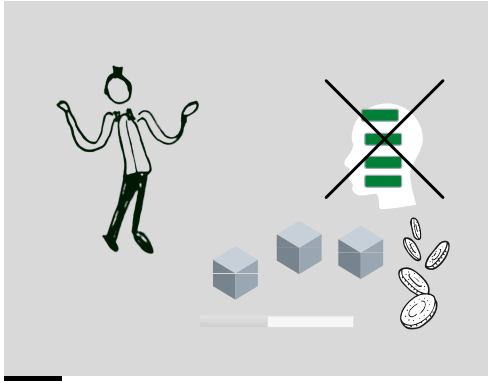
Which?

'PING-PONG'

Observing Shanghai teachers, it was noted that their lessons are even broken down into smaller steps where the teacher teaches and the children carry out guided practice. This process is repeated until the children have gained a deep enough understanding of the small step in order to move on to the next one. This could take more than one lesson. The walkthru here shows how this 'Ping-Pong' style of teaching could be achieved.



1

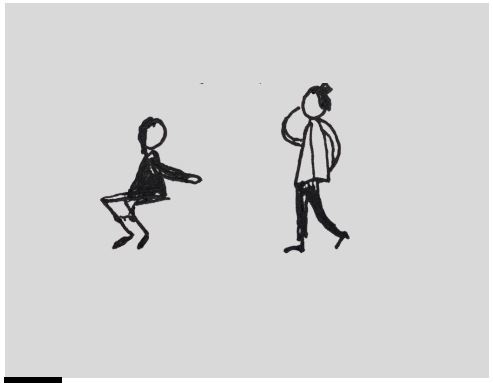
TEACH

Model using examples and ensure understanding of the 'why' around a concept. Use manipulatives as suggested in the White Rose sequence, making sure that working memory is not overloaded.

2

GUIDED PRACTICE

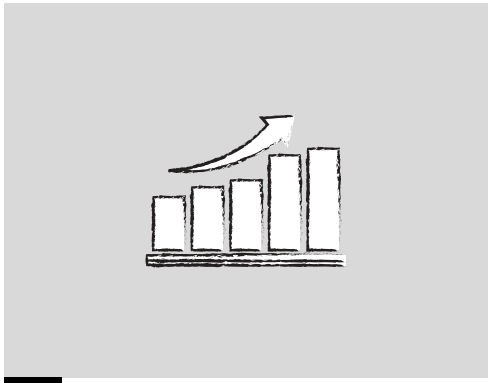
Whilst children carry this out, the teacher's role is to monitor the situation and intervene where needed making an impact. Children self-mark so that the teacher can quickly see who understands and who does not.



3

ACT ON WHAT YOU SEE

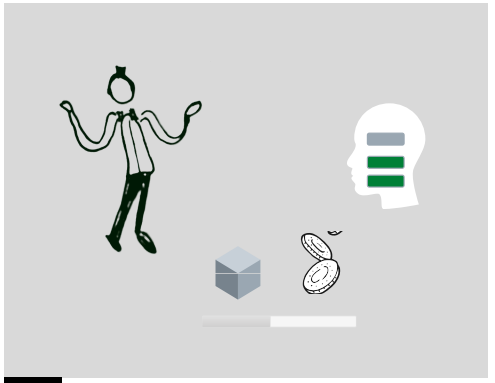
The aim is for everyone to move onto the next task together. See **Rapid Graspers** for those who finish quickly. See **Those Taking Longer** for the options which apply at this stage.



4

KEEP THE CLASS TOGETHER

This is easier said than done. Some children will need to spend longer securing the fundementals but the aim is to make sure everyone gets to where they need to be to move on.



5

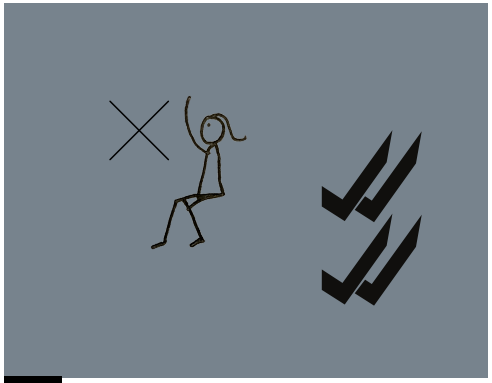
MOVE ON

If you have built the task around no more than 5 questions and everyone is ready, you can bring them back for the next input.

Which?

RAPID GRASPERS

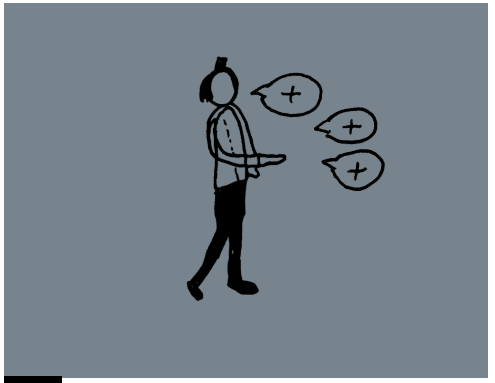
The children who seem to get through things quickly aren't necessarily the best mathematicians. They need to deepen and broaden their experience of Mathematics so that when they go onto Higher Education, they don't drop out at the first sign of a tough problem, all thanks to their diet of getting everything correct in earlier schooling. This walkthru takes you through what you can do to foster a love of Maths and to facilitate high achievement from these children in Maths Mastery lessons, leaving them begging for more and in no way bored or frustrated.



1

PLAN 'IF YOU FINISH' TASKS

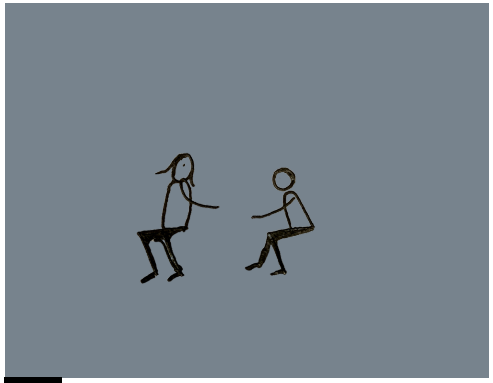
Children should know if they have truly finished and trained to know what to do next. This task should be open-ended and build on what they have been learning.



2

"AND ANOTHER"

If they finish finding a solution, keep asking them for more. Mathematicians are resilient and they persevere with finding more answers. Ask for written reasoning- "How do you know this is correct?"



3

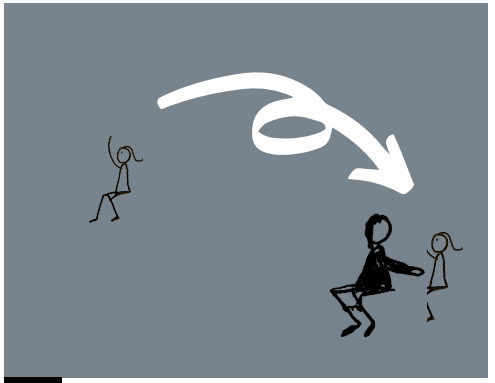
WORK WITH A FELLOW FINISHER

If the task can involve working with a fellow finisher, then rich mathematical conversations can come out of it. This again, needs training so children make productive use of this time.

4

CARRY OUT METACOGNITION

Research shows that the most academic also carry out metacognition and self-regulation to great effect. Ask them to think about how they succeeded and jot their thoughts down.



5

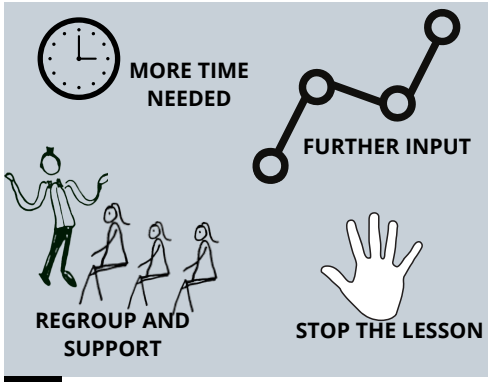
PUT SUPPORT EXACTLY WHERE NEEDED

Be aware of what the rapid graspers are doing but spend longer with those who need your help. Be mindful of 'Learned Helplessness' from certain children.

Which?

THOSE TAKING LONGER

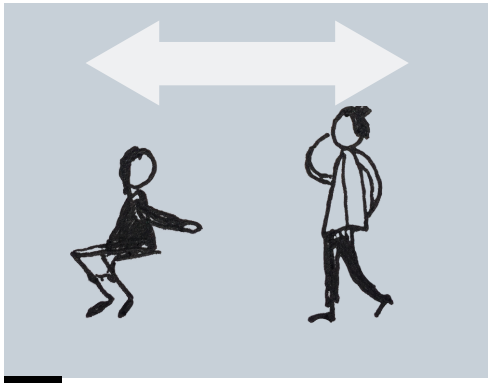
Like in real-life with the Driving Test, there are some who take longer than others to understand things. Shanghai Teachers insist that every child can learn to the same high standards but will take longer. There are others who are significantly behind and alternatives are explored in this walkthru. Be aware that those children should be a very small minority of a school.



1

CONSIDER OPTIONS

If you have noticed in a lesson, certain children aren't understanding, then stop and think. What are your options?



2

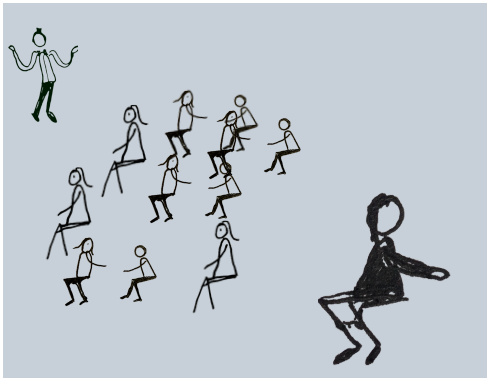
SWITCH PLACES WITH TA

If your Teaching Assistant has finished getting children off to a flying start, then swap roles. They can do the monitoring and feedback to you whilst you teach any children who need it.

3

GIVE MORE EXAMPLES TO PRACTISE

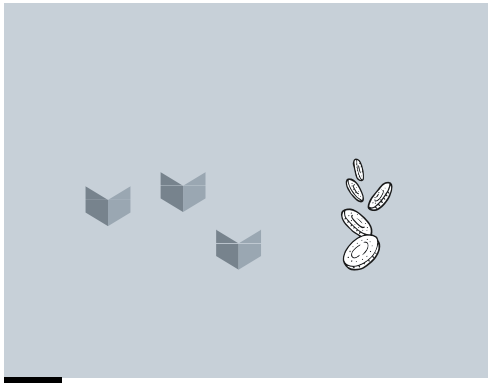
Your Teaching Assistant could spend longer with those needing to really 'nail' the fundementals. You or your TA could write more examples for them to do.



4

SAME DAY INTERVENTION

If there's a maximum of 3 children with a similar issue, a TA could work at the back of the class during other subjects for a maximum of 10 minutes to prevent curriculum narrowing.



5

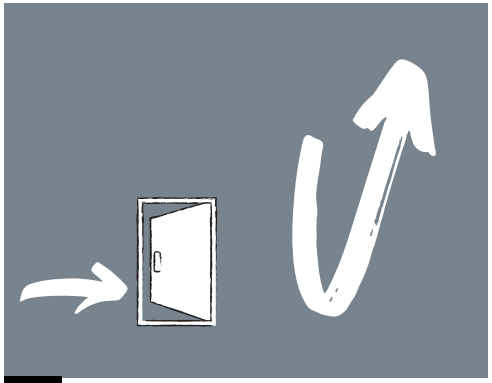
CONSIDER A LAST RESORT

When things get more complex, children with huge gaps in their knowledge get overwhelmed easily. Is this a good use of time? These children could do work on place value, times tables and other strengthening work instead.

Which?

SUPPORT/ DEEPEN LESSONS

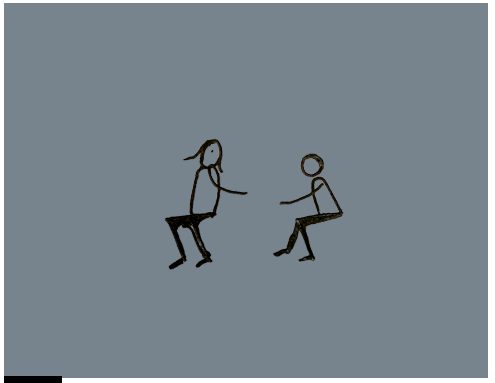
If there's a common misunderstanding and the group is larger than 3 children, then it is the teacher's job to work with this group the next day. This is an excellent opportunity for some group work and the others who did understand to deepen their learning with the current small step as well as build their self-perception as a Mathematician.



1

LOW THRESHOLD, HIGH CEILING

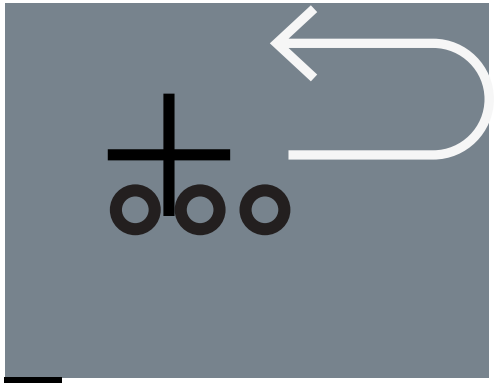
NRICH has some excellent activities and online games for deepening understanding. It is simple to get started with these tasks and the possibiities are endless with the exposure to rich mathematical learning.



2

WORK IN PAIRS

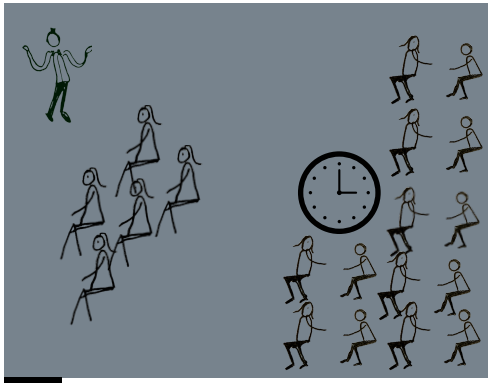
Not only can they support each other with the task to get started but this is a good chance for reasoning as well. It also gives children a chance to get 'unstuck' together before asking for adult assistance.



3

GET MORE OUT OF A TASK

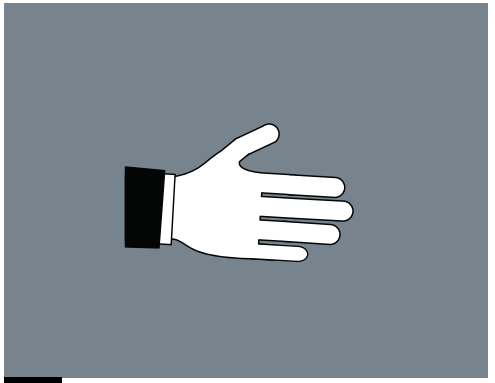
Is there a task from earlier on in this small step that can be adapted so it is more open-ended? Can it be 'pitched-up'?



4

TEACH THE SMALLER GROUP

You can now give a lot more attention to the group that needs further teaching. Plan in time to work without you so you can check in on the vast majority of the class.



5

HAVE A TRICK UP YOUR SLEEVE

Be ready to change the task that the majority are doing to make it different so that those who finish can get more out of it. Can you build in further complexity and links with other areas of Maths? Children love this!