



The Gillon Phonological Awareness
Training Programme

*An intervention programme for children at risk for
reading disorder*

Programme Handbook

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1. Introduction

The Gillon Phonological Awareness Training Programme was developed by Professor Gail Gillon, Pro-Vice-Chancellor, College of Education at the University of Canterbury (formerly a researcher in Speech and Language Therapy, in the College of Science at UC). The programme was designed for a research intervention study funded by the New Zealand Foundation for Research Science and Technology. The research investigated phonological awareness training effects on the phonological awareness ability, speech production, and literacy development of 5- to 7-year-old New Zealand children with spoken language impairment (Gillon, 2000). The notes contained in this handbook formed part of the training package that the speech–language therapists involved in the research project received and were intended to be supplemented with a training workshop and video demonstration of the activities. Since the completion of the project in 1998, the notes have been modified for more general use, new activity sheets have been added, and information suggesting how phonological awareness activities may be integrated with goals for speech production has been included.

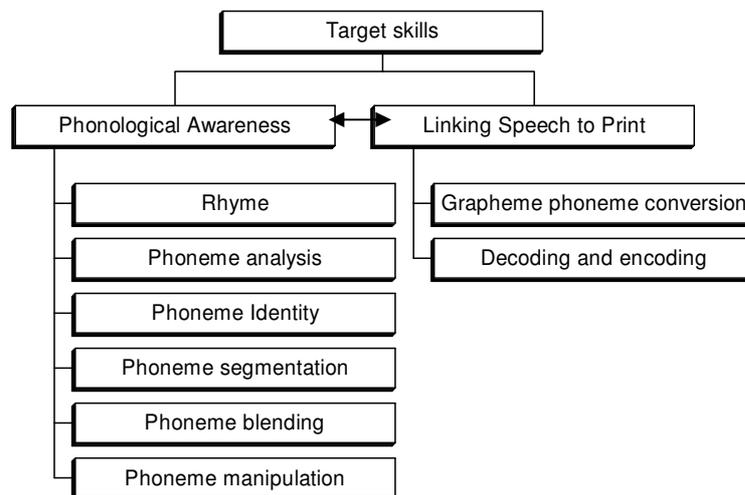
Findings from previous research in phonological awareness intervention directed the development of the programme activities. The key principles that formed the basis for the programme content are summarised below. A discussion of the research supporting these principles is provided in Gillon (2004).

1. Phonological awareness training should focus on the development of skills at the phoneme level (Brady, Fowler, Stone, Winbury, 1994; Brennan & Ireson, 1997; Cary & Verhaeghe, 1994; Lundberg, Frost, & Petersen, 1988; Yopp, 1988).
2. Phonological awareness activities should be integrated with letter sound knowledge training (Cunningham, 1990; Hatcher, Hulme, & Ellis, 1994).
3. A range of phoneme analysis and synthesis activities should be incorporated with particular attention given to phoneme segmentation skills (Ayres, 1995; O'Connor, Jenkins, Leicester, & Slocum, 1993; Schneider Kuspert, Roth, & Vise, 1997; Torgesen, Morgan, & Davis, 1992).
4. The integration of letter sound knowledge with phonological awareness activities should include manipulative materials and should engage the children in reflecting upon the phonological awareness task (Alexander, Andersen, Heilman, Voeller, & Torgesen, 1991; Clarke-Klein, 1994; Cunningham, 1990; Defrior & Tudela, 1994; Gillon & Dodd, 1995, 1997; Truch, 1994).
5. Flexibility in programme implementation is required (Brady et al., 1994).
6. A direct approach to phonological awareness training has greater benefits for literacy development than an indirect approach (Ayres, 1995).
7. An intensive individual or small group model of service delivery is necessary for children with severe deficits (Brady et al., 1994; Byrne & Fielding-Barnsley, 1995; Torgesen, Wagner, & Rashotte, 1994).

The results from the research project suggested that the programme content based on these principles proved highly effective in developing the phonological awareness and reading ability of children with spoken language impairment. Improvements in the children's speech production skills were also evident following training (Gillon, 2000). Follow-up assessment 11 months post intervention revealed that the benefits of the programme were maintained over time (Gillon, 2002).

The programme was designed for children with spoken language impairment who had normal intellectual ability, English as their first language, had no sensory, neurological, physical, or emotional disorders, and had adequate receptive language abilities to comprehend the vocabulary and instructions in the activities. The main area of spoken language difficulty for the children who participated in the research project was their expressive phonology, with all the participants demonstrating delayed or disordered speech development. The programme was also designed to be implemented by a speech-language therapist in 2 one-hour individual sessions per week for a total of 20 hours. It is anticipated, however, that the programme can easily be adapted for other populations and other models of service delivery. Initial insights suggest the programme may be successfully adapted for children with severe visual impairments (Young & Gillon, 1997) and to group settings with speech-language therapists working with teachers and teacher aides (Watson & Gillon, 1999).

1.1 Programme Overview



1.2 Programme Materials

NB: If downloading this programme from on-line it is recommended that the materials are printed out in colour and laminated before use. Sets of these materials already prepared and laminated are available for purchase (see order form on the website).

- ◆ Programme booklet
- ◆ Alphabet letters for wooden blocks - 1 set of 56 wooden letter blocks (The template for these letters is available on-line and these letters may be pasted onto blocks or copied onto hard cardboard and laminated)
- ◆ 1 set of small coloured blocks (Coloured counters may be used or coloured blocks can be purchased from educational outlets)
- ◆ 3 rhyme bingo boards
- ◆ 2 yellow rhyme picture sheets to be cut into cards
- ◆ 1 rhyme word sheet
- ◆ 1 phoneme analysis (discrimination) board
- ◆ 3 phoneme segmentation bingo boards
- ◆ 3 blue phoneme segmentation bingo picture sheets to be cut into cards
- ◆ 9 phoneme identity picture cards¹
- ◆ 6 phoneme segmentation and blending sheets
- ◆ 6 sound-symbol boards
- ◆ 3 sheets of alphabet letters to be cut into cards
- ◆ 2 word bingo boards (to be cut in half) and 2 matching word sheets to be cut into cards
- ◆ 5 picture game sheets. These game sheets may be photocopied for use in the programme.
- ◆ 3 tracking sounds changes sheets and 1 blank sheet for individualised lists.
- ◆ 1 reward poster
- ◆ 1 time chart

Two sound-symbol boards using Maori pictures and words are included are included for use in New Zealand. The author gratefully thanks He Wahi Whakairo for the use of these pictures.

¹ The clip art pictures used in the programme materials are from Corel Gallery (1994, 1999).

1.3 Pre-Programme Activities

Prior to beginning phonological awareness training, prepare activities and games to teach children (or check their knowledge of) the following language concepts:

same /different

first / middle /last

beginning /end

number concept to four

concept of a **word** and a **sound** in a word.

1.4 Teaching issues

- Articulation of phonemes

When segmenting words into sounds (phonemes) or saying sounds in isolation only the target phoneme should be articulated. Avoid adding a vowel to the target phoneme unnecessarily.

Example:

/p/ **not** puh

/n/ **not** ni as in **nip**

/s/ **not** si as in **sit**

- Segmenting words into phonemes

When segmenting words into individual phonemes, cluster sounds should be separated. For example,

tree has 3 phonemes: t-r-ee

chips has 4 phonemes: ch-i-p-s

star has 3 phonemes: s-t-ar

mist has 4 phonemes: m-i-s-t

street has 5 phonemes: s-t-r-ee-t

Remember to segment by phonemes and not by the number of letters in a word.

For example,

shop has 3 phonemes: sh-o-p

bath has 3 phonemes: b-a-th

church has 3 phonemes: ch-ur-ch

back has 3 phonemes: b-a-ck

- Correcting speech and reading errors

When the child makes an error develop the child's awareness for why the word is incorrect as appropriate to the child's phonological abilities. When reading and spelling words use problem-solving strategies to decode and encode the word accurately.

Example Target word : car

Child: tar

Therapist: *When you say tar I hear a /t/ sound at the beginning. Car starts with a /k/ sound. Car, hear the /k/ sound at the beginning. Let's try saying car with a /k/ sound.*

Child: car

Therapist: Great, now I hear the /k/ sound.

Target word: bus

Child: bu

Therapist: *When you say bu I can't hear the last sound. Bus has three sounds b..u..s.. (segmenting the word and placing out three blocks to represent the three sounds). Try saying bus with three sounds... bus (touching each block to correspond with each sound in the word).*

Target: Written word cat

Child reads the word as cap

Therapist *Good try the word starts with a /k/ sound, but let's see if we've got a match. When you say cap I hear a /p/ sound at the end but I can see the letter t (pointing to the final letter) t makes a /t/ sound... Mmm.. so I know it can't be cap. Let's see if we can work it out. ca t cat (working together with the child).*

- Praise

Give the child plenty of praise and encouragement as the he or she attempts the activities. Positively reinforce the parts of the activity that the child has correct and correct errors in a positive manner. When appropriate, give additional prompts until the child achieves success.

Example: Phoneme segmentation error: the child brings down 5 blocks for the word run.

Therapist: *Good try you're hearing lots of sounds in that word run. Let's listen again as I say the word slowly r u n. How many sounds did you hear?*

Child: 5

Therapist: r u n (placing a block out as each sound is spoken so that only three blocks are in front of the child)

Child: *Oh, there are three sounds*

Therapist: *Good listening. Run, (saying the word together but touching each block to correspond with each sound) yes there are three sounds.*

Programme Activities

2. Rhyme

2.1 Aim

To teach children to identify phonological similarities in spoken word pairs.

2.2 Resources

Three Rhyme Bingo laminated boards
 Two yellow picture sheets to be cut into cards
 One sheet of rhyme words to be cut into cards
 Small coloured blocks to act as counters in the bingo game

BOARD 1	Rhyme Word	BOARD 2	Rhyme word	BOARD 3	Rhyme word
boat	goat	man	pan	clock	block
bee	knee	meat	feet	rose	nose
bat	hat	coat	goat	tree	knee
tie	pie	key	knee	ring	king
fan	pan	drum	thumb	van	pan
hose	nose	nail	mail	sun	gun
house	mouse	bear	pear	rat	hat
fish	dish	cat	hat	snake	rake

2.3 Activities:

- Identifying rhyming words

Begin the activity by discussing what rhyming words are. Give plenty of examples of rhyming words. Use the rhyme bingo picture boards to identify rhyming words. Ask the child to name the pictures in each row. Work with the child to identify the rhyming words. Encourage the child to repeat the words aloud and listen carefully to the sounds in the words.

Example:

Therapist: *Do fish and hat rhyme?*

Child: *Fish Hat. No, they don't rhyme*

Continue working through the boards in this manner

Do fish and dish rhyme?

Do hat and dish rhyme?

Do hat and cat rhyme? etc

Encourage the child to identify the rhyme unit in the words.

*king /ring they both end in **ing***
*cat /hat they both end in **at***

- Rhyme Bingo Game.

Place the yellow cards face down on the table. Place a rhyme bingo board in front of each player. Take turns with the child to pick up a yellow card, say the word, and find the rhyming match on the Bingo Board. When you or the child have a rhyming word on your board place a coloured block onto the picture. The winner is the first player with a coloured block on each picture on his or her rhyme board.

Example:

Therapist: *I've picked up a picture of a hat. What rhymes with hat? (Move the picture along the board and verbalise your thoughts as you try to find the rhyming word).*
hat van, no, they don't end the same. They don't rhyme.
*hat sun...mmm.. **hat sun** (emphasising the final sounds). Do you think they sound the same at the end? No they don't rhyme*
hat rat ...hat rat . Yes, they sound the same at the end, they rhyme. Hat and rat are rhyming words.
Do you have any words on your board that rhyme with hat?
 Prompt: *Have a look down here* (pointing to the pictures of bear and cat)
Yes, cat rhymes with hat cat hat. Hear how they sound the same at the end.
Now it's your turn to pick up a card.

Remember to keep the focus of the rhyme activities on teaching children to become aware of the sounds in the word and which sounds are the same.

- Rhyme Generation Game

Place the yellow cards from the rhyme bingo game face up onto the table. Throw a block and try to land on one of the pictures. Generate as many rhyming words (or non words) as you can for each picture.

- Extension activity

Cut the words from the rhyme word sheet into individual cards (man, pan, meat, feet etc). As the child identifies a rhyming pair, ask the child to find the words in written form on the rhyme word cards. Only put out a few words at one time. That is, place the target words and a few distracters on the table.

Example

Therapist: *Bat cat, yes they are rhyming words. Let's see what these words look like when they are written down* (place out the words bat, cat, bee, feet, pan).
Let's look for the word bat. It starts with a /b/ sound.
Child: points to bee.
Therapist: *Good try, bee starts with a /b/ sound, but listen to the end of the word: bat. What sound can you hear at the end? Bat, yes a /t/ sound.*

Let's see if we can find a word that matches what we say. Bat, (find the word bat) Yes, that word starts with a /b/ and ends with a /t/. It says bat. Now let's see if we can find cat. These words say bat cat... they sound the same at the end and they look the same at the end.

Introduce words that rhyme, but are not orthographically similar (e.g., key, bee) only when the child is confident finding regular rhyming words.

- Integrating activity with speech production goals

Create a new picture board using commercially available picture sheets for phonological process therapy, or articulation picture sheets of a target sound. Throw a block onto the board, say the target speech word and generate rhyming words for the target word.

Play rhyme-matching games using speech production target words.

Example: target practice words: /s/ clusters
Therapist: *Do snake and snail rhyme?*
Child: *Snake, snail no they don't end the same*
Therapist: *Do snake and stake rhyme?*
Child: *Snake, stake yes they are rhyming words.*
Therapist: *Do skate and school rhyme?*
Child: *Skate, school no they don't rhyme*
Therapist: *Do skate and state rhyme?*

3. Phoneme analysis

Adapted from the Auditory Discrimination In depth Programme (Lindamood & Lindamood, 1975).

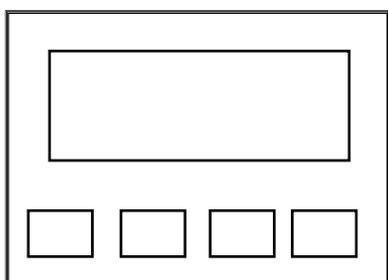
3.1 Aim

To teach children to analyse and manipulate sounds in isolation.

3.2 Resources

Coloured blocks

Phoneme discrimination board



3.3 Activities

- Manipulating phonemes in isolation

Place the coloured blocks in the large box at the top of the page provided. Bring down the blocks into the smaller blocks below to match the number of sounds heard and whether the sounds heard were the same or different. If the child hears two sounds that are the same use two blocks the same colour. Begin with wide sound contrast sounds and move to finer sound contrasts.

Demonstrate the activity to the child by giving the instruction and verbalising what you are doing as you complete the instruction.

Example:

Therapist: *Show me /p/ /p/ (pause briefly between each sound).*

Prompt the child to bring down two blocks the same colour from the larger top square and place them in the first two small squares. Choose any colour block (i.e., no one colour represents a particular sound). Ask the child to repeat the sounds /p/ /p/ as he/she touches each block.

Therapist: *If that says /p/ /p/ (touching the blocks) show me /s/ /p/.*

Child: The child changes the first block to a different colour and says the new sound pattern /s/ /p/ as he/she touches the individual blocks. Encourage the child to verbalise the change... *The first sound changed.*

Therapist: *If that says /s/ /p/ show me /s/ /m/.*

Child: changes the last block and says: /s/ /m/ *the last sound changed.*

Therapist: *If that says /s/ /m/ show me /s/ /m/ /m/.*

Continue working down the chart below in this manner and add your own combinations as appropriate to the child's needs.

Wide contrasts	Finer contrasts
p p	t d
s p	t d d
s m	t d
s m m	s d
s m d	s sh
m d	s sh sh
w d	s sh
z w d	f sh
z w w	f z
z w	f z z
f w	b z z
f g	b z
f g g	b p

- Integrating activity with speech production goals.

Begin by using sounds that are within the child's phonetic repertoire and progress to using target sounds for the child's speech production goals. Adapt the activity accordingly.

4. Phoneme Identity

4.1 Aim

To teach children to identify phonemes in words.

4.2 Resources

Nine coloured picture sheets in various semantic groupings.

Animals	Food	Transport	Sport	Medial sounds
dog /deer	corn/cake	car/van	net/bat	pencil/ puppy
cat/bear	pea/pear	bus/bike	ball/boot	beetle/bottle
seal /pig	soup/egg	train/truck	dart/ surf	apple/candle
fox/ fawn	chop/chips*			coffee/camel
mouse /horse	ham/plum			monkey/turkey
cow/goat	cheese/meat			lemon/ kitten
				muffin/melon
				turtle/tiger
				chicken/raccoon

*the word chips or fries can be used for this picture

4.3 Activities

- Identifying consonant sounds in words.

Use the picture sheets in semantic category groupings to identify whether words start with the same sound.

Example Animal picture sheet

Therapist: *Here are some pictures of animals. Can you tell me what all the animals are called? (Child responds and the therapist discusses the animals as necessary). Listen to the sounds in these words. Listen to the word Dog. Dog starts with a /d/ sound and deer starts with a /d/ sound. Dog, deer, they both start with a /d/ sound.*

Do cat and cow start with the same sound?

Child: *Cat , cow, yes they start the same.*

Therapist: *Good listening. Cat, cow, both start with a /k/ sound.*

Therapist: *Do seal and dog start with the same sound?*

Child: *Yes*

Therapist: *Listen again: seal dog. Seal starts with a /s/ sound and dog starts with a /d/ sound. Let's try another one. Do seal and deer start with the same sound?*

Repeat the activity within each semantic category of food, sport, and transport. Teach the vocabulary as necessary. Progress to working across categories.

Example:

Do soup and seal start with the same sound?
Do bike and bear start with the same sound?
Do boot and cat end with the same sound?

Repeat the activity listening for final sounds

Do boot and dart end with the same sound?
Do cake and bike end with the same sound?
Do soup and cheese end with the same sound?

- Sound categorisation activity

Identify all the words on the picture sheets that start with a target sound. Begin with initial sounds and progress to final sounds. Place the letter for the target sound out in front of the child at each turn.

Example: Place out the letter b

Therapist: *Let's find all the pictures that start with a /b/ sound. (Say each word as you find the picture: bus, bike, boot, bat, bear, ball). Can you think of other words that start with /b/ sound? Are there any things in this room that start with a /b/ sound? (e.g., box, book etc).*

Repeat this activity using a variety of target sounds.

Reinforce this phoneme identity task by playing a game with the picture sheets. Place all the picture sheets (excluding medial consonant sheets) out onto the table. Place a letter block/s (e.g., c and k) in the middle of the table. The child and therapist race each other to identify all the pictures that start with the sound of the letter by placing a coloured block or counter on each picture that starts with the target sound.

Example:

Therapist: *Lets find all the pictures that start with /s./ Ready, go! (The child and therapist race each other to find pictures starting with /s/ and place a coloured block on the picture). What words did you find that start with /s/? (Ask the child to say the words. Model the correct articulation as necessary).*

Correct errors as appropriate. For example: The child identified mouse as starting with a /s/ sound.

Therapist: *Good try. I can hear a /s/ sound in that word, but let's listen again: mouse. What sound does it start with? Mouse (repeating the word). Yes, mouse starts with /m/ and the /s/ sound is at the end.*

Repeat the above activities listening to the final sounds.

Example: *Find all the pictures that **end** with a /t/ sound (place out the letter t).*

- Odd one out phoneme identity game.

Therapist: *I'm going to point to three pictures. Listen to the beginning of each word and tell me which one starts with a different sound: bear bat car*

Child: *car*

Therapist: *Yes, car starts with a /k/ sound (pointing to the letter c) and bear and bat start with a /b/ sound (pointing to the letter b). As the child's skills improve ask the child to find the letter block to match the initial phoneme of each word.*

Continue in the above manner with a variety of sounds. Ensure that you alter the pattern of the target words.

cheese egg chop
soup pear pea etc

Repeat the activity listening to final sounds.

Therapist: *Listen to the end of each word and tell me which one has a different end sound.*

Corn cake bike (pointing to the appropriate pictures)
Ham cheese plum
Pig dog seal etc

- Extension Activity: Medial consonants

Use the phoneme identity sheets with medial sounds to identify words with the same medial consonant.

- Integrating activity with speech goals.

Integrate speech production targets through awareness of initial and final sounds.

Example : Child says tar for car when identifying pictures that start with a /k/ sound.

Therapist: *When you say tar I hear a /t/ sound at the start. Car begins with a /k/ sound. Can you make car start with a /k/ sound. Model the sound and word as appropriate.*

Create new phoneme identity picture sheets using the template provided with words that target the child's speech production goals (e.g., integrate some minimal pair pictures). Identify the beginning sound in each word and find the corresponding letter for the initial sound. Ask the child to repeat the words or use role reversal techniques to give the child practice at articulating the target words.

Example: target: use of fricative sounds in single words (e.g., sh sound)

Therapist: *Do shop and top start with the same sound?*

Child: *shop, top, no they don't start the same*

Therapist: *shop starts with a sh sound can you find the sh letter block*

What sound does top start with?..... can you find the /t/ letter block.

5. Phoneme segmentation

5.1 Aim

To teach children to analyse words at the phonemic level.

5.2 Resources

Coloured blocks

Three phoneme segmentation bingo boards

Three phoneme segmentation bingo pictures on blue card to be cut into individual cards

Six segmentation and blending boards

5.3 Activities

- Selecting words from a story.

Choose a short story to read to the child. Select nouns from the story and identify the number of sounds in the word (phonemes, not letters). Ask the child to clap out the sounds and then say the word together. For example, cat: “c-a-t” “cat”. Initially select words with two or three phonemes and then move to four by introducing two consonant clusters (e.g., tr, pl, sp, sl.) Remember to clap out two sounds for the cluster sound. For example; train: t-r-ai-n = 4 sounds (4 claps). Ch, sh and th are one sound, for example, ch-ur-ch = 3 sounds (3 claps).

- Phoneme segmentation bingo game.

Play bingo with the phoneme segmentation bingo boards and cards. Each player has a picture bingo board. Place the matching pictures on blue card in a pile face down on the table. Pick a card from the pile and say the name of the picture. Identify how many sounds the word has and represent the number of sounds with the coloured blocks. Place the card over the picture on the appropriate bingo board.

Begin the game by asking the child to name the pictures on the three boards. Model the correct articulation as necessary.

Bird, duck, owl, hat, cake, bear (target word *big* i.e., *a bear is very big. How many sounds in the word big?*)

Key, sew or pin, bee, car, pie, egg (or nest if you wish to introduce 4 sounds)

Sheep, goat, cat, cow, ape, dog

Example: The therapist picks up a picture of a dog.

Therapist: *Dog*

Initially articulate the word slowly and carefully so the child can identify each sound in the word. As the child’s skills improve use a normal articulation rate.

Listen to each sound in the word dog? d o g (segmenting the word).

Place three different coloured blocks in the middle of the table and touch each block as you say each sound in the word dog. Use a different coloured block for each different sound heard in the word.

I heard three sounds, dog.

Say the word slowly and point to a block to correspond with each sound in the word. The blocks should be placed next to each other to contrast against sounds in isolation.

Now it's your turn. What picture have you found?

Child: *sheep*

Therapist: *What sounds can you hear in the word sheep?*

Child: no response

Therapist: *Try saying the word slowly... sh ee p.*

Child: sh ee p

Therapist: *That's right there are 3 sounds. Can you put out three blocks and touch the blocks as you say the sounds.*

Child: *sheep ... drawing out the articulation of the word and touching the blocks to correspond with each sound.*

- Phoneme segmentation and blending sheets

Example: Picture with a horse and four carrots.

Place the coloured blocks at the top of one side of the picture as shown in Figure 1.

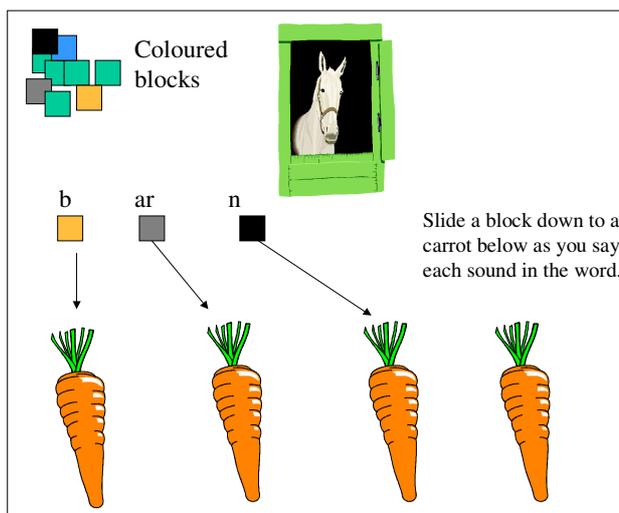
Therapist: *Here is a picture of a horse. He'd like some carrots to eat. I'll say a word and I want you to show me how many sounds are in the word. We'll give the horse one carrot for each sound we hear.*

*This horse lives in a **barn**. How many sounds can you hear in the word barn? B ar n (segmenting the word). Bring down one block at a time and place on a carrot below the horse to represent each sound.*

He got three carrots to eat.

At the completion of each turn clear the blocks from the carrots and place over the other side of the board.

Figure 1: Phoneme segmentation example



Gillon PAT Programme: Segmentation and Blending

Continue working through the phoneme segmentation and blending sheets in this manner. Ask the child to repeat the word and segment the sounds in each word.

Suggestions for discussion topics and related words to segment:

Horse: Talk about what a horse likes to do and eat.

Words to segment: rein, eat, nose, barn, horse, food, hay, run

boat : Talk about a lifeboat and how it might be used to save someone in the sea.

Words to segment: sea, boat, rope, in, save, man, boy, girl

Here is a picture of a lifeboat and here are some life rings. I'll say a word and I want you to show me how many sounds you hear in the word.

Place a block on a life ring for each sound you hear.

rabbit: Talk about a rabbit and what it likes to eat.

Words to segment: food, run, hop, green, white, eat, fur

Here is a picture of a rabbit. He'd like some lettuces to eat. I'll say a word and I want you to show me how many sounds are in the word.

We'll give the rabbit one lettuce for each sound we hear.

money: Talk about what might happen to the gold.

Words to segment: coin, out, drop, rob, bag, cash

Here is a bag of gold. The bag has a hole in the bottom. I'll say a word and I want you to show me how many sounds you hear in the word.

Imagine one coin drops out of the bag for each sound you hear. For example, coin, c-oi-n, (bring down one block at a time for each sound heard and place on the gold coins below the money bag). I heard three sounds so three coins dropped out of the bag.

cat fishing: Imagine a cat fishing in a goldfish bowl!

Words to segment: fish, swim, fin, hook, line, rod, bowl, cat

Here is a picture of a cat trying to catch a fish. Imagine the fish are too clever for the cat and they swim away. I'll say a word and I want you to show me how many sounds are in the word. Imagine one fish gets away

for each sound you hear. For example, swim, s-w-i-m (bring down one block at a time for each sound heard and place on the fish below the cat). I heard four sounds so four fish got away.

swimming: Talk about swimming in a pool:

Words to segment: swim, boy, dive, in, pool, breath, kick, arm, leg

Here is a picture of a boy swimming. I'll say a word and I want you to put one block on each blue square for each sound you hear. For example

dive: d-i-ve, I heard three sounds so I'll bring down three blocks.

6. Phoneme Blending

6.1 Aim

To teach the child to blend isolated sounds together to form words.

6.2 Resources

Phoneme segmentation and blending sheets

Phoneme bingo cards and boards

Coloured blocks

6.3 Activities

- Segmentation Bingo Boards

Use the activities for phoneme segmentation in a reverse manner to teach the child to blend sounds together. For example, when using the bingo cards say the name of one of the words in a segmented manner and ask the child to say the word blended together.

Therapist: I'll say a word slowly and see if you can guess what picture it is: *b...ird*

Child: bird

Example: using the segmentation and blending sheets

Therapist: *I'll say a word very slowly and see if you can guess the word: b....ar....n*

Segment the word and place three blocks on the carrots below the horse (one block per carrot). When the child guesses the word barn sweep the blocks together and reinforce the correct articulation.

That's right the word was barn

Therapist: H....or....se

h...ay

f...oo...d

Continue working through the segmentation sheets in this manner.

7. Tracking Speech Sounds

7.1 Aim

To teach children skills in phoneme segmentation, blending, and phoneme manipulation.
To teach children to identify the number and order of sounds in a sequence using coloured blocks.

7.2 Resources

Adapted from the Auditory Discrimination in Depth Program (Lindamood & Lindamood, 1975)

Coloured blocks

Tracking sound sheets

7.3 Activities

- Identifying sound changes with coloured blocks.

Work down the columns in the tracking sound sheets using the same phrase pattern to present each stimulus item.

Show me _____

If that says _____, show me _____

Example: Working down the first column of tracking sheet 1.

Therapist: *I'm going to say some words, or parts of words, and I want you to show me the sounds you hear with the coloured blocks. I'll try some first.*

arm

I heard two sounds ar m (segmenting the word) so I'll put out two blocks....arm Say the word together but touch the first block as you say the ar sound and the last block as you say the m sound. Place the blocks beside each other and use two different colours to indicate that there are two different sounds as shown in Figure 2.

That says arm and now I want to show art arm.... art ...I heard a different last sound so I'll change the last block.

Change the last block to a different colour and then repeat the new word as shown in Figure 2

Art Touch the first block for the ar sound and the second block for the t sound.

That says art and now I want oot

Art ...oot..... the first sound has changed so I'll change the first block... oot

Touch the first block for the oo sound and the second block for the /t/ sound

Now you try

Therapist: *If that says oot (pointing to two different coloured blocks placed together in front of the child) show me oom*

Child: fails to respond

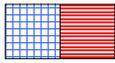
Therapist: *That says oo t (Say the word slowly and touch the first block as you say oo and the last block as you say /t/) Now I want oom*

Touch the blocks and emphasise the m sound as you touch the second block

Oh the last sound changed so we need to change the last block

- If that says oom show me oof*
- Child:** changes the last block to a different colour and says *oof*
- Therapist:** *That's right and what happened?*
- Child:** *The last sound changed.*
- Therapist:** *If that says oof show me oon*
- Child:** Child changes the colour of the last block says: *oon, the last sound changed.*
- Therapist:** *If that says oon show me arn*
- Child:** Child changes the colour of the first block says: *arn, the first sound changed.*
- Therapist:** *If that says arn show me ark*
- Child:** changes the last block and says: *ark, the last sound changed*
- Therapist:** *If that says ark show me eek*
- Child:** changes the first block to a different colour and says: *eek, the first sound changed.*
- Therapist:** *If that says eek show me eed*
- Child:** changes the last block to a different colour and says: *eed, the last sound changed.*

Figure 2: Example of children's expected responses using the coloured blocks

Therapist	Child
"Show me arm"	 <p>"arm.... I heard two sounds: ar..m"</p>
"If that says arm show me art"	 <p>"art... the last sound changed"</p> <p>(changed the last block to a different colour)</p>
"If that says art show me oot"	 <p>"oot...the first sound changed"</p> <p>(changed the first block to a different colour)</p>

- Continue in this manner working down the lists. Encourage the child to repeat the word/syllable at each change and to touch the blocks as they say the word. Occasionally reinforce the child's response by saying *yes, you heard two different sounds so you showed me two different coloured blocks*. You may need to model the response pattern several times and prompt with questions until the child can confidently say what sound structure the blocks represent and what change occurred.
- It is important for the child to say the sounds together, but touch the blocks individually as she/he says the syllable. For example: *oon* - touch the first block when saying the *oo*

and the next block when saying the *n* sound. Prolong or exaggerate the articulation of the syllable if required “*ooooooooo*” but progress to using a normal articulation rate. It is also important for the child to consciously identify where the change has occurred (e.g. the first sound /last sound/middle sound changed).

- To encourage the child to work through these lists of sound changes use reinforcement as necessary. For example: After the child has worked through 5 changes put a sticker onto the reward chart.
- As the child develops skills and confidence with this activity introduce a timing incentive to encourage the child to process the sound changes quickly. For example: use a stop watch and tell the child you will time how long it takes him/her to work through 10 sound changes. Record the time on the time sheet provided.
- Integrating activity with speech production goals

Example: Increasing the child’s use of final consonants.

Provide plenty of practice in adding, deleting and substituting final sounds.

Therapist: *Show me eep,if that says eep show me eek,if that says eek show me eed,.... if that says eed show me ee,..... if that says ee show me oo,..... if that says oo show me oop etc.*

Encourage the child to repeat the syllable and discuss each change.

8. Sound Symbol Association (phoneme - grapheme knowledge)

8.1 Aim

To teach or reinforce the child's knowledge of phoneme-grapheme relationships

8.2 Resources

Three sheets of letters to be cut into cards

Six sound symbol picture sheets with words written under the pictures

Coloured blocks to use as counters

8.3 Activities

- Sound symbol bingo game

Begin this activity by checking the child knows the names of the pictures and by bringing the child's attention to the first letter in each word.

Therapist: *I have some pictures I'd like to show you. The name of the picture is written underneath. Let's say the names of the pictures together.*

Bear What sound does bear start with?.... That's right a /b/ sound and look there is the letter b at the start of the word. The letter b makes a /b/ sound.

Monkey.... monkey starts with a /m/ sound. Can you find the letter m? yes that letter makes a /m/ sound.. etc

Now let's play a game with these boards.

Place one or two picture boards in front of each player. Place the letter cards face down in a pile in the centre of the table. Take turns at picking up a letter, say the name of the letter and the sound (or sounds) the letter makes. Put a coloured block on the picture that starts with the letter.

Therapist *What letter have you picked up?*

Child: *r*

Therapist: *That's right. The letter r makes a /r/ sound.*

Let's find a picture that starts with a /r/ sound.

Child: *road*

Therapist: *Yes, road starts with /r/. Place a block on the picture of the road.*

The winner is the first player with each picture on his or her board covered with a block. Not all of the letters are represented with pictures and you may wish to make up additional boards using the sound symbol board template provided.

- Extension Activity

Repeat the above game listening and looking for words that start **or end** with the target sound.

Use the sound-symbol picture boards for other phoneme awareness activities. For example, cover up the written words with a small piece of card and use the boards for a phoneme identity game such as finding a picture that starts with a /p/ sound.

9. Tracking speech sounds with letters

9.1 Aim

To teach children to identify the number and order of sounds in words using letter blocks.
To teach children skills of encoding and decoding sound patterns using letters.

9.2 Resources

One set of letter blocks (56 letter blocks in a set)
Tracking sound sheets.

9.3 Activities

- Making and breaking words

Choose a group of consonants and vowels that the child understands the grapheme-phoneme relationship (or teach the child the name of a few letters and sounds if necessary). Initially choose 3 or 4 consonants and a couple of vowels that will allow a variety of words and syllables. Gradually extend the group of letters as the child's knowledge of consonants and vowel sounds expands.

For example: use m ch f a ee t p

Therapist: *show me at*

Child: responds incorrectly

Therapist: *This letter says /ae/ (short a sound) and this letter says /t/ (pointing to the appropriate letters) now try showing me the word at.*

Child: Correct response

Therapist: *if that says at show me mat*

Child: Child places the letter m at the end of the word

Therapist: *Good try you heard the right sound, but let's check where we hear the /m/ sound... mmmat*

Child: corrects error with therapist's prompts and says *mat*

Therapist: *If that says mat show me fat*

Child: changes the first letter and says: *fat, the first sound changed*

Therapist: *If that says fat show me feet*

Child: changes the middle phoneme and says: *feet, the middle sound changed*

Therapist: *If that says feet show me meet*

Child: changes the first letter and says, *meet, the first sound changed*

Therapist: *If that says meet show me mat*

Child: changes the middle sound and says: *mat the middle sound changed.*

Continue in this manner prompting the child as needed. If the child does not know a letter, show the child the letter and say the sound. Then ask the child to put the letter in the correct place to form the new word.

- Ask the child to check that the written form matches the spoken form. If, for example, the child puts out *mad* for *mat* say: *Let's check that we've got a match mmaaadd - (pointing to each letter as you say the sounds). Mad - does that match what I said- mattt (emphasising the last sound) encourage the child to self correct or give further prompts until she/he realises the error.*

- If the child is not sure of the vowel sound ask the child to identify where the sound changed (e.g., the middle sound changed) and tell the child the sound of the vowel. Use a variety of combinations at the two and three phoneme level. For example: Sound deletion - *If that says mop show me op What happened?... Yes the first sound was taken away.* Addition: *If that says it show me fit.... Yes we added a sound to the beginning.*

- Tracking sound changes

As the child's knowledge of grapheme-phoneme relationships develops work through the lists from the tracking sound sheets that were used for tracking sounds with coloured blocks. Work down the columns tracking the changes with the letter blocks and reading and spelling the words. To emphasize the reading component, ask the child to read the syllables and words after you have made the changes to the letter patterns. For example,

Example: Vowel Consonant (VC) list on Tracking Sound Sheet 1.
Spell out the words/ syllables with the letter blocks

Therapist: *If this says arm what does this say (change the letter m to t)*

Child: *Art*

Therapist: *If this says art what does this say oot (change the ar phoneme block to oo)*

Give plenty of praise and encouragement as the child reads the words that you spell with the letter blocks. Explain to the child that some of the letters will make a word and some will make part of a word. Occasionally show the child how the word part belongs to a word (e.g., eet *I know a word that ends like that: feet* placing the letter f in front of the eet). Remember to correct errors by bringing the child's attention to the mismatch between speech and print:

Therapist: *When you say ark I hear a /k/ sound at the end, but I can see the letter /m/. Let's try again: ar m (pointing to the letter blocks as you say the sounds).*

When the child is confident with two and three phonemes, begin work on four phonemes by introducing clusters.

- Integrating skill with speech production goals

Adapt chains as appropriate to the target speech production goals. Teach the child to become aware of the mismatch between their speech and the written form of the word.

Example: increasing use of final consonants

Therapist: *If this says bu show me bus*

Child: *child adds the letter s but says bu*

Therapist: *When you say bu I can't hear this last sound (pointing to the letter s). Let's say the word slowly pointing to all the sounds we can see.....b u s (pointing to each letter to correspond with each sound).*

Therapist: *Now try saying the word together ...bus.*

Child: *bus*

Therapist: *Great, now I can hear the /s/ sound (pointing to the letter s).*

10. Reading and spelling games

10.1 Aim

To provide practice in reading and spelling phonetically regular words.

10.2 Resources:

Four Bingo Boards on white card

Matching words for the bingo boards on mauve and cream coloured card to be cut into individual cards

Five game sheets with various shapes drawn on them.

Coloured blocks to use as counters

10.3 Activities

Introduce these games at a suitable stage in the therapy programme. For example; a child who begins the programme as a non reader, may not be ready for these games until he/she has built up sound symbol associations, segmenting, and blending skills.

- Shape game sheets

Write phonetically regular CV or CVC words into the shapes on the shape sheets provided. Select words from the tracking sound sheets or provide new words. The child and therapist take turns at throwing a block onto the game sheet. Each player scores 1 point if the counter lands on a shape, and a second point if the player can read the word in the shape. Remember to use the same awareness strategy of matching the spoken form with the written form of the word when correcting errors.

Example: Child reads can as cat .

Therapist: *Good try, it starts with a /k/ sound, but look closely at the last letter. When you said cat I heard a /t/ sound and I can see a /n/ sound. Lets try it again, c a n that's right it says can... good reading.*

- Word Bingo

Place a white bingo board in front of each player and place the corresponding cream or purple cards face down into a shallow box or lid. Each player takes turns at selecting a card from the lid. If using the cream and purple cards in the same game, hold the lid up high so the child has to reach into the box and can't see what colour he or she is selecting. Ask the child to read the word selected. Assist the child by giving phonological cues. Look to see which board the word belongs on. Place the word over the appropriate corresponding word on the bingo board. The winner is the first player with all their words covered. Bring the child's attention to the rhyming words: *They start with a different soun, but they end the same.*

- Make up your own bingo boards using the templates provided. Use phonetically regular words to provide decoding practice that is most suited to the child's reading ability and phonological skills. The words used do not need to rhyme. Target phonetically regular CVC (consonant vowel consonant) words and then introduce CCVC words or simple two syllable words as appropriate.

11. Programme integration

Work through the activities in an integrated manner, adjusting the time spent on activities as appropriate to the child's increasing skill level. For example: during the first stages of the programme you may spend longer on rhyme, tracking sound changes with coloured blocks, phoneme identity skills, and sound-symbol association skills. Towards the end of the programme the child will require more practice on tracking sound changes with letters, phoneme segmentation, and reading and spelling games. However, with the exception of the reading and spelling games, all of the activities can be introduced early in the programme. That is; the child does not need to achieve 100% success with rhyme skills before moving on to other activities. The more difficult tasks can be introduced with graded levels of prompting to ensure the child succeeds in the activity. For example, tracking words with letter blocks:

Therapist: *If this word says bat show me cat* (give the child the letter c and encourage the child to listen and find which sound/letter the c will replace).

Present a variety of activities during the one-hour session to maintain the child's interest. Not all of the activities need to be taught within each session. However, each session should include phoneme segmentation activities and tracking sound changes with coloured blocks or letter blocks.

An example of a one hour session

Rhyme bingo game (10 minutes)

Phoneme identity race game (integrated with letter sound knowledge) (10 minutes)

Phoneme segmentation and blending practice (e.g., horse & carrot sheets) (10 minutes)

Tracking sounds with coloured blocks and then repeating with selected letter blocks (15 minutes)

Sound Symbol association game (10 minutes).

Total = 55 minutes with a 5 minute break after 30 minutes for a drink of water for the therapist and child.

12. Ideas for classroom teachers

Ideally, speech-language therapists, classroom teachers, and reading specialists should work closely together to assist young children with reading difficulties. The speech-language therapist can assist by assessing the children's spoken language system. In particular, the speech-language therapist can provide detailed knowledge about children's phonological processing abilities (i.e., phonological awareness skills and the child's ability to store and retrieve phonological information in an efficient manner). Children who have severe phonological processing problems are likely to be the children who fail to make adequate progress on other remedial reading programmes such as Reading Recovery. Providing such children with specific phonological awareness training prior to entering other remedial reading programmes may resolve underlying weaknesses in their spoken language system and thus provide the children with a much stronger base for reading and spelling.

It has been established that the regular classroom language curriculum does not resolve children's underlying phonological processing deficits (Gillon, 2000; Gillon & Dodd, 1994). If left untreated, these deficits will persist over time and these children will continue to have reading and spelling difficulties through their school years. It is critical therefore, that children with phonological processing difficulties are identified early and that appropriate programmes are implemented to ensure young children experience success in their reading and spelling development. Teachers and speech-language therapists can work together to develop a profile of children's language development (see the Speech to Print profile in the appendix and refer to Gillon, 2004pp.126-128). Such a profile will help the teacher and speech-language therapist recognise the strengths and weaknesses in children's spoken and written language and will help identify areas that require focused teaching.

Children with severe phonological processing deficits require small group or individual instruction. Twenty hours of intervention with a speech-language therapist has proven successful in resolving phonological processing difficulties (Gillon, 2000). Classroom activities provided by the teacher will help to reinforce such instruction and will greatly assist children with milder phonological processing deficits. It is therefore recommended that activities directly focused on developing children's phonological processing skills, and helping children understand the links between speech and print, are incorporated into the class language programme. Many activities in the English curriculum already help to foster children's phonological processing skills, but more focused activities are necessary to help children who struggle to read and spell.

Class Activities

Some examples of how teachers can focus children's attention on the sound structure of words within class activities are provided.

- Large book activity.

For Example: Repeat the activity described for phoneme segmentation (section 5.3) at a class level. Read a large storybook to the class and then work through the book using the pictures for stimulus words to develop phoneme awareness. Select nouns from the story and identify the number of sounds in the word (phonemes, not letters). Ask the children to clap out the sounds and then say the word together.

Teacher: *This story is about a cat. Let's listen to the sounds that make up the word cat. c-a-t cat. Cat starts with a /k/ sound. Let's clap the number of sounds in the word cat as we say the sounds: c-a-t (3 claps). Here is a picture of a dog. Let's clap out the sounds in the word dog: d-o-g (3 claps saying the sounds as you clap hands). Dog starts with a /d/ sound.*

Give the class plenty of examples and then ask children to clap out the sounds in words and identify the sound the word starts with. Initially select words with two or three phonemes and then move to four. Remember that clusters such as pl, bl, tr have two sounds (e.g. t-r-ai-n = 4 sounds, 4 claps). Ch, sh and th are one sound (e.g. ch-ur-ch = 3 sounds, 3 claps). As the children become better at identifying the initial sound, ask the children to identify the last sound in the word. Be sure that all the children know the concepts of first and last.

- Class language theme activities

Build up a series of large colourful pictures around a class language theme to use in phoneme segmentation and phoneme identity activities. (Corel Gallery Clipart computer software packages are great for finding pictures on a given topic).

Example: Class theme: Occupations

Phoneme segmentation and sound symbol (phoneme- grapheme) association.

Choose single-syllable words associated with the class theme. For example,

Teacher: *Here is a picture of a doctor. A doctor helps sick people. Let's listen to the word sick. Clap out the sounds in the word sick: s-i-ck (3 claps). Sick starts with a /s/ sound. This letter makes a /s/ sound (pointing to the letter s on the board).*

In this picture the nurse is giving the man his medicine. Let's clap out the sounds in the word nurse: n-ur-se. Yes, I heard three sounds in nurse. What about the word man? m-a-n (3 claps). Great, I heard three sounds in man: m-a-n.

Phoneme identity

Teacher: *Here is the letter d it makes a /d/ sound (pointing to the letter d on the board). Let's think of different occupations that start with a /d/ sound: doctor, dentist, driver, digger.*

Here is the letter t. It makes a /t/ sound. Can anyone think of an occupation that starts with a /t/ sound? teacher, tennis player, truck driver (prompt as necessary with pictures).

Phoneme identity odd-one-out

Teacher: *Listen to these three words (show pictures to help with memory): Doctor, singer, dentist. Which word starts with a different sound? (repeat words) Doctor, singer, dentist. Yes, singer starts with a /s/ sound and dentist and doctor start with a /d/ sound. This letter makes a /s/ sound so singer would start with the letter s. Who can find the letter the word doctor starts with?*

- Making and breaking words

Glue magnets onto the back of the wooden letter blocks to use on a white board, or stand the wooden blocks up on a ledge, and work through the making and breaking word activity (described in section 9.3) at a class level. Ask the children to sit on the mat in front of the board or ledge where the letters are displayed.

Choose a group of consonants and vowels that most children understand the grapheme-phoneme relationship to display on the board (or teach the children the names of a few letters and sounds if necessary). Initially choose 3 or 4 consonants and a couple of vowels that will allow a variety of words and syllables. Gradually extend the group of letters as the children's knowledge of consonants and vowel sounds expands.

For example: use m ch f a ee t p

- Teacher:** *This letter says 'a' (short a sound) and this letter says /t/ (pointing to the appropriate letters). If I put them together I make the word at. If that says at, Lewis can you come up and make the word mat.*
- Child:** Child places m at the end of the word.
- Teacher:** *Good try, you heard the right sound, but let's check where we hear the /m/ sound... mmmat.*
- Child:** corrects error with teacher's prompts and says *mat*
- Teacher:** *Great, you added the letter m to the front.*
- Teacher:** *Sarah, if that says mat can you come up and show me fat.*
- Child:** changes the first letter and says: *fat,*
- Teacher:** *Excellent, you changed the first sound*
- Teacher:** *If that says fat, Robert can you show me feet.*
- Teacher prompt:** *This block here says ee (pointing to the ee block).*
- Child:** changes the middle phoneme and says: *feet.*
- Teacher:** *Well done, you changed the middle sound*
- Teacher:** *If that says feet, Grace can you show me meet.*
- Child:** changes the first letter and says, *meet, the first sound changed*
- Teacher:** *Good work Grace you made the word meet. I can think of a sentence that uses the word meet..... I like to meet my friends at the shops. Can you think of a sentence that uses that word meet?*

Continue in this manner prompting the children as necessary. If the child does not know a letter, show the child the letter and say the sound. Then ask the child to put the letter in the correct place to form the new word. Avoid turning the activity into a guessing game with the child wildly guessing at letters to choose. Rather, simply tell the child the letter block required and the sound the letter makes. Use the tracking sound sheets provided or make up your own sets as appropriate to the class programme.

Ask the child to check that the written form matches the spoken form. If, for example, the child puts out *mad* for *mat* say: *Let's check that we've got a match mmaaadd - (pointing to each letter as you say the sounds). Mad - does that match what I said- mattt (emphasising the last sound) encourage the child to self correct or give further prompts until she/he recognises the error. If the child is not sure of the vowel sound ask the child to identify where the sound changed (e.g. the middle sound changed) and tell the child the sound of the vowel. Use a variety of combinations at the two and three phoneme level. For example: Sound deletion - *If that says mop show me op... What happened?... Yes the first sound was taken away. Addition: If that says it show me fit.... Yes we added a sound to the beginning.**

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Appendix**Speech to Print Profile**

The speech to print profile may be photocopied for individual use by teachers and speech–language therapists.