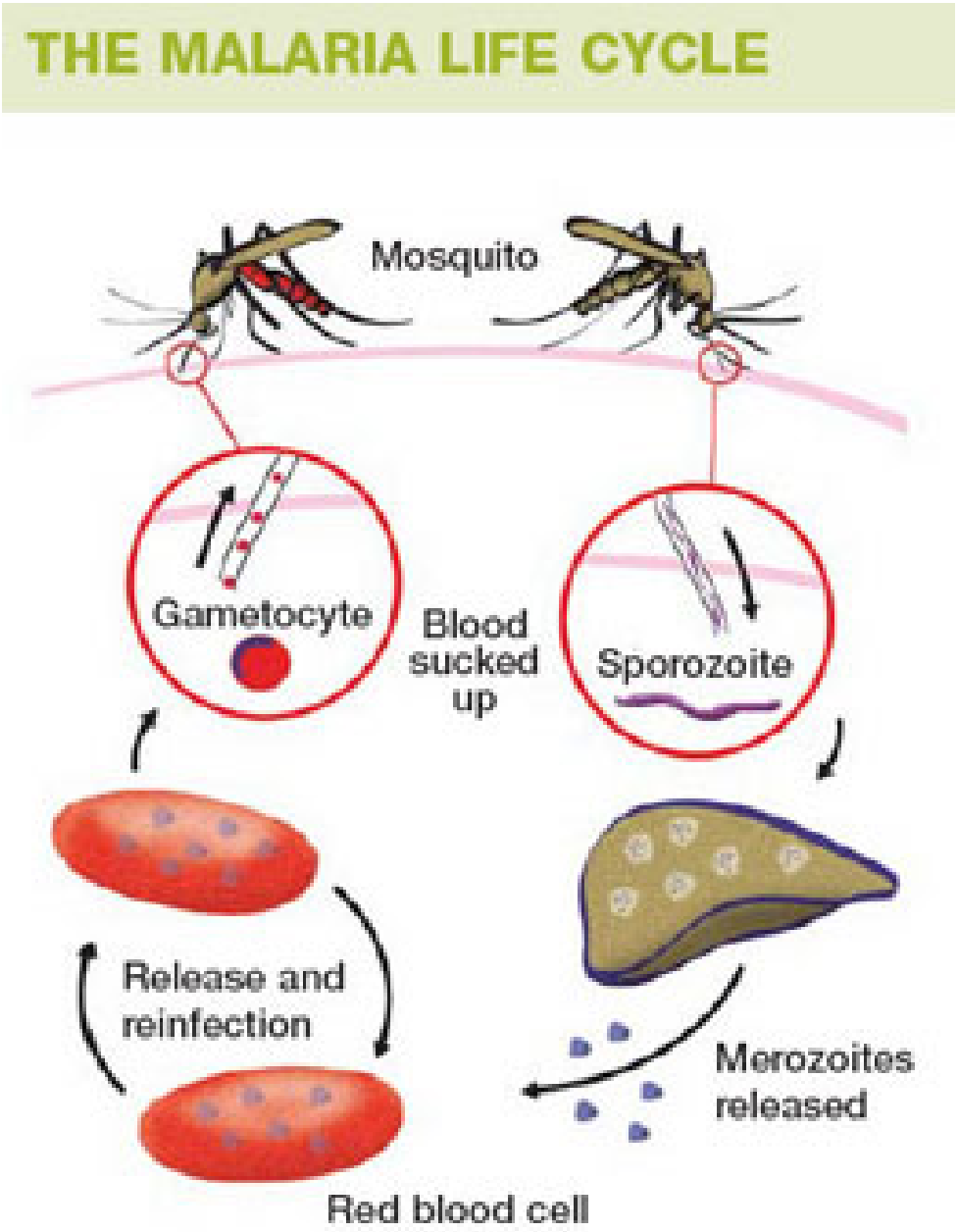
"Push and Pull"

The UK Chancellor announced in November 2004 that the government would buy 300 million doses of an effective malaria vaccine for the developing world...

On 8th September 2022 researchers at Oxford university announce they had developed a cheap, easily transported and effective vaccine. Will our government keep its promise?

We will be updating this activity and welcome your help.



http://www.collaborativelearning.org/pushandpull.pdf

Push and Pull

We promised more information gap activities on line. They are quick to download, and prepare for the classroom. They are an ideal way to introduce material with difficult reading tasks, but with content which we really want to teach. This activity was sourced from an article by James Surowieki in the December 2004 edition of the New Yorker magazine.
http://www.newyorker.com/archive/2004/12/20/041220ta_talk_surowiecki
He was reporting on Gordon Brown's offer to drug companies to buy three hundred million doses of a malaria vaccine.
The activity is ideal for a citizenship lesson for Year 8 up, although many teachers have adapted similar content for Year 6. Information gap works well with Year 3 up. The trickiest bit of this activity when trying it our for the first time is sorting the initial pairs or trios and groups, so we have included a sample card set for sorting thirty participants, which you can always pare down if you are fortunate enough to be teaching fewer. There is plenty of further reading, including the New Yorker article, currently on the net which you might chose to include.
The webaddress for this activity is:
<http://www.collaborativelearning.org/pushandpull.pdf>

COLLABORATIVE LEARNING PROJECT
Project Director: Stuart Scott
Supporting a cooperative network of teaching professionals throughout the European Union to develop and disseminate accessible teaching materials in all subject areas and for all ages.

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BRIEF SUMMARY OF BASIC PRINCIPLES BEHIND OUR TEACHING ACTIVITIES:
The project is a teacher network, and a non-profit making educational trust. Our main aim is to develop and disseminate classroom tested examples of effective group strategies across all phases and subjects. We hope they will inspire you to use similar strategies in other topics and curriculum areas. We run teacher workshops, swapshops and conferences throughout the European Union. The project publishes a catalogue of activities plus lists in selected subject areas, and a newsletter available by post or internet: "PAPERCLIP'.

*These activities were influenced by current thinking about the role of language in learning. They are designed to help children learn through talk and active learning in small groups. They work best in mixed classes where children in need of language or learning support are integrated. They are well suited for the development of speaking and listening . They provide teachers opportunities for assessment of speaking and listening and other formative assessment.

*They support differentiation by placing a high value on what children can offer to each other on a particular topic, and also give children the chance to respect each other's views and formulate shared opinions which they can disseminate to peers. By helping them to take ideas and abstract concepts, discuss, paraphrase and move them about physically, they help to develop thinking skills.

*They give children the opportunity to participate in their own words and language in their own time without pressure. Many activities can be tried out in mother tongue and afterwards in English. A growing number of activities are available in more than one language, not translated, but mixed, so that you may need more than one language to complete the activity.

*They encourage study skills in context, and should therefore be used with a range of appropriate information books which are preferably within reach in the classroom.

*They are generally adaptable over a wide age range because children can bring their own knowledge to an activity and refer to books at an appropriate level. The activities work like catalysts.

*All project activities were planned and developed by teachers working together, and the main reason they are disseminated is to encourage teachers to work effectively with each other inside and outside the classroom. They have made it possible for mainstream and language and learning support teachers to share an equal role in curriculum delivery. They should be adapted to local conditions. In order to help us keep pace with curriculum changes, please send any new or revised activities back to the project, so that we can add them to our lists of materials.

Push and Pull

Collaborative Reading Materials with an information gap.

There are three different texts with a common question sheet. The principle here is that readers will be unable to complete the questions by using the information in their version, but will have to collaborate with other readers, asking questions and eliciting information, possibly arguing and negotiating. There is also an opportunity to draw on their own previous knowledge and other information provided.

We have outlined the following procedure for a class of thirty, but you can reorganise things in a variety of ways. You can possibly arrange to pair slower readers with faster ones etc. You could start with threes rather than pairs etc.

The class works first in pairs or threes and these groups have copies of the same text. For example: five pairs could have Sheet A, five Sheet B etc. The card activity is a simple way of organising into pairs with a bit of extra learning thrown in, and if you want to select pairs you can always deal the cards from the bottom of the pack. Pairs can read the text silently first, and then to each other, and then work together to answer as many questions as they can.

The pairs then split up and move into colour groups of six where two participants have Sheet A, two Sheet B etc. They can then go on to complete the questions by interrogating each other.

If you are thinking about producing your own information gaps, you may find it easier if you try this method. Find a suitable whole single text containing the information you wish to teach. Formulate a series of questions for the text. Produce three or four texts where the factual and inferential information is shared between them. Some overlapping of information is fine. You may decide to provide texts of varying difficulty. There is an example of this online at http://www.collaborativelearning.org/foodandbabies.pdf

Push and Pull Text A

The UK Chancellor announced in November 2004 that their government would buy 300 million doses of an effective malaria vaccine for the developing world. This disease is spread by mosquitos in countries with hot wet climates. Mosquitos pump the disease into the bloodstream when they bite you to drink your blood.

This promise means that drug companies will work hard to develop a vaccine. They have to invest a lot of time and money into research and testing before a drug is ready to be sold. If they think they can't recover the money and then make a profit, they don't do the research.

Some companies have been given money to research malaria, but have not found a vaccine. One company has already developed a vaccine that is 58% successful. There are still years of testing a millions of pounds to be spent before a vaccine is ready to be sold.

Push and Pull Text B

The average amount per person spent on health every year in the USA is $5000; and in Africa $18. Drug companies have to make money for their shareholders. They invest in the development of drugs that will be used regularly by people who can afford them. An example of this would be a drug to relieve arthritis which needed to be taken every day. Drug companies are unwilling to develop a malaria vaccine, because few people in Africa can afford the market value.

The UK Labour government has come up with a way to encourage drug companies. It has promised to pay the market price for 300 million doses of the vaccine when it is developed. Charities and foundations are also likely to make similar promises.

If this method of funding to help poor countries works, it is likely to be extended. Similar promises could be made for the development of drugs to cure AIDS and tuberculosis. "Pull" funding is not a new concept, but it has not been popular. Governments have generally tried "push" funding by giving money to universities and drug companies to encourage research. Up to now this method of funding has not produced a vaccine for malaria.

Push and Pull Text C

In the 18th century many ships hit rocks and sank because they lost their way. At that time there was no reliable way of finding out their longitude. The British government promised £2000 to the first person to find an accurate way to find longitude while on a ship. A clockmaker won the prize. This is an example of "pull" funding. Gordon Brown MP has revived this strategy by promising a prize for the first successful vaccine for malaria.

This may take a long time. Most politicians prefer "push" funding. In this case they give money up front to a drug company to develop drugs which may not be profitable. Push funding means politicians get publicity and can give out favours. Big drug companies like push funding too. They can develop cosy arrangements with governments and charities that provide money for research and development.

Gordon Brown's decision may mean that a vaccine for malaria is more likely to be developed. The market value of the drug will depend on how long the research takes. The social value will be much greater. At the moment hundreds of millions of people catch malaria. Students who are often ill cannot learn well. Ailing workers do not produce so much. Rich companies do not invest their money in countries where infectious diseases are common.

Push and Pull - Question sheet with space for answers.

1.What do you know about Gordon Brown?	2. Why isn't there an effective vaccine against malaria?	3. When did Gordon Brown make his promise?	4. Malaria is infectious. What does this mean?
5. How much is spent on health in the US and in Africa?	6. Where do drug companies invest their research money?	7. How does malaria keep African countries poor?	8. How does push funding work and why do drug companies like it?
9. Why does it cost a lot of money to develop a vaccine?	10. What was one of the first examples of pull funding?	11. What is a good definition of pull funding?	12. What is the social value of a vaccine? How and why is it different from its market value ?

Original article from the New Yorker by James Surowiecki

A couple of weeks ago, Gordon Brown, Britain's Chancellor of the Exchequer, made a promise. The United Kingdom, he said, would buy up to three hundred million doses of a new malaria vaccine for the developing world. It was a welcome sign that the West is finally paying attention to the most important problem in global public health; namely, the spread of infectious diseases like malaria, tuberculosis, and aids. It was also something else: a dramatic innovation in the way those diseases are fought.

That's because the vaccine that the U.K. promised to buy doesn't exist yet. There are several good candidates for a malaria vaccine, and one of them, being developed by GlaxoSmithKline, showed excellent results recently in a clinical trial in Mozambique, where it cut the risk of developing severe malaria by fifty-eight per cent. But there are still years of testing and hundreds of millions of dollars in development costs before any viable product could be sold. What Brown's announcement guarantees is that if an effective vaccine emerges there will be someone to buy it at a fair price.

Usually, a company that invents something useful doesn't have much trouble selling it. But vaccines—especially for diseases in the developing world—are notorious exceptions to this rule. To begin with, Third World countries have unimaginably tiny amounts to spend on public health. (The poorer African countries spend eighteen dollars per person a year on health. We spend five thousand dollars.) And then the market value of a vaccine may be a fraction of its social value. If you're vaccinated, it not only makes you safer; it makes me and my children safer, too. So though you might be willing to pay the vaccine-maker just two dollars for a shot, its value to your community might be twenty times as great. Governments, of course, could make up the difference, but, historically, they haven't been willing to. Instead, they've used their regulatory and bargaining powers to drive prices down to the bare minimum.

The result is that drug companies have put very little money into vaccine research. They'd much rather invest in an anti-arthritis drug that well-insured Americans will take every day than a vaccine that may never command a fair price. (Just a few years ago, a promising malaria-vaccine candidate that had been tested in Papua New Guinea was abandoned for lack of funding.) Meanwhile, diseases like malaria and tuberculosis have continued to ravage the Third World. Hundreds of millions of people are newly infected every year. And the burden of disease has helped keep sub-Saharan Africa poor: students who are in and out of school have a hard time learning, ailing workers aren't very productive, and Western firms are loath to invest in countries where such diseases are endemic.

When the private sector isn't providing the innovations we need, the traditional answer is to have the government stump up for R.&D. This is what's called "push" funding, because the government chooses among various options and gives its favorites a push. In the case of a malaria or t.b. vaccine, this means that the government sizes up candidates, offers grants, and subsidizes drug companies, universities, or its own research teams as they experiment with the vaccines. In fact, that's what the United States did at the beginning of the nineteen-eighties, when it funded a number of malaria-vaccine projects—none of which panned out.

Instead of deciding in advance which vaccine candidates deserve funding, however, a government could commit itself to paying a reasonable price for whatever vaccine turns out to work, effectively guaranteeing a market for it. Drug companies would thus have an incentive to invest in promising candidates. Rather than pushing vaccines into existence, this approach pulls them.

Although "pull" is relatively new to public health, it has a good track record; think of the prize that the British government offered to the first person to come up with a way of measuring longitude at sea. It's an approach with two great virtues. First, the buyer—whether a government or a nonprofit organization like the Bill and Melinda Gates Foundation, which might well spend hundreds of millions on any vaccine that's developed—doesn't have to guess which candidates are most likely to succeed. Second, buyers pay only if the vaccine works, so they aren't stuck bankrolling bad ideas.

The logic of the pull strategy in vaccine development—a strategy that has been most cogently advocated by the Harvard economist Michael Kremer, who is the co-author, with Rachel Glennerster, of the new book "Strong Medicine"—seems hard to resist; it's low risk, high reward. But there are powerful forces against it. Politicians prefer push funding because it's an easy way of doling out favors, rewarding supporters, and getting publicity when the lab back home gets a nice grant. Some activists scorn anything that might further enrich drug companies. And the companies themselves—especially big ones—actually like push funding better, too. It assures them a steady flow of R.&D. money, can often be earned via political connections, and isn't tied to performance. Then, there's the ticklish matter of appearances. Drug companies are wary of admitting publicly what everyone knows to be true: that the size of a market affects how much they invest in it.

But pay attention to what companies do, not to what they say. Push funding will continue to be important, especially in subsidizing basic research, but the way to get companies to put resources where they're most needed is to make a concrete, binding promise to buy. All it takes, in the end, is a little pull.

Push and Pull - different groups for thirty participants
Matching pairs e.g. under/over 3x10 letter groups and 5x6 colour groups.

under A RED	over A YELLOW	Mickey B RED	Minnie B YELLOW
right shoe A GREEN	left shoe A BLUE	train B GREEN	track B BLUE
pick A ORANGE	mix A RED	tea B ORANGE	cakes B RED
Mad Hatter A BLUE	March hare A YELLOW	thunder B BLUE	lightning B YELLOW
milk A GREEN	cereal A ORANGE	sun B GREEN	moon B ORANGE

ice cream C RED	jelly C YELLOW
sugar C GREEN	spice C BLUE
fingers C ORANGE	thumbs C RED
sweet C BLUE	sour C YELLOW
tweedledum C GREEN	tweedledee C ORANGE

Jigsawing with a class of thirty??!

These cards will make your life a lot easier when organising pairs into sixes. Each child has a card and everyone finds their partner. If you think any pair is difficult, why not substitute from the list below or invent your own or get your children to think some up. You can always develop thematic pairs for any activity. Pairs collect the information sheet with the letter that corresponds to the one on their card. Although they work together they will each need a copy, since when they go into colour groups of six, their partners are in a different group.

strawberries/cream
cheese/biscuits
fish/chips
knife/fork
smoke/fire
bed/breadfast
dog/bone
jeans/jumper
naughty/nice
push/pull
fizzy/still