

Action Research Project:

(Teacher-Researcher)

ABSTRACT:

A problem many students have is poor phonological awareness. In this research four students were selected from Year One. Each student was reading between text levels 1 and 4 and was exposed to explicit teaching in eleven two-letter rime units from the thirty-seven dependable rimes. The teaching targeted explicit instruction in developing awareness of these rime units and the ability to blend and segment words containing these units.

An action research model was used with the goal of developing a worthwhile research question related to the needs of a specific group of students (Munro, 2002). The students were assessed and from this a teaching procedure was developed. Students were withdrawn from class in a group for ten sessions of 20 minutes over a period of two weeks. Each session consisted of explicit instruction in two rime units with two new rimes worked on each day. Following the intervention post testing was carried out to assess gains made.

The hypothesis tested was:

By helping students develop their knowledge of two letter dependable rime units and how to blend and segment these in unfamiliar words, the students word and text reading will improve.

The findings indicated that explicit teaching of the targeted rime units improved the students reading at both word and text levels. For all students improvement was made in recognising and reading the eleven rime units targeted and in reading one-syllable words containing those units. All students also showed improved use of blending strategies beyond the units targeted to unfamiliar words containing more complex onset and rime units.

INTRODUCTION:

Many students in their first year of schooling make appropriate gains in reading, developing good phonemic awareness yet do not continue to make gains in their second year. These students have difficulty reading words accurately and automatically. This can be due to factors across the model for understanding literacy learning disabilities and could include incorporating phonemic awareness, rapid renaming, poor oral language and inability to pronounce words accurately (Munro 2002). While the students in this study have some phonological awareness they are unable to use it efficiently. They cannot transfer their phonemic knowledge and beginning understanding of phonology to the use of onset and rime segmenting and blending. As such, instruction in onset and rime might be the most effective for these students (Juel & Minden-Cupp, 2002). Torgesen, Wagner and Rashotte (1997) argue that reading disabilities are most commonly caused by an inability of students to process the phonological features of language while the Davis, Morgan and Torgesen research (1992) showed that explicit instruction in blending and segmenting improved the skills of students in segmenting words into phonemes resulting in enhanced ability to read new words.

Included in the teaching unit is opportunity for students to play with rhyme related to the rimes targeted as suggested by Clay (1991). Clay also outlines Gibson's (1965) findings that children in their first year of reading instruction make use of clusters of letters. The students in this study are unable to do this therefore need explicit instruction to ensure they develop the strategy to read groups of letters and to then blend and segment words using this knowledge.

“Directing attention to only one source of information used by the reader of a text can produce problems.” (Clay, 1991 p.314) This research recognises this but also sees the need for students with reading difficulties to have explicit instructions in strategies that they have not taken up independently. It has assessed gains made at both a word and text level to determine the use students can make of blending and segmenting in either.

This study was designed to assess the gains these students could make if given explicit instruction in phonological knowledge and whether this knowledge could be transferred to word and text reading.

METHOD:

Design:

The study uses an action research design in which a problem for a group of students with reading disabilities is identified. A strategic plan of action is then devised to address the problem. Data is collected to enable study to be done on the effects of the strategic action plan. The action plan is carried out and further data is collected and then analysed to determine the success of the action plan and modifications required (Munro 2002). This study measures the gains made by a group of Year One students given explicit instruction in phonological awareness.

Participants:

Children were selected to participate from 42 Year One students. From this group 8 students were identified as being “at risk” (reading below Reading Recovery text level 5). Of those eight three were already involved in intervention assistance through Reading Recovery. After discussions with the class teacher’s four students were chosen that the teachers felt had similar learning needs, in particular poor phonological awareness. Their entry age and pre-test assessment results are shown in Table 1.

Table 1.

	Student A	Student B	Student C	Student D
Age	6 yrs 11 mths	6 yrs 3 mths	6 yrs 1 mth	6 yrs 7 mths
Instructional Reading Level	Level 5	Level 1	Level 3	Level 2
Letter Identification	95	89	94	95
Orthographic Rime/word test	8	3	15	9
Sutherland Phonological Awareness test	29	18	33	29

Materials:

- ? Clay Letter Identification - Upper and lower case letter name and sound.
- ? Rime and Word Reading Task – Teacher designed see Appendix 3.
- ? Sutherland Phonological Test
- ? Reading Accuracy – PM Benchmark Kit One.

- ? Eleven two letter rime units from the 37 dependable rimes list.
(Blue Print For Literacy Success)

Procedure:

Students were withdrawn from class together on a daily basis for two weeks. Each session was 20 minutes in length. The first five lessons consisted of explicit instruction in phonological awareness of eleven two-letter rime units. Two units were introduced each session with daily revision of previous sessions units. Each day students were asked to identify the rime units to be learnt through card games, suggest rhyming words related to each rime unit and complete blending and segmenting activities using magnetic letters. Lessons 6-8 consisted of revision of all eleven rime units using the Rosser Speedo Program approach (Appendix 2). The last three lessons were made up of simple games, using the eleven rime units, to revise student knowledge (Appendix 2).

RESULTS:

Student performance is described in four sections:

- 1) Orthographic reading – two letter rime units.
- 2) Orthographic reading – one-syllable words containing two letter rime units.
- 3) Phonological awareness.
- 4) Text accuracy.

The student's orthographic reading was calculated in terms of their scores on the pre, interim and post-tests. The rime and words were administered as one test but the results can be reviewed in terms of rime only, word only and as a total. The text accuracy was calculated using running records to determine the instructional text level at pre and post-testing.

The data related to the assessment is shown in Table 2.

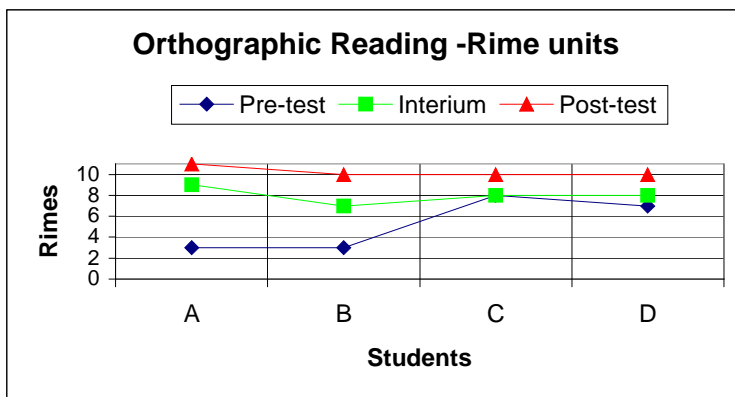
Table 2.

Student	Orthographic Knowledge			Sutherland Phonological Awareness		Text Level %									
	Pre-test	Interim	Post-test	Pre-test	Post Test	Level 3		Level 4		Level 5		Level 6		Level 7	
						Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
A	8	18	22	29	42	99	100	90	100	98	100	80	98	75	97
B	3	12	21	18	34	80	94	70	85	50	80	---	---	---	---
C	15	14	20	33	47	96	100	70	95	96	98	75	87	---	---
D	9	16	19	29	36	86	100	80	95	83	97	80	96	75	90

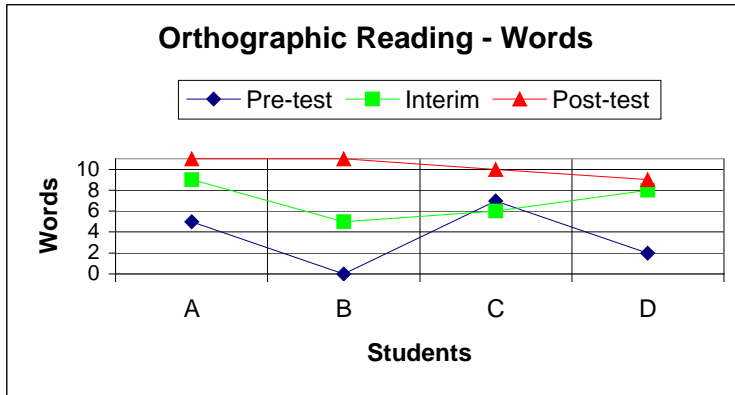
Trends for the group indicate that all students benefited from the intervention. Three students improved their orthographic knowledge substantially with one student making smaller gains having begun stronger. All students also made gains in text accuracy with the least gain being two text levels and the greatest being more than five text levels. This studies prediction that explicit instruction in phonological awareness and blending/segmenting rime units is supported by these results.

Graphs 1-3 show each student’s progress in orthographic reading as measured by the Orthographic Reading Test (Appendix 3).

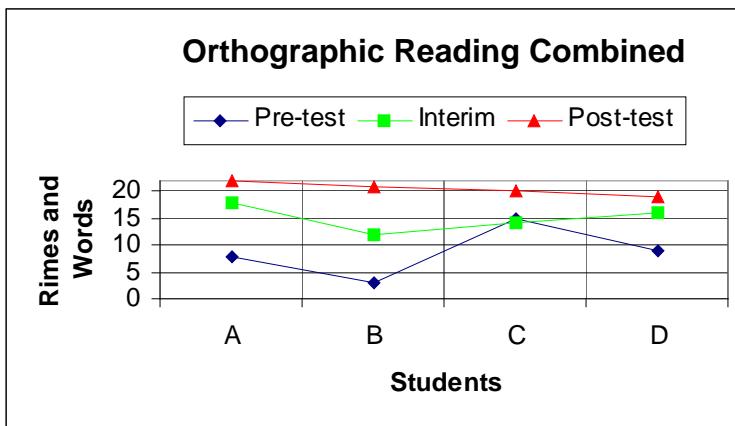
Graph 1.



Graph 2.



Graph 3.



Students A and B had very poor orthographic knowledge prior to the intervention with both students knowing only 3 of the eleven rimes whilst students C and D could recognise 8 and 7 respectively. Student C had a good knowledge of the words and some understanding of blending and segmenting to attempt unknown words. Students A,B and D, however had very little understanding of blending and segmenting to call on when attempting unknown words. As the graphs and Table 1 show, however all students made substantial progress by post-testing.

The greatest improvement was by Student B with an 82% gain, followed by Student A with a gain of 64%. Whilst Students C and D had lesser gains it is important to note they

both began higher with 68% and 41% of rimes and words known in the pre-test as opposed to Students A and B knowing 36% and 13% respectively.

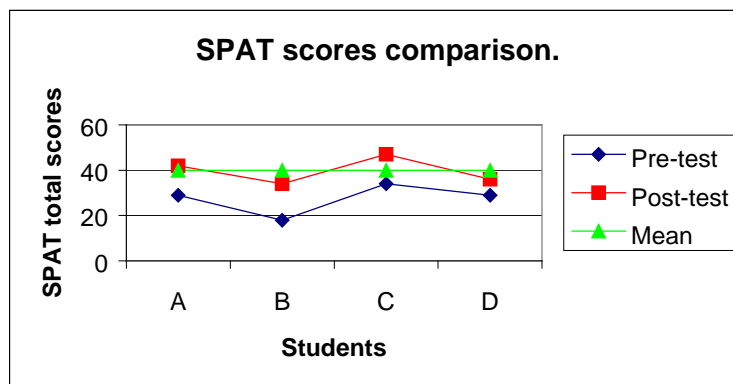
Table 3 indicates student scores in each subset of the Sutherland Phonological Awareness Test (SPAT).

Table 3.

Student	SUBSET							
	Syllabic & subsyllabic		Phonemic (CVC)		Phonemic (blends)		Grapheme-Phoneme Correspondences	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
A	14	16	12	16	0	3	3	7
B	13	16	5	14	0	0	0	4
C	15	16	13	16	1	7	5	8
D	16	16	11	15	0	1	2	4

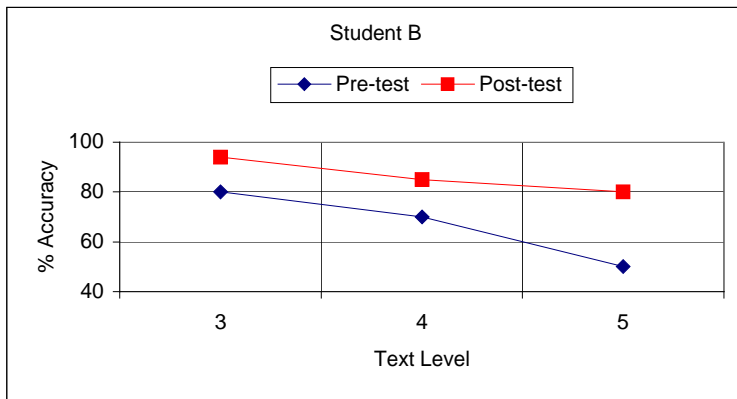
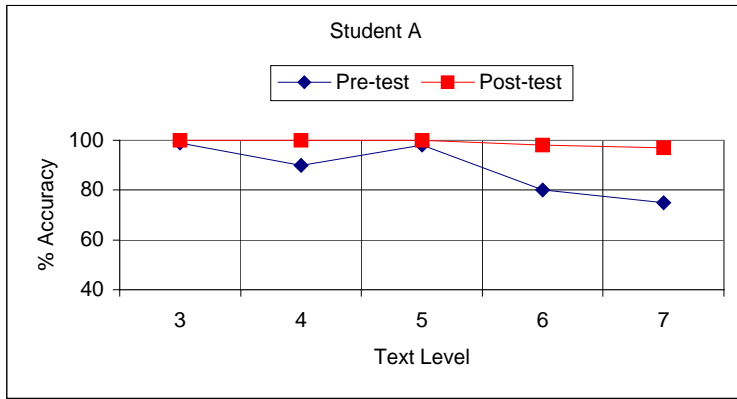
Student performance on the phonological awareness test showed that all students had similar syllabic and subsyllabic knowledge. Compared to students A, C and D student B had very poor phonemic (CVC) knowledge. All students scored poorly on phonemic level (blends) at pre-test but made slight improvements in post-test results.

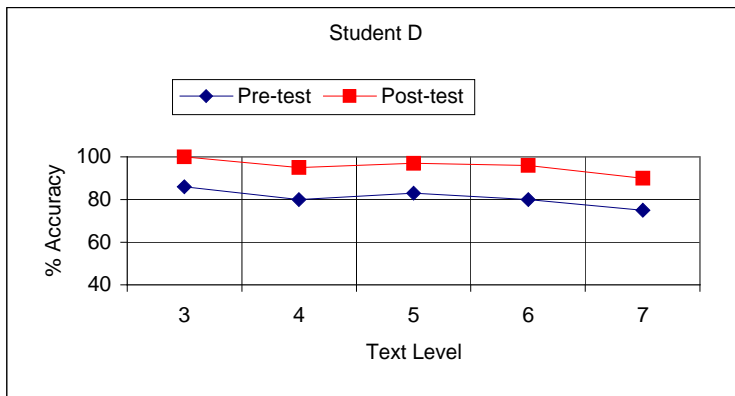
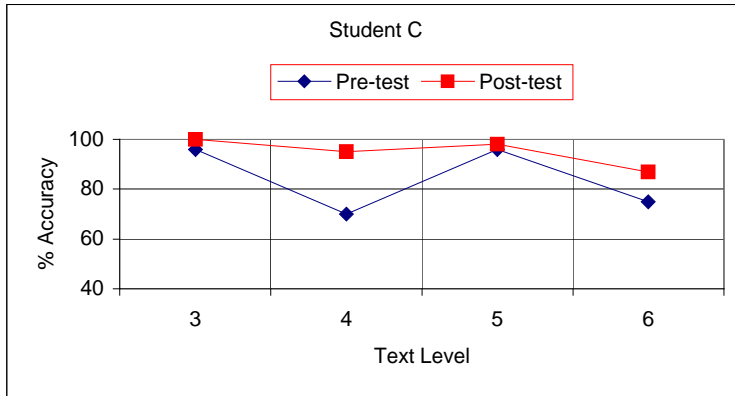
The following graph shows the students total SPAT scores compared to the mean.



All students were below the mean in pre-testing with Student B two standard deviations below the mean and Students A, C and D one standard deviation below. Post-testing indicates that Students A and C are now above the mean and all students improved at least one standard deviation.

The next series of graphs show individual student text reading accuracy as measured by converting error rate to percentage accuracy score (Clay,1993).





All students showed improvement in reading accuracy. Student A, B and C showed gains of two text levels while Student D gained five text levels. Overall students showed percentage gains at all text levels in reading accuracy.

DISCUSSION

This study examined how helping students develop their knowledge of two letter dependable rime units and how to blend and segment these in unfamiliar words, the students word and text reading will improve. The results showed that these students could make sizable gains through such intervention. It is important to note, however, that Student B and D missed three of the ten teaching sessions each due to illness. These students showed an ability to use the strategies taught when decoding unfamiliar words, in the orthographic test, containing rimes covered in their absence. It was interesting to note also that all students exhibited knowledge transfer at text level. They each verbalised

their need to blend at point of difficulty even with words not containing the targeted rimes. This was a skill none had shown before.

In their 1998 research Torgesen, Wagner and Rashotte (1997) concluded that by providing early intervention for students with weak phonological processing skills their reading accuracy and rate of text processing can come up to the normal range. Whilst the intervention in this research study did not bring the target students up to the normal range they did show improvement. It could be concluded then that further long-term intervention should result in more dramatic changes. Their findings suggested that:

One-to-one instruction in reading, even if it is consistent with the regular classroom instruction program, may not have a significant impact on the core word-level reading problems of children with serious reading difficulties unless it contains very explicit and intensive instruction in phonemic awareness and phonemic decoding skills. We should not assume that even skilfully administered one-to-one instruction will have a significant impact on word-level skills in children who have serious phonological processing weaknesses if it does not contain sufficient depth of instruction in alphabetic reading skills. (p.18)

This study seems to imply that for some students the development of phonological sensitivity combined with exposure to reading is not sufficient. These students require explicit instruction on how to approach unknown words and blending and segmenting of onsets and rimes (Juel and Minden-Cupp, 2002).

The gains made by these students show that explicit instruction is beneficial for students with reading difficulties. Such students require careful assessment to determine their learning needs and specific programs developed to address these needs. Historically, I believe, teachers have seen intervention as being a long-term program put in place. This study shows that tremendous gains can be made by short teaching sessions, over short periods of time, addressing the learning needs of individuals. This study shows students in their second year of schooling that have reading difficulties can make gains through explicit instruction in phonological awareness.

While the research showed students using more self-talk in the post-test text reading this was not formally assessed. It would be useful to measure the changes in self-talk. Further research could also be done in linking the gains made through explicit phonological instruction with comprehension improvement. Comprehension was not assessed in this study.

In conclusion whilst some students progress well through normal classroom instruction it is obvious that some require a different approach. This study would suggest that such alternate approaches should include explicit instruction in areas where the child is having difficulties. Through assessment teachers can endeavour to determine what is causing reading difficulties, develop teaching sessions to address those difficulties and continually monitor changes occurring in student reading throughout the intervention.

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APPENDIX 1:

Teaching unit.

Four Year One students

Small group instruction

10 sessions of 20 minutes

Pre, Interim and Post testing as outlined below.

DESCRIBE OUTCOME:

The activities within the intervention are designed to develop and automatise relevant phonological knowledge.

The students will be able to:

- ? say accurately each rime targeted both in isolation and in the context of single syllable words
- ? distinguish between words that have and don't have the sound targeted
- ? suggest other words that rhyme with the rime
- ? discuss shared sound patterns

These students are working at the word level of the model where they need to further develop their understanding of rime families and word structure. The strategies they need are converting letter clusters to sounds and segmenting words into functional units and recode.

DESCRIBE ACTIVITY:

Assessment Procedures:

Pre and Post Testing:

- ? Letter / sound knowledge through Clay Letter Identification Test
- ? Sutherland Phonological Awareness Test
- ? Orthographic Reading Test (Teacher designed see Appendix 3)
- ? Running Records to determine text level and accuracy

Administered individually.

Teaching Procedures:

Lessons 1-5

- a) Introduce letter clusters to be targeted (2), read with students and repeat 3 times having students say:
e.g. “ ‘a’ and ‘t’ say /at/”
- b) Students brainstorm words with same rime.
- c) Provide each student with magnetic letters for the rime and single consonants to make words. Practice making words using making and breaking as described by Marie Clay for Reading Recovery.
- d) Introduce new cluster and repeat as per steps a) to d)
- e) Play a game from suggested list. (Appendix 3)
- f) Model to students what was learnt today,
e.g. “ today we learnt that ‘a’ and ‘t’ says /at/ as in /c/ /at/,
‘cat’.
Have students articulate what they learnt.
- g) For each session add 2 new clusters and include previous clusters learnt in concluding game.

At the end of Lesson 5 readminister orthographic knowledge test to students individually.

Lessons 6 & 7

- a) Provide students with cards showing rimes from previous week and revise the sound each makes.
- b) Place copies of each rime card on table and challenge students individually to....
e.g “Find the letter pattern that says /a.../t/ and have students say...
“ /a/ and /t/ says “at””
Ask students to name words that have same letter/sound pattern.
- c) List 5 of these words on cards and have students match them with the correct rime unit to make word lists. Discuss what each word has in common and what letters make the common sound.
- d) Rosser Speedo Program (Appendix 2)

Lessons 8-10

- a) Revise all rime units through games outlined in Appendix 3.

APPENDIX 2

Games

Materials required:

Six copies of each rime to be targeted, in varied fonts and sizes.

RIMES:

in an at it ug op ot ap ay ip aw

Card Games:

Concentration, Go Fish, Snap
Bingo
Dominoes

Rosser Speedo Program:

- ? a strategy to assist students experiencing difficulties in decoding.
- ? provides specific visual training to enable the student to see the sameness of print at speed.

Method:

1. Six copies of the rimes to be targeted presented to the student face down.
2. The student is required to sort the cards and place them in piles containing the same rime.
No more than five rimes at a time. Visually similar rimes are grouped.
3. The activity is timed.
Generally, students aim to reach the target time of 2 seconds per card, e.g if the pack contained 30 cards, the time target would be 60 seconds. Alternately the initial sorting activity is timed and the target time becomes two thirds of the original time.

APPENDIX 3

Orthographic Reading Test

Cover Row 2 as student reads Row 1 and Row 1 as he/she reads Row 2.

an	it	ay	in	ot	ug	ap	at	aw	ip	op
fan	bit	day	fin	pot	Rug	map	bat	paw	lip	mop

Orthographic Reading Test Results

	Student A			Student B			Student C			Student D		
	Pre-Test	Interim	Post-Test	Pre-Test	Interim	Post-Test	Pre-Test	Interim	Post-Test	Pre-Test	Interim	Post-Test
an	in	✓	✓	at	✓	✓	✓	✓	✓	✓	✓	✓
it	✓	✓	✓	I T	✓	✓	in	✓	✓	✓	✓	✓
ay	i	✓	✓	-	An	✓	✓	✓	✓	✓	an	✓
in	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ot	to	to	✓	-	✓	✓	✓	to	✓	✓	✓	To
ug	yog	✓	✓	up	yog	✓	U/G	✓	✓	✓	yg	ug
ap	ape	✓	✓	✓	✓	✓	✓	up	✓	✓	✓	✓
at	ate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
aw	A/W	oup	✓	A/W	a/w	-	ow	our	ow	ap	A/w	ap
ip	I/p	✓	✓	-	I/p	✓	✓	✓	✓	Ip	✓	✓
op	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓
fan	✓	✓	✓	-	✓	✓	✓	✓	✓	for	✓	✓
bit	bite	✓	✓	-	✓	✓	bite	bat	✓	bat	✓	✓
day	bay	✓	✓	-	d/ay	✓	✓	✓	✓	dad	✓	✓
fin	fine	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓
pot	✓	✓	✓	-	p/ot	✓	✓	boot	✓	pick	pto	✓
rug	ug	✓	✓	-	rop	✓	roog	✓	✓	rose	rgu	✓
map	✓	✓	✓	-	mop	✓	✓	mup	✓	mat	✓	mup
bat	✓	✓	✓	-	✓	✓	✓	✓	✓	but	✓	✓
paw	powe	pow	✓	-	pat	✓	pow	bow	pow	plat	P/a/w	pap
lip	lipe	l/ip	✓	-	l/op	✓	lipe	lup	✓	lup	✓	✓
mop	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓
Totals	8	18	22	3	12	21	15	14	20	9	16	19

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