoon - massage
17	prevent	invent			harpoon - collide
18	patrol	control			balloon - excite
19	admit	permit			protect - blockade
20	support	deport			enjoy - affect
<b>Part 2 total</b>					

<b>Test total</b>		
-------------------	--	--

**Comments**

# Picture Rhyme Test (D James 2003)

Name \_\_\_\_\_ No \_\_\_\_\_ school \_\_\_\_\_  
 Date \_\_\_\_\_ tester \_\_\_\_\_

Trial	Target	Choices			Response
1	Brush	<b>rush</b>	book	chin	
2	Phone	shop	<b>bone</b>	fish	
3	Zip	worm	hook	<b>lip</b>	
4	Stick	comb	<b>lick</b>	dice	
<b>Test</b>					
1	0+	Sock	<b>clock</b>	doll	hat
2	0+	Tree	pie	<b>knee</b>	bird
3	0+	Hand	glove	salt	<b>sand</b>
4	0+	Leg	<b>peg</b>	nail	arm
5	0-	One	two	<b>swan</b>	bike
6	0-	Shoe	gold	feet	<b>blue</b>
7	0-	Light	<b>kite</b>	sun	duck
8	0-	Draw	pen	<b>floor</b>	bath
9	0+	Wall	wig	tie	<b>ball</b>
10	0+	Tap	<b>map</b>	ten	ring
11	0+	Bag	kiss	<b>flag</b>	bee
12	0+	Fan	coat	fox	<b>man</b>
13	0-	Fruit	<b>boot</b>	door	frog
14	0-	Soap	cot	<b>rope</b>	six
15	0-	Whale	cup	win	<b>snail</b>
16	0-	Key	<b>sea</b>	Farm	king
17	0+	Nurse	pill	<b>purse</b>	night
18	0+	Pink	red	crack	<b>sink</b>
19	0+	Face	<b>Race</b>	nose	fork
20	0+	Bin	can	<b>pin</b>	bed
21	0-	Four	fat	eight	<b>saw</b>
22	0-	Drum	<b>thumb</b>	tap	toy
23	0-	Hair	bow	<b>pear</b>	goal
24	0-	Bowl	bus	fork	<b>goal</b>
				Total	
				Total 0+	
				Total 0-	

## Comments

0- = orthographically incongruent; 0+ = orthographically congruent.

# Oral Rhyme Test (Phab)

Name

No

school

Date

tester

Practice items				
A	sail	boot	nail	
B	red	fed	leg	
C	big	hiss	miss	
Part 1 test items				Score 0 or 1
1	made	hide	fade	
2	wig	fig	pin	
3	bus	harm	farm	
4	pack	lag	sag	
5	sap	hop	top	
6	nut	cut	pet	
7	sand	hand	cup	
8	cat	fan	mat	
9	dot	mop	top	
10	tub	mud	cub	
11	dog	man	fog	
12	sip	win	bin	
Part 1 total				
(9 or more needed to continue)				

Part 2 test items				Score 0 or 1
13	badge	match	catch	
14	fate	late	made	
15	tease	geese	piece	
16	lip	sip	rib	
17	dog	sock	log	
18	had	Sad	mat	
19	lick	big	tick	
20	bead	wheat	seat	
21	cob	hop	sob	
Part 2 total				

Rhyme Test total	
(Part 1 + Part 2: out of 21)	

Comments

## Appendix F Bongo Phonics Children's Workbook

### Phonological Awareness Tests - Music



Featuring Pat the Panda

**Music Tests for Rhyme Predictability  
and Syllable Segmentation**

Designed and composed by  
**John P. Verney**

A training programme devised for PhD  
Faculty of Education  
 UNIVERSITY OF  
CAMBRIDGE

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### Task 1

#### Metronome

(a) 500ms. (b) 400ms. (c) 666ms. (d) 1000ms

When 'Metro Man' clicks can 'Bongo Boy'  
synchronise his bongo taps with him?  
Listen carefully because 'Metro Man'  
can go fast and slow.



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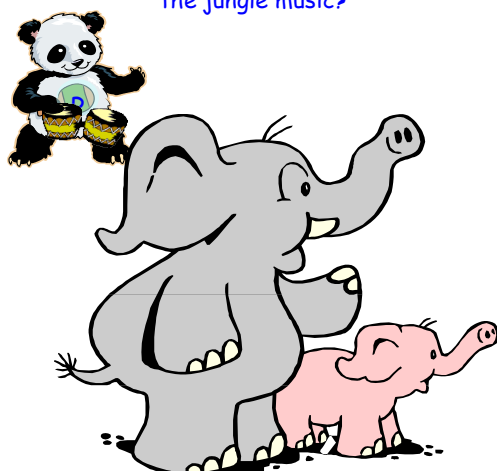


### Task 2 (Tune Set 1)

#### Marching Through The Jungle

(500ms)

Can Pat the panda play his bongos with  
the jungle music?



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### Task 3 (Tune Set 1)

#### Music Day

(400ms)

Can Pat the Panda play the bongos all  
the way through the music,  
with the bongo player



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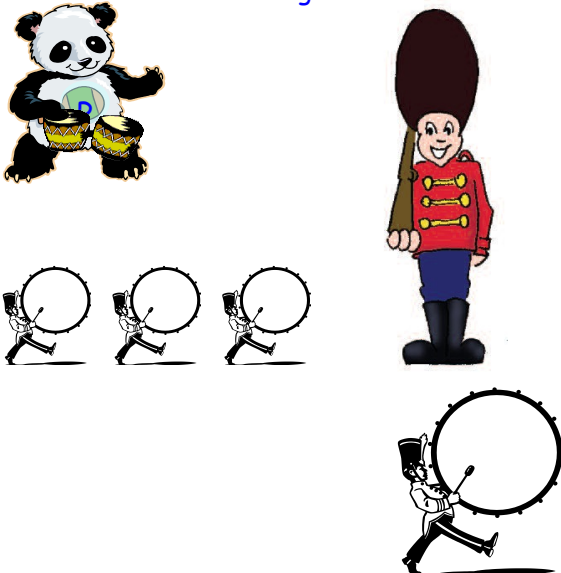


#### Task 4 (Tune Set 1)

##### Soldier's Song

(666ms)

Can Pat the panda play his bongos with  
the marching soldier ?



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#### Task 5 (Tune Set 1)

##### Snake

(1000ms)

Can Pat the panda play his bongos to  
help the snake slither slowly in the  
grass?



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#### Task 2 (Tune Set 2)

##### Rover had a rag

(500ms)

Can Pat the panda play his bongos when  
Rover the dog is eating the rag?



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#### Task 3 (Tune Set 2)

##### The Race Song

(400ms)

Can Pat the panda play his bongos along  
with this running song?



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#### Task 4 (Tune Set 2)

##### Ladybird

(666ms)

Can Pat the panda play his bongos as the ladybird flies around the flowers?



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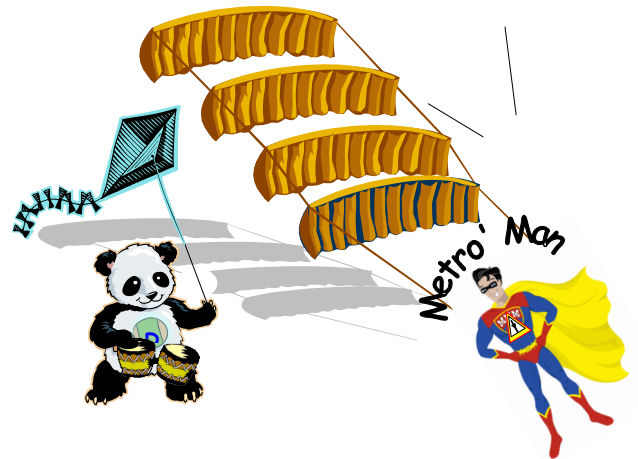


#### Task 5 (Tune Set 2)

##### Fly a Kite

(1000ms)

Can Pat the panda play his bongos when Metro' Man flies his kite?



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Can you sing along and change the words with the music played on the chime bars?



Singing in Time Task 6. (500ms)

Sing and count the numbers with the music

1 2 3 4 5 6

Singing in Time Task 7. (666ms)

Sing

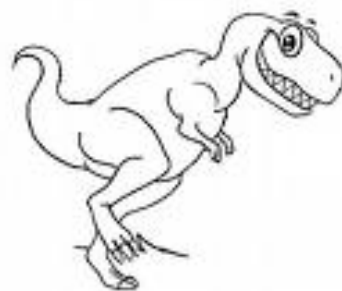
'Hel - lo Pat the Pan - da'



Singing in Time Task 8. (1000ms)

Sing

'Hel - lo Mr Dinosaur'



Singing in Time Task 9. (400ms)

Sing

'Hel - lo Mr Duck'



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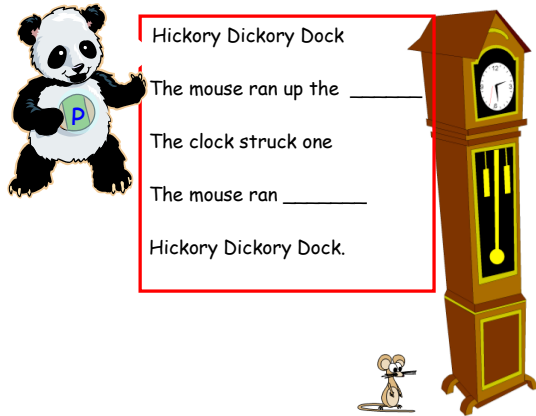
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### Rhyme Tasks 10 and 14

Hickory Dickory Dock  
(1000ms)

Can you sing along with Pat the Panda so  
you can help him finish the song by  
singing the missing words ?



Hickory Dickory Dock

The mouse ran up the \_\_\_\_\_

The clock struck one

The mouse ran \_\_\_\_\_

Hickory Dickory Dock.

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### Rhyme Tasks 11 and 15

Twinkle, twinkle little star  
(666ms)

Can you sing along with Pat the Panda so  
you can help him finish this song?



Twinkle, twinkle little star.

How I wonder what you \_\_\_\_\_

Up above the world so high

Like a diamond in the \_\_\_\_\_

Twinkle, twinkle little star

How I wonder what you \_\_\_\_\_



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### Rhyme Tasks Test 12 and 16

Baa, baa black sheep  
(400 ms)

Can you sing along with Pat the Panda so  
you can help him finish the song?



Baa, baa black sheep

Have you any wool?

Yes sir, yes sir

Three bags \_\_\_\_\_

One for the master,

And one for the dame

And one for the little boy

Who lives down the \_\_\_\_\_



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### Rhyme Tasks 13 and 17

Miss Polly had a dolly  
(500ms)

Can you sing along with Pat the Panda so  
you can help him finish the song?



Miss Polly had a dolly who was  
sick, sick, sick:

So she 'phoned for the doctor to be \_\_\_\_\_

\_\_\_\_\_



The doctor came with his bag and his hat,  
And he knocked on the door with a \_\_\_\_\_

\_\_\_\_\_



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## Phonological Awareness Tests - Music



**Bongo Phonics**

**PhD Intervention Programme  
to improve rhyme predictability  
and syllable awareness**



Featuring Pat the Panda

Designed and composed by

**John P. Verney**



## Appendix G ( a) Music Intervention Programme



Lesson Plan	Familiarisation Sessions (x3)	October 2010
Introduction to the characters	Pat – Bongo Boy and Metronome Man	
Resources	Panda	
Toys	Bongos, chime bars, maracas	
Instruments		
<p>Organise stool for the children so they can play the bongos comfortably or else let them play standing up.</p> <p>Sing Hello Pat the Panda</p> <p>Introduce them to the metronome and practice tapping slowly and quickly with the beats – start at 500 ms and move to slow and then quick.</p> <p>Introduce the children to Bongo Boy and Metronome Man who have to play together and give each a child (over the 3 weeks) a go on the bongos.</p> <p>Bring out the little maracas so they can play along with the metronome and then play along with Mickey the Mouse. Stops and starts.</p> <p>Substitute maracas for individual children on the bongos.</p> <p>‘Hello Pat the Panda’</p> <p>Count to 6 – check syllables</p> <p>Demonstrate on chime bars</p> <p>Get children to play them individually</p>		

Comments

**Intervention Lesson No 1** Spring Term January - March

**Resources**

**Toys** Panda Mouse

Bag of cuddly toys grouped in syllable bags eg Bear, dog, duck etc in bag 1  
Panda, rabbit, etc. in bag 2  
Ladybird etc. in bag 3

**Instruments** Chime bars: syllable sticks (simple claves – wooden dowels)

Learn and sing Hello Pat the Panda ( 1 2 3 4 5 6 – on each chime bar as a preliminary song) using chime bars C D and E

Choose various animals from the different bags and then tap its syllable sound with the syllable sticks. Sing the Hello song to each new animal – emphasising the different syllable numbers.

Get teacher to choose children for individual attention.

Using the syllable sticks sung and tap along to Twinkle Twinkle – tapping each syllable.

Sing Mickey the mouse song

Get the children to sing just the rhyming words eg mouse and house, whilst the trainer sings the whole song – make sure it is sung to 120 bpm.

Mickey the mouse

Mickey the mouse

He plays music all round the house

Sing Horsey Horsey

Sing just the rhyming words and further syllable work on “clippity clop” using the sticks.

Horsey Horsey don't you stop

Just let your feet go clippety clop

Your tail go swish and the wheels go round

Giddy up we're homeward bound

'Bye Bye Mr Verney Song'

Get children to play them individually

**Intervention Lesson No 2** Spring Term January - March

**Resources**

**Toys** Panda, Rabbit, Mouse

Bag of cuddly toys grouped in syllable bags eg Bear, dog, duck etc in bag 1  
Panda, rabbit, etc. in bag 2  
Ladybird etc. in bag 3

**Instruments** Chime bars: syllable sticks

**CD player**

Sing “Hello Pat the Panda” with the 3 chime bars (CDE)  
Sing Hello to the different animals from the syllable bags ( children choose)

Sing Mickey the mouse song – using the backing track on the CD  
Get the children to sing just the rhyming words eg mouse and house, whilst the trainer sings the whole song – and then try and miss out the rhyming words - make sure it is sung to 120pm.

Mickey the mouse

Mickey the mouse

He plays music all round the house

Learn ‘Marching through the Jungle’ using the cuddly toys to change the name of the animals – the children choose a different animal from each bag

Marching through the jungle – watching all the tigers play – 4 beat growl

Marching through the jungle – having a lovely day 4 beat tiger smile

I'm a baby elephant marching with my friends

wave arms like an elephant trunk  
then march on the spot with the last line.

We march every morning and stop when the daylight ends.

First learn the song sitting and then marching

Bye Bye ‘Pat the Panda’ and Mr Verney

Get individual children to play chime bars.

‘Bye Bye Mr Verney’

### Intervention Lesson No 3

Spring Term January - March

#### Resources

Animal syllable – segmentation **Flash cards** (set of 21) – see *Speech programme*

#### Toys

Rabbit Panda

A bag of animals from the jungle:-

Must have different syllable numbers – eg snake, tiger, elephant

#### Instruments

#### CD Player

Chime bars: metronome: mini maracas

Sing “Hello Mr Verney” with the 3 chime bars (child chosen as individual or part of a group of 3 – depending on class size).

Look at all the Flash cards – and divide them into the three syllable groups – and choose children to play and sing the new ‘Hello’ songs according to the chosen flash card. See which animal names ‘match’ each other.

Sing Hello song to different jungle animals, creating different rhythms according to the individually chosen animals:- Hello tiger : Hello elephant etc

Revise Marching through the jungle – use as many different syllable length animals as possible in the time.

Marching through the jungle – watching all the tigers play

Marching through the jungle – having a lovely day

I’m a baby elephant marching with my friends

We march every morning and stop when the day/light ends

Revise ‘Mickey the Mouse’ and play along with the CD track emphasising the rhyme structure. Tap along with the mini-maracas

Introduce the children to Rocky the Rabbit and say hello to him, and learn his song emphasising the rhymes at the end of the lines.

Rocky is a rabbit and he plays the **guitar**

He dances on the stage ‘cos he is a rock **star**

He shimmys with the sheep, and he sings with the **deer**

He’s the greatest rabbit that you’ll ever **hear**.

‘Bye Bye Mr Verney’

### Intervention Lesson No 4

Spring Term January - March

#### Resources

Panda, Mickey mouse, rabbit

Jungle animal soft toys

Chime bars: metronome:

mini maracas, bongo drums, tambourine

#### CD player

Play Miss Polly Had a Dolly on the Chime bars and emphasise the rhymes with claps.

Miss Polly had a Dolly who was **sick, sick, sick**

So he phoned for the doctor to come **quick, quick, quick**

The doctor came with his bag and his **hat**

And he knocked on the door with a **rat-a-tat-tat**.

Get individual children to tap rat – a – tat on the tambourine to check syllable awareness.

Play ‘It’s My School Music Day’ on CD player and tap knees in time.

Then tap along with maracas, bongo drums, tambourine ( all three syllables)

It’s my school music day – what music shall we play

What is the sound of a ‘syllable’ – tambourine – bongo drums etc

It’s my school music day

Choose a child to tap – the three syllables - on the bongo drums / tambourine etc..

Sing Hello song to ‘Rocky the rhyming rabbit’

Then use Rocky the Rabbit as a rock song – using the mini maracas as microphones.

Rocky is a rabbit and he plays the **guitar**

He dances on the stage ‘cos he is a rock **star**

He shimmys with the sheep, and he sings with the **deer**

He’s the greatest rabbit that you’ll ever **hear**.

Choose different children to fill in the gaps at the end of the lines, by pointing the pretend microphone at the child.

Teach the children the ‘Soldiers song’ :- Emphasise (by actions) the rhyming words that will be changed to make the song ‘funny’ in the future.

‘The Soldiers Song’

The soldier marched around with a **hat** upon his **head**

With a hat upon his head – With a **hat** upon his **head**

The Soldier Marched around with a **hat** upon his **head**.

And the drums went Rat – a – Tat – Tat

Tap out Rat – tat – tat with the tambourine.

‘Bye Bye Mr Verney’

## Intervention Lesson No 5

Spring Term January - March

### Resources

'Rime' matching Flash cards (set of 36) – see *Speech programme*

**Toys** Panda, Mickey mouse, rabbit

Jungle animal soft toys

**Instruments** Chime bars: metronome:

mini maracas, bongo drums, tambourine

### CD player

Play Miss Polly Had a Dolly on the Chime bars and emphasise the rhymes with claps.  
Miss Polly had a Dolly who was sick, sick, sick

So he phoned for the doctor to come quick, quick, quick

The doctor came with his bag and his bat

And he knocked on the door with a rat-a-tat-tat

He looked at the dolly and he shook his head

And he said "Miss Polly, put her straight to bed"

He wrote on a paper for a pill, pill, pill

"I'll be back in the morning if the dolly's still ill"

Sing "Hello Mr Verney" with the 3 chime bars.

Play 'It's My School Music Day' on CD player and tap maracas in time with the music on the backing track.

Sing Nursery rhymes and omit the rhyming word – Hickory – Baa Baa – Twinkle - 12345

Choose different children to fill in the gaps at the end of the lines, by pointing the pretend microphone at the child.

Look at all the 'rime' flash cards to make sure children know the rhymes, then play a game changing the words in the 'Rocky' Poem as you reveal each pair – "**clock** rhymes with **sock**", – "**car** rhymes with **star**" etc.

Which words in this poem Rhyme – Rocky the Rhyming Rabbit will help them decide!  
Rocky is a rabbit and he's got a clock  
He keeps his clock inside a sock

Rocky is a Rabbit and he's a rock star  
He drives around in a racing car

Make up new action songs with the children's rhyme suggestions:-  
"Rocky is in a band so he can play lots of different instruments"

Rocky is a rabbit and he plays the drums

He plays them best when he's sitting on his bum

He shimmys with the sheep, and he sings with the deer

He's the greatest rabbit that you'll ever hear.

'Bye Bye Mr Verney'

## Intervention Lesson No 6

Spring Term January - March

### Resources

'Rime' matching Flash cards (set of 36) – see *Speech programme*

**Toys** Panda, Mickey mouse, rabbit

Jungle animal soft toys

**Instruments** Chime bars: metronome:

mini maracas, bongo drums, tambourine

### CD player

Sing "Hello Mr Verney" and "Hello Rocky the Rhyming Rabbit" with the 3 chime bars

Revisit The 'Soldiers Song' with more changes of rhyming words that the children can suggest:- (It doesn't matter if they don't make sense)

The soldier marched around with a rat upon his fed  
With a hat upon his head – With a rat upon his fed  
The Soldier Marched around with a rat upon his fed,  
And the drums went Rat – a – Tat – Tat.

Look at all the 'rime' flash cards to make sure children know the rhymes, then play a game changing the words in the 'Rocky' Poem as you reveal each pair – "**clock** rhymes with **sock**", – "**car** rhymes with **star**" etc.

Divide the flash cards into three groups to play an 'odd one out' game.  
Sock, clock, car etc.

Continue with new songs for Rocky based on the flash cards

Rocky is a rabbit and he's got a bear

He likes to see him sitting on a chair

Rocky is a Rabbit and he's found a mouse

He found it running round his house

Make up new action songs with the children's rhyme suggestions:-  
"Rocky is in a band so he can play lots of different instruments"

Rocky is a rabbit and he plays the piano

He's the best play that you'll ever know

He shimmys with the sheep, and he sings with the deer

He's the greatest rabbit that you'll ever hear.

'Bye Bye Mr Verney'

### Intervention Lesson No 7

Spring Term January - March

#### Resources

Toys Panda, Rabbit, Mouse

Instruments Bag of cuddly toys grouped in syllable bags

CD player Chime bars: metronome: mini maracas: bongos

#### CD player

##### Revision Session

Sing "Hello Mr Verney" and "Hello Pat the Panda" with the 3 chime bars

Revise:-

Mickey The Mouse

Marching Through The Jungle

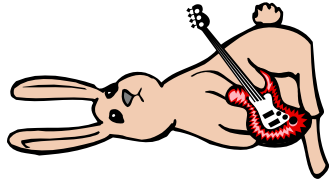
Rocky The Rabbit Songs

My School Music Day

All Nursery Rhymes

Concentrate on syllables and rhyme awareness

'Bye Bye Mr Verney' with chime bars



**Bongo Phonics**

**Phonological Awareness Tasks for  
Rhythmic Speech-based Intervention  
Programme to improve syllable and  
rhyme awareness.**

Designed and composed by  
**John P. Verney**



The Centre for Neuroscience in Education



**Appendix G (b) Rhythmic Speech Intervention**



**Animal Syllable- Segmentation Flash Cards**

1 syllable	2 syllable	3 syllable
Fish	Lion	Elephant
Cow	Rabbit	Kangaroo
Shark	Zebra	Gorilla
Dog	Penguin	Butterfly
Duck	Parrot	Octopus
Pig	Spider	Crocodile
Horse	Panda	Polar bear

**Rhyming Word List**

Cap	Tap
Fan	Man
Hat	Cat
Bear	Chair
Box	Fox
Sea	Tea
Pea	Key
Phone	Bone
Star	Car
Snake	Cake
Carrot	Parrot
Saw	Door
Fish	Dish
House	Mouse
Clock	Sock
Eye	Pie
Honey	Money
Pin	Bin



## Intervention Lesson Week 1

Spring Term January - March

### Resources Toys

Bag of cuddly toys grouped in syllable bags eg Bear, dog, duck etc in bag 1  
Panda, rabbit, etc. in bag 2  
Ladybird etc. in bag 3

Syllable Sticks (Pairs of Wooden Dowels) and Tambourine

### Resources Toys

Bag of cuddly toys grouped in syllable bags eg Bear, dog, duck etc in bag 1  
Panda, rabbit, etc. in bag 2  
Ladybird etc in bag 3

Syllable Sticks (Pairs of Wooden Dowels) and Tambourine  
Animal Syllable – Segmentation Flash Cards (Set of 21)

Learn introductory poem.

### Hello Mister Verney – Hello Mister Verney

How are you today

Start with a whisper and then get a little louder – and end with a big wave.

Say hello to the different animals that the children chose coming from the ‘Syllable bags’.

Clap out the syllables to see which animals have 1, 2, and 3 syllables  
Rabbit Panda Dog etc.

Use the syllable sticks to tap out the rhythm, instead of clapping.

Teach the children the Poem :- it will change every week!! Emphasise (by actions) the rhyming words that will be changed to make the poem ‘funny’ in the future.

‘The Soldiers March’

The soldier marched around with a **hat** upon his **head**  
With a hat upon his head – With a **hat** upon his **head**  
The Soldier Marched around with a **hat** upon his **head**,  
And the drums went Rat – a – Tat – Tat

Tap out Rat – tat – tat with the tambourine.

### Bye Bye Mr Verney – Bye Bye Mr Verney

See you again on Thursday

### Bye Bye Mr Verney – Bye Bye Mr Verney

See you on Friday

**Hat** is changed to **mat** – ‘The soldier marched around with a **mat** upon his **head**  
**Head** is changed to **bed** - ‘The soldier marched around with a **mat** upon his **bed**.

-Teach the poem

‘Rocky The Rabbit’

Rocky is a rabbit and he plays the guitar  
He dances on the stage ‘cos he is a rock star  
He shimmys with the sheep, and he sings with the deer  
He’s the greatest rabbit that you’ll ever hear.

### Intervention Lesson Week 3

Spring Term January - March

#### Resources Toys

Mini maracas used to tap out syllables and become pretend microphones  
Tambourine  
Animal Syllable – Segmentation Flash cards (Set of 21)

Panda and Rabbit and Mouse

Rime matching - Flash Cards (Set of 36)

Tambourine

#### Hello Mister Verney – Hello Mister Verney – Hello Mister Verney

How are you today  
Start with a whisper and then get a little louder – and end with a big wave.

Same for the puppets  
Hello Pat the Panda  
Hello Rocky the rabbit  
Hello Mickey the mouse

Say some more Hello's using Animal Flash cards. Count out syllables for each new poem, and then play a matching game – Does fish match with tiger, or elephant, or dog – **'Syllable Snap'**.

Learn the actions to go with the poem.

Rocky is a rabbit and he plays the guitar

He dances on the stage 'cos he is a rock star

He shimmys with the sheep, and he sings with the deer

He's the greatest rabbit that you'll ever hear.  
shimmy and sing with microphone  
point at the rabbit.

Pretend to use the microphone as you recite the poem and say only the rhyming words

'Mickey the Mouse'

Mickey the **Mouse** – Mickey the **Mouse**

He plays music all round the **house**

Revisit The 'Soldiers March' with more changes of rhyming words that the children can suggest:-

The soldier marched around with a **bat** upon his **shed**

With a hat upon his head – With a **bat** upon his **shed**

The Soldier Marched around with a **bat** upon his **shed**,

And the drums went Rat – a – Tat – Tat

#### Bye Bye Mr Verney - Bye Bye Mr Verney - Bye Bye Mr Verney

See you again on Friday

### Intervention Lesson Week 4

Spring Term January - March

#### Resources Toys

Panda and Rabbit

Rime matching - Flash Cards (Set of 36)

Tambourine

#### Hello Mister Verney – Hello Mister Verney – Hello Mister Verney

How are you today  
Start with a whisper and then get a little louder – and end with a big wave.

Same for the two puppets  
Hello Pat the Panda  
Hello Rocky the rhyming rabbit.

Look at all the flash cards to make sure children know the rhymes, then play a game changing the words in the 'Rocky' Poem as you reveal each pair – "clock rhymes with sock" – "ear rhymes with star" etc.

Which words in this poem 'rhyme' – Rocky the Rhyming Rabbit will help them decide!

Rocky is a rabbit and he's got a **clock**

He keeps his clock inside a **sock**

Rocky is a Rabbit and he's a rock **star**

He drives around in a racing **car**

Revisit the 'Soldiers March' and change as many rhyming words as possible and make up new actions

The soldier marched around with a **cat** upon his **ted**

With a hat upon his head – With a **cat** upon his **ted**

The Soldier Marched around with a **cat** upon his **ted**,

And the drums went Rat – a – Tat – Tat

#### Bye Bye Mr Verney - Bye Bye Mr Verney - Bye Bye Mr Verney

See you again on Friday

**Intervention Lesson Week 5**

January - March

Spring Term

**Resources Toys** Panda and Rabbit  
**Mini-maracas – as pretend microphones**  
 Rime matching Flash Cards (Set of 36)

**Hello Mister Verney – Hello Mister Verney**

How are you today  
 Start with a whisper and then get a little louder – and end with a big wave.

Same for the two puppets  
 Hello Pat the Panda  
 Hello Rocky the rhyming rabbit.

Use the pretend microphones to recite lots of Nursery Rhymes emphasising the rhyming words.

**Hickory / Baa Baa / Twinkle / 12345 and Miss Polly**

Try and chant rhymes without the rhyming words, or with just the rhymes – miming the other words.

Divide the flash cards into three groups to play an ‘odd one out’ game.  
 Sock, clock, car etc.

More new Rocky poems

Rocky is a rabbit and he’s got a **parrot**  
 He feeds his parrot with a big red **carrot** etc..

Make up new action poems with the children’s rhyme suggestions:-  
 “Rocky is in a band so he can play lots of different instruments”

Rocky is a rabbit and he plays the **drums**  
 He plays them best when he’s sitting on his **bum**  
 He shimmys with the sheep, and he sings with the deer  
 He’s the greatest rabbit that you’ll ever hear.

**Bye Bye Mr Verney – Bye Bye Mr Verney** - Bye Bye Mr Verney  
 See you again on Thursday

**Intervention Lesson Week 6**

Spring Term January - March

**Resources Toys** Panda and Rabbit  
**Mini-maracas – as pretend microphones**  
 tambourine  
 Rime matching Flash Cards (Set of 36)  
 Animal Syllable – Segmentation Flash cards (Set of 21)

**Hello Mister Verney – Hello Mister Verney**

How are you today  
 Start with a whisper and then get a little louder – and end with a big wave.

Say some more Hello’s using Animal Flash cards. Count out syllables for each new poem, and then play an ‘odd one out’ game – Elephant – crocodile -bear

Make up new action poems with the children’s rhyme suggestions:-  
 “Rocky is in a band so he can play lots of different instruments”

Rocky is a rabbit and he plays the **piano**  
 He’s the best play that you’ll ever **know**  
 He shimmys with the sheep, and he sings with the deer  
 He’s the greatest rabbit that you’ll ever hear.

Revisit The ‘Soldiers March’ with more changes of rhyming words that the children can suggest:- (It doesn’t matter if they don’t make sense)

The soldier marched around with a **rat** upon his **fed**  
 With a hat upon his head – With a **rat** upon his **fed**  
 The Soldier Marched around with a **rat** upon his **fed**.  
 And the drums went Rat – a – Tat – Tat

**Bye Bye Mr Verney – Bye Bye Mr Verney** - Bye Bye Mr Verney  
 See you again on Friday

**Intervention Lesson Weeks 7**

Spring Term January - March

**Resources Toys**

Panda and Rabbit

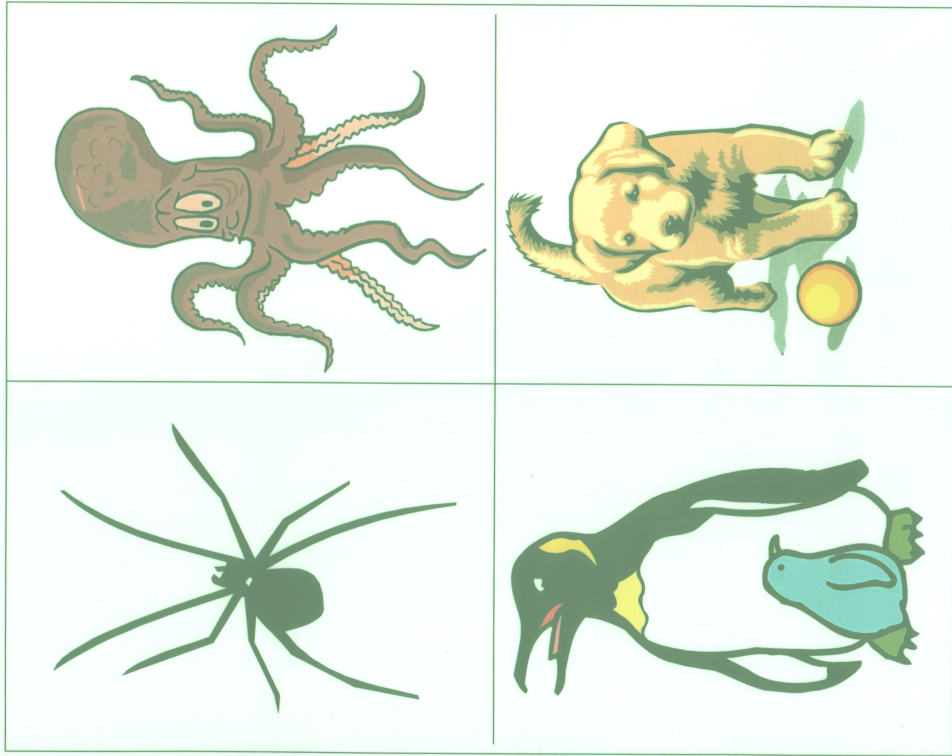
Syllable bags full of cuddly toys

Mini-maracas – as pretend microphones, tambourine

Animal Syllable – Segmentation Flash cards (Set of 21)

Rime matching Flash Cards (Set of 36)

**Examples of flash cards Syllable Segmentation**



**Hello Mister Verney – Hello Mister Verney – Hello Mister Verney**

How are you today

Start with a whisper and then get a little louder – and end with a big wave.

Same for the puppets in the syllable bags

**Hello Pat the Panda**

**Hello Rocky the rabbit**

Play Syllable 'Snap' and 'Odd one out'

Work on Rime matching flash cards 'Rhyme's and 'Odd one out'

Pat works on the syllable counting.

Rocky works on the Rhymes

Revise all the Poems and the Nursery Rhymes with the pretend microphones

Each task starting with their poems and actions.

**Bye Bye Mr Verney - Bye Bye Mr Verney - Bye Bye Mr Verney**

See you again on Thursday

## Appendix H Results for the drumming and singing entrainment tasks in the Full Sample

### Beat Alignment tasks

The rhythmic entrainment data are presented in Table AH1 for the metronome task and the beat alignment to music task, both of which used Bongo drums as the dependent variable. Singing data are presented in Table AH2 (Singing in Time; Singing the Rhyme, -Music; Singing the Rhyme, +Music). Any responses that were +/- 2 SD outside the mean response time for an individual child were first removed from the data (2.08% responses removed in the rhythmic entrainment tests and 4.51% responses removed in the singing tests).

Inspection of the Tables show that in the Full Sample more children contributed scores in the Singing tasks (Table AH2) than in the rhythmic entrainment drumming tasks (Table AH1). The least number of participants to complete the task was nearly always at 1000ms (1 Hz) rate. The highest number of participants was usually at the 500ms (2 Hz) rate.

Table AH1 Beat accuracy (mean in ms) by rhythmic entrainment drumming task, with median in parentheses and standard deviations and total N in square brackets.

Pulse Rate	400 ms	500 ms	666 ms	1000 ms
Metronome	94.9 (93) [31.1, 151]	92.8 (91.5) [37.1, 168]	123.6 (126.0) [47.8, 167]	194.1 (186.0) [83.6, 155]
Beat Alignment to Music	85.0 (83.0) [31.5, 169]	90.5 (86.0) [40.5, 173]	106.2 (103) [41.2, 161]	155.5 (145.0) [64.2, 123]

Table AH2 Beat accuracy (mean in ms) by singing task, with median in parentheses and standard deviations and total N in square brackets.

Task	400 ms	500 ms	666 ms	1000 ms
Singing in Time	71.5 (60.0) [39.4, 169]	73.2 (66.5) [35.0, 178]	72.6 (63.5) [39.5, 170]	120.7 (109) [59.9, 157]
Singing the Rhyme, - Music	89.8 (79.0) [48.8, 172]	66.9 (58.0) [33.4, 176]	77.9 (71.0) [38.4, 173]	84.5 (71.0) [63.5, 175]
Singing the Rhyme, +Music	98.7 (87.0) [59.5, 179]	56.0 (52.0) [29.5, 175]	72.9 (66.0) [37.7, 177]	102.6 (90.0) [55.6, 177]

**(a) Drumming Tasks to metronome and music**

In the Full Study the rhythmic entrainment in the two tasks was compared using a 2 x 4 (Task: Metronome, Music x Rate: 400 ms, 500 ms, 666 ms, 1000 ms) ANOVA. Mean beat alignment in ms was the dependent variable, and missing values in the data were replaced by median scores. The ANOVA showed a significant main effect of Task,  $F(1,191) = 532.5$ ,  $p = .0001$ , because children were significantly more accurate in the music task than in the metronome task overall, and a significant main effect of Rate,  $F(3,573) = 98.7$ ,  $p = .000$ . The significant main effect of Rate was investigated using Tukey post-hoc tests, and arose because the children were equally accurate at the two faster speeds (400 ms, 500 ms), but then declined significantly in accuracy for the 666 ms rate, and declined significantly again in accuracy for the 1000 ms rate ( $p$ 's = .001). There was also a significant interaction between Task and Rate,  $F(3,573) = 82.4$ ,  $p = .0001$ . Post-hoc inspection using Newman Keuls post-hoc tests revealed that children were significantly more accurate in the musical task than in the metronome task in entraining to the beat at all speeds except 500 ms ( $p$ 's = .05). For the 500 ms (2 Hz) rate only, they were as accurate in keeping the beat with the metronome as with a piece of music. For the metronome task, they were equally accurate in keeping the beat at the two faster speeds (400 ms, 500 ms), and were significantly more accurate at these two speeds than at either 666 ms or 1000 ms ( $p$ 's = .001). For the music task,

they were also equally accurate at keeping the beat at 400 ms and at 500 ms, and they were significantly more accurate at these speeds than at either 666 ms or 1000 ms ( $p's < .001$ ).

**In the Full Study the children's rhythmic entrainment was best at 400 ms and 500 ms, and for 500 ms only they did not gain any significant benefit in terms of temporal accuracy from the richer musical experience.**

**(b) Singing to Music**

(i) For the measure of Singing in Time (to the Hello song played at different pulse rates), a one-way ANOVA was run taking Rate as the repeated factor. Mean beat alignment in ms was the dependent variable, and missing values in the data were replaced by median scores. The ANOVA showed a main effect of Rate,  $F(3,573) = 72.0$ ,  $p = .001$ . Post-hoc inspection of the means using Tukey post-hoc tests showed that children were as accurate at singing in time at the rates of 400 ms, 500 ms and 666 ms, but were significantly less accurate at 1000 ms than at all these other rates ( $p's = .001$ ).

**In contrast to keeping time on the Bongo drums, with their own voices in the Full Study children were not only more accurate at the rates of 400 ms and 500 ms, but were also more accurate at the rate of 666 ms in comparison to the slowest rate (1000 ms).**

**(c) Rhythmic entrainment in both Drumming and 'Singing in Time' Compared.**

If a general rhythmic embodiment is present in these young children, then the accuracy of singing in time should be correlated with the accuracy of playing the Bongo drums in time. Relations between temporal accuracy in the rhythmic entrainment and singing tests were explored by computing partial correlations between the beat alignment with music task and the Singing in Time task, taking general cognitive ability (WPPSI) as the covariate (see Table AH3). This was done because the Singing in Time measure was significantly correlated with I.Q. for the rates of 400 ms ( $r = -.213$ ,  $p = .003$ ) and 500 ms ( $r = -.150$ ,  $p = .037$ ), and the beat alignment with music task was significantly correlated with I.Q. for the 500 ms rate ( $r = -.148$ ,  $p = .040$ ). The metronome task was not significantly correlated with I.Q. at any rate. Both the Singing in

Time measure and the beat alignment to music measure used a rich musical accompaniment to support temporal accuracy (drumming or singing). Inspection of Table AH2 reveals that there were many more significant correlations when the rhythmic entrainment task involved a rich musical accompaniment (beat alignment with music correlated with Singing in Time) than when the entrainment task did not involve music (the metronome measures). For those rates that lie within the region of greatest pulse salience (400 ms, 500 ms, 666 ms), the accuracy of playing the Bongo drums in time with a 400 ms rate was significantly correlated with singing in time at the rates of 400 ms and 500 ms ( $r = .176$ ,  $p = .015$ ; and  $r = .212$ ,  $p = .003$  respectively). Drumming accuracy for the 500 ms rate was significantly correlated with singing in time at 500 ms and 666 ms ( $r = .226$ ,  $p = .002$ ; and  $r = .160$ ,  $p = .027$  respectively), as was drumming accuracy for the 666 ms rate ( $r = .172$ ,  $p = .017$ , singing at 500 ms; and  $r = .293$ ,  $p = .000$ , singing at 666 ms). Drumming accuracy at the slowest rate (1000 ms) was significantly correlated with singing at 400 ms ( $r = .148$ ,  $p = .042$ ) and at 666 ms ( $r = .171$ ,  $p = .018$ ). For the pure measure of rhythmic entrainment (drumming in time with the metronome), by contrast, only 4 correlations were significant (drumming at 400 ms and singing at 666 ms,  $r = .151$ ,  $p = .037$ ; drumming at 1000 ms and singing at 400 ms,  $r = .199$ ,  $p = .006$ ; drumming at 500 ms and singing at 666 ms,  $r = .198$ ,  $p = .006$ ; and drumming at 666ms and singing at 500 ms,  $r = .185$ ,  $p = .010$ ).

**In the Full Study Table AH3 suggests that more accurate entrainment in drumming to music was significantly related to more accurate rhythmic embodiment in singing, especially for the 500 ms and 666 ms singing rates (2 Hz, 1.5 Hz). However, of these significant correlations, few would survive Bonferroni corrections for multiple comparisons ( $p$  values  $> .003$ ). Only rhythmic entrainment to music at both 400ms and 500ms was related to singing at 500 ms, and drumming to music at 666 ms and singing at 666 ms, remained significant.**

Table AH 3    Pearsons Partial Correlations between Rhythmic Entrainment and Singing, controlling for I.Q.

Bongo Drum tasks	Singing in Time, 400 ms	Singing in Time, 500 ms	Singing in Time, 666 ms	Singing in Time, 1000 ms
Metronome 400	-0.008	0.093	0.151*	0.134
Metronome 500	0.137	0.031	0.198**	0.120
Metronome 666	0.109	0.185*	0.111	0.104
Metronome 1000	0.199**	0.75	0.104	0.087
Music 400	0.176*	0.212**	0.107	0.073
Music 500	0.077	0.226**	0.160*	0.043
Music 666	0.062	0.172*	0.293**	0.117
Music 1000	0.148*	0.047	0.171*	0.124

**(d) Rhythmic entrainment in the Singing The Rhyme Tasks in the Full Study**

The two singing tasks in which the missing rhymes had to be supplied also used the child's voice as the dependent measure, hence singing the rhyme on time with the beat in these two tasks (-Music, +Music) was compared using a 2 x 4 (Task: Singing the Rhyme, -Music; Singing the Rhyme, +Music; x Rate: 400 ms, 500 ms, 666 ms, 1000 ms) ANOVA, taking mean beat alignment in ms as the dependent variable. Missing values in the data were again replaced by median scores. The ANOVA showed a significant main effect of Rate,  $F(3,573) = 4.8$ ,  $p = .002$ . This arose because the children were best of all at singing on time with the beat for the 500 ms pulse rate, even compared to the rate of 666 ms,  $p < .001$ . They were most accurate next at the rate of 666 ms, for which keeping the beat was significantly more accurate than for the slowest rate (1000 ms) and the fastest rate (400 ms,  $p$ 's = .001). Singing the Rhyme at the slowest (1000 ms) and fastest (400 ms) speeds did not differ in accuracy, and children were significantly poorer at keeping time when singing at both of these pulse rates ( $p$ 's < .001). The main effect of Task was also significant,  $F(1,191) = 9.1$ ,  $p = 0.003$  but the interaction between Rate and Task was highly significant,  $F(3,573) = 50.3$ ,  $p = .0001$ . Post-hoc inspection of the interaction using Newman-Keuls post-hoc tests showed that for the most accurate temporal rate (500 ms), children were significantly more accurate at keeping the beat in the

+Music condition (56 ms), where they were singing along to rich musical accompaniment, than in the –Music condition (voice alone, 67 ms,  $p = .01$ ). For the second most accurate temporal rate (666 ms), keeping to the beat was equivalent across the two conditions (+Music, 73 ms, -Music, 78 ms). The -Music condition was more helpful with respect to keeping time at the very slow rate of 1000 ms (85 ms versus 103 ms,  $p = .001$ ), and also at the fastest rate of 400 ms (90 ms versus 99 ms,  $p < .05$ ).

In the Full Study the 500 ms (2 Hz) rate was the temporal rate for which rhythmic accuracy was highest. There was a benefit from a + Music experience for the most accurate speed (500 ms), as keeping the beat was significantly better at this rate when the children were singing along to music than to a voice alone.

**e) Relationships between Beat Alignment and Phonological Awareness tasks in the Full Study**

I next explored possible relations between rhythmic timing and beat alignment and children's performance in the phonological awareness tasks.

Table AH4 Pearson's Partial Correlations between Rhythmic Entrainment and Phonological Awareness, controlling for I.Q.

*(all Phonological Awareness Scores = percentages)*

Bongo Drum tasks	Oral Rhyme	Picture Rhyme	Oral Syllable	Picture Syllable
Metronome 400	-0.072	-0.139	-0.148*	0.112
Metronome 500	0.071	-0.101	-0.130	0.097
Metronome 666	-0.027	-0.073	-0.022	0.056
Metronome 1000	-0.101	-0.028	0.119	0.041
Music 400	-0.082	-0.129	-0.086	-0.102
Music 500	-0.184*	-0.199**	-0.177*	-0.147
Music 666	-0.094	-0.210**	-0.146	-0.010
Music 1000	-0.036	-0.097	0.040	0.124

\* $p < .05$ , \*\* $p < .01$ .

Performance in all four of the phonological awareness tasks was significantly correlated with I.Q., hence I.Q. was controlled using partial correlations (oral rhyme percentage score and WPPSI,  $r = .330$ ,  $p = .000$ ; picture rhyme and WPPSI,  $r = .344$ ,  $p = .000$ ; oral syllable and WPPSI,  $r = .520$ ,  $p = .000$ ;

and picture syllable and WPPSI,  $r = .291$ ,  $p = .000$ ). Given the hypothesised relationship between rhythmic entrainment and syllable-level entrainment to the speech stream, we expected to find relations between temporal accuracy and phonological awareness at both linguistic levels (the P-centre both marks syllable onset and is a cue to the onset-rime division of the syllable, thereby aiding rhyme awareness). Relations for the rhythmic entrainment tasks (temporal accuracy on the Bongo drums to the metronome and to music) are shown in Table AH 4. Relations for the singing tasks (Singing in Time, Singing the Rhyme with and without musical accompaniment) are shown in Table AH6.

Inspection of Table AH4 reveals only one significant relationship for the metronome task. Drumming at the 400 ms (2.5 Hz) rate was significantly related to performance in the oral syllable task ( $r = -.148$ ,  $p = .048$ ). For the drumming to music task, both the 500 ms (2 Hz) and 666 ms (1.5 Hz) rates showed significant correlations with phonological awareness. For the 2 Hz rate the significant correlations were with oral rhyme awareness, picture rhyme awareness, and oral syllable awareness ( $r = -.184$ ,  $p = .020$ ,  $r = -.199$ ,  $p = .008$  and  $r = -.177$ ,  $p = .018$ , respectively). For the 1.5 Hz rate, there was a highly significant relationship with the picture rhyme awareness only ( $r = -.210$ ,  $p = .005$ ). Hence for different measures of rhythmic entrainment (to a metronome versus to music), all the rates of greatest pulse salience (2.5 Hz, 2 Hz and 1.5 Hz) showed some significant correlations with oral language processing (phonological awareness of rhymes and syllables). The most consistent relationships between rhythmic entrainment and phonological awareness occurred for drumming to music at 500 ms (3 out of 4 correlations significant, and the correlation with the picture syllable task just missed significance,  $r = -.147$ ,  $p = .056$ ). So individual differences in the temporal accuracy of entrainment by young children do show some significant connections with their phonological awareness.

For the singing measures (Singing in Time, Singing the Rhyme, see Table AH5), there were very few significant correlations between phonological awareness and temporal accuracy (3 significant correlations only). For the Singing in Time measure there were no correlations. For the Singing the Rhyme measure, the 400 ms rate in the +Music task was significantly correlated with

picture rhyme,  $r = -0.179$ ,  $p = .017$ , and with picture syllable,  $r = -0.184$ ,  $p = .016$ ). In the Singing the Rhyme measure - Music there was one significant correlation between drumming at 666ms and the Picture Rhyme test,  $r = 0.147$ ,  $p = .05$ . Hence even though singing is a good measure of rhythmic embodiment, temporal accuracy was not strongly related to phonological awareness. Further, none of the significant correlations for the drumming nor singing measures would survive Bonferroni corrections.

Table AH5 Pearson's Partial Correlations between Singing Tasks and Phonological Awareness, controlling for I.Q.

*(all Phonological Awareness scores = percentages)*

Voice tasks	Oral Rhyme	Picture Rhyme	Oral Syllable	Picture Syllable
Singing in Time, 400	-0.057	-0.091	-0.001	-0.049
Singing in Time, 500	-0.066	-0.077	-0.116	-0.150
Singing in Time, 666	0.064	-0.121	-0.136	0.039
Singing in Time, 1000	0.007	-0.011	0.086	0.076
Rhyme, -Music 400	-0.140	-0.106	-0.073	-0.078
Rhyme, -Music 500	-0.010	-0.119	-0.108	-0.062
Rhyme, -Music 666	-0.108	-0.147*	0.016	-0.099
Rhyme, -Music 1000	-0.118	-0.076	-0.062	-0.069
Rhyme, +Music 400	-0.137	-0.179*	-0.027	-0.184*
Rhyme, +Music 500	-0.036	-0.046	-0.142	-0.006
Rhyme, +Music 666	0.055	-0.071	-0.030	0.055
Rhyme, +Music 1000	-0.147	-0.056	-0.118	-0.031

\* $p < .05$ , \*\* $p < .01$