Precision Teaching

For monitoring teaching strategies and ensuring a child makes good progress

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Special educational needs and disability code of practice: 0 – 25 years

The SEN Code of Practice (2014) talks about a 'graduated approach' to identifying and responding to SEN;

> 'Schools should take action to remove barriers to learning and put effective special educational provision in place. This SEN support should take the form of a four-part cycle through which earlier decisions and actions are revisited, refined and revised with a growing understanding of the pupil's needs and of what supports the pupil in making good progress and securing good outcomes'. (6.44)
>
> 'The support and intervention provided should be selected to meet the outcomes identified for the pupil, based on reliable evidence of effectiveness, and should be provided by staff with sufficient skills and knowledge' (6.50)

Precision Teaching is a quick and easy tool for reviewing a child's progress on a daily basis. It is an invaluable tool for monitoring and reviewing the effectiveness of teaching techniques.

The two teaching strategies referred to in this training; Direct Instruction and Early Reading Research, are based on 'Instructional Psychology', which seeks to find the most effective way to teach – emphasizing the need to adapt the environment and teaching styles to suit the child. These teaching methods are based on best practice from extensive research.

How do we acquire new skills?

When a teacher accurately identifies a student's learning stage, the instructor can select instructional ideas that are more likely to be successful because these strategies match the student's learning needs.

Learning Stage	*Student 'Look-Fors'…*	*Teaching strategies…*
Acquisition: Exit Goal: The student can perform the skill accurately with little adult support.	• Is just beginning to learn the skill • Not yet able to perform learning task reliably or with high level of accuracy	• Demonstration • Modeling • Cues and prompts • Routine drills • Praise
Fluency: Exit Goals: The student (a) has learned skill well enough to retain (b) has learned skill well enough to combine with other skills, (c) is as fluent as peers.	• Gives accurate responses to learning task • Performs learning task slowly, haltingly	• Opportunities to *drill* (direct repetition of target skill) and *practice* (blending target skill with other skills to solve problems) • Student gets feedback on *fluency* and *accuracy* of performance • Student receives praise, encouragement for *increased fluency*
Generalization: Exit Goals: The student (a) uses the skill across settings, situations; (b) does not confuse target skill with similar skills	• Is accurate and fluent in responding • May fail to apply skill to new situations, settings • May confuse target skill with similar skills (e.g., confusing '+' and 'x' number operation signs)	• Student receives encouragement, praise, reinforcers for using skill in new settings, situations • If student confuses target skill with similar skill(s), the student is given practice items that force him/her to correctly discriminate between similar skills • Student gets periodic opportunities to review, practice target skill to ensure maintenance
Adaptation: Exit Goal: The Adaptation phase is continuous and has no exit criteria.	• Is fluent and accurate in skill • Applies skill in novel situations, settings without prompting • Does not yet modify skill as needed to fit new situations (e.g., child says 'Thank you' in all situations, does not use modified, equivalent phrases such as "I appreciate your help.")	• Train for adaptation: Student gets opportunities to practice the target skill with modest modifications in new situations, settings with encouragement, corrective feedback, praise, other reinforcers.

Early Reading Research

Early Reading Research (ERR) is a whole school approach to teaching literacy skills. It was developed by Dr Jonathan Solity and is a good example of a successful Instructional Psychology approach. In a large scale study on ERR it was found that 'the incidence of children perceived to have SEN reduced from between 20-25% to 2-5%'.

The principles of ERR:

- Teach skills of most use first
- **Distributed Practice**; little and often
- **Interleaved Learning**; mix new materials with older, more familiar material which help prevent forgetting and aid retention
- Skills are taught to **high fluency** levels

ERR focuses on the types of skills and knowledge that are of greatest use to the learner. The idea is that, if children who are having difficulties with retention, motivation and other barriers to learning are taught skills and knowledge that yield the greatest returns for their efforts, they are more likely to see the benefits of learning...

...it has long been known that self-esteem is boosted far more by raising achievement than by self-esteem classes (Carnine 1979)!

Reading skills of greatest use to the learner…

Synthesis: Putting sounds together to create words, i.e.
a-n an, m-a-p map, m-u-s-t must, s-k-i-p skip, b-l-a-s-t blast

Segmentation: Identifying individual phonemes in words i.e.
at a-t, man m-a-n, tart t-a-r-t etc.

Synthesis and segmentation are both aural skills and do not require the pupil to be able to recognize words or letters – just be able to hear and say.

Letter sounds: knowing the corresponding phoneme for letter symbols… a, s, t, p etc.

High Frequency Words: Some words occur so frequently it is best to be able to know them by sight. The 100 highest frequency words make up just over 50% of any book and are therefore worth learning to a really high level of accuracy and fluency!

The First 16 (make up 25% of any book): a, is, went, to, he, was, with, my, and, then, of, in, that, it , the, I

The next 24: for, some, this, when, one, are, she, has, saw, me, see, had, am, there, at, have, out, they, come, her, his, we, little, has

The final 60: about, could, make, take, after, did, new, their, all, do, next, them, an, down, not, three, as, from, now, time, away, get, off, today, back, got, old, too, be, here, on, two, because, him, once, up, big, into, other, us, but, last, our, very, by, like, over, were, call, live, out, what, came, look, said, will, can, made, so, you

A reading skills assessment sheet is attached at the back of this pack (page 15 and 16). This assessment often reveals the best place to target skill development.

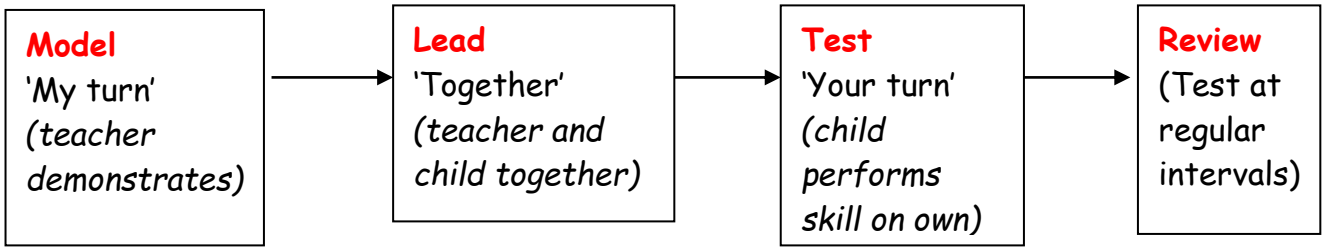
Direct Instruction

This is a highly prescribed teaching method which research has found improves individual pupils attainment in: basic skills such as reading and arithmetic, cognitive skills such as comprehension and problem solving and affective skills such as motivation and self-esteem (Carnine 1979).

The basic principles and teaching points are:

1. More can be taught in less time
2. The design allows for 'flawless instruction'
3. The child receives immediate feedback
4. Errors are noticed and corrected immediately
5. The programme is personalized to individual needs
6. The child becomes an active learner – enhancing motivation
7. There are clear goals and expectations
8. The child reaches a level of mastery – accurate, confident and fluent

The teaching procedure;



The procedure should be well paced. If a child makes an error the adult simply models again: 'this word says 'cat' – together… cat – your turn…' (Child has a go on own).

Precision Teaching

Based on materials developed by Caroline Gilliland (Chartered Educational Psychologist)

- Precision Teaching originated in the mid-sixties in Kansas and has been used in the U.K. for several decades.

- Precision Teaching is a misnomer. Rather than it being a teaching method, it is in fact, a precise method of monitoring a highly structured teaching programme that is flexible to accommodate learning and teaching styles.

- Precision teaching aims to develop accuracy and speed (fluency).

- It requires approximately 10 minutes daily one-to-one teaching. It is advisable that it is with the same person at the same time each day.

Precision Teaching provides the teacher with:

- A precise means of describing the pupil's educational performance.

- A means of measuring progress on a direct and daily basis.

- Techniques for keeping daily records and visual displays (charts) of the pupil's performance.

- Guidelines for interpreting these charts.

- Guidelines for making changes in the teaching programme.

(Adapted from "An Introduction to Precision Teaching by Jonathan Solity and Ted Raybould. Walsall Psychological Service)

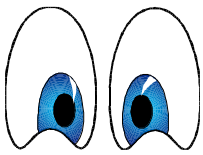
When Can Precision Teaching Be Used?

- When a child is making little or no progress in a particular area.

- When development of speed is essential for progress, for example:
  - Letter recognition
  - Phonological work
  - Sight vocabulary
  - Spelling high frequency words
  - Reading/spelling words with the same letter pattern
  - Number recognition
  - Number bonds

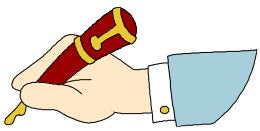
Types of 'probes'

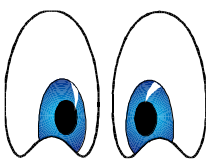
Probes are brief daily tests that indicate a pupil's performance on the specific skill currently being taught.



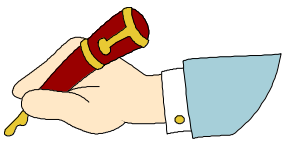
See-to-say (child says what they see)
e.g. letter/number recognition, reading high frequency words, words with the same letter pattern etc

Hear-to-write (child writes what they hear)
e.g. writing the answer to mathematical computations such as 'what number goes with 7 to make ten?'





See-to-write (child copies or supplies answer in writing)
e.g. copy writing letters, words or numbers or seeing a sum and writing the answer



Charting conventions

- A CORRECT response is denoted by a dot: ·
- An INCORRECT response is denoted by a cross: x
- Each week dots-to-dots and crosses-to-crosses are joined up with straight lines to give a clear view of the child's progress.
- Dots and crosses are NOT joined up across 'NO CHANCE DAYS' (no chance to teach or test) or across weekends. This helps to see the effects of absence from teaching opportunities.
- When a new task or phase is started a Vertical Phase Change line is inserted between the relevant days.
- The use of different colours can help to enhance the charts as well as make relevant information more prominent and easily identifiable.
- Charts should also be personalized and pupil friendly.

Deciding On Aim Rates

1. Previous Performance

   A child's previous performance on a probe tapping in on a skill considered to be slightly lower on the learning hierarchy may be used. Given success on the previous probe it can reasonably be presumed that the pupil will achieve comparable levels of performance on the new task.

2. Peer Comparison

   Peer comparison may be useful if this is the child's first probe. Here an average performance for the probe is obtained by calculating the mean performance for a group of average children in a class.

3. Functional Aim Rate

   Functional aim rates focus on the teacher's discretion in deciding the level of competence deemed necessary to perform the skill.

Rules of thumb

3-Day Rule:

After three days of using a probe you should know if the task is too hard or unrealistic. The most likely changes needed are about **making the task easier.**
Either:
•*Task Slice* —Reduce the demands of the task; i.e. reduce the number of items to be learned or simplify the task (e.g. not all CVC just CVC with same medial vowel). Or consider
•*Pre-requisite skill*—Go back to an earlier skill (e.g. phonic sounds, CV words, etc.)

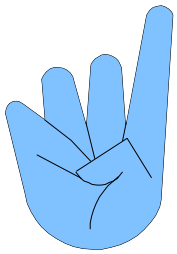
8 day rule:

If the pupil is not *at* or *very near* your selected Aim Rate after 8 days on the same task, you should not proceed without considering a change. The most likely changes are about **changing teaching style for that child.**

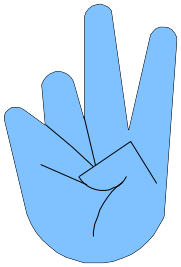
Either:

Increase motivation or
Modify the teaching method or teaching arrangements.

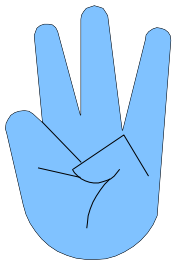
How To Do It



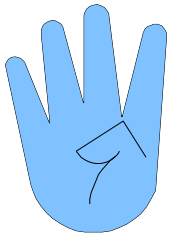
Select a target area and assess the pupil's attainment in that area.
For example, Alana finds Numeracy particularly difficult and when presented with the numerals 0-10, she could recognise 1 and 5.



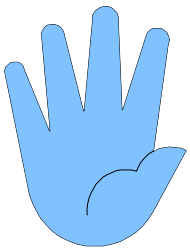
Break the task into achievable steps (task analysis) and prepare probe sheets.
For example, step one is for Alana to recognise the numbers 0, 2 and 3, step two is for her to recognise the numbers 4, 6 and 7 and the last step is for her to recognise the numbers 8, 9 and 10. To complete the probe sheets, the numerals for step one (0,2,3) are placed repeatedly and randomly on the grid.



Establish the pupil's baseline performance by presenting him/her with the probe sheet and recording how many items are correctly completed in EXACTLY one minute. For example, when presented with the probe sheet containing the numerals 0, 2 and 3 Alana was unable to identify any of them in one minute.



Identify the level of performance that you feel would indicate success for that child. This is known as an aim rate. The success criteria should be able to be reached in 2 to 3 weeks. (See next page for guidance on how to decide on an aim rate.)
For example, Alana's aim rate is to recall the numerals 0. 2 and 3 40 times in one minute with no errors within two weeks.



Start the programme. Arrange to work one-to-one with the pupil for ten minutes each day, preferably with the same teacher or teaching assistant and at the same time. Each day begin the session with the one minute test recording the scores on the ratio chart. After the daily test, teach the child for approximately eight minutes using a method such as Direct Instruction. **Teach to errors**. Success is achieved when the pupil reaches the target on 3 consecutive days.

Trouble Shooting

Data Analysis

When looking at the pupil's scores there are a number of factors to watch out for. The table below summarises the most common ones.

Pupil's Performance	Interpretation	Probable Intervention
More errors than correct answers	Task inappropriate – too hard?	Consider task analysis and reducing the amount of information to be learnt
Number correct and incorrect both increasing	Child trying to get faster to increase how many they can say in a minute but not yet accurate	Teach to errors – which are they always getting wrong? Give extra practice on this
Number correct increasing and number incorrect decreasing but both slowly	Task is likely to be appropriate, but progress is not fast enough	Increase motivation through rewards and incentives or alter teaching methods

Reasons Why Precision Teaching May Not Be Working…

- Timing

Variable or inaccurate timing may produce an inaccurate record of a child's progress.

- Selection of Probe

A probe may not directly sample the desired performance on the skill being taught.

- Inappropriate Teaching Method

The teaching may not relate to the target skill.

- Step Too Large

Inappropriate probe size may result in disaffection with the programme through persistent failure.

- Irregular Data Analysis

Poor monitoring of charted data can allow undesirable trends to go unnoticed.

- Lack of Feedback and Praise to Pupil

Positive feedback and a feeling of involvement are central to motivation behind Precision Teaching.

- Poorly Constructed Charts

Charts that are poorly labelled and constructed may impede judgements on the child's progress.

Further considerations…

- Can we devote ten minutes one-to-one every day for this pupil?
- Is the learning generalised to the classroom?
- Are the skills maintained over time?

Name: Reading Skills Assessment Date:

1. **Phonological awareness (all oral/aural)**

Synthesis – sound out word, child to say the word it makes

VC	a-n	a-t	i-n	o-n	u-p
CVC	m-a-p	s-i-t	h-a-m	r-o-d	n-e-t
CVCC	m-a-s-t	s-i-n-k	b-e-n-d	f-a-s-t	s-o-n-g
CCVC	s-k-i-p	f-r-o-g	d-r-u-m	c-l-a-p	t-r-a-p
CCVCC	b-l-a-s-t	s-t-i-n-g	c-l-a-m-p	d-r-i-n-k	p-l-a-n-t

Segmentation – say the word, child to sound it out

VC	am	at	in	up	it
CVC	man	jet	hip	log	hug
CVCC	must	soft	link	ring	song
CCVC	slug	grab	plum	stun	swim
CCVCC	tramp	fling	plank	craft	bring

Comment on fluency of synthesis and segmentation skills:

2. **Phonic Knowledge (symbol/phoneme recognition)**

Letter sounds

a	m	t	s	i	f	d
r	o	g	l	h	u	c
b	n	k	v	e	p	w
j	y	x	q	z		

Comment on fluency:

Applying segmentation and synthesis skills to regular words (give pupil large print version on page 18)

VC	an	it	on	up	if
CVC	fan	rat	hut	sit	pot
CVCC	pink	soft	must	wept	wing
CCVC	plan	drop	twig	blot	flag
CCVCC	blink	crank	flint	cramp	draft

Comment on fluency of applying segmentation and synthesis skills to regular words:

3. Sight Vocabulary – High Frequency Words (HFW) (give pupil large print versions on pages 19-21)

First 16 (make up over 25% of any text)

a	in	of	to	that	was	he	went	and
it		the		I	my	then	with	is

Next 24

am	had	me	some	are	has	one
there	at	have	out	they	come	her
saw	for	this	see	we	go	little
she	when	his				

Remaining 60 (making all 100 total more that 50% of any text)

about	could	make	take	after	did	new	their	all	do	next	them	an
down	not	three	as	from	now	time	away	get	off	today	back	got
old	too	be	here	on	two	because		him	once	up	big	into
other	us	but	last	our	very	by	like	over	were	call	live	out
what	came	look	said	will	can	made	so	you				

Comment on fluency:

4. Text work (applying above skills to an appropriate piece of text)

- Comment on how the pupil applies his/her knowledge of HFW when reading

- Comment on how the pupil applies his/her synthesis and segmentation skills to decode regular words

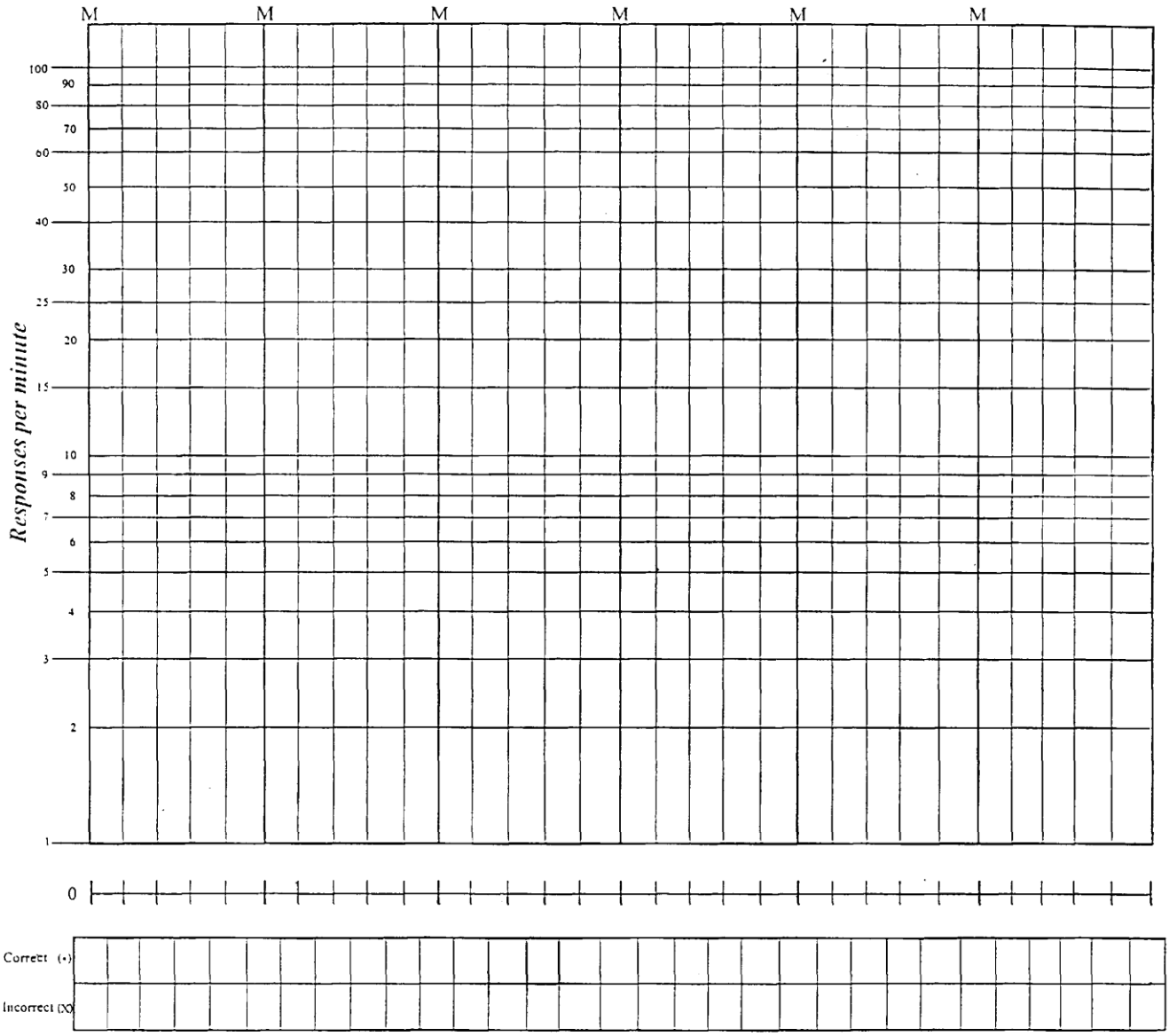
- Comment on fluency

- Comment on motivation

Pupil: _____ 's CHART Teacher: _____

School: _____ Advisor: _____

Dates:



Teaching targets and arrangements

Walsall Educational Psychology Service

Pupil: Isla White

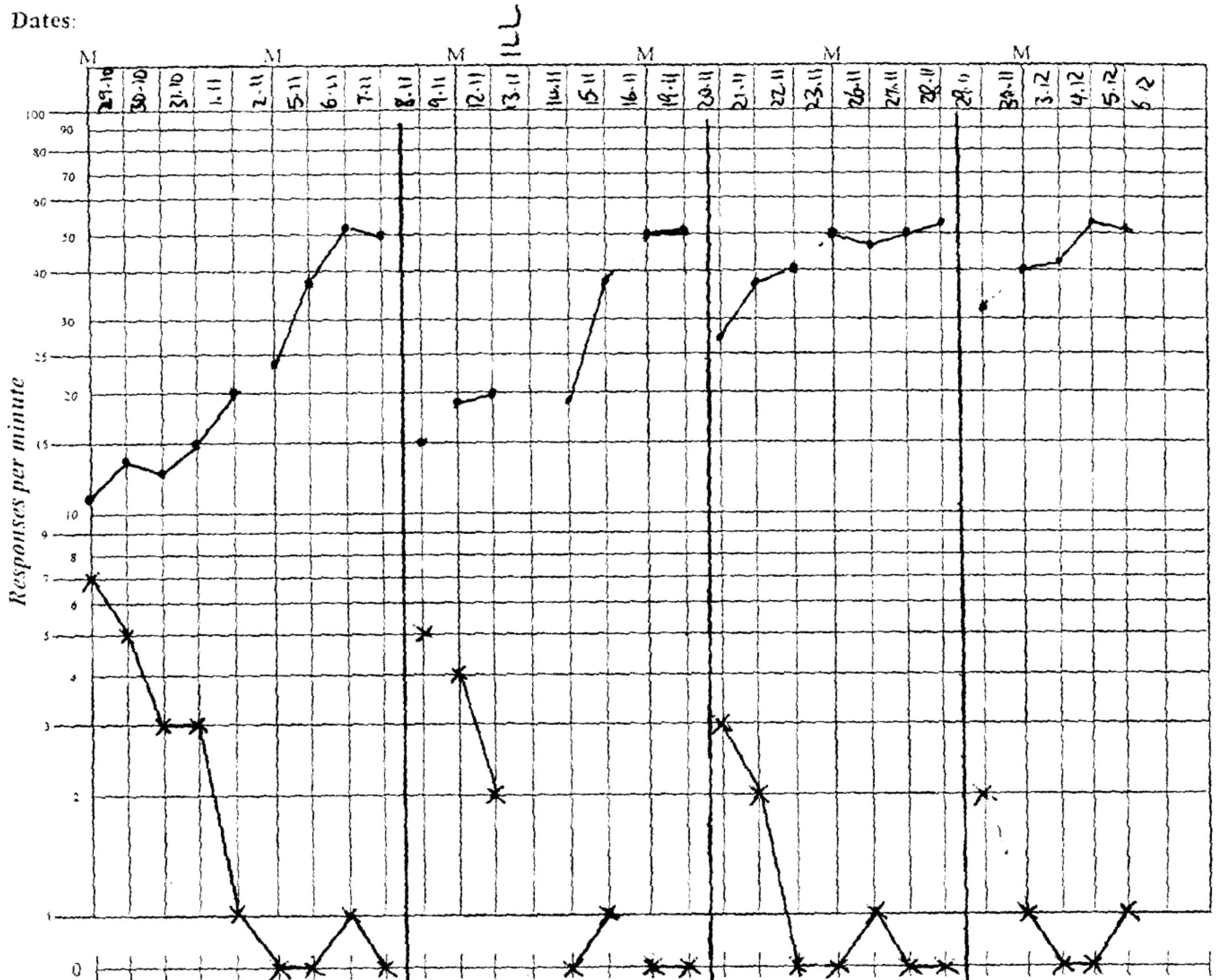
School:

Isla 's CHART

Teacher: C. Mee

Advisor:

Dates:



	29.10	30.10	31.10	1.11	2.11	5.11	6.11	7.11	8.11	9.11	12.11	13.11	14.11	15.11	16.11	19.11	20.11	21.11	22.11	23.11	26.11	27.11	28.11	29.11	30.11	3.12	4.12	5.12	6.12
Correct (•)	11	14	13	15	20	24	38	52	50	15	19	20	-	19	38	50	51	23	38	40	50	48	50	52	32	40	42	53	51
Incorrect (X)	7	5	3	3	1	0	0	1	0	5	4	2	-	0	1	0	0	3	2	0	0	1	0	0	2	1	0	0	1

PTP Sheet 1 | Sheet 2 | Sheet 3 | Sheet 4

Teaching targets and arrangements

Walsall Educational Psychology Service