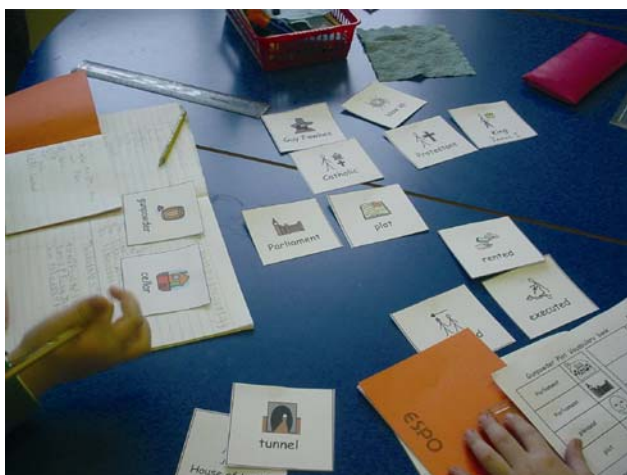


Symbols supporting inclusion in mainstream education



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Other Useful References

Symbols Inclusion Project (SIP) www.widgit.com/SIP

Downloadable symbol resources www.widgit.com/resources

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Symbols supporting inclusion in mainstream education

The Warwickshire Symbols Inclusion Project. (SIP)

In January 2003, Warwickshire Education Authority and Widgit Software began a six month project to study the impact of using symbols to help enable inclusion in a number of primary schools in Warwickshire.

Warwickshire DISCS (Disability Inclusion Sensory and Communication Service) provided an experienced teaching assistant for four days a week and an experienced classroom teacher for two days a week to work in Widgit's office to prepare materials for trial in the pilot schools. Widgit Software provided the technical help and a full-time graphic artist to support the work of the teachers.

Such was the success of this pilot that the Education Authority and Widgit agreed to provide these resources for a further three years and that the materials created would be distributed throughout the Authority schools. These resources are now available free or as low cost downloads for anyone else to use. The files are mostly for Widgit's 'Communicate: In Print' program or as PDF files which do not need specific software to use.

This pamphlet gives a brief account of some of the individual successes of the project in order to give a flavour of the work and how it was used. The names of the children have been changed. Each page gives a description either of the work of an individual student, or of the experiences of a particular teacher.

Some of the key advantages that are evident from these stories are: improving behaviour and motivation, creating greater independence and giving access to the the curriculum and learning. It is often difficult to separate these strands as they are necessarily related. Most significantly these strategies enable students to demonstrate what they know. As one child asked, "I can't think of the word. Can I draw the picture?"

For more information, email SIP@widgit.com



Writing using the vocabulary symbol list. Pupils really enjoyed using the list to spell all the tricky words, enabling them to produce work independently.



They used larger pictures to sequence and use for spelling.



The display supports the topic and reinforces the vocabulary.

Motivation and Behaviour

We use text for assisting in the delivery of major sections of the curriculum. Those students who have difficulty with text will frequently find frustration in handling many aspects of school life, from surviving in the general school environment, through literacy work, to understanding written instructions and worksheets for the curriculum.

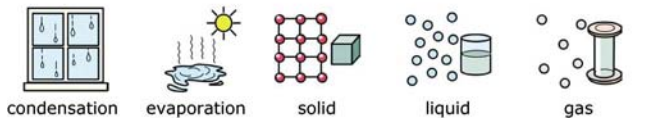
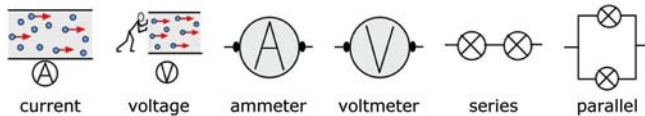
If we can separate out literacy problems from other tasks then we can reduce the measure of frustration very significantly. There are many cases, other than the descriptions here, where teachers have seen much greater motivation through the use of symbols.



Clearly not all cases of poor behaviour will be helped by increasing motivation and involvement through symbol support, but for many students it empowers them to become learners. Symbols have also been shown to have a role in managing behaviour by creating more effective ways of communicating with students. Many are not able to understand or remember verbal instructions and information. Holding up a symbol card to reinforce a spoken instruction or request, can help a student fully understand what behaviour is required.

Symbols can give these children a voice to express themselves when words fail them.

Learning and Curriculum



By illustrating words, symbols can help a student to learn and recall information. This is particularly true for those students who operate more visually and whose visual memory may help to recall facts. It is also true that symbols can help to remind students of a concept. The symbol itself cannot teach the concept, but once a concept has been understood, symbols can reinforce that understanding and help make the comprehension more permanent.

For example, we have developed many Science symbols where the images can help students to recall the meaning of the concept, even though they may be perfectly capable of reading the word. Even difficult concepts, such as voltage (the push sending the current round a circuit) and the current (the flow that results) can be well illustrated with symbols.

Self Study

Self study is an important aspect of learning. Many students who have literacy problems find research difficult. Often reference books have too much text or the layouts are too busy. These students may be able to handle ideas and information if they have to help understand the words and their meanings. For example we have produced a variety of History books about the Romans and Greeks. There are a number of topics covered in each set and each topic book has been made at five levels. These range from books with a picture and simple text information, a text level with support for key words and new vocabulary, through levels of symbol support, to books with just a single illustrative symbol per page. In this situation, the symbols help differentiate curriculum access.

The image shows five panels illustrating different levels of text and symbol support for a page about Roman soldiers building aqueducts and bridges. Each panel features an illustration of an aqueduct at the top and the number '7' at the bottom.

- Text only:** The page contains only the text: "Soldiers were also taught other skills. They learned to be engineers. They supervised building the roads. They built aqueducts and bridges."
- Supported text:** The text is accompanied by small icons representing the actions: a soldier, a book, a person building, and an aqueduct/bridge.
- Symbol:** The text is replaced by larger icons representing the same concepts: a soldier, a book, a person building, and an aqueduct/bridge.
- Simplified:** The text is replaced by even larger, more prominent icons representing the same concepts.
- One symbol:** The page features a single large, detailed illustration of an aqueduct with the word "aqueduct" written below it.

Independence

In the classroom, we need to give students as much independence as we can. This is psychologically important for the student as well as purely practical for the teacher. Students with literacy difficulties may also have difficulties in retaining verbal information. So we really need ways of providing printed information in a way that students can understand. Symbols supported worksheets and visual timetables etc. can greatly help provide information in this form.

The image shows three worksheets illustrating different methods of providing information:

- Unit 2E-04 quiz:** A quiz titled "Forces Quiz" with four questions:
 - What are forces measured in?
 - A force that pulls an apple to earth is called?
 - Which force slows down moving objects?
 - Which force would slow down a parachute?
 Below the questions are four options: Gravity, Air resistance, Newtons, and Friction.
- Unit 2D-13 cut and sequence:** A worksheet titled "Cut and sequence" with a grid of items: table, wood, tree, wool, sheep, jumper, leather, bag, cow, dress, plant, and cotton.
- Unit 2C-10 looking at materials:** A flowchart titled "Looking at materials" that asks "Is it hard?" and "Is it strong?" to categorize materials like wood, fabric, and paper.

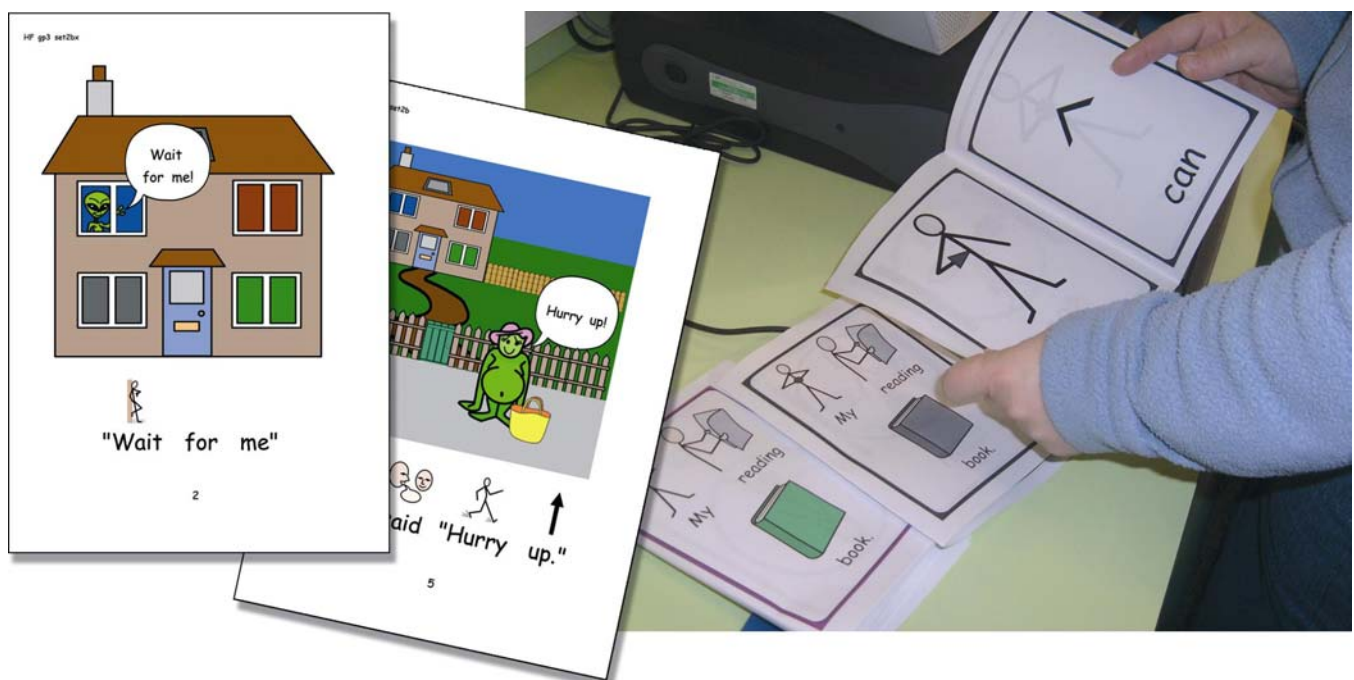
Learning to Read

Some students may never gain full functional mastery of text. For such students, symbols can be a lifeline. But the question exists whether a wider range of students can be helped with learning to read without forming any dependency on the images.

In the SIP project, there has been a focus on supporting early readers. Some students struggle to learn the first 45 high frequency words and schools often have limited material with this vocabulary. The Zed books use symbol support to aid word recognition as well as providing visually stimulating graphics. The books cover topics about real life experiences and students are motivated by the characters. Students begin to see themselves as 'readers' which improves self esteem and their ability to learn.

In the software that Wigit produces, it has always been possible to change the level of symbol support so that reliance on any visual clues can be removed if it is no longer needed.

The Zed books are provided in two levels. Set A has all the words supported, but Set B has the target words as text only. Set A may help in learning the vocabulary, and Set B in reading the text. The advantage of using symbols is that the books can cover more imaginative material. There are also two advantages of having the book electronically. First, small books can be printed for each pupil to read, take home and record progress. The second is that the books can be edited, for example by removing the target words completely for the pupil to hand-write in, removing all the text for a new sentence to be composed or by removing the pictures allowing the pupil to draw their own.



Summary

The process of inclusion brings its own challenges. Students may have various degrees of learning and communication difficulties or may not have English as their first language. The experience in Warwickshire has shown that through using symbols in the curriculum, and more generally in the environment around school, that many students feel more secure and have enhanced learning outcomes. The following pages give five examples from schools in Warwickshire that illustrate some of the value of symbols for specific children.

1. Improving behaviour

David was in Year 3 (7-8 year olds) with learning levels of a Y1 pupil working at Level 1 of the National Curriculum. His language and communication skills were very poor and he found it difficult to express his ideas. David also had a weak auditory memory. He was not able to access the Y3 Curriculum without considerable differentiation of the material.

David had good visual skills as a learner and responded well to symbols and photos. He had initial sound recognition and the combination of this and the symbol helped him to work out the word and its meaning.

Staff used the symbol-supported calendar with him every day. By crossing off each day when it had passed he was able to work out what the day was. He could not have done this without the symbols for the days and months.

The photos show David writing independently using symbol word grids made in 'Communicate: In Print'. The key vocabulary was put into the grids in the sequential order of the story, 'The Tiny Seed' by Eric Carle. The teacher first read through the story making sure that David found the key vocabulary on his grid. The task was to retell his favourite part of the story. David did this by using the symbols as a visual prompt to remember the story and then by copying the word underneath the appropriate symbol. The teacher supported him in formulating each sentence and rehearsing it verbally before he tried to write it.

David's writing target, to put a capital letter at the beginning of a sentence and a full stop at the end, was also symbolised so it could be referred to and he could see it – another visual prompt.

David saw himself as a 'writer' in this session which greatly boosted his self-esteem. His behaviour in unsupported writing sessions when the material was not accessible for him was very different. He shouted out, distracted other pupils and was generally disruptive.



2. Increasing independence

Anna is a Year 6 child who has attended a speech and language base for over 5 years. She has a severe expressive speech and language disorder and poor reading and recording skills. Her comprehension level is above these other skills. Anna tends to get very frustrated with herself when she cannot find the words she wants or write her ideas down. She often gives up and does not volunteer answers in class.

We first used the 'Writing with Symbols' program with Anna to make simple reading books and to help her record basic sentences. It made such a difference - suddenly, she could read word for word instead of guessing and could access a wordlist to record independently. We also supported her expressive language with cue cards. Anna finds it very hard to formulate a sentence with the words in the correct order which makes it hard for her to communicate with others. She needs thinking time and lots of visual prompting and encouragement. We made question cards she could use to ask questions e.g. "What do you like?" "When is your birthday?" We colour-coded words to remind her to use subject/verb/object etc. and Anna is very good at remembering the colours of each part of speech and to start with "Who" when it was needed. Then we found we could make her cue cards so she could speak in Assembly and at Christmas productions (provided we limited the language). She was proud of herself and her parents were impressed as well.

We used a visual timetable to help Anna remember where she had to be and what was happening each day. She took to this very well, knew if there were to be any changes and sorted these out herself. This also helped other children in her group.

We have extended this support through the use of symbols to other subjects such as Science, History and Geography. Anna really enjoys these subjects, but it was hard for her to contribute without 1-1 support. Now she has some level of independence through using History books and wordlists, Science recording sheets and prepared differentiated work. We have even prepared songs and carols for her to take home and practice. This has helped her to become part of the class and join in with class activities.

Anna uses the WWS program herself to have a go at spelling, writing sentences, poems and stories, and checking vocabulary. She really enjoys this and is becoming quicker at typing in words. She is pleased with the results and likes to print off her work to take home or to show the class.

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'Writing with Symbols' has really helped Anna to achieve in areas where she was having great difficulty. She is a very visual learner and this support has benefited her immensely. Her self-esteem has been raised, as has her success in class.



3. Learning

An investigation into the value of symbols in vocabulary acquisition.

Stockingford Infants School use symbols in the school to support communication friendly environments. The teacher, Dena, wanted to evaluate the use of symbols in learning.

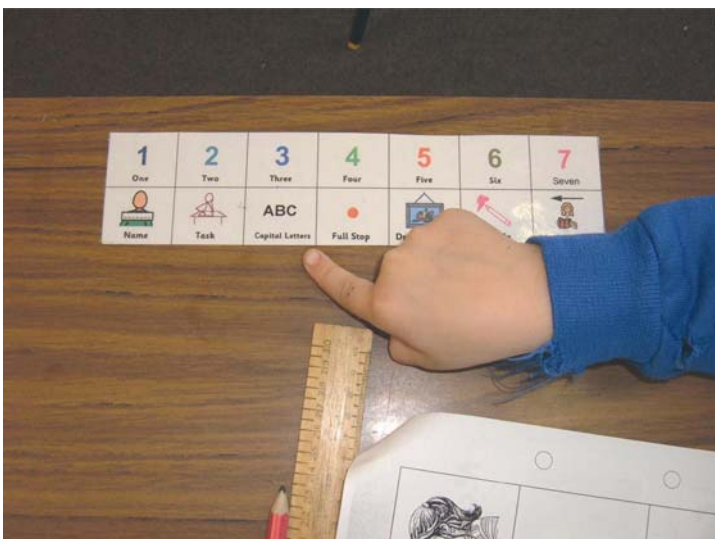
As part of a post-graduate study, she observed three students with communication difficulties over an 8 week period in a project to evaluate the role of symbols in acquiring sight vocabulary.

The pupils all aged about five had difficulty in reading the first 45 Reception High Frequency words. In the weekly sessions, Dena used flash cards with the words, and with the words plus symbol, in a number of games and activities during the period of the intervention. She used the vocabulary both in isolation and in connection with reading books. All three pupils made significant gains during the intervention, but the most remarkable gains were by the child with the most severe reading difficulties.

Clearly these gains could not be attributed solely to the intervention and to the use of symbols. There are many other possible influencing factors, “Nevertheless, there are some observations that do suggest that the use of symbols may have had a positive impact.”

The indicators she cites are, that as well as recognising the words, they understand the meanings of words such as they/he/she which they were not yet using correctly in their spontaneous spoken language. When reading from the text alone they could read repeated phrases but did not always do so from word to word. However, when the symbols were present they were seen to consistently point from symbol to symbol as they read.

She also reported that the children showed a positive attitude to the activities involving symbols and approached the tasks with enthusiasm. “Symbols also allowed a child with very limited level of literacy skill to take part meaningfully in activities with his higher attaining peers.”



Some proponents of the use of symbols in early literacy intervention indicate a concern that children could become ‘dependent’ on the symbols and that they should be phased out as soon as possible. Dena, however, challenges this. Although in the reading activities the children were encouraged to read the words without symbols, she feels that such a categorical statement appears unduly prescriptive. She believes that symbols contribute to an inclusive strategy, supporting visual learners by giving access to reading and information while learning to read the printed word.

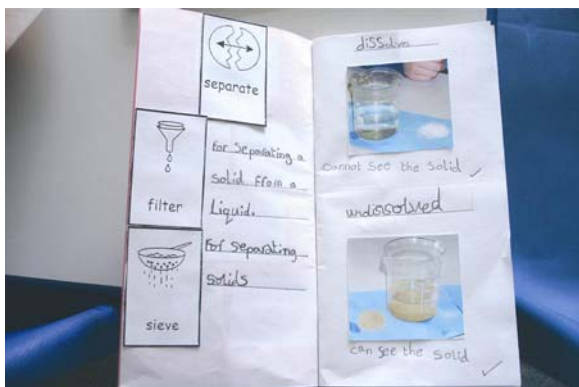
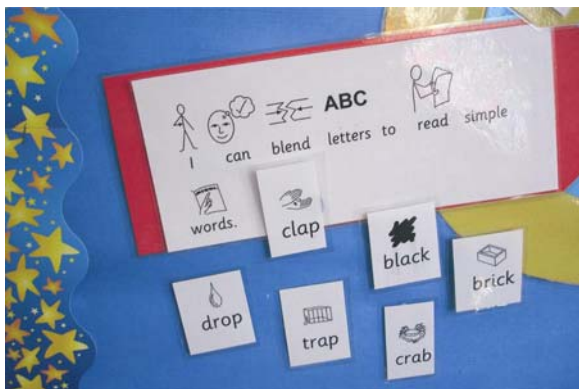
4. Motivation

Telling the story. Use of symbols and gesture to support science, a teacher from Weddington Primary School reports.

In Year 5, we have been studying the topic 'Earth, Sun and Moon'. I developed a set of symbolised materials and key topic words using 'Communicate: In Print'. The teaching sessions have been visual and multi-sensory. The children were very enthusiastic. The impact of these methods certainly worked with one very visual child. His class teacher reported that in an unsupported class revision lesson this child had his hand up to answer all of the questions and his answers proved that he had learned as much, if not more, than some of his peers. The gains are not only in knowledge but also in raised self esteem that comes with genuine praise in front of peers and the feeling that "I know"

I used similar materials and methods with the current Year 6 children last year when they were in Year 5. Tests to advise revision topics have revealed that one particular child has retained lots of the information covered in Y5. For a child who is not particularly motivated in other lessons, and does not succeed at the same level as his peers, this is a real success.

The inclusion of symbols supports multi-sensory teaching. One of the children I am currently working with is a very visual child. He finds explaining himself and remembering words very difficult. However, symbols seem to prove the link that stimulates the recall of language. When seeing the symbol I used for instructions, he was immediately able to recall the words and their correct order.



5. Curriculum involvement

In Clapham Terrace School, they are using the 'Roman' books. The teacher introduced the symbol versions of the books to two children, a boy, who was very difficult to motivate and a girl who was Portuguese with huge gaps in English vocabulary.

I worked with these two students over a three week period, with two sessions a week. I started by asking them both what they knew about the Romans so that we could refer back to that later. The boy had some understanding of the Romans, but the girl did not.

The boy lacks understanding of concepts but loves books. He loved the symbol book. Pauline writes: "I read the first page, then he wanted to read the rest. When I paused to check the vocabulary, he impatiently said 'Let's get on. I want to read this bit'". He loved the pictures and really enjoyed telling us what he knew about them. The girl was also engaged in reading the books for a long time and the symbols helped her to join in with the reading. She most enjoyed looking at the pictures as I introduced the vocabulary and was willing to talk about them. She was less keen on reading.

In the second session that week both children showed continued interest, and remembered a few of the new terms introduced. In this session they used the flash cards to identify specific vocabulary and discuss the meanings.

By the second week, both children had a good recall of vocabulary and good attention to the tasks. They both made a big effort to recall the labels from last time. The specific vocabulary they could recall was Rome, Emperor, sword, shield, aqueduct, legion and the purpose of turtle formation.



By the end of the second week they were able to read from the symbol supported books. These books have symbol/pictures linked to the new and difficult vocabulary. It was clear that the symbols helped them to remember and understand the concepts.

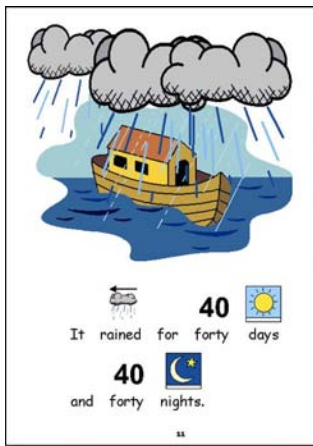
In the third week, we introduced a 'Pairs' game using the flash cards. The game was very successful. Before we started we looked at the cards to discuss content. They were very keen to play the game and it encouraged more discussion as we went along.



The symbols provided clear motivation and helped with understanding the vocabulary and meanings of terms. Two other children, who hadn't seen the books before, were able to read a lot of the symbol supported text independently.

Symbols Inclusion Project Resource Packs

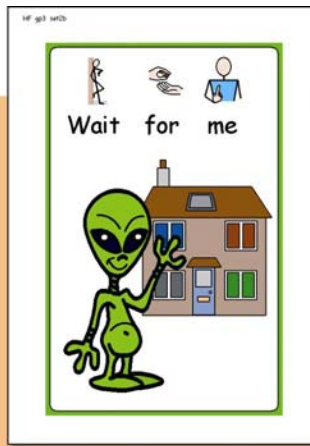
Curriculum resource packs
downloadable from www.widgit.com/resources



Noah Pack



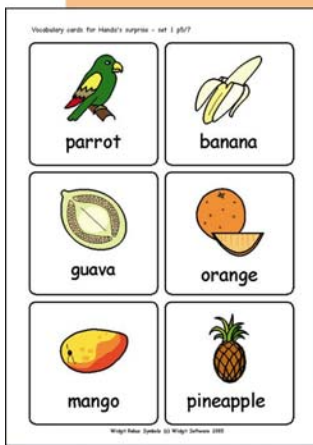
History books



Early reading books



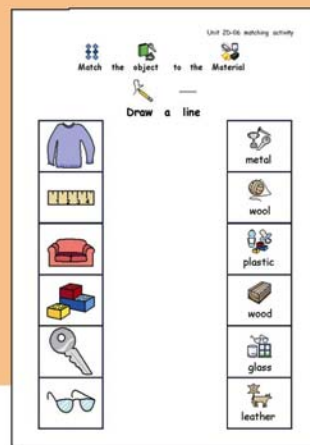
Gunpowder Plot



Flash cards for
well known stories



Seasonal packs



Science packs
for QCA units



Diwali

The materials developed under the SIP project are available as FREE or low-cost downloads. There are resources for many areas of the curriculum as well as cross-curricular packs and topical packs for different seasons.

The packs will typically have between 10 and 20 activities and reading books which can be printed from Communicate: In Print.



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