

Overcoming barriers



Overcoming barriers in mathematics

Helping children move from L1 / L2, L2 / L3, L3 / L4 and L4 / 5



L1/L2 Ref:

00021-2009BKT-EN

L2/L3 Ref:

00149-2008PCK-EN

L3/L4 Ref:

00695-2007PCK-EN

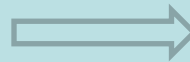
L4/L5 Ref:

00904-2009BKT-EN

Overcoming barriers in mathematics

These are materials directly linked to the renewed framework.

Level 3 to level 4 – especially for Y5 and Y6 teachers



Level 2 to level 3 - especially for Y3 and Y4 teachers

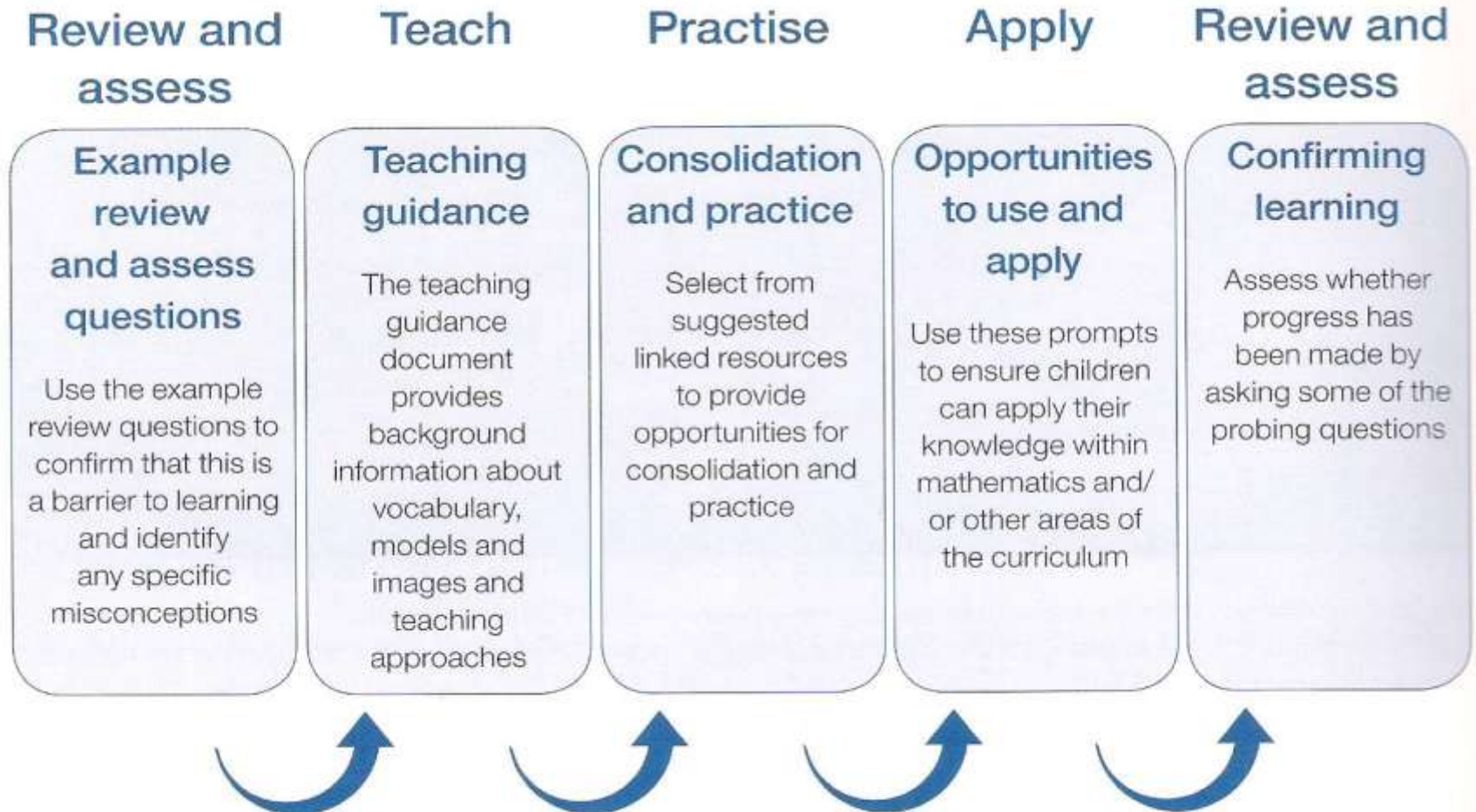
Level 1 to level 2 – end of KS1

lower KS2

Overcoming barriers material

- ❖ Targeted for pupils who are at risk of not meeting age-related expectations by the end of Y2 / Y4 / Y6.
- ❖ Address key areas of mathematics that children often find challenging (and are sometimes difficult to teach).
- ❖ Learning objectives are included for Y1-Y6 (to Y7) but not all objectives have materials to support them – only those that have been identified as *common barriers to progress*.
- ❖ The materials are linked and are referenced to the Primary Framework i.e. they are organised into the seven strands and can be matched to the unit of work that is being taught.

Structure of the materials



How to use the CD

Assess the children and identify where support is needed

Choose the 'Can I?' statement that links to the support needed.

Look at the **example review questions**, they could be used for discussion with individuals or groups.

Teaching guidance links vocabulary, models and images and other teaching tips are included

Consolidation and practice links existing resources that can be used eg. ITP's and Springboard materials

Opportunities to use and apply gives suggestions where children might be able to use this knowledge.

'Can I' questions **confirm learning** and probe children's understanding

Overcoming barriers in mathematics – – moving children from Level 3 to Level 4

using and applying

counting and understanding number

knowing and using number facts

calculating

understanding shape

measuring

handling data

Select a highlighted strand from the list to view the objectives

NB: To select a strand, select PowerPoint slide show



Measuring

Year 5

Click on an arrow to select an objective

Year 6

Read, choose, use and record standard metric units to estimate and measure length, weight and capacity to a suitable degree of accuracy; convert larger to smaller units using decimals to one place



Select and use standard metric units of measure and convert between units using decimals to two places

Interpret a reading that lies between two unnumbered divisions on a scale



Read and interpret scales on a range of measuring instruments, recognising that the measurement made is approximate and recording results to a required degree of accuracy; compare readings on different scales

Draw and measure lines to the nearest millimetre; measure and calculate the perimeter of regular and irregular polygons; use the formula for the area of a rectangle to calculate the rectangle's area



Calculate the perimeter and area of rectilinear shapes; estimate the area of an irregular shape by counting squares

Read and interpret scales on a range of measuring instruments

Monitoring children's prior learning

Can I read and use a scale on a thermometer, protractor, ruler, weighing scale and measuring cylinder?



Can I read and use a scale?

Example review questions

A piece of cheese has a mass of 350 grams.
Mark an arrow on the scale to show the reading for 350g.



Show children a scale and ask questions such as:

- What is the reading at this point?
- What does each division represent?
- What is the maximum this scale can measure?
- How much more is needed to get to the next 100/1000?

Teaching
guidance

Consolidation
and practice

Opportunities
to use & apply

Confirming
learning



Can I read and use a scale?

Consolidation and practice



Ruler ITP



Measuring Scales ITP



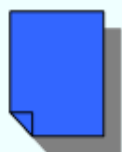
Measuring Cylinder ITP



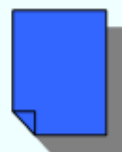
Thermometer ITP



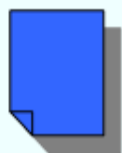
Scale challenge



Springboard 6, Lesson 16
Measures 2



Springboard 6, Lesson 16
Resources



Springboard 7, Unit 11, Section 1, 2 and 3
Mass, Units of mass, Capacity



Can I read and use a scale?

Opportunities to use and apply

Possible contexts include:

Practical experience at home and school, for example

- Make fruit cocktails using precise measurements of juice.
- Measure the growth of plants in a science lesson.

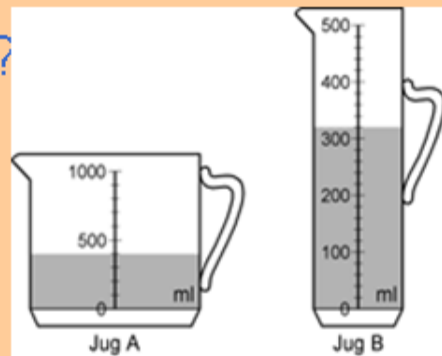


Can I read and use a scale?

Confirming learning

Confirm learning by asking probing questions such as:

How could you annotate the image to help you read the scale accurately?



On this scale, the arrow shows the weight of a pineapple:



Here is a different scale. Mark with an arrow the weight of the same pineapple.

